

ELIMINATION OF GERMAN RESOURCES FOR WAR

HEARINGS
BEFORE A
SUBCOMMITTEE OF THE
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AND
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(79th Congress)
AUTHORIZING A STUDY OF WAR
MOBILIZATION PROBLEMS

PART 3
TESTIMONY OF
FOREIGN ECONOMIC ADMINISTRATION
AND MATERIALS ON
GERMAN PENETRATION OF
EUROPEAN INDUSTRY

JUNE 26, 1945

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CONTENTS

	Page
Director, Enemy Branch, Foreign Econo-	143

SCHEDULE OF EXHIBITS

GERMAN PENETRATION OF EUROPEAN INDUSTRY

Exhibit	Appears on page
European industry:	
Production and distribution in Germany.....	193
Economy of France.....	206
Iron and steel industry.....	228
Chemicals industry in Germany.....	265
German economy and its contributions to enemy Europe.....	294
Chemical industry of France.....	313
Economic penetration and exploitation of Southeast-	
Europe.....	343
German penetration of corporate holdings in Serbia.....	352
German penetration of corporate holdings in Croatia.....	359
German penetration of European insurance.....	367
German data on the prewar German economy.....	408
German assets and economic activities outside Germany af-	
ter German war potential and propaganda.....	454
German penetration of current or recent German economic penetration	493
German penetration of interviews held in the United States by U. S. Gov-	
ernment officials with German industrialists, scientists, attorneys,	
and former German government officials.....	(498)
German Farben's manufacture of poison gases, 1913-18, filed	
with the War Relocation Authority.....	504
German government.....	504
Portions of an Interim Report on Study Projects Relating	
to German Economic and Industrial Disarmament.....	509
German Industrial Disarmament Studies.....	541
German newspaper clipping from Baltimore Sun, June 30, 1945.....	552

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TUESDAY, JUNE 26, 1945

UNITED STATES SENATE,
COMMITTEE ON MILITARY AFFAIRS,
SUBCOMMITTEE ON WAR MOBILIZATION,
Washington, D. C.

The subcommittee met at 10:50 a. m., pursuant to adjournment on Monday, June 25, 1945, in room 358, Senate Office Building, Senator Harley M. Kilgore, of West Virginia (chairman), presiding.

Also present, Dr. Herbert Schimmel, chief investigator.

The CHAIRMAN. At the request of the subcommittee the Foreign Economic Administration has been preparing during the past 2 months extensive testimony on the problems of eliminating Germany's economic resources for another war. Mr. Leo T. Crowley, Foreign Economic Administrator, was scheduled as the witness before the subcommittee this morning to present this testimony.

Mr. Crowley called me yesterday afternoon to say that it would not be possible for him to appear before the subcommittee this morning. He is on the Hill, but is tied up on another matter. He will appear later, and this morning two members of his staff are here to present the material which has been prepared.

Mr. Henry H. Fowler will be the first witness.

Mr. Fowler, will you identify yourself for the record?

STATEMENT OF HENRY H. FOWLER, DIRECTOR, ENEMY BRANCH, FOREIGN ECONOMIC ADMINISTRATION

Mr. FOWLER. Thank you, Mr. Chairman.

For the record, my name is Henry H. Fowler, and I am Director of the Enemy Branch, Foreign Economic Administration.

In your letter to Mr. Crowley, Mr. Chairman, you indicated that it would be the purpose of these hearings, among other things, to develop further information on the technics and practices which the Germans have used at home and abroad to create economic resources for aggression, and to determine the nature and the extent of these resources.

The material to be presented this morning, Mr. Chairman, includes a statement which Mr. Crowley had intended to deliver orally to the committee, plus a lengthy written statement with a number of exhibits which are submitted for the record.

The CHAIRMAN. Will you present the statement which Mr. Crowley had intended to deliver orally to the committee?

Mr. FOWLER. Yes, sir.

We have won a war with Germany for the second time in less than 30 years. Today the most important question facing us is: What can we do to prevent a third World War? In my opinion, the subject

of the committee hearings, the economic base for German aggression, is the important key to the problem of peace.

There may be many solutions to the German problem of a political and social nature. Of none we can be sure, however, unless steps are taken to see to it that the economic and industrial potential of Germany does not permit her to wage another war of aggression. Hence, it seems most timely that through the forum of your committee, while memory of battle and death is still fresh, the American Congress and the public will become acquainted with the fact that a powerful German economic base for aggression still exists at this moment—and that it must be eliminated or controlled before we will be able to live in peace.

Mr. Crowley's statement is as follows:

For many months now the Foreign Economic Administration, through its Enemy Branch, specially constituted for this purpose out of various units of FEA concerned with economic-warfare problems, has been engaged in a broad and inclusive study of what we call German economic and industrial disarmament. This extensive study and programing project was undertaken by FEA in response to a direction from the President last fall in which he instructed me to carry forward "studies from the economic standpoint of what should be done to limit the power and capacity of Germany to make war in the future." The Director of the FEA Enemy Branch, Mr. Henry H. Fowler, who is here with me today, is in charge of this work. In the detailed statement which is to be presented for your record, there is a brief account of some of the work projected by the FEA Enemy Branch in response to this Presidential direction. Among other things, this FEA work program includes, as its major feature, the formulation of a specific program for German economic and industrial disarmament—industry by industry—designed to apply to Germany as a whole. This is precisely the type of specific program which Mr. Baruch advocated before the Senate Military Affairs Committee last week.

Let me hasten to add that in undertaking and carrying forward this extensive and important study project, the FEA does not preempt to itself the function of deciding what American policy should be on this subject or the job of executing that policy through international negotiations or the performance of occupation tasks in Germany. The task of advising the President on Executive policy on this subject is one shared by various agencies, including the FEA, acting under the direction of the Department of State. The negotiatory and executory responsibilities fall logically to the State and War Departments. In accordance with the President's letter¹ FEA tries to perform the role of a service agency for the agencies charged with negotiatory and executory functions and to promote understanding, appreciation, and knowledge in the United States field representatives of the problem of economic and industrial disarmament of Germany.

Because of the delicacy of the entire German question during the period of actual hostilities, we have had to work quietly upon this subject. But now that hostilities are over, the FEA appreciates this opportunity to present to this committee of the Congress its impressions of the nature and magnitude of the problem of German economic

¹ Letter of September 29, 1944, from President Roosevelt to the Foreign Economic Administration.

and industrial disarmament. I believe this to be a matter of the highest importance for the following and obvious reasons.

Unless the American people, speaking through the appropriate officials of their Government, are prepared to enter into the undertakings that will be necessary to sustain their security by affirmative action regarding Germany's economic and industrial war potential, all of the studies, knowledge, and programs that a Government agency can develop will be of no avail. Indeed, such a policy will prove fruitless unless the American people are willing to commit themselves to a course of determined action over a long period of years that is designed to render Germany economically and industrially incapable of waging World War III.

This job of controlling Germany, I must emphasize, is no short-term business. The Germans are capable and industrious people. They are fired by their desire for revenge and can rebuild an industrial war machine and reorganize it for war purposes in a few short years, regardless of the damage wrought by bombing and regardless of the deprivation of existing facilities through removals or destruction. Cartels struck asunder today may be restored by an agreement tomorrow. German industrial assets held abroad, although wiped out tomorrow, may be built up again within a decade. Although during the year 1945 we may confiscate Germany's tools and implements of war down to her last gun, a few years from now war materials may flow out of German plants in newer and deadlier forms—unless we take steps to prevent such a catastrophe from happening.

Hence, I say that this problem of eliminating and controlling Germany's economic base for aggression is no short-term job. But it can be done, if the public realizes that it must take out and maintain insurance against future German aggression. Insurance means premium payments in vigilance and positive action—payments which must continue for decades if protection is to be maintained.

Balancing the costs of such insurance against the fatal consequences of a new holocaust of war, I submit that the American people should protect themselves with this security.

Although the problem is a long-term one, it does not follow that we have a long time to make up our minds about whether or not we will undertake to deal with it. Many decisions are upon us now. Action or inaction today will prejudice our later opportunity to achieve our basic aims. To wait until many months of occupation have lapsed before beginning the necessary measures would almost surely constitute fatal delay.

In order to save the time of the members of the committee this morning, I am submitting for incorporation into your record a detailed statement dealing with this problem. It will be the purpose of this statement to acquaint this committee with the existence and dimensions of Germany's economic base for aggression as it still exists today (see ch. 1). Secondly, the statement presents a brief outline, largely historical, of the mistakes which we made after the First World War, in treating Germany's base for aggression and the way in which the Germans took advantage of these mistakes and rearmed for World War II (see chs. 2 and 3). Finally, this statement will address itself to some of the problems connected with the development of a full-fledged long-term program for German economic and industrial disarmament, including the work in which the FEA Enemy Branch is presently engaged (see ch. 4).

In conclusion, I am glad to be able to place in the record of this committee the first chapter of what promises to be one of the most important stories of our time. What we have endeavored to prepare and present today is an appropriate back drop for the many succeeding occasions in which this topic of preventing renewed German aggression will be discussed. Less dramatic than the account of battles, but basically more important, the effort of our Government to anticipate and defeat the forces that would fight and win World War III surely deserves continued and intensive national attention. I congratulate this committee upon its determination to put this problem at the top of our national agenda.

The CHAIRMAN. You are now going to give a summary of the four chapters of your main statement, is that right?

Mr. FOWLER. Yes, sir.

The CHAIRMAN. The summary will include all the facts of the main statement, will it not?

Mr. FOWLER. It will, sir, and in addition to the lengthy written statement we are also submitting a series of eight exhibits which I will mention in the course of the summary.

It is the purpose of the statement submitted today to provide for the committee's record a factual back drop for the many succeeding occasions that we anticipate the committee will address itself to this topic of Germany's economic base for aggression.

In order to provide this factual back drop, the written statement submitted includes, first, an appraisal of the nature and extent of Germany's economic base for aggression today.

The CHAIRMAN. Mr. Fowler, it is true, is it not, that the Foreign Economic Administration has investigators in each country, as the Army advances, checking records?

Mr. FOWLER. Yes, sir, we have a limited staff of economic intelligence investigators who are associated with the military forces as they go forward. Of course, the staff is small in number but they attempt to concentrate their efforts on uncovering and making available economic information and intelligence.

The CHAIRMAN. Isn't it true that other agencies are helping, so that you are really getting the service of more men than you actually have abroad in each of the countries?

Mr. FOWLER. That is correct, sir, and one of the purposes of having an FEA contingent is to provide liaison with the military forces, so that when occasion demands it, additional men can be drawn into the study or procurement of batches of information that become available.

The CHAIRMAN. Do you know how that work is being done by the British? Is it done by their military intelligence, or do they have an agency similar to the Foreign Economic Administration?

Mr. FOWLER. I am not sure I can answer that question, but I am sure, in result, a similar procedure is followed, because there is in the British Foreign Office an economic advisory branch whose function is to follow and keep up to date the economic intelligence and information of this character as it is sent back from the field.

Insofar as the United States Government is concerned, there is quite a network of interagency coordination in this field, both at home and in the operating theater, particularly in the work of collecting

economic intelligence. It is becoming recognized that various agencies have substantial interests in the information that becomes obtainable. So, under the leadership of the Department of State, the recruitment of personnel for the ultimate dissemination of this information has been going forward for some time. In addition to that, there are other forms of interagency coordination for the development of study and the development of a program, which I hope to deal with in a few moments.

The second phase of this statement submitted today includes a review of the disarmament provisions in the last treaty of peace, plus a historical treatment of Germany's rearmament for World War II on the economic base that was left to her by the victorious Allies. Finally, in conclusion, we have ventured some general observations on the task of developing a program for treating the German problem.

There is not included in the statement, Mr. Chairman, a substantive description of a program, but rather a description of how we are going about the process of developing one. The program that is in process of development is not complete and we did not think it appropriate to bring forward a half-finished analysis today.

Dealing with the first topic, briefly, Germany's present economic base for aggression, I think it would be fair to say that, unhampered by international restrictions or intervention, and given the will and the political leadership to prepare for war, Germany could be far better prepared for war economically and industrially within a few years than she was in 1939.

That is because of the tremendous advances in organizing and girding her industrial economy for war that have taken place, not only before hostilities began in 1939, but also during the course of hostilities.

It is easy to confuse Germany's momentary inability to utilize her industrial potential for war that is a natural consequence of defeat, with a permanent elimination or control of Germany's physical war-making power.

Allied bombing and military operations accomplished their mission. That mission was to harass and damage German industrial production or reduce it to possession by force of arms in order to achieve the defeat of the German armed forces.

But such military operations, basically selective in their character, were not and could not be executed so as to eliminate permanently a national industrial war potential. That can result only from the making and keeping of the peace in such a way as to complete the process of German economic and industrial disarmament and prevent any rearmament.

The most important fact about Germany today is the size and range of the existing German industrial plant. It has been geared for total war and can be geared again; the bone, muscle, and sinew of the economic and industrial war power that nearly conquered the world is still in existence—Germany's economic base for aggression remains to be eliminated or put under long-term control.

The CHAIRMAN. The roots of that plant are spread all over the world?

Mr. FOWLER. There are very extensive roots in Germany and they extend throughout the world in one form or another.

The CHAIRMAN. And, preceding the war, that was built up, with the idea of war and conquest in mind?

Mr. FOWLER. Completely.

Not only evidence brought out by the study of the Foreign Economic Administration, but also evidence uncovered by studies of other agencies proves conclusively that for a long period of years, there has been in Germany a perfect working partnership between the state and industry and military staff, in which the three have worked together for the common purpose of girding themselves industrially and economically for war.

The CHAIRMAN. The thing that impresses me about that partnership of government and industry is that industry was not solely interested in the expansion of business but its ultimate aim was the industrial domination of the world to be accomplished by force.

Mr. FOWLER. Exactly.

You will notice we have submitted as an exhibit to this statement, in that connection, exhibit 6, which is entitled, "Unofficial Government." I think one of the impressions that one can derive from a close study of the way in which both official and unofficial government has been organized and run in Germany over the past several decades is that it was a partnership designed to carry out exactly the plan you have described. In many cases, where ordinary business judgment and a response to the rules and motives of free competitive enterprise would have dictated one course, a completely different course has been adopted by reason of an arrangement between the state and the business owner involved.

Mr. SCHIMMEL. In regard to your exhibit 6, entitled "Unofficial Government," I gather that this partnership was not one between the Nazi state and the whole of German industry, but rather between the Nazi state and the major cartel groups. The partnership was used by members of the major cartel groups—corporations like Krupp and I. G. Farben and Vereinigte Stahlwerke—to dominate and to regulate very strictly the smaller and weaker German business groups. Is that not true?

Mr. FOWLER. There was ample evidence shortly after the First World War to substantiate that. There developed an inflation which many observers, including General Morgan, of the British Control Commission, believed to be planned inflation. It wiped out a number of the smaller enterprises, and in the wake of that inflation the larger business organizations, such as I. G. Farben, were able to consolidate their positions.

The CHAIRMAN. The result of that period of inflation and deflation was that the major cartel groups, which cooperated closely with the German Government, were left at the end of the period with practically all Government business under its control; is that correct?

Mr. FOWLER. Yes, sir.

Mr. SCHIMMEL. The significant combines were in the war-making industries, notably the chemical, steel, electrical, synthetic rubber, and similar industries?

Mr. FOWLER. That is correct. Exhibit 6 develops that point in two specific cases, the chemical industry and the iron and steel industry, which, of course, are the two great industrial pillars of the war potential of any state.

What are the component elements of an economic base for aggression? Obviously, everybody can make up his own list, but due to our own experience with our own war effort, perhaps certain generalizations can be ventured, about what industries or types of products deserve listing as components in an economic base for war.

Perhaps the principal element is a huge machine shop equally capable of turning out arms, ammunition, and implements of war and a wide variety of useful peacetime products. The possession by a nation of a large installed stock of machine tools constitutes a major element in a war-making capacity, outweighing the military potential of population numbers. Germany, with a 1938 population of 70,000,000, had a machine-tool inventory and a machine-tool building capacity larger in 1939 than that of the United States, with more than 130,000,000 people, and a more highly mechanized civilian economy. It is believed today that even with allowances made for damage and obsolescence, Germany has in excess of 4,000,000 tons of machine tools together with a vast undamaged capacity for new machine-tool production. As it stands today, Germany, except for the United States, is the outstanding machine shop in the world.

The CHAIRMAN. Mr. Fowler, a country being geared industrially for war must, in the period preceding war, find outlets for much of its production in order to keep up its huge industrial momentum; isn't that correct?

Mr. FOWLER. Exactly. One of the purposes of the Germans was to establish and maintain motion in particular industrial fields which, when the occasion presented itself, could be easily converted to war production. In order to keep those industries alive in peacetime, it was necessary for them to be developed in Germany, both internally and through foreign trade.

The CHAIRMAN. That was the reason also for developing a highly centralized and cartelized control, was it not, so that industry could be rapidly geared to war?

Mr. FOWLER. That is right.

In the section in the lengthy statement on foreign trade, there is a considerable treatment of the way in which the German Government built up before 1939 large stock piles of raw materials, so that particular industries would be able to greatly expand their rate of operation when the time came.

The CHAIRMAN. I have been told, Mr. Fowler, that prior to 1939, as a part of the German stock-piling program for war, the German people were urged to put copper rainspouts and gutters on their houses. Do you have any information on that?

Mr. FOWLER. No, but it seems probable, considering the value of copper scrap.

The CHAIRMAN. I noticed a general absence of gutters and downspouts on German houses when I was there, and it appeared that they might have been taken for stock piles.

Mr. FOWLER. There is very complete evidence summarized in the written statement of the way in which Germany expanded her imports of certain raw materials far beyond their current need between 1934 and 1938. Imports, for example, of copper increased 101 percent; chrome ore, 130 percent; bauxite, 262 percent; iron, 165 percent. So, in one way or another, they were building stock piles during the years 1934 to 1938.

As a counterpart to the machine shop previously described, there was an iron and steel capacity in Germany which was huge in its extent, even before the war, producing 20,000,000 tons per annum, and the evidence we have indicates the greater part of that capacity is available today.

Despite rather substantial bombing damage the capacity of a huge German chemical industry remains or can be rebuilt in a short time. Some segments of it, such as that devoted to the production of synthetic petroleum, were substantially curtailed in their operation in the latter stages of the war because of bomb damage, but substantial segments of the industry are capable of high level operation in the near future, given an opportunity to repair and rehabilitate.

Fundamentally, this is the story all the way up and down the scale of industrial production. Many buildings stand in rubble, including a vast amount of residential housing. Many plants were damaged sufficiently to put them out of operation for the war just ended. But a huge block of industrial capacity is or can be made available for operation, given a relatively short period and the opportunity to repair and rehabilitate. The skill, know-how, and physical capacity is there.

The shape of the German economy of the future, warlike or peaceful, will depend fundamentally on what happens in the months ahead, not those just behind.

Many raw materials are available to provide the working materials for this industrial potential. Coal is still in the ground in huge deposits. The forests still grow. Through a marvelous capacity for synthetic production, supplies of textiles, rubber, petroleum, nitrogen, and many other items not available in their natural state in Germany can be produced in synthetic form.

A huge electric power industry, based on both ordinary coal and so-called brown coal, stands ready to provide power for the wheels and tools to fashion the raw materials into semifinished forms. Germany has the capacity for an outstanding electronics and electrical equipment industry and a superb precision and optical instruments industry. These are examples of industrial superiority and capacity which are esteemed by our military production authorities as vital elements in a war machine, particularly where they exist in a hugely oversized form. This existence in Germany of the capacity to produce a given material or product in amounts far beyond that necessary for a peaceful economy must be considered as a threat to peace.

Apart from the purely physical availability of plant, raw materials, and power capacity, there are other important components in Germany's economic base for aggression which must not be overlooked.

The last months of the war provided ample testimony to her amazing technical ability to produce new weapons and materials as a result of mobilized technological research and development. The organized and adequately financed research institutions, operating independently of or in connection with normal industrial operations and including large numbers of highly trained and specialized scientists, constitute one of the most important parts of the German war machine.

An equally important and sometimes overlooked base consists of the properties presently or formerly owned by Germans which are located outside the physical borders of the country, together with a

wide variety of economic and trade activities which constitute a transmission belt for the achievement of German economic and political objectives.

This particular phase of the subject was developed fully, I understand, at the hearing yesterday by Mr. Clayton, who discussed, in particular, the situation in some of the South American countries. I would like to call your attention to exhibit 2. That includes a detailed description of some of the methods Germany used after the last war to evade the controls that were imposed by the Treaty of Paris. One of the outstanding features of the German's program for evasion last time was the way in which they used their economic resources and activities outside the geographical area of control in Germany.

Through German economic penetration, and the fifth column activities on which it was based, Germany won an amazing string of victories. It is this economic base for aggression outside of Germany which, like the fifth column, can be most easily overlooked in any organized effort to defeat the peace. Why? Because this is the base which can be most readily utilized in all of the various countries when the cynosure of all eyes is upon the prevention of organized planning for aggression in Germany.

The CHAIRMAN. Mr. Fowler, the German cartels did not hesitate to use the good faith of their cartel partners abroad to further the interests of the German Government, did they?

Mr. FOWLER. No, sir. I think the private businesses in other countries, dealing with Germany, were at a terrific disadvantage. The private traders in Germany had the Government behind them. The other dealer had his own business interests to think about and the German trader was able to play upon his lack of resources, shall we say, to take advantage of him.

Finally, we must not overlook the highly integrated control of German economy which has become both traditional and intensified. This integrated control took many forms, sometimes manifest in the relationship between the state and industry, sometimes between German military leaders and private industrial organizations, sometimes being effected by trade organizations themselves through cartel and similar devices. It is easy to be deceived by the temporary state of disorganization of the German economy, about which we hear so much. The years of working together in a highly organized fashion have created a habit pattern and manner of doing business that is easily reconstituted.

That is well illustrated, Mr. Chairman, by the fact that the German coal cartel at the present time is perfectly willing to finance the operations of the mines and produce the coal, and turn it over to the occupation forces without guaranty they will be reimbursed. They would rather do that than relinquish control of the mines. They would rather provide coal to the military forces and actually pay the workers themselves. This is similar to an incident which occurred during the course of reparations after the First World War: there was a suggestion by the Allied authorities that a given item be taken off reparations; the German authorities in question urged that the item be kept on for reparations because it tended to secure a market for them that otherwise they might not have been able to sustain.

There is a general warning indicated in recent statements of German industrialists which have been reported both officially and by

the press. These statements clearly picture the efforts of the Germans to revive their important key industries, regardless of the cost involved. That will undoubtedly have a high priority in the German mind as the most important step at reconstruction.

Next, I would like briefly to summarize the points in the treaty after the last war, which are salient to the problem of disarming Germany.

Already we have avoided two of the difficulties that last time defeated an attempt to prevent Germany from making war again. We have avoided a negotiated peace. We have instituted Allied authority in lieu of a German government. We have agreed that Germany should be treated as a defeated nation and disarmed so completely that she will not be able to menace the people of the world.

Last time the disarmament of Germany was conceived of as a part of universal disarmament, not as a specific program for preventing a recurrence of German aggression that might impinge upon the sovereignty of a German government.

Last time Germany was permitted to retain and equip an army. The possession and manufacture of arms, ammunition, and implements of war was only restricted. It was not abolished.

The provisions of the Treaty of Versailles were eloquent in their omission of provisions constituting a program for the elimination or control of German industries capable of military production. They aimed, rather, at reducing the standing military forces of Germany and the amount of true military equipment they could retain and manufacture.

Last time there were widespread attempts to violate and evade the provisions restricting the maintenance of or redevelopment of Germany's armed might. The enforcement commissions were slow in beginning control. They were possessed of inadequate powers, badly understaffed, and particularly hampered by the lack of adequate Allied intelligence personnel. In addition, the surprising course of Allied policy of upholding German sovereignty against the role of the commission greatly interfered with enforcement activities.

In the lengthy statement there is a considerable elaboration of that phase of the report.

Mr. SCHIMMEL. Mr. Fowler, I think it is very significant, as you bring out in your lengthy statement, that all this was happening when there were still very considerable democratic elements in Germany, as contrasted to the situation today when there appears to be no remnants of any democratic elements left in Germany. The danger today would therefore appear to be all the greater.

Mr. FOWLER. Yes; in the lengthy statement we have developed that point, Mr. Schimmel, thinking it worthy of emphasis at this stage of the game, that contrary to some general opinion to the effect that the Nazis were solely responsible for war preparations, there is a surprising record in the years immediately succeeding the end of the First World War during the tenure of the so-called Weimar regime of attempts not only private but official to evade the provisions of the Treaty of Versailles.

The evidence on that point is summarized in chapters 2 and 3 of the written statement.

One of the main features of this effort historically was, of course, the activities underground and apparent of the so-called General Staff group.

Even before World War I was over, German military leaders were analyzing the causes of their impending defeat and planning for the next war. They found few defects in German arms and military strategy. The main weakness that they discovered was in the field of war economics.

The Treaty of Versailles abolished the German General Staff, but the German General Staff was able to circumvent that prohibition by continuing its work in various governmental organizations such as the National Archives, where they purportedly worked on a historical study of the First World War.

Not long after 1918, the German General Staff set up schools to train German officers in military economics and industrial organization. By the middle 1920's many German officers trained in those schools had been sent out to help and guide German industrialists to rearm Germany economically and industrially for World War II.

THE CHAIRMAN. Mr. Fowler, did you know that one of the foundations in this country, the American Research Foundation, helped by spending several million dollars to make a study of Germany's failure in the First World War?

MR. FOWLER. I wasn't aware of that, but I did find that some innocent mistakes were made. Some of the companies in this country educated the Germans rather successfully in the art in which we are outstanding and superb; that is, the techniques of mass production. In the lengthy statement, there is an account of the way in which the Germans sought to take advantage of that opportunity and to learn as much as they could about American production methods and assembly techniques.

By the end of 1923, the German General Staff's plans for the next world war were so apparent that the British Brigadier General, John H. Morgan, of the Allied Disarmament Committee, was able to state: "Germany is in many respects far better prepared, industrially speaking, for a great war than she was in 1914."

The date of that remark was 1923.

The German General Staff did not confine its economic efforts to Germany itself. In fact, they hardly had surrendered in 1918 when, working closely with the industrialists, they encouraged and organized the flight of specialized assets and personnel from Germany. Blueprints, plans, and many valuable documents, and in some instances, equipment and machinery, were taken from Germany into neighboring countries where German research and development was continued.

There are many examples of this: For instance, not long after the armistice of 1918, train after train crossed the German border into Holland bearing equipment and materials of an important Fokker airplane works. Along with them went German technicians. A similar incident occurred with regard to a Dornier subsidiary which was established in Switzerland, just across the lake from its parent company in Germany.

THE CHAIRMAN. We have had examples of Germans sending large amounts of airplane-manufacturing machinery to a neutral country with detailed technical information for setting it up. They are already undertaking to do it again.

MR. FOWLER. History is being repeated to a considerable extent.

In the lengthy statement, in chapter 3, and also in exhibit 2, there are a number of examples with which I will not now take up your time.

The CHAIRMAN. Has your organization made any studies of the interlocking of stockholdings in such companies as Bofors and Schneider-Creusot in France with Skoda, Vickers, and Krupp?

Mr. FOWLER. I am informed that there were some months ago some studies of that character made by the Office of Economic Progress, a related organization.

The CHAIRMAN. I hope that thorough studies can be made. I understand that the interlocking is amazing.

Have you made any studies of the royalties which they may claim from American corporations on, for instance, stainless steel or the Bofors gun—royalties with which they may hope to refinance their companies? After the First World War royalties were paid to Krupp on steel armor plate, if I remember it, to the extent of something like \$70,000,000. I believe that the records of various American manufacturing concerns operating under licenses will show that reserves have been set up to pay royalties to German companies after the war.

Mr. FOWLER. We have heard of such instances. I don't know that we have any complete information.

The APC would perhaps be a better source of that information than would our agency, as the APC has much more intimate contact with the operation and management—

The CHAIRMAN. No; the APC is concerned with American concerns with German holdings. In the cases of which I am speaking there would be no German stockholders.

On the question of their recuperative power, I was recently told by one of our greatest Air Force men in France that if Germany could have held the Rhine 90 days longer she would have gained air supremacy over Germany by reason of her increased fighter-plane production in spite of the bombing. My own observation, in looking over the plants, was that the man was right. They had a change-over program in progress which in spite of the bombings they could have completed in 90 days.

Mr. FOWLER. We have had very interesting reports of the so-called dispersal program, by which they were able to disperse plants and place key ones underground.

All through the 1920's the German general staff and the industrialists continued their efforts to reorganize and prepare the German economic and industrial system for World War II. They instituted and managed inflation; they arranged for foreign loans to Germany; they were able to make arrangements with the Allies so that reparations actually were used to promote their plans rather than to impede them and they widened and strengthened the network of domestic and international cartel arrangements for the same purpose. This committee has already conducted hearings with regard to those cartel arrangements. For that reason I believe it is unnecessary to refer to them further in this summary.

When the Nazis came to power in 1933 they found that long strides had been made since 1918 in preparing Germany for war from an economic and industrial point of view. However, they also found that Germany was lacking in many basic raw materials and that her imports of those materials and her production of necessary synthetics would have to be increased. Working closely with the German General Staff, the Nazis achieved a high degree of success. In particular their foreign trade policy toward the countries of southeastern Europe

was so successful that during World War II Germany was able to obtain a very high percentage of strategic raw materials from the Balkans and central Europe.

Today, many people are inclined to give the Nazis credit and blame for Germany's accomplishments and policies from 1933 to 1935. In reality the German General Staff and the military German authorities were equally responsible. During those years, Germany was in fact ruled by the Nazis in partnership with the German General Staff and the major industrialists. Any effective program of economic and industrial disarmament which we and our allies undertake must take cognizance of this fact.

How are we to cope with this problem of Germany's economic base for aggression in the light of our failures and difficulties after World War I?

The problem must be studied intensively and a program for action devised; regular and intensive discussions and negotiations with our allies should continue; an adequate short-term policy should be maintained so that long-term plans will not be unduly prejudiced; as soon as is consonant with sound judgments and careful study a United States policy for a long-term program of German industrial disarmament will be determined at the highest level.

Confronted by this rather simple and obvious course of action, the responsibilities of the FEA are limited to the first point, namely, the study of the problem of German economic and industrial disarmament and the development of a specific and definite program for United States consideration. This responsibility is derived from a letter from the late President Roosevelt, directing the Agency to make "studies from the economic standpoint of what should be done after the surrender of Germany to control its power and capacity to make war in the future." The responsibility for the carrying on of negotiations and the execution of United States policy and programs in the field, falls to such organizations as the Allied Control Council or the Reparations Commission, in which United States representatives operate under the direction of the President and the Departments of State and War.

The FEA has sought to execute the President's direction to organize and accelerate studies and programs bearing on the subject of German economic and industrial disarmament by various devices.

It has established a new organization unit known as the Enemy Branch for this purpose. It has transferred to that Branch the substantial quantities of files and information concerning the German economy which FEA and its predecessor agencies had collected in the business of economic warfare and the continuing study of the enemy's economic potentials and institutions. It has transferred to this Enemy Branch all of the staff available from the Economic Warfare Section of the Agency and other units doing related work.

It has sought to bring together in the study and analysis of this problem a variety of experts in or available to many of the executive agencies. It has sought affirmatively to widen the circle of trained minds available to this government who would work toward the formulation of an adequate program for dealing with it.

The attention of the committee is directed particularly to one group of projects which were launched some months ago and constitute, in our judgment, the most intensive and organized attempt yet made to

develop the essentials of this new science of economic and industrial disarmament. A detailed description of the interagency study project on this subject which is being carried forward by the FEA Enemy Branch is described in the written statement, and is the subject of exhibits 7 and 8.

The completion of these study projects within the month should result in:

(a) An organized consideration by experts drawn from various backgrounds of the more important components in Germany's economic base for aggression. Among other things, they will provide specific industry by industry studies which Mr. Baruch suggested be prosecuted in his appearance before the committee last week.

(b) Creation of a series of adequately prepared written analyses of the various topics selected for detailed examination. These reports are being prepared to include not only a description of the particular German industry or economic resource under consideration, but also to deal with various detailed questions that undoubtedly will be raised or answered in connection with any international considerations of a long term program. They will include recommendations of a specific and definitive character, although they will be advisory only to FEA and the other agencies concerned, and not have the force and effect of adopted Government policy.

(c) The early provision of a basis for searching and complete technical discussions of the problems of German economic and industrial disarmament by our appropriate representatives.

Those 27 study projects are being conducted in a variety of ways. To handle most of the specific industrial projects, the FEA worked out careful cooperative arrangements with a number of departments and agencies of the government, including State, War, Navy, OSS, Commerce, WPB, Interior, and others, possessing or having access to specifically trained technical personnel. In some cases, a given project has been redelegated by the FEA to a particular agency because of a peculiar aptitude of the personnel of the agency to deal with the subject. In dealing with other projects, particularly those of an economic character, involving such difficult and troublesome questions as cartels, German assets abroad, and intercorporate relationships, the FEA has depended primarily upon its own personnel.

These reports, now in the process of completion, will be submitted to the FEA as reports of the individuals who served on the committees or prepared the report, speaking from their own knowledge and point of view, rather than as reports reflecting the policy or fixed views of the agencies to which they are attached. The reports are being made to not by the FEA. Rather than constituting adopted policy of the executive branch, they are being prepared for the advice and information of officials responsible for the making of such policy. They will incorporate the informed views and judgments of the best experts available to the Government, organized and assembled in an orderly manner.

After the submission of these reports to it, the FEA will undertake to evaluate and coordinate the conclusions and recommendations in these reports with many others worked out by its own staff into one master report. The Agency will submit this over-all summary report on the subject to the State Department and the President with specific detailed recommendations constituting a suggested long-term program for German economic and industrial disarmament.

The FEA, which has devoted more man hours to this subject than elsewhere in the country, feels that only a beginning has been made in the study of this problem and the development of sound informed judgments. In effect, only the preliminaries are out of the way. It urges that military, economic and industrial experts be increasingly employed in the task of diagnosing the plans of the enemy and in developing and executing plans designed to frustrate them. It is especially important to procure economic information and intelligence within Germany itself, particularly on the subject of German economic penetration of other countries.

Without discussing the nature or substance of the definite and detailed program which is in process of development to carry out the Yalta agreement, certain ground rules regarding the character of such a program can be outlined. The attention of the committee is directed to a brief summary of these important ground rules which is contained in the detailed statement.

That completes my summary of the material which Mr. Crowley had intended to deliver orally.

The CHAIRMAN. Will you place in the record the more lengthy and detailed statement which Mr. Crowley has prepared, together with the exhibits to that statement?

Mr. FOWLER. Yes, sir.

(The following is the written statement, with exhibits which Mr. Fowler submitted for the record on behalf of Mr. Crowley:)

There are few Americans today who will question the statement that the ability to wage a modern, large scale war is as dependent upon industrial and economic resources as it is upon military weapons. An airplane factory is more important than the plane. A sufficient stock pile of bauxite for making aluminum is as important as the stock pile of airplane spare parts. The Germans realized this as a result of their experience during World War I. And when they armed militarily for World War II, they also armed economically and industrially. Therefore, if we now mean to prevent Germany from possessing the means of waging a third world war, we must disarm her industrially and economically as well as militarily. That is one of the lessons learned in the last two decades. How can we apply it to the present situation in which we, as a victorious nation, seek with our Allies a lasting peace from German aggression? The answer to that question involves:

1. An appraisal of the extent of Germany's present economic capacity to wage war.
2. A review of the inadequacy of the disarmament provisions in the last treaty of peace.
3. An historical analysis of Germany's rearmament for World War II on the economic base left to her by the victorious Allies.
4. Some observations on the task of developing a program for the economic and industrial disarmament of Germany.

Discussion of these four subjects will be presented in the form of four chapters.

CHAPTER 1. THE PRESENT GERMAN ECONOMIC BASE FOR AGGRESSION

Germany is a defeated nation. She cannot use her economic potential for war. At the moment the Allies by sheer force of occupation prevent such a result. But what would Germany do in her current condition if opportunity for attack was presented, and she had the will and organization to fight? 'What is Germany's present-day-economic base for aggression on which it can build for yet a third world war?

Germany has the better part of her economic and industrial strength today, even though she could not martial it immediately for a third world war. It is there to build on.

The fighting has been over for only about 6 weeks. A detailed assessment of Germany's present economic and industrial position is still unavailable. But enough is known to safeguard an estimate that, if we were to leave Germany to its own devices and not to institute a program of economic and industrial disarmament Germany could be far better prepared for war within 5 years than she was in 1939.²

A major element in the defeat of Germany was the havoc wrought on Germany's industrial war machine by Allied bombing. But, contrary to popular belief, Allied bombing did not reduce most German plants to utter ruin. It substantially curtailed the production of aircraft.

This does not mean that Allied bombing failed to accomplish its purpose. Its effect on German production in 1944 and 1945 was tremendous. Its effect on German production for 1946 and 1947 and a few years after that will probably be tremendous. But it didn't eliminate permanently Germany's industrial war potential—and its effect on Germany's productive capacity could almost surely be discounted by the Germans before many years have passed unless we take steps to prevent that from happening.

Air bombing during World War II disrupted the flow of raw materials, fuels, and other supplies by wrecking the transportation system. It put certain big plants out of commission by destroying essential working parts, such as power houses. Demolition put out of operation a few key units, such as the ball-bearing plant at Schweinfurt. Other plants here and there were flattened. But even here the tools and plant equipment can be put back in shape; it is the buildings that are gone. For the most part the great majority of the most important plants could today go into operation after very little repair. In fact, some plants are already in operating shape.

The size of the existing German industrial plant is still enormous. All of it is geared for total war. All of it is still part of a huge modern industrial machine, which was organized and used for war.

Dyes and chemicals.—Germany, less than four times the size of New York State and with only five times New York State's population, has one dye plant that can turn out almost as much dye in a year as all the plants in the United States together. Not one of its windows has been shattered. During the First World War this plant using the equipment needed for dyemaking was a key unit in production of poison gases, the surprise weapon of that war. During the Second

² For a brief account of German industrial mobilization prior to 1939, see Exhibit No. 1, Organization of European Industry, published as Monograph 3 of the Subcommittee on War Mobilization, and based on material submitted by FEA and other government agencies.

World War it turned out great quantities of chemical materials for ordnance. It is in perfect operating condition today.

*Iron and steel.*²—Practically all the great iron and steel furnaces of Germany are ready for operation or can be in operation with minor repairs. Germany, which produced only 3,000,000 tons of steel in 1932, including that used to manufacture goods for export, made more than 19,000,000 tons in 1938 and at that time had a capacity of 25,000,000 tons.

This capacity would have been sufficient to supply half of the United States requirements at that time which, of course, included the tremendous transportation system, railroads, waterways, and highways necessary to keep together our economic and industrial structure which is spread over an area 16 times as large as that of Germany. Germany could not utilize a capacity of 25,000,000 tons of steel except for warfare. The mere continued existence of such a capacity is an invitation to war.

Nitrogen. In 1936-37 the world output of chemical nitrogen was around 2.6 million metric tons. Germany was producing about 1,000,000 metric in 1939 and had a potential of at least 1.6 million tons. It was this enormous capacity that enabled the demolition bombing of Warsaw, Rotterdam, London, and Coventry. More than 28 percent of the contents of each bomb consisted of chemical nitrogen from the atmosphere over Germany. The plants that supplied the nitrogen for many thousands of demolition bombs were vast enough also to supply great quantities of nitrogen for explosives needed by the Wehrmacht. A large part of the capacity remains or can be rebuilt in a short time.

Coal Tar.—Germany's coke oven, which provided the coal byproducts also necessary for explosives, produced 2,228,000 metric tons of coal tar in 1937—only 115,000 tons less than the ovens of the United States. From coal tar are derived many thousands of chemical compounds important to war. The German capacity is now considerably greater and has not been materially reduced by military action.

Synthetic textile fibers.—In 1934 Germany imported nearly 400,000 metric tons of raw cotton and cotton yarn for domestic use and for sizable exports of textiles. Today, Germany has rayon factories with a combined capacity of at least 450,000 metric tons. She no longer has to worry about her overseas cotton supplies being cut off in time for war.

Part of Germany's rayon output is used to supplement the limited supply of wool available at home and to provide high-tenacity fibers for industrial purposes.

Germany has domestic supplies of flax. This is supplemented by a new synthetic paper binder twine which takes the place of the hemp and jute which she had been accustomed to import from abroad.

In summary, Germany did not lack materials for textiles during the Second World War, the shortage of which was so serious during the First World War after the British blockade cut off the arrival of supplies from overseas. On the basis of incomplete information, it would appear that little permanent damage has been done to most of the plants which have been producing those materials during the last 6 years of war. Today Germany is still in a position to produce these essential synthetic materials.

² See exhibit I.

Rubber.—In 1933 Germany imported 60,500 metric tons of rubber, in the form of raw rubber and semimanufactured rubber goods. According to the best available estimates, the German synthetic-rubber capacity today is more than 100,000 tons.

Petroleum products.—In 1934 Germany was consuming less than 4,000,000 tons of petroleum products. Of that total, approximately 300,000 tons were supplied by natural petroleum found in Germany. In 1935 Germany manufactured about 300,000 tons of synthetic oil. Nine years later, in 1944, Germany was producing about 1,000,000 tons of natural petroleum and about 5½ million tons of synthetic oil, within the borders of Germany as she stood in 1938 before Hitler began to annex other parts of Europe. By the time the war ended in 1945, Allied bombing had done great damage to Germany's natural-petroleum and synthetic-oil production, but it is believed that a large part of Germany's 1944 capacity for producing petroleum products can be restored within a brief period.

*Aluminum.*⁴—In 1933 Germany had the capacity to make approximately 40,000 tons of aluminum a year. Actually, however, in 1933, Germany's aluminum output was only about 19,000 tons. According to the best estimates today, her capacity is currently around 250,000 tons. That capacity is still available to build Messerschmitts, Focke-Wulfs, jet-propelled planes, and improved pilotless flying weapons.

*Coal.*⁵—Germany has almost no raw materials except coal to feed its vast industrial machine. Coal, however, is a material required for the synthetic-gasoline industry, the nitrogen-fixation industry, the dye industry, the pharmaceutical industry, the plastic industry, and many other industries that provide substitutes for the resources Germany lacks. Germany ranks with the United States, the United Kingdom, and the Soviet Union as one of the important coal producers of the world. Its output of bituminous and subanthracite coal in 1938–39 was 187,000,000 metric tons, and production did not drop far below that annual rate until the last months of the war. In addition, Germany has vast fields of brown coal, half of it in Central Germany, that can be scooped up from open pits. In 1938–39, 187,000,000 tons of brown coal were mined; in the year ending in March 1944 the annual rate had reached nearly 250,000,000 tons. This brown coal was being used to provide a considerable proportion of the electric power of the country, to make briquettes and coke, to meet the requirements of much of the retail trade of the country, and as a material for the manufacture of liquid fuel and other military necessities.

Machine tools.—Machine tools are much more important in modern war than soldiers. A nation vastly superior in its machine-tool population is possessed of a potential for production of instruments of war that surpasses in its importance the ability to produce soldiers. One tool may be the equivalent to hundreds of workers. The possession by any nation of a large, installed stock of machine tools constitutes of itself a major element in defensive or offensive war-making capacity and outweighs the military potential of population numbers. The capacity of any nation to produce machine tools in quantities is an even greater factor in war-making potential. Whereas machine-tool

⁴ See exhibit 1, the Light Metal Industry in Germany.

⁵ See exhibit 1, Coal Production and Distribution in Germany.

capacity installed may be said to add arithmetically to the military power of a given population, the possession of knowledge and capacity to build quantities of machine tools effectively multiplies that war potential in geometric progression.

In the light of this knowledge, Germany's war potential in machine tools is a fact that is truly arresting. Recent studies and comparisons show that Germany not only has a very large number of machine tools but a capacity to produce them altogether disproportionate to any normal needs of the civilian economy. Germany, with a 1938 population of 70,000,000, had a machine-tool inventory and a machine-tool building capacity larger in 1939 than that of the United States, with more than 130,000,000 people and a more highly mechanized civilian economy. German over-all holdings compared to those of the United States on a 1939 peacetime basis are: 2 to 1 per capita of population; 3.2 to 1 per ton of steel capacity; 3.4 to 1 of production of civilian machinery; 16 to 1 per motorcar produced.

This disproportion in Germany's holdings of machine tools is even more striking in relation to other European countries. The German Nation had developed manufacturing industries far beyond her own consumption needs. These industries exported to and dominated middle Europe. In addition, Germany was the main source of supply of these non-German areas for the machinery and the machine tools they did use. Thus, the location of all of this manufacturing and tool-producing capacity inside Germany meant a large subtraction from the defense potential of other European countries.

While this same economic domination was true in other fields, such as chemicals, it was outstanding in the machinery and machine-tool field.

It is believed today that even with allowance made for damage and obsolescence, Germany has at the present time in excess of 4,000,000 tons of machine tools together with a vast undamaged capacity for new machine-tool production. Converted from their use for producing instruments of war to the uninhibited production of machinery of all types, there is no reason why Germany's industrial war potential in this field could not preserve itself and maintain its domination over the entire continent of Europe. As it stands today, Germany, except for the United States, is the outstanding armament machine shop in the world.

Other industrial potentials.—This listing and tabulation of existing German industrial war potential could be multiplied into other critical fields such as: Shipping, ship building, antifriction bearings, electric power, electronic and electrical equipment, precision and optical instruments, and vast and striking array of primary and subcontractors in the direct armament field.

The most striking fact that should be underscored in our current thinking is that in late 1944 the German Nation achieved the highest level of production in its entire history. This testimonial to her economic and industrial war potential stands out even more sharply in the perspective of heavy losses in male population due to the war casualties, the presence of a huge German Army beyond her borders, and the impact of accumulated years of aerial attack and economic warfare.⁶

⁶ These record-making levels of production in late 1944 finally sluffed off in the last part of the year and the early part of 1945 as a result of intensified Allied air attack, primarily on transportation.

In assessing these bare bones of Germany's industrial war potential certain other less tangible, but none the less important, aspects of her economic base for aggression should be appraised. These include her amazing technical ability to produce new weapons as a result of technological invention, her vast pool of skilled workmen and highly trained scientists, the existence abroad of extensive economic assets and activities, and finally, a highly integrated organization and control of her economy. Each of these aspects of Germany's base for aggression deserves a brief reappraisal as of today.

Ability to produce new weapons and products.—According to recent reports from Germany, it appears that if the Germans could have held out only 6 months longer they would have been able to smash New York City with improved V-2 bombs.

Only a little longer period would have been needed to bring into production the jet-propelled planes that could have reached Washington.

It is not necessary here to elaborate upon the terrifying scientific discoveries which our economic and industrial intelligence is gradually uncovering as we work beneath the lid in Germany. With the memories of her new V-weapons fresh in our minds, little needs to be added except to point out that they just didn't appear out of thin air. They were the fruit of carefully organized and adequately financed research institutions in which large numbers of highly trained and specialized scientists went about their business of inventing and developing the weapons that would establish German world supremacy. The results they achieved and would still achieve if opportunities are provided, spring from the existence of a laboratory here and pilot plant there and a research institution in another place. These institutions and these scientists are still on hand ready to do business for a new Germany when the break comes. Nor will their ideas and inventions be fruitless because of a lack of German capacity to translate them into mass production.

Germany could rapidly set up plants for such new products because of its enormous capacity to produce machines and machine tools, and the huge supplies of machine tools that were built up in advance of need. The plants the victors so innocently permitted to operate after the last war to turn out agricultural, construction, and textile machinery for the devastated regions of Europe were expanded and re-equipped to supply German factories to meet the needs of the war of 1939—already being planned when the armistice of 1918 was signed.⁷

*German economic assets and activities outside Germany.*⁸—One of the most important bases for German aggression consists of the properties owned or controlled by Germans, which are located outside the physical borders of the country. Coupled with these properties and based upon them, there are a wide variety of economic activities which act as transmission lines for the achievement of German economic and political objectives.

The story of the fifth column is a companion piece to the story of German economic penetration.⁹ While quantitatively this economic

⁷ See exhibit I, German Industrial Planning and Subsidization of Industry.

⁸ See exhibit 2: How German Assets and Economic Activities Outside Germany Affected German War Potential and Propaganda. Note, in particular, sec. c (3).

⁹ Some of the story is told in exhibit I, German Economic Penetration and Exploitation of Southeastern Europe.

base outside Germany may not seem to be of high importance, qualitatively, it is of the highest importance. Why? Because unless the United Nations are alert, this is the base on which plans for future aggression can be most readily utilized in the years immediately ahead when presumably our occupation forces in Germany will be engaged in preventing such planning there.

In viewing this economic base, two aspects should not be confused. One aspect consists of German efforts in the latter stages of the war, to get out of Germany, particularly to neutral countries, funds, loot, and key industrial technicians and organizers. The second aspect, less dramatic, but infinitely more important, was the existence, even before the war, of (a) extensive German investments in business properties and concerns of an enduring and well-established nature,¹⁰ and (b) long-term business relationships in the world of commerce and trade, that often took the form of private trade agreements or cartels.¹¹

When World War II broke out Germans were strongly entrenched economically in Spain, Switzerland, Turkey, Argentina, and Portugal as well as Finland, Bulgaria, and Rumania. During the occupation of the remainder of Europe they took the opportunity to lay the ground work for an economic empire which involved in direct affiliations of business relationships, literally hundreds of thousands of individuals in the liberated areas, including such countries as France, Belgium, Holland, Norway, Yugoslavia, and Austria.¹²

This economic network grew with government supervision and was carefully planned as an important component in the German scheme for the maintenance of an overwhelming political and economic power. Old established investments, contractual rights, personnel, and other assets were used to serve the objectives of the state.

With the defeat of Germany these assets previously used in outright war take on a new meaning. They are the means whereby the ground work for rebuilding a new German war potential can be developed beyond the reach of the Allied occupation forces.

This is a story which can be told country by country in great detail. The agencies of this Government, in painstaking fashion, are trying to build up, through various means, more complete records of the story of German economic penetration. We are all sure that as of today that story can by no means be fully told.

This committee and agencies of the Government including the Department of Justice and the FEA, having painstakingly traced the records of a goodly number of international cartels through which the Germans attempted to build up their own war potential and prevent their potential opponents from achieving an adequate defensive position. Yet the probabilities are that for the dozen stories of this sort that are fully known to us today, there are a multiplying number as yet unknown or barely glimpsed.

However, we do know enough to assess and place in special categories the more important types of German economic bases abroad which are important to take into account in our planning.¹³ They are:

¹⁰ The evidence in this respect is overwhelming. See exhibit I, Integration of the Continental Iron and Steel Industry into the German War Economy; German Penetration of the European Aluminum Industry; German Penetration of Corporate Holdings in Serbia; German Penetration of Corporate Holdings in Croatia.

¹¹ See exhibit I, the Iron and Steel Cartels; and the International Aluminum Cartel.

¹² Details on some of the business relationships established by the Germans in France may be seen in exhibit I, the Textile Industry of France. The Belgian Economy and Its Contributions to Enemy Europe gives some idea of the extent to which the Belgian economy was tied to the German.

¹³ Sample cases of Recent and Current German Economic Penetration Abroad are presented in exhibit 3, cases 1-15.

(1) Long-term investments in industrial plants, banks, mines, commercial enterprises, shipping, warehouses, public utilities, insurance companies and other types of industrial, commercial, and financial undertakings, whether completely or partly owned.¹⁴ These are by far the most dangerous of German assets since most long-term investments are of prewar origin and have become well integrated with the neutral economy.

(2) Stock piles of merchandise or raw materials built up in anticipation of continued trade between Germany and the neutrals. These consist of stock piles of German goods either accumulated in order to maintain a dominant position in the neutral markets or destined for shipment to Germany when the latter was cut off by the Allied landing in France, or originally intended for safe haven.

(3) Art objects, jewelry, and privately owned precious metals which often may be looted property but in many cases the legitimate property of Germans who either reside in the neutrals or have shipped their valuables abroad in order to escape contributing to reparations or other Allied penalties.

(4) Gold holdings, securities, and bank deposits which make up a large part of German assets in the neutrals. German Government-owned gold may be deposited with the German Embassy or Legation; privately owned gold may include stocks, usually bearer shares, of foreign and domestic companies, bonds, and the like. Securities and bank deposits of German nationals and companies and their cloaks in the neutrals undoubtedly are considerable in amount.

(5) Contractual rights include cartel agreements, mortgage, patents, licenses, trade-marks and copyrights, reinsurance treaties, and options of various sorts.

Integrated control of economy.—The last-mentioned but not the least important economic base for a new German aggression is the highly developed control machinery that blanketed the country from top to bottom. It is our belief that it is capable of functioning fairly efficiently even in the absence of any native political government. Although authority over policy was concentrated in Berlin for the last 2 years, a considerable measure of local industrial authority was permitted during the closing months of the war, when bombing disrupted communications and transportation. At all levels the persons participating in the control of German industry have been trained to follow a pattern that will advance the interests of the country. Its elements are:

(a) Some of the officials of the large civil service bureaucracy that has never attracted any great attention to itself by political activity in the Nazi Party. This body has no doubts about a revival of Germany and will seek to act in a manner that cannot draw censure when foreign troops are withdrawn.

(b) The military organizations that are being disbanded. The military tradition is so firmly imbedded that uniforms and open display of rank are not needed to obtain unquestioning obedience. Even with the General Staff disbanded there will be men of lesser rank ready to promote the long-term program of Germany, just as happened after the last war. Every graduate of the military schools knows what that program is and can be counted on to act accordingly.

¹⁴ The way in which the insurance business of Europe lent itself to German long-term plans for domination is described in exhibit I, Axis Penetration of European Insurance.

Small groups will begin, if they have not already begun to do so, to meet cautiously to study the causes of defeat and devise ways of preventing it the next time. As long as the industrial plant of the country is intact, it will be far easier for new groups to mobilize the country's resources for war than it was for their predecessors of the 1920's, because industry has now been integrated for total war.

(c) The network of trade, industrial, and cartel organizations: These have been streamlined and intermeshed, not only organizationally but also by what has been officially described as "personnel union." Legal authority to operate this organizational machinery has been vested in the concerns that have majority capacity in the key industries, such as those producing iron and steel, coal, and basis chemicals. These concerns have been deliberately welded together by exchanges of stock to the point where a handful of men can make policy and other decisions that affect all. During 6 years of war the ordinary procedures of the free market largely have disappeared.

Each small buyer learned to depend on a given supplier or to have a substitute provided by a higher authority. As one prisoner of war stated it: "We smaller manufacturers have become plant superintendents and bookkeepers."

The managers of the German machines are already displaying their tactics. Almost daily there are newspaper reports that American members of the Allied Military Government are met in each factory by hand-picked men, frequently engineers, speaking English and often prepared with credentials to prove acquaintance with reputable citizens of the United States. After disclaiming all association with the Nazi Party, they endeavor to persuade the visitors that the German industrial capacity can greatly contribute to the war with Japan, or at least to relieve the needs of liberated Europe. These are precisely the tactics the Germans adopted after the defeat of 1918, to get the wheels of Germany's industry required for military production, rolling and operating, for purposes other than war production, so that the Allies would continue to allow them to operate and forget or disregard their importance to Germany's industrial war potential.

No criticism of individual cases of plant reopenings or the resumption of production in "peaceful types" of industries is intended or implied. The purpose of the observation is to point up the general danger to which we must be constantly alert.

As we have reviewed the various aspects of Germany's economic base aggression, it would seem to be abundantly clear that the problem of eliminating or controlling that base in such a manner as to prevent renewed German aggression is not a simple one.

If such an objective is to be achieved, surely we must understand the complexities of the problem and plan on a broad plane. At the risk of rehashing history of recent years that may be well known to members of the committee, it will be the purpose of the next two chapters of this statement to trace the fatal errors made in the wake of World War I which left the Germans the opportunity to wage World War II and the way in which the German nation took advantage of that opportunity.

CHAPTER 2. THE INADEQUACY OF THE DISARMAMENT PROVISIONS OF THE TREATY OF VERSAILLES

The economic and industrial war potential of defeated Germany in 1918 was small compared with the potential of defeated Germany in 1945, just described. However, it was a large war potential in terms of 1918 and compared favorably at that time with the economic and industrial war potentials of the victor nations. Nevertheless, it was largely ignored by the Allied statesmen when they convened at Versailles in 1919 to draw up a treaty of peace. It is necessary for us to examine carefully the reasons for this and to take advantage of the lessons of the past.

Today our rights in Germany are those of conquerors. The Germans surrendered unconditionally about 6 weeks ago, after they had been beaten so thoroughly that they were unable to continue resistance. Today, in 1945, there can be no question of a negotiated peace. In fact, there is no German Government with which to negotiate. In 1918, by way of contrast, there was an armistice, a negotiated peace, and a German Government which we recognized.

Lack of unified Allied policy.—At the end of World War I there was no unified Allied policy toward Germany. There was no general agreement that Germany should be treated as a defeated nation and disarmed completely so that she would not again be able to menace the peace of the world. Instead, there was a desire on the part of many Allied statesmen to deal with a responsible, democratic German Government, to impinge as little as possible on the sovereignty of the German Government once the Kaiser was removed, and to prepare the way for the eventual entrance of Germany into the League of Nations. The disarmament of Germany was conceived of as part of a program of universal disarmament, not as a program for preventing a recurrence of German aggression. The introductory paragraph of part V of the Treaty of Versailles states:

In order to render possible the initiation of a general limitation of the armaments of all nations, Germany undertakes strictly to observe the military, naval, and air clauses which follow.

To repeat: In 1919 there was no unified conviction on the part of the Allied leaders that it was necessary to disarm Germany in order to secure the peace. And it was against this background that the peace treaty was written and enforced.

The military disarmament terms.—A quick reading of part V of the peace treaty indicates clearly the extent to which the provisions fell short of adequate disarmament. Germany was allowed to retain and equip a provisional army of 100,000 men—an army larger in proportion to the population of Germany than the Regular Army of the United States before the present war was to the population of the United States. In an attempt to prevent evasion of the 100,000 limitation, the treaty limited the number of customs officers, forest guards, coast guards, police, members of veterans societies, etc., which the Germans could have.

The treaty provided that the German General Staff should be abolished. It limited the number of officers in the Ministry of War and

... restricted the number of civilians who could be employed by the military services.

Just as the treaty limited, but did not do away with, the armed forces of Germany, so also it restricted but did not abolish the possession and manufacture of all arms, ammunition, and implements of war. It did prohibit the retention or manufacture of any poison-gas equipment, armored cars, and tanks. But it provided for the German Army of 100,000 men to be equipped with artillery, machine guns, trench mortars, rifles, and ammunition. All such material of these types in excess of the amounts allowed to be retained was to be surrendered to the Allies. All war-plant capacity in excess of that needed to keep the Army of 100,000 men equipped with the permitted types and amounts of war material were likewise to be surrendered to the Allies, but such war plants were not so defined as to include definitely anything other than a specialized, direct arms-producing factory or arsenal.

The naval disarmament terms.—The naval terms of the treaty were similar to the ones directed at the German Army. The German Navy was reduced to specifically named warships. Further, Germany was not permitted to retain any submarines, and all construction of submarines and warships was prohibited.

The air-disarmament terms.—The air clauses of the treaty forbade Germany to possess or manufacture military land or sea planes, but no limitation of any kind was placed on the manufacture of civilian aircraft.

Import and export prohibitions.—The treaty prohibited the importation into or exportation from Germany of any arms, munitions, or war materials.

The Commissions of Control.—The treaty provided for three Inter-Allied Commissions of Control: Military, naval, and air. The German Government was instructed in the treaty to provide liaison officers to aid these Commissions. In general, the Commissions were given investigatory and supervisory powers.

Lack of any general economic and industrial disarmament provisions.—The treaty placed limitations and some absolute prohibitions on the production of direct military goods. It provided for the surrender to the Allied authorities for destruction of "any special plant intended for the manufacture of military material, except such as may be recognized as necessary for equipping the authorized strength of the German Army" (art. 169). But it contained no provisions prohibiting or limiting the production in Germany of any but direct military goods. There were, for instance, no provisions reducing Germany's steel production capacity to the level required for peaceful purposes. There were no provisions to keep Germany from building up plants for the production of peacetime goods in times of peace and war materials in time of war. There was, in short, no attempt to regulate those key industries which are related intimately to war production.

The omissions were undoubtedly due in part to a lack of understanding of the concept of economic and industrial armament and disarmament, a concept which Germany learned through bitter experience in World War I. But even if that concept had been understood by the Allied leaders in 1919, they would have almost surely not adopted it. For the concept would have been applicable against

Germany only if the Allies had decided to treat her as a defeated nation over which long-term control was necessary.

To summarize: The disarmament provisions of the treaty aimed merely at reducing the standing military forces of Germany and the amount of direct military equipment which they could retain and which could be manufactured for them. This was the same approach which was taken during the 1920's at the various international disarmament conferences at which attempts were made to persuade the major powers to reduce their military establishments and their manufacture of articles of war.

*Violations and evasions by the Germans.*¹⁵—The ink was hardly dry on the treaty before its provisions began to be violated and evaded. The size of the German armed forces was, in fact, reduced, but the police forces were increased beyond their authorized size and a number of voluntary military and semimilitary organizations were formed. In addition, many military officers were transferred to civilian status, and entire divisions of the military organizations and the ministries administering these organizations were transferred to civil ministries.

In addition, the 100,000 men making up the regular army were not constituted as an army but rather as a body of specialists and leaders who were trained as such. The general staff, while formally abolished, was reestablished in such innocuous looking organizations as the National Archives, where it studied the causes of the defeat of Germany in the First World War and planned for German victory in the Second World War.

The enforcement of the provisions of the treaty dealing with stocks of military equipment and war factories was even less effective than the enforcement of the provisions dealing with the size of the armed forces.

Slowness of Commissions in beginning control.—In the first place, the Military Commissions were too slow getting started. They did not begin active enforcement until 14 months after the armistice was signed in November 1918. During those 14 months, the Germans were able to hide away and camouflage equipment, blueprints, and other articles, and to organize methods of evading the provisions of the treaty.

Inadequate powers of the Commissions.—In the second place, the Commissions were not given sufficient independent powers and freedom of action, and their prestige was weakened by the Allied leaders, who bypassed them from time to time and dealt with the various Allied ambassadors in Berlin on military matters which should have been handled solely by the Commissions. Further, the Commissions were ordered to report to the Conference of the Ambassadors of the principal Allies, which continued to sit in Paris. In addition, in between the Conference of Ambassadors and the Military Commissions in Germany was interposed the Inter-Allied Military Committees of Versailles, which was set up to interpret and transmit decisions of the Conference of Ambassadors on military points arising under the treaty. All this made for cumbersome, unworkable machinery and meant that the Commissions in Germany were not free to act on the spot.

¹⁵ See exhibit 4: A Collection of Interviews Held in the United States by U. S. Government Officials with German Industrialists, Scientists, Attorneys, Journalists, and Former German Government Officials.

In addition, the Commissions were badly understaffed and were particularly hampered by lack of adequate Allied intelligence-gathering personnel. As a result, they were largely dependent on their German liaison officers for intelligence. These liaison officers were supposed to act as servants of the Commissions. Instead they were in fact often advance agents of the German Government and helped to keep the German Government informed of every move the Allied Commissions were making and in many cases enabled the Germans to hide away equipment and records which the Allies desired to examine.

Allied policy of upholding German sovereignty.—Added to all this was the Allied policy of upholding German sovereignty and of not treating Germany as a defeated nation. The Commissions were in enemy country without adequate military enforcement powers and without the support of adequate Allied military garrisons. They had to argue with the German Government concerning the interpretation of the provisions of the treaty. They had to ask for advance permission to make inspection visits at factories, depots, and barracks. And also they had to face the fact that the German courts were invoking the German treason law against informers who cooperated with the Commissions, thus severely discouraging Germans from cooperating with the Commissions.

Efforts by the Commissions to control production of military goods.—Under these circumstances, it is surprising that the Commissions were able to accomplish as much as they did and that they were able to arrange for considerable amounts of military equipment to be turned over to them. They also seem to have succeeded, in some degree, in restricting production of direct military equipment, though it is highly doubtful if such production stayed within the limitations set by the treaty. In fact, a number of instances of direct violation, particularly by firms such as Krupp, are on record.

Destruction of surplus war plants.—The provision of the treaty requiring that surplus war plants be surrendered to the Allies was narrowly interpreted by the Commission. Only such buildings and machines incapable of conversion to peacetime uses were destroyed. Some general-purpose machines which were in direct war-material factories were dispersed in order to break up the factory, but this dispersal was on a very small scale and had little adverse effect on the German industrial war potential.

Achievements of the Germans.—While the Commissions were meeting great obstacles inside Germany, the Germans were busy sending personnel, blueprints, and some equipment abroad where manufacture and research were continued. These activities outside of Germany (which are described in some detail in ch. III), when added to those activities which the Germans were able to carry on inside of Germany, provided the Germans with adequate opportunity for continuing to develop, design, test, and improve models of war equipment for future production and future use.

It was not the amount of military material which Germany was able to save from destruction by the Allies nor the handful of military material which Germany was able to manufacture by devious methods in violation of the provisions of the Treaty of Versailles, which were important during the years which immediately followed

the defeat of 1918. Rather, it was the fact that Germany retained intact a vast aggregate of economic and industrial war potential and was able to continue to experiment, plan, and prosecute its development in terms of future war production that was important. Indeed, it was this fact that later enabled the German nation to organize itself completely and entirely for war in a very short space of time, when the opportunity came with the ascendancy of the Nazis to power and the final breach by Germany of the provisions of the Treaty of Versailles.

Lessons from the past.—There are lessons to be learned from the failures of the Allied statesmen in the period immediately following World War I. We have already demonstrated that we have already learned some of those lessons. Germany today is being treated by the victor nations as a defeated country. It is being administered by Allied military forces. Considerations of German sovereignty are not weighty and inhibiting as yet. We are not beset by divergent aims the way we were last time. President Roosevelt, Prime Minister Churchill, and Marshall Stalin pledged at Yalta to "eliminate or control all German industry that could be used for military production." This is a tremendous advance over the attitude which governed at Versailles in 1919 when the concept of general economic and industrial disarmament of Germany was lacking.

Yet we are only at the beginning. We have still to agree on and to begin to apply a detailed, specific, unified economic and industrial disarmament program which will eliminate the German war potential as a part of a unified occupation program. We have yet to impose a treaty of peace on Germany and to enter into an accord between the Allies that will establish permanently a control of Germany's war potential. We have yet to establish anything that resembles a long-term disarmament machinery which, over a period of decades, will see to it that the disarmament provisions of such a treaty are enforced and adapted as the situation may require.

We have seen the extent of Germany's present war potential—a war potential which exists despite the military defeat we have inflicted upon the German nation. Further, we have seen the mistakes which we made immediately after the last war. But in order to understand completely the problem of economic and industrial disarmament of Germany, it is necessary for us to trace through the pages of history the ways by which Germany achieved the economic and industrial rearmament for World War II.

CHAPTER 3. THE ECONOMIC AND INDUSTRIAL REARMAMENT OF GERMANY FOR WORLD WAR II

In the early summer of 1918 it was clear that Germany would be defeated. The men who had directed her war effort, began to develop a new plan for the next war. The men who had drawn up Germany's economic plans for mobilization of the entire German economy during the First World War began in 1918 to plan the economic and industrial rearmament of Germany for World War II.

General Staff emphasis on war economics.—The German General Staff, while officially abolished, as discussed in chapter II by the Treaty of Versailles, actually continued in existence after 1918, operating mainly in the National Archives, where, it was announced some former

in writing a historical study of the recent some volumes on military events, but their s of the causes of their defeat, and planning defects were found in German arms and in weakness discovered was in the field of reason, soon after 1918, the General Staff the Officers Corps must be trained in this ty all military schools were to be abolished. d, but at the same time the underground w academy in the Institute of Technology This old institution not only had some of ties of the country but also one of the best other similar institutions were developed. ers and officer-candidates were sent to the idies that included the efficient use of indus- emics of raw materials, production manage- ization, and war financing. In time the ear of practical experience in plant manage-

es of the General Staff's new type of military d industrial training had become active in t army corps areas, where they were the army commanders and worked closely with g their functions was the "rationalization" the latest advances in technology and pro- attention of manufacturers and promoted s as the synthetics Germany must have to er war. They later took credit for having ment and production of synthetic petroleum, ction and improving the quality of rayon, and magnesium, for improving the methods n ore, and for greatly expanding the capacity stry. In many cases Government funds were esired activities. The corporations concerned ebates, tax exemptions, and similar favors in ration.

World War II.—The plans of the General Staff of World War II emerged as the War Economics embraced these measures:

Germany from war debts and reparation pay-

ization of industry essential to war; the expansion of equipment of all plants with labor-saving machinery erability of industry to wartime shortage of man-

ment of domestic resources to the maximum, and titutes for critical materials not to be found in ay in Europe;

ing of critical materials that could not be developed

Collection of Interviews Held at U. S. Government Officials with German Indus-
trians, Journalists, and Former Government Officials. The cases set forth in this
a great deal of the discussion in this chapter.

(e) The rebuilding of the merchant marine and the building up of an air fleet;

(f) The construction of strategic motor highways and the unification and reequipment of the railroads;

(g) The institution of governmental economic and industrial controls well in advance of the outbreak of war to prevent confusion in the critical period of initial attack.

Statements by one of the Allied Disarmament Commissioners.—Too little information is available to judge precisely the extent to which the German General Staff and its industrial collaborators planned and promoted certain situations in the years immediately after World War I and to what extent they merely took advantage of them in putting their program into effect. But the staff's operations were already so apparent at the end of 1923 that the British Brig. Gen. John H. Morgan, of the Allied Disarmament Commission was able to state:

Germany has now got, ingeniously camouflaged, that Economic General Staff which was the dream of Rathenau * * * and the whole of the key industries of war—coal, tax products, sulfuric acid, nitric acid, aluminum, and all the rest—have been reorganized, subsidized, and controlled to this end. The whole of German industry and production have been reorganized by some astute and able brain with a view to making her independent of overseas supplies of material in the next war. Even her rolling-stock for ordinary commercial traffic has been altered to a new type capable of immediate conversion to troop trains.

Later Morgan said Gen. van Seeckt was the director of the _____ that the Government of the German Republic was collaborating fully with him, and that members of the general's economics staff were planted in key positions in Government agencies, including the Ministry of Finance.

Morgan also wrote in 1923, "Germany is in many respects far better prepared, industrially speaking, for a great war than she was in 1914."

General Morgan made these statements in 1923, 3 years after the guns had ceased firing on the Western Front. We were trying to forget there had been a war. The Germans were already on their way toward a new one.

*Flight of specialized assets and personnel from Germany.*¹⁷—The German General Staff did not confine its economic efforts to Germany itself or to international cartel arrangements worked out by German industry. In fact, they had hardly surrendered in 1918 when they encouraged and organized the flight of specialized German assets and personnel from Germany. Indeed, the 1918 surrender had taken place so far beyond the German boundaries that the Germans were able to secrete, camouflage, and smuggle key blueprints and other vital data of a technical and military character out of the country or into hiding places in Germany before a single representative of the Allies entered the country. The situation in the period before the formal arrangements of Allied control were put into effect was so lax that the Germans even continued the construction of submarines in Germany until an annex to the armistice terms ended the work.

The informality and looseness of the situation also was so favorable to the Germans that the important Fokker airplane works were shipped out to Holland. Train after train crossed the border from Germany into Holland bearing equipment, parts, and materials,

¹⁷ See exhibit 2: How German Assets and Economic Activities Outside Germany affected German War Potential and Propaganda. See particularly, sec. (a) and (b).

and German technicians to install the machines and resume construction of planes. Later a Dornier subsidiary was established in Switzerland, just across the lake from its parent company. Junkers continued to make planes through a Swedish subsidiary. Thus, German technicians continued German military research and trained other German technicians for the next war.

Other German firms arranged to have various kinds of military construction carried on abroad, and to protect their patents on devices of military importance by use of native firms and secret subsidiaries in neutral countries. Krupp, for example, transferred key patents, licenses, and secret processes to Bofors, the Swedish armament company, in exchange for a bloc of its stock. Later, in order to circumvent Swedish legislation aimed at preventing direct Germany ownership of Swedish armament facilities, Krupp gained control of the company by the purchase of additional shares. Krupp brought suit against the British armament firm of Vickers for infringement of Krupp patent rights on fuses for hand grenades; in settlement of the case Vickers turned over to Krupp its steel-rolling mill at Miers in Spain. This strengthened its outpost operations in that country, which already included naval construction and manufacture of machinery.

Submarine construction was carried on in the Netherlands through a disguised subsidiary of the German Government-owned yards at Kiel. The manner in which this subsidiary operated is of interest. Finland advertised for bids on a submarine. It was arranged that the contract should go to a small Finnish firm, though none in the country had facilities for doing such work. The Finnish company then subcontracted the order, placing it with the German subsidiary in the Netherlands. This operation was publicized by the French company that had competed for the Finnish subcontract with others from Britain and Italy, offering lower bids than the German puppet in Holland. Protests of the French Government over the treaty violation brought no Allied measures against Germany.

A more direct arrangement for submarine construction was made by the German Navy in 1924, when two model submarines were built in Spain and the German U-boat ace, Capt. Manfred von Killinger, founded a company in Echevarria, Spain, to experiment with submarines.

One of the best opportunities afforded the Germans for maintenance of forces skilled in manufacture of a military nature, and for experimentation, was arranged with the Russians. At a time when Russia's former allies were invading the country and supporting the so-called White Armies, the Soviets had too few engineers and technicians to utilize the old tsarist armament plants to advantage. German firms, above all Krupp, offered to operate these plants on lease and did so for a number of years. Junkers also operated a plant in Russia.

At a time when the continuation of experiments with engines and plane parts was vital to the Germans if they were to build up a fleet of military planes as good as that of future opponents, some German designs were almost forced into production in countries not considered dangerous to Germany. Blueprints for a fighter engine were donated to a Czechoslovak manufacturer and designs for bombers parts were

sold to the Czech Government for a nominal price. In return, the Germans were allowed to watch performance tests.

While the establishment of some German subsidiaries abroad in the field forbidden to parent companies in Germany under the peace treaty might be considered merely a series of commercial ventures, the completeness with which every industry falling within the terms of the treaty was soon in operation abroad left little doubt that the corporations were working in close collaboration with the general staff. Some of the production they undertook could not have been carried on otherwise, since if involved the use of blueprints for which the manufacturers were responsible to the government.

Military research inside Germany.—Not all the experimentation in the immediate years after World War I was carried on outside Germany. As shown in chapter II of this statement, military production and research never actually ceased in Germany. The Reich military research institutes which could carry on in properly guarded buildings, continued operations with budgets that were buried in government appropriations for the benefit of agriculture and similar peace time activities.

Military production inside Germany.—An example of military production, Germany during these years is set forth in the Report of the Special Senate Committee of the Seventy-third Congress on the Munitions Industry. The report refers to a statement by a representative of Du Pont to his company in which he said that a State Department official had informed him that the Germans were exporting powder and munitions and that the Allies were not objecting because these exports were increasing Germany's ability to pay reparations.

Use of American methods.—The United States accidentally played an important role in the technical arming of Germany. Although the German military planners had ordered and persuaded manufacturing corporations to install modern equipment for mass production, neither the military economists nor the corporations seem to have realized to the full extent what that meant. Their eyes were opened when two of the chief American automobile companies built plants in Germany in order to sell in the European market without the handicap of ocean freight charges, and high German tariffs.

Germans were brought to Detroit to learn the techniques of specialized production of components, and of straight-line assembly. What they saw caused further reorganization and refitting of other key German war plants. The techniques learned in Detroit were eventually used to construct the dive-bombing Stukas. While this aid to the German airplane industry was accidental, at a later period I. G. Farben representatives in this country enabled a stream of German engineers to visit not only plane plants but others of military importance, in which they learned a great deal that was eventually used against the United States.

Industrial reorganization.—During the latter years of World War I, the German military economists had found many industrial plants with outmoded equipment and dependence on cheap manpower rather than modern devices that not only saved labor but also promoted mass production. They had also found industries poorly grouped for efficient operation and the saving of transportation. Some important segments, while having capacity sufficient for peacetime markets, were much too limited to meet military demands.

Plants producing synthetic substitutes for critical materials were quite inadequate, both in the character and type of their output. In other words, much of the German plant needed reorganization, reequipment, and expansion before Germany could safely enter another war.

But accomplishment of this program required the expenditure of large sums of money at a time when reparations payments and service on public and private debts were materially reducing the funds available for investment in construction—especially in construction on which no immediate return could be expected. Thus, during the early 1920's, the German General Staff and the industrialists had a problem on their hands: How was Germany to finance the program of construction needed to arm Germany economically and industrially for World War II.

The answer was in a sense threefold: Inflation, foreign loans, and reparations, although all were related rather than separate methods.

Inflation.—Various apologists for Germany have denied that inflation in Germany during the early 1920's was managed. But, General Morgan, who was in Germany through the period when it was in operation and in an exceptionally good position to discover the facts, stated the conviction that inflation had been "the instrument" of the underground General Staff to accomplish a large part of its program. Such a program could not have been carried out without the collaboration of the government of the Weimar Republic and of the major industrialists. The latter were in control of banking and, in addition, occupied many of the government offices concerned with public finance. They, furthermore, were the chief beneficiaries. While small businessmen who did not understand the techniques of managed bankruptcy were ruined, and salaried workers and wage-earners were driven to desperate expedients in order to subsist with prices doubling overnight, a constantly narrowing group of the major industrialists were creating economic domains of fantastic proportions. As company after company was forced to the wall, the successful manipulators bought them up.

The new empires built with the aid of inflation were not all within Germany. At the same time when Germany was pleading poverty and inability to pay reparations, German manufactured products were being sold abroad in large quantities, thanks to the low-production costs, and part of the proceeds from them were being used to acquire properties abroad—some of them German holdings that had been confiscated by the Allies.

The final triumph of inflation was its blackmail value. Germany's ability to undersell other nations with goods produced under inflationary conditions began to cause trepidation among other trading nations in 1922. The speculation in the mark was also disturbing the money markets. The German Government insisted that it was powerless to handle the situation. Finally the Allies agreed to review the reparations question and to consider aiding Germany financially. The mark was abruptly stabilized.

Foreign loans to Germany.—The Dawes plan, adopted in August 1924, fitted perfectly into the plans of the German General Staff's military economists. A more than reasonable program of reparations payments was worked out. It was agreed that the German obligations ended with payment in marks to the Allied Agent General in

Germany. And the Allies undertook to float loans to enable German economic rehabilitation.

With such guaranties, German business had little difficulty in floating private loans in other countries. German municipal and regional governments, as well as the Reich Government, shared the inflow. The result was a new construction boom whose stimulating effects on other industries caused many observers to write approvingly of the amazing recovery of Germany.

There was surprisingly little intelligent analysis by foreign observers of the purposes for which the moneys were spent, or investigation of the soundness of the investments. While some foreign money was used for housing and much-needed public works, a very considerable portion of the funds went for the construction of iron and steel mills and similar works that Germany already had in sufficient capacity for legitimate peacetime needs. Coal mine development went ahead sharply and in spite of reparations deliveries German coal was soon cutting into British export markets. The results of this building up of German industrial capacities were fully apparent by 1937, when the bituminous coal output almost reached the all-time peak of Greater Germany in 1913, the steel output was slightly greater than in that year, and the pig-iron output was only about three million tons less than when Lorraine ore was in German hands. Long before 1937 Germany had more than replaced the industrial capacity of the territories taken from her by the Treaty of Versailles.

Reparations in finished and semifinished goods.—Reparations in finished and semifinished goods played a not inconsiderable role in the German economic and industrial rearmament. The reparations in goods kept the enlarged plants busy and skilled staffs together, built up buyer demand for Germany in the receiving countries against the day when the deliveries stopped, and retarded the development of key war-potential industries abroad, particularly in the machine and chemical fields. Countries receiving German machines became dependent on Germany for spare parts and replacements. Consumers of dyes who had learned to use the German products successfully were later unwilling to risk the use of other products when the reparations deliveries ceased.

It was of considerable significance that Germany, long before the day in 1928 when she had an option to end the deliveries of chemicals, informed the Agent General that she was quite ready to continue this form of reparation payment. In that year 16.6 percent of the value of all the alizarine dyes Germany exported, 18.3 percent of the value of the chemical fertilizers, and 26.3 percent of all the synthetic ammonium sulfate were on the reparations account.

In his annual report the Allied Agent General for Reparations Payments stated that the Allied experts considered it advisable to encourage the deliveries in goods because of their healthy effect on German industrial activity. He further justified the continuation of reparations in this form with the explanation that the deliveries had become "an inevitable part of the economic condition of several of the Allies, so that they could not be abandoned without considerable dislocation."

The word "inevitable" was ill-chosen in the light of the facts. France, for example, was a major recipient of German dyestuffs, though it had its own dye industry, which had been expanded during

the war and which had been strengthened by the seizure of German dye patents. As early as 1924, however, Germany had begun to regain control, not only of the plants using its patents but also of the French chemical company that had taken them over. By 1927 there was an agreement with the company that enabled I. G. Farben to dictate what quantities and kinds of dyes France might produce and export.

This took place only 10 years after the Germans had used their dye plants to manufacture poison gases¹⁸ and to launch gas attacks on French soldiers and civilians, counting on the superiority of German dyes production capacity to prevent equivalent Allied retaliation.

Not long ago President Roosevelt pointed out in a letter to Secretary of State Hull that "the history of the use of I. G. Farben by the Nazis reads like a detective story." But the detective story had been running in serial form when Adolf Hitler had been a mere corporal on the Western Front. It had been running under the authorship of the German General Staff and the major German industrialists.

Cartel arrangements.—The cartel program as developed first by the General Staff and the big industrialists, and after 1933 by the Nazis as well, called for the manipulation of the world's trade and the world's resources by German industry through the medium of cartel arrangements so as to strengthen Germany's position to make war, and, in turn to weaken the defensive position of its potential enemies.

Two of the best examples of the success of such manipulations are the stories of the aluminum and magnesium cartels.

Aluminum, a light-weight metal, is an important war item. It is used for aircraft, and also as a substitute for steel, copper, brass, and a catalyst in the production of aviation gasoline and important chemicals.

During the 1920's and 1930's the Germans gradually built up their aluminum production and entered into cartel agreements under which French, British, and American production was limited. Germany increased its purchases of bauxite, and alumina from France (bauxite is the raw material from which alumina is made; alumina is the base from which aluminum is made), by seeing to it that the French owners of bauxite and alumina made more profit by selling to Germany than by increasing French aluminum production. When World War II started, France paid dearly for this arrangement. And when, not long after, the United States was attacked at Pearl Harbor, it found itself with far less aluminum production than it needed. The British went through a similar experience.

Magnesium is one-third again lighter than aluminum. It is highly inflammable and generates great heat when it burns. It is the main ingredient of the incendiary bombs which our superforts are now showering on the Jap homeland. But when we were attacked in 1941, we had insufficient magnesium production and very small stocks on hand in this country. This we owed to cartel arrangements made by I. G. Farben under which American—and British—magnesium production was limited.

The result was that for many months, until American manufacturers were able to produce sufficient magnesium, we had to use

¹⁸ Exhibit 5: I. G. Farben's Manufacture of Poison Gases, 1913-18.

thermite instead of magnesium. Thermite is highly inflammable, but it burns in 30 seconds. It is therefore not nearly as suitable for incendiary bombs as the longer burning magnesium. Thus, during months of war, the magnesium cartel arrangements were responsible for greatly reducing the efficiency of what is today one of our main aerial weapons—the incendiary bomb.

In addition to the economic and industrial advantages which Germany gained by means of cartels, the system was exceedingly useful to the military planners. It gave access to military developments abroad in a much more direct way than any spy system could, and it actually allowed Germany to undertake a program of disarming the powers who had beaten her in World War I.

All this was going on at a time when we were engaged in helping Germany get back on her feet. The Dawes plan was in operation and Germany was quiet on the surface. But underneath, war preparation was going on.

Foreign trade.—The Nazis found when they came to power in 1933 that long strides had been made since 1918 in using German foreign trade as an instrument of preparing for war. The reparations arrangements, the extension of the cartel system, and the flight of assets and personnel to neutral and other countries after the armistice in 1918 fitted roughly into a pattern of foreign economic policy which included a determination to gain control over the sources of strategic materials required by Germany, even in view of her program of synthetic production, to wage successfully the new war.

Germany's lack of raw materials.—As a matter of fact, it is actually amazing that England, France, Russia, America, and all the other nations who have repeatedly suffered from German aggression stood by and allowed Germany to accumulate the raw materials she needed for the Second World War. With the exception of coal, and about one-third of her iron ore requirements, Germany possesses none or grossly inadequate amounts of strategic raw materials. Germany is dependent, wholly or in large part, on synthetic production or on imports from abroad for her petroleum, rubber, copper, manganese, nickel, lead, zinc, chrome, bauxite, industrial diamonds, opium, fats.

She has solved the need for some of these materials by the production of synthetics within her own borders. Well-known examples of this practice are synthetic rubber and synthetic oil. But synthetics alone were not able to satisfy Germany's needs for strategic materials—and so the Germans looked abroad—to foreign trade.

The trade statistics for the years between the two World Wars were available for everyone to examine. They portrayed a pattern of preparation for war—a pattern which was almost entirely ignored by the nations against whom it was directed.

German imports.—During the period 1934–38 German imports increased in the following proportions:

	<i>Percent increase</i>
Iron ore.....	165
Copper ore.....	101
Lead ore.....	71
Chrome ore.....	130
Bauxite.....	262
Petroleum.....	57
Rubber.....	34
Pyrites.....	45

During the ~~same~~ 4 years, total German imports increased less than 10 percent. And the two principal exporters to Germany during this period were the United States and the United Kingdom.

Nazi foreign trade policy was simple—(1) to import as large quantities of raw materials and products needed for war as possible and to import as little of anything else as possible, (2) to obtain the required imports by exporting things which (a) Germany did not need for war, and (b) the receiving country could not use for war, and (c) Germany could produce with the slightest possible burden on her domestic rearmament production program, e. g., children's toys. Some of the instruments used by Germany to implement this policy have already been mentioned. Cartel arrangements, for instance were one. Others included subsidies, foreign exchange control, German Government allocation of import requirements, etc.

Bilateral agreements.—Foreign trade however involves two partners and German unilateral control was not enough. To overcome the shortage of foreign exchange which continued to stifle trade, Germany turned to a series of discriminatory bilateral agreements, the network of which was spread over Europe and certain countries of South America. Barter agreements provided for the exchange of definite quantities of specified commodities; clearing agreements set up special accounts in the central bank of each country in which local importers deposited domestic currency and out of which exporters were paid. These types of agreements were negotiated particularly with countries which could directly supply commodities in which Germany was deficient.

Barter and clearing agreements, however, did not supply foreign exchange. It was of paramount importance therefore that Germany should obtain free exchange particularly from her good customers who happened, however, to be her reparations creditors. With them she ran the danger that they would retain any surplus exchange for the amortization of her World War I debts. To safeguard against this eventuality a third type of bilateral agreement was negotiated, known as a payment agreement, which contained among other terms a definite commitment as to the amount of exchange derived from German exports which could be reserved for payment of war debts.

Southeastern Europe.—Germany had another primary foreign trade objective—namely, the development of sources of supply of strategic materials in nearby European countries—sources which could not be disturbed by a British sea blockade. And so after 1934 Germany accentuated a program of economic penetration into her neighboring countries, which had as its purpose the development of resources in those countries which, safe from marine blockade, would complement German synthetic production.

This was especially true of Germany's interest in the countries of southeastern Europe which could supply commodities in which Germany was dangerously short, such as foods of all sorts, oil, and nonferrous metals. The economic drive to obtain those products showed good results before the war and paid high dividends during the war period. The main techniques employed by Germany consisted of paying higher than world-market prices, of signing long-term contracts for the development of certain lines of production, such as oilseeds in Rumania and Bulgaria, of selling on credit machinery to be used to develop certain resources, of granting preferential tariffs, and of handling all transactions through bilateral clearing arrangements.

In addition, Germany followed a policy of maximum buying and minimum selling which resulted in the creation of large clearing balances in favor of the exporting countries. In order to utilize these balances, which constituted a heavy burden upon their central banks, these small countries were forced to enter into new agreements with Germany providing for imports from Germany conditioned by new exports to Germany, and resulting in a still greater entanglement in the German network of economic domination.

From the German point of view, this economic policy proved highly successful. About three-fourths of Germany's war supply of chrome, more than half of her copper, and over one-fourth of her lead were produced in southeastern Europe. Rumanian and Hungarian oil represented more than 40 percent of Germany's total supplies, including synthetic. One-third of Germany's bauxite supplies were delivered by Hungary. Manganese and mica, practically unexploited before 1939 as industrial weapons of war, were imported from the southeast and used with increasing military importance by the Germans. In the textile field, hemp and other fibers were obtained, while the wool delivered by southeastern Europe represented about one-half of all new German wool supplies.

The Weimar Republic.—Germany was a republic—the so-called Weimar Republic—from shortly after the end of World War I to the ascendancy to power of Hitler and the Nazis. During those years, the German military leaders and major industrialists helped to keep up the pretense of a democratic regime, but they were both restless under it and constantly seeking a means of replacing it. The family and other bonds between the officers corps and the industrialists was strengthened by the frustrations both suffered as a result of national humiliation and the concessions necessary to keep up the appearance of popular government.

During the 1920's various right wing political parties came on the scene but only a few gained any considerable popular following. Although Ludendorff took part in the National Socialist putsch in 1923, most people of importance were not yet ready to back the Nazis. The character of many of the Nazi leaders was too crude to appeal to the General Staff and the industrialists. Moreover, while they shouted for Pan-Germanism, treaty repudiation, and military action, the Nazis also advocated a kind of internal German socialism which was objectionable to the industrialists, the land-owning Junkers, and the General Staff.

By 1929, however, the Nazis had enough of a popular following to make it seem possible that they might be able, with proper backing, to overthrow the existing regime. Some of the Nazi party leaders began to explain to the militarists and industrialists that the Socialist parts of the Nazi platform could safely be forgotten though its use must be continued in campaign oratory. A few of the Ruhr group began to send secret contributions to the party; but as a whole the Ruhr was not convinced until Hitler met with certain Ruhr bankers and other conservatives and convinced them that he could be trusted to set up a strong central government with a stable, aggressive, foreign policy.

First year of the Nazis.—During their first year in office, the Nazis were on probation so far as their monetary backers were concerned. While some of their acts were pleasing to the industrialists, certain others, intended to cement their hold on the populace, were not. The

purge of 1934, which was publicized as a measure to rid the party of certain notoriously immoral and treasonable elements, was the blood price paid to reassure the doubters. Thereafter Germany was ruled by the party, in partnership with the major owners of combines and the German General Staff.

Unofficial government.—In effect, there was an unofficial super-governmental structure in Germany from 1934 to 1945 which included the Nazi government officials, the General Staff, and most of the important industrialists. Attached as exhibit 6 is an editorial explanation, along with a chart which attempts to combine a simplified outline of the official government structure during the winter of 1944–45, with the structures of the major combines and the General Staff. This chart, which is based on a study of the laws, decrees, and administrative orders since 1930, plus an examination of governmental appointments and such industry records and data as are at hand, shows clearly the integration of German industry into the German war machine. The big German industrialists may claim that they took their orders from the Nazis—that they were sheep like the masses of the German people. But they were guilty of being more than sheep. They were full partners of the Nazi shepherds—just as were the members of the General Staff. Any effective program of economic and industrial disarmament must take cognizance of that fact.

CHAPTER 4. SOME OBSERVATIONS ON THE TASK OF DEVELOPING A PROGRAM FOR GERMAN ECONOMIC AND INDUSTRIAL DISARMAMENT

How are we to cope with this problem that emerges to confront us today in the fearsome perspective of a history that showed the Allies to be wholly inadequate in dealing with it after World War I?

Certain lines of action are clearly indicated:

(1) We must see to it that this problem is studied intensively, that the facts are marshalled, that our previous mistakes are analyzed, that corrective programs are devised, and that a general understanding and appreciation of the problem in all of its ramifications is created in the executive agencies and departments, the Congress and the public.

(2) We must seek to promote regular and intensive discussions and negotiations with our allies on this subject to the end that a common program can be devised and adequate international arrangements be made to execute that program.

(3) We must see to it that a short-term policy of controlling Germany's economic base for aggression is launched and maintained so that any common efforts to achieve a long term result will not have been unduly prejudiced by errors of omission or commission in the interim.

(4) We must, as quickly as is consonant with sound judgments and careful study, adopt as high policy a long-term program for German economic and industrial disarmament which this Government and the people of the United States are prepared to commit themselves to for many decades.

(5) We must attempt, through diplomatic negotiation and the exercise of a bold and vigorous foreign policy in this field, to seek a substantial measure of agreement to our program on the part of our allies.

This effort should result in the incorporation of an international program of German economic and industrial disarmament as one of the important foundation stones in the foreign policy of all governments committed to maintain peace, including that of a future German government.

The present interests and responsibilities of the Foreign Economic Administration concern the first point listed above, namely, the study of the problem of German economic and industrial disarmament and the development of a specific and definite program for United States consideration, designed to eliminate or control Germany's economic base for aggression.

As a result of the experience of the FEA and its predecessor agencies in the business of economic warfare and its continuing study of the enemy's economic potentials and institutions, the agency found itself in possession of a substantial amount of information concerning the German war economy and the nucleus of a trained staff equipped to deal with the analysis of this and other post-surrender problems. On September 28, 1944, the President directed the agency as follows:

Control of the war-making power of Germany: You have been making studies from the economic standpoint of what should be done after the surrender of Germany to control its power and capacity to make war in the future. This work must be accelerated, and, under the guidance of the Department of State, you should furnish assistance by making available specialists to work with the military authorities, the foreign service, and such other American agencies and officials as participate with the United Nations in seeing to it that Germany does not become a menace again in succeeding generations.

In the intervening months, the Foreign Economic Administration has been in the process of executing this direction.

Before going further, I want to make it clear that the FEA, in carrying out the President's directive, does not arrogate to itself the responsibility for determining what American policy should be, or for executing that policy through international negotiations or the performance of occupation tasks in Germany.

The FEA is primarily concerned with seeing to it that the subject of German economic and industrial disarmament is intensively studied and that feasible programs for securing that objective are prepared and presented at the various points in our Government where decisions can be made and action taken. In addition, the FEA participates as one of the executive agencies in making policy decisions or recommendations on this subject for Executive action.

In accordance with the President's letter, the FEA also acts as a service agency for either the State or War Department or military and civilian officials abroad in providing personnel or performing other work at their request. It does so, however, as a service agency without the responsibility or authority for either carrying on negotiations with other countries or executing United States policy and program in the field. That responsibility handled through such organizations as the Allied Control Council or the Reparations Commission falls, under existing arrangements, to the State and War Departments.

In the light of the foregoing, the committee will understand that I must be limited in my subsequent comments to the way in which a program for German economic and industrial disarmament is being developed rather than what form it is taking or how it is being executed.

Following receipt of the President's letter, the FEA set about its

task of "accelerating" studies of German economic and industrial disarmament by working out arrangements for the guidance by the State Department stipulated in the President's letter and launching an intensive work program on this subject.

A new branch, first called the German Branch and later consolidated with other units in the Economic Warfare Section of the Agency and now called the Enemy Branch, was created and charged with the responsibility of carrying forward this work. Its Director is Mr. Henry H. Fowler, formerly assistant general counsel of the War Production Board.

In addition to consolidating the personnel with industrial and economic knowledge of the German war potential in the FEA Enemy Branch, the FEA has sought to bring into the study and analysis of the subject various types of experts in or available to many of the other executive agencies. In other words, the FEA has not been content to treat this important problem exclusively within its own ranks. It has sought affirmatively to ever widen the circle of trained minds available to this Government who would think and work toward a solution.

I will not burden the record with a description of the many studies and reports which have been collected and prepared since we undertook that task. I will describe, for illustrative purposes, one particular group of study projects, which I believe, taken as a whole, constitute the most intensive and organized attempt yet made to master the essentials of this new science. That group consists of a series of interagency projects which the committee may be interested in following.

After a review of all of the available materials within and without the agency, the problem of German economic and industrial disarmament was broken down by the newly created Enemy Branch in FEA into a series of separate projects for intensive technical examination. The basis or handbook for this effort took the form of an interim report on A Study Project of German Economic and Industrial Disarmament which was submitted to me by the director of the Enemy Branch on January 10. In order that the committee may fully understand the nature of the problem as we saw it then, and the techniques we have employed subsequently to develop a fuller governmental understanding of it, I wish to submit as exhibit 7 to this statement some pertinent portions of this interim report. I particularly call to your attention the portions of this exhibit which are entitled "Background of Study Project for German Economic and Industrial Disarmament," and the description of the 27 specific projects which this interim report outlined for intensive examination. I believe the committee will be interested in the coverage of these 27 projects, since their very titles indicate something of the nature and complexity of the subject under examination. They are:

- Project 1. The post-surrender treatment of German industry involved in the production of armament, munitions, and implements of war.
- Project 2. The post-surrender treatment of the German aviation industry.
- Project 3. The post-surrender treatment of German engineering and research related to armament, munitions, and implements of war.
- Project 4. The post-surrender treatment of German engineering and research in the "secret weapon" field.
- Project 5. The post-surrender treatment of the German light metals industry.
- Project 6. The post-surrender treatment of the German oil and petroleum industry.

- Project 7. The post-surrender treatment of the German rubber and rubber products industry.
- Project 8. The post-surrender treatment of the German radio and radar (electronics) industry.
- Project 9. The post-surrender treatment of the German bearings industry.
- Project 10. The post-surrender treatment of the German "common components" industries (exclusive of bearings).
- Project 11. The post-surrender treatment of German machine tools industries.
- Project 12. The post-surrender treatment of the German automotive industry.
- Project 13. The post-surrender treatment of the German shipbuilding industry.
- Project 14. The post-surrender treatment of the aggregate of the German machinery industries.
- Project 15. The post-surrender treatment of the German steel and ferro-alloys industries.
- Project 16. The post-surrender treatment of the German chemical industry.
- Project 17. The post-surrender treatment of the German coal industry.
- Project 18. The post-surrender treatment of the German electric power industry.
- Project 19. The post-surrender treatment of strategic minerals for German industries.
- Project 20. Appraisal of alternative devices for the international import control into Germany of supplies for which, for security reasons, that country may be made dependent upon external sources.
- Project 21. Technical requirements for a permanent Allied Commission to enforce international arrangements relating to German industrial disarmament.
- Project 22. The economic consequences of a separation from Germany of the Rhineland and/or the Ruhr, and/or areas east of the Oder River.
- Project 23. The post-surrender treatment of German landed estates and the practice of economic autarchy in food products.
- Project 24. An appraisal of the technical potentialities for the development of "peaceful" industrial activities in Germany for both home consumption and export.
- Project 25. The need for and nature of Allied activities relating to German property assets, industrial personnel, and economic activities outside Germany, designed to enforce economic and industrial security measures pertaining to Germany.
- Project 26. The post-surrender treatment of German participation in international cartels affecting international security.
- Project 27. The post-surrender treatment of German foreign trade consonant with economic and industrial disarmament considerations.

Subsequently, two additional projects have been added, one concerned with precision instruments and optical equipment, and the other with forest products industries. The purpose of these study projects was outlined in the interim report referred to as follows:

(a) A speedily organized consideration by experts, drawn from various backgrounds, or the more important subjects which can be singled out in this field for intense scrutiny.

(b) The creation of a series of adequately prepared written analyses of the various subjects selected for detailed examination. These reports should include a description of the German industries or economic problems under consideration. They should note the various detailed questions that should be raised or answered in connection with any international consideration to undertake or not to undertake a disarmament program. The pros and cons on these questions should be included. Recommendations, however tentative, should be specifically and definitely stated, with appropriate reservations as to their force as accepted policy.

(c) Through these written reports on the organized study, United States policy officials should be able to develop the boundaries of the United States position in conference with the representatives of other powers and ultimately determine what practical and feasible stand the United States can take.

It should be emphasized that these so-called technical industrial disarmament projects are pointed squarely at the problem of security from German aggression, pinpointed in the President's letter. They are not concerned with other questions such as how and why industries should be built up or repaired for rehabilitation and other purposes.

These study projects, all of which are now approaching completion, have been conducted in a variety of ways. Careful cooperative arrangements were worked out with a number of departments and agencies of the Government, including State, War, Navy, OSS, Commerce, WPB, Interior, who have especially trained industrial personnel and in some cases more specialized agencies such as OSRD and the Federal Power Commission. Pursuant to these working arrangements, various agencies designated individuals to serve on interagency working groups which were charged by the FEA with responsibility for making a study and submitting report on a particular project. This method was particularly used in dealing with the industrial projects where various types of expertise were required for thorough treatment including a knowledge of the industry in question, its technical processes, its methods of public control as exemplified in the WPB type of limitation, its role in foreign trade, methods of production and distribution, and so forth. In some cases outside consultants were enlisted by the FEA or one of the participating agencies because of a special technical background for contributing to the particular study project.

In other cases, such as projects 1, 2, 3, 4, and 13, the project was delegated to one or two agencies for study and preparation of a report because of the peculiar aptitude of the agency in question to deal with the project. In dealing with certain other projects, particularly of the strictly economic character, the FEA has attempted to handle the project exclusively with its own personnel, leaving it up to them to seek informally advice and assistance from other agencies.

In other words, the FEA Enemy Branch, acting as a "coordinating work shop" has sought to engage and enlist the best qualified experts available to the Government, regardless of current departmental or agency affiliation. I wish to offer for the record an exhibit describing just how each project is being handled, together with a list of the personnel constituting the interagency committee, wherever that device has been employed. (See exhibit 1.)

Let me add that the launching and conduct of this interagency project by the FEA has received the fullest cooperation from the other participating agencies. It is a striking example of the proposition that ability in various corners of the Government can be assembled, organized, and put to constructive work without friction and jurisdictional dispute. It would have been impossible for us to pull together an equivalent group of experts in a single agency.

Lest there be any confusion or concern about the status of the reports of the various working groups whom we have sought to enlist in this effort, I wish to emphasize certain points.

All of these 29 project reports, when completed, will be submitted to the FEA Enemy Branch as a report of the individuals who serve on the committee or prepared the report, speaking from their own knowledge and point of view, rather than reflecting a policy or fixed view of the agencies to which they are attached. These reports are being

made to, not by, the FEA. It has been constantly emphasized and generally understood that the reports are advisory and, rather than constituting adopted policy of any agency or of the Executive Branch, that they are being prepared for the advice and information of officials responsible for the making of such policy. They constitute the informed views and judgments of many of the best experts available to the Government organized and assembled in an orderly manner.

We have been careful in the handling of these projects to refer questions to the type of personnel seemingly best equipped to deal with them. For example, in dealing with the industry projects we have sought to enlist, through our agency and the WPB, the help of industrial technicians who have a firm practical knowledge of the industry in question and of existing WPB measures of limitation or control, that represent the principal body of experience we have to go on in this field. Similarly, in dealing with the cartel question and intercorporate relations between German concerns and concerns outside Germany, we have confined this topic (which cuts across many of the industries in question) to a single project, number 26. There it is being dealt with by our own staff with informed contacts with an already existing Government Committee on Private Monopolies and Cartels rather than the committees on particular industries which naturally included personnel who had worked for or were interested in companies engaged in international trade and finance.

We expect all of these 29 reports to be completed sometime within the next 30 days. They will be submitted for advice and information of interested United States officials without carrying on their face any FEA endorsement or rejection of the views stated therein. However, the FEA will undertake subsequently to evaluate and coordinate to the conclusions and recommendations within these reports together with many others worked out by its own staff into one master report which the agency will submit to the State Department and President with specific detailed recommendations constituting a long-term program for German economic and industrial disarmament.

The Enemy Branch of the FEA is presently engaged in the preparation of such a program and will, before the summer is out, complete that phase of its task.

As I have indicated before, it will be for other agencies to determine with the FEA whether or not such a program is acceptable and should be adopted as long-term United States policy in the field. Likewise, it will be the entire responsibility of others to negotiate and execute such a program, assuming it is acceptable to the responsible policy officials in the executive and legislative branches.

Before passing this phase of my statement, I wish to emphasize my conviction that only a beginning has been made in developing the studies and analysis of this subject. We in the FEA who have devoted more man-hours to it than elsewhere in the country are impressed and appalled with the vast amount of work that is yet to be done, particularly in the realm of the collection and appraisal of views, the development of sound and informed judgments, and the welding together of an integrated program.

Politics and technology are ever changing. What is effective today may be outmoded tomorrow by a scientific or political development. I submit to you, therefore, that we are only beginning to achieve the first point of the program I outlined in the beginning of this section,

development, namely, the development of a knowledge and understanding of the problem.

The executive and legislative branches and, I might add, a large cross section of the general public must continue to educate and inform themselves on this subject if we are to deal with it intelligently, not only in the initial phase of staking out the outlines of the peace machinery, but in seeing to it in the years ahead that that machinery is kept up to date. Just as the German General Staff in the last war studied ways and means of developing an industrial war machine, and as some yet unknown German underground organization may again pursue that subject, so the peace-loving nations must utilize their military, economic, and industrial exports to diagnose the plans of the enemy and outwit them. An Allied General Staff for preserving the world from German aggression is indispensable.

Perhaps this sounds pessimistic. We would all prefer to think that when the peace treaty is signed we are done with this dirty business of policing a nation of sixty-odd-million people. Our efforts in that field will have to simplify and abate after a period of occupation. However, our experience in FEA in the last few months in scratching the surface in the study and development of this problem persuades me that the peace of the world requires considerable organized governmental attention to the course of industrial and economic development and operations in Germany. This will be true at least until generations of peace from German aggression have demonstrated that it is no longer necessary to keep open the watchful eye and maintain the necessary surveillance and control.

To this end it is our hope and purpose to continue to collect facts and information on this subject and develop informed judgments concerning what can be done. Thus far, we have tried to exploit to the fullest the information available to us in this country, largely in the experience and knowledge of our own war agencies concerning the relationships of various industrial processes and potentials to the business of war making and the feasibility of their control. Now that Germany has surrendered and the opportunity for obtaining authentic, on-the-ground information from Germany itself is presented, we trust that it will be possible to obtain an ever-increasing flow of economic information and intelligence from Germany itself.

Of course, this is more important in some fields than in others. A machine tool is a machine tool whether it is in Germany or in the United States. To a considerable extent industrial processes in both countries are similar. However, we are able to learn much in certain chemical and mechanical fields concerning new developments in German technology now that the lid is off. But, in certain other areas, having exhausted the store of information available in this country, it seems to us in the FEA that determined efforts must be multiplied to tap the resources available in Germany.

This is particularly true on the subject of German economic penetration of other countries. The ramification of German holdings and economic interests outside of Germany can be most fully determined by investigations on the ground. Likewise, the thorough spading up of the countless business relations via the trade agreement and cartel route can become reduced to possession only by vigorous investigation in Germany. Similarly, a full story of the ways and means of which the Germans utilized exports and imports to bind other nations into

dependency upon Germany can only be uncovered by complete investigation at the center of the web. The story of German efforts to utilize the neutral and other countries as escape valves and bases for future aggressive enterprises can only be uncovered by tapping the source of this planning in Germany.

Therefore we stress the importance of adding, to the efforts which have been going forward here in Washington, very intensive efforts in Germany itself on the part, not only of the central council but of the interested civilian agencies such as our own. A free flow of information back by which the sum total of our information here can be considerably refreshed with that obtained in the field is necessary if we are to keep on the top of this problem and plan and execute the necessary diplomatic measures with the countries involved.

As indicated previously, this statement will not attempt to recite in detail the efforts this Government already has taken to deal with the problem of Germany's economic base for aggression as a result of the studies by FEA and other agencies of the nature and extent of the problem. Nor will it attempt to describe the series of concrete recommendations and conclusions on which we are presently working.

Since this Government has undertaken to explore extensively this problem, a substantial measure of agreement on several important fundamentals has been achieved. At Yalta an agreement was reached by the late President Roosevelt, Prime Minister Churchill, and Marshal Stalin which was published to the world at large. On the subject of disarmament and security this pledge of agreement was reported as follows:

It is our inflexible purpose to destroy German militarism and Nazism and to insure that Germany will never again be able to disturb the peace of the world. We are determined to disarm and disband all German armed forces; break up for all time the German General Staff that has repeatedly contributed the resurgence of German militarism; remove or destroy all German military equipment; eliminate or control all German industry that could be used for military production; * * * and take in harmony such other measures in Germany as may be necessary to the future peace and safety of the world. It is not our purpose to destroy the people of Germany, but only when Nazism and militarism have been extirpated will there be hope for a decent life for the Germans, and a place for them in the comity of nations.

The Allied determination to disarm Germany economically and industrially was made by the three leaders with full knowledge of the pattern of German history from 1918 to 1945—and specifically of the partnership between the German General Staff, the major German industrialists, and the Nazis. They knew that Germany had prepared for war by a program of economic and industrial, as well as military, armament—and that to disarm her and keep her disarmed, economic and industrial measures and controls were required.

To implement this pledge the three allies, with the addition of France, have agreed to and established an Allied control council to occupy Germany and exercise the power and authority necessary to carry out Allied objectives regarding that country. A reparations commission has been established to consider ways and means whereby reparations for damage can be obtained in some measure. It is important to interject here that the tone of this agreement on reparations and subsequent statements by our Executive and his Reparations Commission quite properly have made it clear that we intend to utilize the device of reparations to carry out our security objectives,

rather than permit the process to be utilized to maintain and restore a German industrial war potential.

Without discussing the nature of the definite and detailed program, which is in process of development to carry out the Yalta agreement, several general observations seem appropriate at this time. In my opinion, and the opinion of my staff, economic security from future German aggression must—

(1) Take precedence over all other Allied policies for the treatment of Germany. If there is a conflict with other policies such as reparations or the need of other countries for relief or rehabilitation, the policy of preventing Germany from rebuilding and perpetuating a dynamic power to make war must be considered primary.

(2) Be thorough. It must not be limited solely to the direct production of implements of war, but must also take into account a treatment of the general economic base for aggression, including those industries that we have come to recognize as the basis for modern warfare. The decisive factor in modern war is the industrial plant as a whole rather than those designed particularly for the assembling of guns and explosives. The application of the Yalta formula of elimination or control of these various industrial segments must not be so strictly construed as to be meaningless as in the case of the last treaty.

(3) Be addressed to the overwhelming German economic domination of Europe, through the abuse of foreign trade and the utilization of a wide variety of devices for economic penetration which rendered the remainder of Europe relatively powerless to resist German aggression.

(4) Be lasting in concept and character. It serves no useful purpose to enter upon a program that bravely restricts a defeated Germany in 1946 but expires into feeble and impractical ineffectiveness in 1956 or 1976. What we undertake now must be attuned to long-range objectives. This search for security from German aggression is no short-term business. The Germans are a capable and industrious people. More than likely they will continue to be fired with the desire for revenge or to obtain what they believe to be their rightful position of world dominance. Given the resources and the opportunity to do so, they can rebuild and reorganize their industrial war machine within a few short years regardless of the extent of bombing or short term deprivation of facilities through plant removals or construction. Cartels struck asunder today may be restored by agreement tomorrow. German industrial assets held abroad, although greatly reduced by reparations, may be built up again within a decade. Therefore, any system designed to limit the power and capacity of Germany to make war in the future must be built and fashioned to last.

(5) Recognize the difference between a powerful war economy and a healthy consumer economy. It by no means follows that international arrangements designed to limit Germany's power and capacity to make war need have the result of permanently lowering the standard of living of the German people or of depriving them of opportunities to have an increasing measure of goods and services. In the long run, the German people will be far better off when German resources are being used in the interest of higher consumer standards

of living for the individual Germans rather than to build up an over-industrialized, self-sufficient war economy, designed to equip Germany to conquer the world. More houses and less war plants won't hurt the German people. Of course, Germany is going to go through a period of difficulty no matter what we do. Let us not make the mistake of considering that to be security measures we propose when, in reality, it is directly the result of Germany's aggression. The difficulties they will encounter for the greater part will be the direct results of a war they brought on themselves. Hence, our program for preventing German aggression should not be postponed, deferred, or modulated because of the confusion of its results with the results of the war itself.

(6) Be developed and understood as a measure of security and not as a device for punishment and retribution. The issue of a soft versus a hard peace as it applies to a program for security is a false issue. This concern with the appropriate treatment of Germany's economic base for aggression must be constantly distinguished from any desire for a soft or a hard peace; it is and should be held by advocates of both types of peace. Nor is it a derivative of feelings of vengeance. Indeed it has its origin in an unemotional and scientific point of view, being responsive to the simple common sense purpose of preventing those who have proven themselves lawless from reacquiring the unhindered power and capacity to forge new weapons with which to menace the world.

(7) Be achieved by a variety of means. A wise occupation policy, including affirmative industrial and economic controls is a first step. Suitable terms that condition the return of sovereignty to a government selected by the German people is a second measure. Appropriate international arrangements of long term nature providing specific machinery for maintaining security from German aggression after actual occupation is the final and most significant stage in the process.

(8) Be flexible. Changing technology and new forms of industrial and economic activity will call for a process of considerable adaptation of this program. As a nation we have watched with increasing interest and concern the emergence of full-fledged economic warfare, the competition of varying types of industrial mobilization, and the rise of new and fearful technologies. To perfect and mass produce deadly weapons, such as a more powerful explosive, a faster plane, a robot bomb, an atom-smashing device, or a better tank, may condition a victory or defeat. The ability to do so may prompt an aggression as much as the ability to assemble and train an army. The perfection of processes for the manufacture of synthetic oil and rubber in Germany in 1926 and the unfettered trend of her heavy industry toward overexpansive development in the nineteen twenties and thirties were sure harbingers of war. Any program must be capable of adaptation to meet these changes.

(9) Be realistic. A league that offered only protection against a German aggression once begun and backed up by a huge war potential was an idealistic symbol rather than a practical force. Once the power and capacity to wage war is built up in Germany, it will constitute an explosive force. It invites these threatneed by a resurgent Germany to attempt to play it off against targets other than themselves or to conjoin themselves to it rather than resist it.

(10) Be possessed of a maximum of administrative feasibility and simplicity. Complicated and detailed controls may be practical during the period of occupation. Eventually, however, a long-term program must be designed with an eye for administrative simplicity.

(11) Be simple and understandable for the common people of the world. If the conclusions of such a program can be summarized on a single sheet of paper and become the household property of the people and accepted by them as necessary, a base for the powerful and vigilant public opinion which is necessary to such a program will not be lacking.

(12) Be spelled out in detailed particulars. General conclusions are useful to educate and inform public opinion. They must be translated, however, into specific orders, decrees or instruments of understanding, if they are to be lasting and enforceable and subject to changes required by new conditions.

(13) Be the springboard of a peaceful industrial and agricultural future for Germany. Such a program of economic and industrial disarmament, effective for the security purpose, can become the means by which the German economy is reoriented to provide for the consumer standards of the people rather than the war madness of the leaders.

(14) Be consistent with the ambition of Europe to regain a desirable economic and industrial development. A program for German economic and industrial disarmament, properly conceived and executed, can be a first step towards the industrial development of the remainder of Europe in the direction of a balanced economic structure that will prevent exploitation and dominance by an overpowering Germany.

In its larger aspect the problem of the economic and industrial disarmament of Germany is part of the economic reconstruction program facing the world. All of us must get used to living in peace instead of in war or under threat of war. The United States must work with the other United Nations to achieve increased prosperity for itself and its allies. But neither the United States nor its allies can afford to do this unless Germany is effectively disarmed, and kept disarmed. Then, and only then, can we relax our present emphasis on military strength and our ability to protect ourselves. Then, and only then, can we look forward to peace, prosperity and life, and forget about war, destruction, and death. (End of written statement.)

The CHAIRMAN. There is one question I wanted to ask you—from your studies, have you found this fact to exist, that other nations rely purely upon commercial research by private companies, whereas Germany went into war research as centralized industrially, and the research became the foundation stone of their war machine as based upon their contracts and cartels, and not upon the study of the war machines; but one of the real potentials of Germany is research work she has done?

Mr. FOWLER. My own impression is that her advantage was tremendous there. The so-called private concerns were willing and able to spend large sums at the suggestion of a particular government agency involved in research and development in a particular line. For example, the German General Staff claimed credit for pressing the development of synthetic oil and rubber, which was completed in a fairly workable form in 1926, and in addition to the amount of organized research that the General Staff was able to sustain through

private institutions, they, of course, did go forward and establish governmentally owned or directed research.

The CHAIRMAN. I didn't make my question clear. With their economic set-up that they have with that marriage between capital, industry, and state, they were able to guide the destinies of their research on a central plan, whereas other nations, particularly the United Nations, relying largely upon voluntary private research; of course, the research was largely commercial, and their research could be centralized on work that would have a commercial sustaining value, but could be instantly converted to a tremendous wartime potential.

Mr. FOWLER. I think oil and rubber are really the outstanding examples of that. The commercial price levels would have made it ridiculous from a competitive point of view to expend huge sums of money to develop synthetic oil and rubber, and yet, in spite of that, they went ahead and spent money on these synthetic industries and completed them long before they began World War II.

APPENDIX

EXHIBIT I

ORGANIZATION OF EUROPEAN INDUSTRY

COAL PRODUCTION AND DISTRIBUTION IN GERMANY

POSITION OF GERMAN COAL IN THE EUROPEAN ECONOMY

Germany is the greatest coal producer of continental Europe. Most European countries have a coal deficit. Before the war Germany stood second only to England as a source for their supply.

Average coal production, consumption, and deficit in countries around Germany, 1928-37

[Thousand metric tons]

Country	Average production			Average apparent consumption in terms of Steinkohle	Average surplus (+) or deficit (-) in terms of Steinkohle
	Steinkohle ¹	Lignite and brown coal	Total in terms of Steinkohle ²		
Austria.....		3,090	2,040	6,430	-4,390
Belgium.....	26,610		26,610	31,150	-4,540
Czechoslovakia.....	13,200	17,600	24,800	23,160	+1,640
Denmark.....				5,700	-5,700
Finland.....				1,300	-1,300
France ³	48,570	1,000	48,800	79,700	-30,900
Hungary.....	820	6,600	4,100	3,070	+1,030
Italy.....	390	600	520	12,950	-12,427
Netherlands.....	12,410		12,410	12,220	+190
Norway.....				2,970	-2,970
Poland.....	34,230		34,230	23,110	+11,120
Sweden.....				6,570	-6,570
Switzerland.....				3,480	-3,480
Total.....	136,230	28,890	153,510	211,810	
Gross deficit.....					-72,280
Gross surplus.....					+13,980
Net deficit.....					-58,300

¹ German term covering semianthracite, bituminous, and subbituminous coal.

² Conversion ratios:

Austria, Czechoslovakia, Hungary: 1 ton of lignite or brown coal equals $\frac{2}{3}$ ton of Steinkohle.

Denmark, France, Italy (and Germany): 1 ton of lignite or brown coal equals $\frac{3}{4}$ ton of Steinkohle.

³ Production excludes coal from the Saar.

German coal production, consumption, and exports¹

[Thousand metric tons, in terms of Steinkohle]

Period	Production	Apparent consumption	Exports
1928-37, average.....	172,989	143,787	29,205
1932.....	131,995	111,136	20,859
1937.....	225,551	182,326	43,225
1938.....	229,507	194,217	35,290
1939 (estimated).....	236,275		
1943 (estimated).....	238,000		

¹ Figures are for the Altreich, which did not include the Saar before 1935. Saar consumption was about 2,000,000 tons, exclusive of coal used at the mines.

Average United Kingdom coal production, consumption, and exports, 1928-37[Thousand metric tons, in terms of Steinkohle¹]

Period	Production	Apparent consumption	Exports
1928-37.....	232, 300	170, 216	62, 174

¹ All United Kingdom production is in the Steinkohle class.

German production increased as the Nazis prepared for war and the increase has been more than maintained during the war. But in most countries under German domination (excepting Poland and Czechoslovakia) production has declined, owing to lack of willing labor, undernourishment of miners, shortage of new machinery, and so on. It may take some time after the liberation of these countries and the cessation of hostilities to restore their production to pre-war levels.

Military action and German demolitions may further impair continental coal production and impede post-war rehabilitation of the liberated mines. In the Soviet Union many of the mines have been seriously damaged. Even in Sardinia, where there was little enemy demolition, the mines are in poor shape. If the Germans repeat their 1918 wrecking of the northern French mines or if they flood those in the Low Countries, the normal European deficits will be still further multiplied—and this at a time when the work of reconstruction will be making unusual demands for coal.

If the war in the Pacific continues beyond that in Europe, it may be a considerable period before the supply and shipping situation of the United Nations would permit any large-scale imports from England or the United States. Thus, the production of Germany is likely to be of unusual value to the United Nations and especially to the liberated areas in Europe. It could help provide fuel and materials for the manufacture of supplies needed not only for reconstructing wrecked railroads, bridges, roads, ports, houses, and so on, but also for making consumer goods to replace what has been worn out, or destroyed through military action or Nazi destruction. Still more important, it could help overcome mass unemployment that would exist if liberated plants are idle for lack of fuel and if businesses dependent on them are closed.

OWNERSHIP OF COAL DEPOSITS AND ORGANIZATION OF MINING ENTERPRISES

OWNERSHIP AND LEASING OF THE COAL DEPOSITS

With unimportant exceptions, ownership of land in Germany does not give any right or prior claim to underlying minerals. Any person who can show evidence that minerals exist in a specific place, may, if he obtains permission from the State, enter the lands, seek the minerals, and exploit them. Having obtained a mining right, he may not leave the minerals unexploited if, in the opinion of the National Mines Bureau, such exploitation is in the interest of the State. The State also has the right closely to supervise and regulate the mining operations. This concept of mining as a public utility has existed in Germany for centuries.

The owner of the mining right pays an annual royalty to the State in accordance with the number of square meters in his concession.

Mining is carried on by individuals, by partnerships called *Gewerkschaften*,¹ by stock companies, and by the Reich. Formerly cities and States also operated mines but all or nearly all such enterprises have been taken over by the Reich. Although a few of the public enterprises are operated through Government agencies, most are administered through stock companies with the State as sole owner of the stock.

The majority of the enterprises are very large. In 1937, 55 percent of the Steinkohle and 82 percent of the brown coal came from mines having an individual output of more than 1,000,000 tons a year. The total number of coal mines in Germany was only about 260, and they were operated by a very few companies. One company alone, Gelsenkirchener, accounted for 14 percent of the total output in 1937.

Percentage of total production by large companies, 1937

Number of companies:	Percentage of Abreich output
5.....	50
13.....	70
21.....	90

The majority of the mining companies are subsidiaries of the iron and steel combines, though a large part of their output is sold to the general market.

Types of coal mining enterprises and percentage of output from each in 1937

Type of enterprise:	Percentage of total Abreich output
Engaged solely in mining.....	31
Subsidiary to heavy industry.....	54
Subsidiary to chemical industry.....	10
Subsidiary to power and miscellaneous industries.....	4

Among the largest enterprises engaged solely in mining in 1937 were some that have long been publicly owned. Part of the state mining companies were later placed under control of the Reich holding company Reichswerke "Hermann Göring." By 1943, these and other transfers had brought the percentage of total output of coal and brown coal mined by combines to 90 percent, with 70 percent in the hands of heavy industry.

Some leading combines in control of German coal, 1940¹

Interests	Important coal holdings
Graf von Ballestrem group ²	Gewerkschaft "Castellengo Abwehr." Rudaer Steinkohlengewerkschaft.
Friedrik Flick K. G. ³	Essener Steinkohlenbergwerke A. G. Anhaltische Kohlenwerke.

¹ As far as possible, the holding company of the combine is named in the first column. Where the name of the holding company does not indicate the informal name for the combine, this has been added in parentheses. The second column gives the name under which the mines are operated.

² The various iron and steel interests of the von Ballestrem family seem to be held in the name of the mining company, which is a partnership.

³ See next section also on Flick interests.

⁴ Although the number of *Gewerkschaften* has declined in recent years, a few large collieries are still in this class. Rights of the partners are not transferable except by agreement of all partners. Corporations as well as individuals may be partners. The rights of the partners are represented by imaginary shares (*Kuxe*), each of which usually represents 1/100th of the net assets, but may represent 1/1000th or 1/10,000th.

Some leading combines in control of German coal, 1940—Continued

Interests	Important coal holdings
Gutehoffnungshütte Aktienverein für Bergbau und Hütten Betrieb (Haniel combine).	Gutehoffnungshütte Oberhausen A. G.
Honke-von Donnersmark-Beuthen G. m. b. H.-----	Mines of same name.
I. G. Farbenindustrie-Rheinische Stahlwerke A. G.-----	Mines under name of Rheinische Stahlwerke A. G. in Steinkohle and brown coal fields.
	Mines under name of I. G. Farbenindustrie.
Iseder Hütte A. G.-----	See next section.
Klöckner-Werke A. G.-----	Mines of same name.
Friedrick Krupp (family firm)-----	Friedrick Krupp.
	Constantin der Grosse.
	Emscher-Lippe.
	Bergbau Lothringen. ⁴
Mannesmannröhren-Werke A. G.-----	Mines of same name.
Reichswerke "Hermann Göring"-----	See next section.
Gräfl. Schaffgott'sche Werke A. G.-----	Mines of same name.
Schering A. G. and Borsig A. G.-----	Borsig Kokswerke A. G.
Schering A. G.-----	Niederschlesische Bergbau A. G.
Saltzdetfurth A. G.-----	Braunkohlenwerke Saltzdetfurth Mansfeld A. G.
Gebrüder Stumm G. m. b. H.—Otto Wolff K. G.-----	Essener Bergwerks Verein-König Wilhelm.
Vereinigte Stahlwerke A. G.-----	See next section.
Verkaufsgesellschaft der Michel-Werke (Michel combine)-----	Niederrheinische Bergwerke A. G.
	Michel.
	Vesta.
	Leonhardt.
Gerwerkschaft Wintershall (Wintershall combine with Gunther Quandt in control).	Gute Hoffnung.
	Braunkohlen Abbauverein "zum Fortschritt."

⁴ Acquired from Wintershall in 1943, apparently as part of the "reprivatization" movement in anticipation of defeat. The Reich is reported to have some interest in both Wintershall and Saltzdetfurth, which were originally potash combines.

REICH COAL MINING INTERESTS

The Reich has much the most important bloc of interests in the German coal-mining industry. It was estimated at the end of 1942 that more than 40 percent of the total Steinkohle and a considerable percentage of the brown coal being mined in the Altreich came from mines wholly owned by the Reich, by its subdivisions (primarily Prussia), and by combines and holding companies in which the Reich was the sole or the leading shareholder.

Some outstanding enterprises in this category, together with their output in 1937 (the last year for which their respective production figures are available) were—

1. Preussische Bergwerks und Hütten A. G.: 5,777,000 metric tons from mines in Upper Silesia and Saxony. The mines were developed by the Kingdom of Prussia before 1900. The company also mined brown coal.

2. Bergwerksgesellschaft Hibernia A. G.: 10,229,000 metric tons from pits at Herne in the Ruhr. Some stock in this company was acquired by the Kingdom of Prussia before 1912; the remainder was purchased in 1916.

3. Saargruben A. G.: 13,365,000 metric tons. This Reich-owned company produced most of the coal coming from the Saar. The Reich bought out French lessors when the Saar was returned to Germany after the plebiscite of 1934.

4. Gewerkschaft Friedrich der Grosse: 1,221,000 metric tons from pits at Herne in the Ruhr. This company is a subsidiary

of Ilseder Hütte, an iron and steel corporation in which the Reich already had 25 percent of the stock before 1933. It is not clear whether or not the Reich's participation in this subsidiary was increased when the Reich-owned holding company A. G. Reichswerke "Hermann Göring" obtained certain other properties of Ilseder Hütte. The stock was formerly held by the old state holding company VIAG.

5. Grube Ilse: 54,000 metric tons from mines in Lower Saxony. This was also an Ilseder Hütte property.

6. Preussengrube A. G.: 1,403,000 metric tons from pits at Borsig in Upper Silesia. The Reich is reported to have participated in this enterprise before the advent of the Nazis. In 1943, a majority of the stock was held by a subsidiary of "Hermann Göring."

7. Mines of Harpener Bergbau A. G.: 9,149,000 metric tons from pits in several parts of the Ruhr. The mines were acquired outright by Reichswerke "Hermann Göring" through exchange with Friedrich Flick.²

8. Bergbau A. G. Ewald-König Ludwig: 5,008,000 metric tons from mines in the Ruhr. "Hermann Göring" held a majority of the stock.

9. Gelsenkirchener Bergwerke A. G. 26,644,000 metric tons from a number of mines in the Ruhr. This company is wholly owned by Vereinigte Stahlwerke. The Reich was the principal stockholder in this iron and steel combine in 1932 through purchase of Gelsenkirchener Bergbau from Flick and certain minority holders; the mining company was the chief holder of Vereinigte Stahlwerke stock. Under the Nazis there was a reorganization in 1933 that reduced the Reich participation to 25 percent. In 1936 it was announced that the Reich had disposed of its holdings. But late in 1939 state confiscation of the property of the Nazi Party member Fritz Thyssen, a leading stockholder in Vereinigte Stahlwerke, was announced, after he quarreled with one faction of the party and fled the country. So far as is known, the Thyssen holdings in the steel combine remained in the hands of the Reich.

10. Concordia Bergbau A. G. 1,568,000 metric tons from pits near Oberhausen in the Ruhr. Vereinigte Stahlwerke is a majority stockholder.

The above companies mine Steinkohle.³ The Reich also has very considerable participation in the brown coal fields. The mines serving the power plants developed through "Hermann Göring" account for about 8 percent of the brown coal output. This combine also owns the majority of the stock in Braunkohlen A. G. Vereinigsglück Meuselwitz; no figures are available on the company's output, part of which may come from Poland or Czechoslovakia

² It is possible that this exchange also gave some control of the mines of Essener Steinkohlenbergwerke A. G. (6,107,000) a subsidiary of Harpener and of the Flick holding company. "Hermann Göring" acquired merely the mines of the Harpener company, which, like certain other mining firms, is a holding as well as an operating company. When Reichswerke "Hermann Göring" was established its primary job was utilization of certain low-grade German iron ores, as part of a plan for making Germany less dependent on imported ores. Leaders of the older iron and steel combines united in an attempt to keep coking coal from the new rival. Flick, the speculator, broke the united front when he added "Hermann Göring" by turning over some of his mines. His reward came in the form of heavy participation in the loot of conquered areas. According to one report, late in 1943, when the Nazis began to place as much property as possible in the "private" category in anticipation of reparation demands, the Harpener mines were turned back to Flick.

³ The Bavarian state company Bayerische Berg-Hütten-und Salzwerke was producing 610,000 metric tons of pitch coal in 1937.

MINING BY PRIVATE INTERESTS

It is difficult to discover where the Reich's interests end and private interests begin. Each of the large iron-and-steel combines has its mining companies but there has been much interchange of the stock of holding companies and subsidiaries. Vereinigte Stahlwerke sits at the center of the spider web. But interchanges have not been exclusively within the iron-and-steel combines. While Vereinigte Stahlwerke is the majority stockholder of Concordia, nearly a quarter of the stock is held by Schering A. G., a chemical corporation that has greatly prospered under the Nazis. The crossing of lines between the iron-and-steel and the chemical combines is found again in the brown coal Rheinische Stahlwerke mining company, where the major stockholder is I. G. Farbenindustrie.

Moreover, major stockholders of Vereinigte Stahlwerke and other combines appear over and over again in connection with certain subsidiaries of Hermann Göring that are partly owned by private interests.

There is considerable evidence that high Nazis have been piling up fortunes for themselves through use of dummies and it is quite probable that stocks in mining companies are among their acquisitions.

One of the objectives of "reprivateization" is to conceal such gains. The German system of issuing stock certificates of the nonliability type without the name of the owner and with dividend coupons payable to the bearer, lends itself readily to the concealment of ownership. When combined with use of dummy holders, and especially private holding companies in Switzerland and other neutral countries, it offers almost endless possibilities for Nazis to hide their loot. While ownership of large blocks of stock could under ordinary conditions be discovered by examination of the records of the banks that act as buying, depository, and dividend-paying agencies, it is to be expected that such records as they concern improperly acquired holdings will have disappeared. Bomb damage and fire can serve German purposes well in this field.

THE COAL CARTELS

The German coal cartels (called syndicates), which had their origin about 1880 and in which membership has been compulsory since 1916, might be said to have evolved the system that the Nazis adopted to place all power in the hands of a few dominant interests.

The elements of the coal cartel system as eventually developed were—

1. Compulsory membership.
2. A method of sales allocation among the member companies that increased the sales of the dominant companies and drove smaller competitors out of business.
3. Voting representation in accordance with the size of the sales in the previous year, which gradually pyramided control into the hands of a very few companies.
4. Monopoly in the domestic field through tariff protection and regulation of imports.⁴

⁴ Before the war Germany was divided into noncompetitive sales areas (i. e., areas in which the whole market belonged to specific syndicates) and competitive areas, i. e., areas in which two or more syndicates theoretically competed. But even in the competitive areas the character of the competition was strictly limited by intersyndicate agreements. As the voting power of each syndicate was determined by the size of its sales quota, one syndicate alone (Rheinisch-Westphälisches—see ahead) could outvote all the others combined. Moreover, the comparatively small sales quotas of most of the other syndicates prevented them from being serious competitors.

5. **Measures for violation of the cartel rules.**

The key to the system that gradually gave control of all German coal to a few combines was the cartel practice of allotting sales quotas in accordance with the sales of the previous year. In theory this would have resulted in a static relationship; in fact it tended to reduce the sales of the smaller producers and to increase the sales of the larger ones.

Sales quotas were made up first by estimating the total probable sales of the coming year. A minimum was assured through use of an annual contract, required of every domestic buyer and even of some foreign buyers. Under these contracts the buyer had to spread his purchases evenly throughout the year, to agree to a price set in advance, and to accept certain other conditions. Wholesalers, in turn, were required to demand similar arrangements from retailers. The minimum total of sales assured to members of the syndicate were then allotted among the companies in proportion to their share of total syndicate sales in the previous year. This formed the basic quota. However, a fixed percentage was then added to the basic quota to cover unexpected sales of the kind that would appear in a year of rising industrial activity. The latter became the actual working quota.

When large unexpected orders appeared they were in theory allotted among the mines until the respective quota limits were reached. Actually, however, it was usually beyond the ability of the smaller producer suddenly and considerably to increase his output. This would throw the orders to the larger mines, thereby increasing their proportion of syndicate sales in the following year and decreasing the proportion of the smaller operators.

Moreover, some cartel members were able themselves to create large unexpected orders. The iron, steel, and chemical combines that belonged, directly or indirectly, through subsidiaries or affiliates, to the coal cartels could understate their expected coal consumption when the quotas were being fixed and later introduce large orders that would progressively increase the proportion of business allotted to their big coal companies.

And the rules by which the system was established and entrenched could not be changed without the consent of their greatest beneficiaries. Although membership in the coal cartels has been compulsory for all producers ever since 1916, the members do not all have equal voting rights. It is the essence of the system that such rights, like the coal orders themselves, are apportioned in accordance with the sales quotas.

Sales quotas were apportioned among the syndicates by a system similar to that used within the syndicates.

The coal cartels carried on these operations:

1. Restriction of production to maintain prices and prevent competition.
2. Price setting (theoretically kept under control by the State, but after the State coal-mining companies joined the cartels prices were kept at a high level by State acquiescence).
3. Imposition of annual contracts that dictated sales conditions.

4. Operation of sales agencies to enable allocation of orders in the manner most favorable to the dominant companies and to provide a check on compliance with the cartel rules.

Under war conditions the cartels have almost ceased to function except as sales agencies.

1. Owing to the need for maximum production, they have been forced to abandon all company and intercartel quotas. The dominant Rheinisch-Westfälisches cartel has even been forced to promise that all increases in production achieved by its competitors and by small members of the syndicate during the war period will be taken into account in setting post-war inter- and intra-cartel quotas.

2. The over-all price control of the State is applied to coal as well as other commodities, though the cartels still help to assemble the cost-accounting reports prepared by each mining company.

3. Under the rationing system annual contracts, if still used, become meaningless; the State determines sales conditions.

4. The rationing system, coupled with strict control of the distance goods may be shipped, eliminates sales solicitation. The cartel offices still receive the orders for coal that have been approved by the Government rationing authorities, distribute them among the mines in accordance with the rules of the State transportation authorities, and act as collection agents for the coal companies.

It is possible that the syndicates are also acting for the Reichsstelle Kohle in allocating the coal permitted to the large industrial consumers, many of whom are represented directly or indirectly on the boards of directors of the syndicates. While the question of the extent to which coal from their own mines might be used by the combines without syndicate accounting was long a cause of intrasyndicate quarrels, the syndicates at present seem to keep strict account of all coal used by their members.

The chief Steinkohle cartel—Rheinisch-Westfälisches Kohlen-Syndikat—has its headquarters in the Ruhr, the major Steinkohle producing district, but its membership also includes the companies of the Aachen and Saar fields. The Reich mining companies are members of the coal syndicates in every region where they operate.

The Steinkohle syndicates, their headquarters, and the percentage of total German Steinkohle output which their respective members accounted for in 1937 were:

Steinkohle syndicates	Headquarters	Percentage of total German output in 1937
Rheinisch-Westfälisches Kohlen-Syndikat	Essen	80.7
Oberschlesisches Steinkohlen-Syndikat	Gleiwitz	13.3
Niederschlesisches Steinkohlen-Syndikat	Waldenburg	2.9
Sächsisches Steinkohlen-Syndikat	Zwickau	2.4
Niedersächsisches Steinkohlen-Syndikat	Hannover	0.7
Total		100.0

The cartels of the brown-coal companies, their headquarters, and the approximate percentage of the total brown-coal output which their respective members produced in 1937 were:

Brown-coal syndicates	Headquarters	Percentage of total German output in 1937
Rheinisches Braunkohlen-Syndikat	Cologne	29.7
Ostfälisches Braunkohlen-Syndikat	Berlin	25.0
Mitteldeutsches Braunkohlen-Syndikat	Leipzig	43.7
Kohlensyndikat für das rechtsrheinische Bayern ¹	Munich	1.6
Total		100.0

¹ This cartel, as its name indicates, is not wholly a brown-coal syndicate, though belonging primarily in that class. Some of the members, whose mines are scattered, produce pitch coal.

Although the total output of brown coal in 1937 was approximately the same as the Steinkohle output—some 184 million metric tons—in terms of heat value the brown-coal production was worth only about 41 million tons of Steinkohle. Thus the Rheinisch-Westfälisches syndicate controlled not only four times as much Steinkohle as all the other Steinkohle syndicates, but it also controlled, in terms of heat value, an output that was worth about three and a half times as much as that of all the brown-coal syndicates together. Moreover, some of the members are also members of other syndicates, especially of the Mitteldeutsches Braunkohlen-Syndikat, thus further increasing the dominance of the Ruhr group.

The Rheinisch-Westfälisches cartel, many of whose members are big coke producers, also controls the coke syndicate.⁵

While most of the coal syndicates are organized as limited liability companies (Gesellschaften mit beschränkter Haftung), the Rheinisch-Westfälisches Kohlen-Syndikat is a stock company (Aktiengesellschaft) which itself owns or partly owns several other companies. The most important are:

Company	Headquarters	Business
Westfälisches Transport A. G.	Dortmund	Carrier of coal and other materials.
Kohlentransportgesellschaft	Duisberg	Coal carrier.
Ruhr-Elektrizitäts A. G.	Essen	Utility holding company.

In Westfälisches Transport A. G., the cartel shares stock control with Vereinigte Stahlwerke, whose subsidiary, Gelsenkirchener, is also the principal member of the cartel. The Reich, however, through its own mines and through its holdings in Vereinigte Stahlwerke, is actually the majority stockholder in Westfälisches Transport A. G. and all other subsidiaries of the cartel.

Ruhr Elektrizitäts A. G., another of the important subsidiaries of the syndicate, is itself a holding company, founded in 1937 to gain control of the private power system of Germany in order to prevent it from falling into the hands of companies that mined and utilized brown coal for the generation of electricity.

⁵ See appendix for names of leading directors of the cartels and coal companies.

In addition to their joint undertakings as members of the Rheinisch-Westfälisches Kohlen-Syndikat, a number of the iron, steel, and coal companies belonging to the coal syndicate participate jointly in certain important enterprises producing coal byproducts—Ruhrgas A. G., Ruhrbenzin A. G., and Ruhrchemie A. G. The Reich is—or was—also a stockholder. A number of men who were directors of the syndicate in 1940 were likewise directors of these companies.

Distribution of coal.—Except in Silesia, where combines dominating the coal industry marketed coal through four agencies of their own, coal was sold through the syndicates, which maintained sales staffs and accounting offices. All wholesalers and retailers were united in a Zentralverband der Kohlenhändler Deutschlands. They were controlled by the syndicates through a system of annual contracts. Each wholesaler had to agree to handle only such coal as he obtained from the syndicate with which he had a contract; to maintain syndicate prices in his dealings with customers and to force the same conditions on the retailers; and to take the coal for which he contracted in shipments spaced evenly throughout the year. The dealer had to maintain the necessary storage space for coal received during the seasons of lower demand. In general, distribution expenses were shifted onto the dealers.

POSITION OF THE COAL INDUSTRY UNDER THE NAZIS

The Government's position in relation to coal and the coal industry is peculiar. State coal mining was begun long before 1900 to provide a cheap supply of coal for state-owned railroads and later for public power plants. By the early part of the twentieth century the syndicates had made coal prices so high that there was general demand for the Government to expand its operations and enter the commercial field as a competitor of the syndicate members. The threat to private producers forced prices down somewhat. Eventually the Government decided to enter the syndicates to avoid having to set up its own sales organization. The public did not greatly object to this, because it was believed that the Government as a member of the syndicates could keep the prices under control. But by the time the Government's output for the commercial market had reached sizable proportions, the leading members of the Rheinisch-Westfälisches syndicate were able to convince the public authorities that high prices were to the advantage of the public treasury, since there would be a net profit even though public buildings and certain other governmental consumers not served directly by Government mines did have to pay high prices for coal.

This community of interest between the Government and the leading members of the dominant syndicate increased with the concentration of coal-company ownership in the iron and steel industry, whose role as armament maker and steel exporter made it the darling of the Imperial and National Socialist Governments.

Some attempt was made under the Weimar Republic to curb this alliance by establishment of a national coal council (Reichskohlenrat) and a supersyndicate (Reichskohlenverband) with labor and governmental representation. But the iron and steel representatives were easily able to control the new organizations; they had allies in the ex-Army officers who were in strategic governmental positions,

secretly conspiring with them in the interests of rearmament. Under the Nazis labor lost its representation in the two organizations that Weimar had created. Eventually both were abolished.

In April 1941 the Reichsvereinigung Kohle (national coal union) was established as a compulsory nation-wide organization of the coal-mining companies and the coal dealers. It was intimated that the day of the regional syndicates was over and that the Reichsvereinigung would assume their functions. But it was apparently inexpedient to abolish the syndicates during the war.

The order setting up the coal union laid various responsibilities on the members but offered no powers. Like all other business organizations, the union was called on to increase production and promote efficiency. It also had responsibility for "improving the social condition of the workers," for cooperating with big coal consumers and governmental agencies, for collecting and evaluating statistics, for advising the Government on international coal agreements, and for carrying out such agreements. While the order also stated that the members were responsible for organizing coal transportation and distribution, the increasing governmental control of all transportation, allocation, and distribution left the members with little to do but follow the regulations in parceling out orders among the mines. The praesidium of the coal union, whose members were elected for 5 years, were permitted to act through deputies. The first president of the praesidium, whose appointment was subject to the approval of the Reichsmarschall, was Paul Pleiger, a leading official of Reichswerke "Hermann Göring."

But while Reichsvereinigung Kohle now exercises few powers, this does not mean that the men who from their base in the Ruhr have long controlled the German coal industry, as well as most of the economic life of the country, are ruled by Pleiger for the benefit of the Nazis. They themselves are part of the Nazi politico-economic hierarchy, sharing power, but not publicity, with the politicians.

The industrial monopolists have long and ardently worked for pan-Germanism and have willingly joined in partnership with Hitler and his lieutenants to achieve their ends.⁶ For all practical purposes, the social and political philosophies of the partners are indistinguishable, even though their personal interests sometimes lead to factionalism. As Allied pressure increases, for example, Hitler and the politicians will undoubtedly want to fight to the end, since military defeat will entail the loss of all their power, whereas big industrialists like Flick, Tengelmann, and Zangen may wish to negotiate a surrender in the belief that they can still retain their power.

The importance of the Reichsvereinigung Kohle lies in the fact that when Nazi arms are defeated the unpublicized industrial faction may seek to use it as a ready-made instrument for resuming the monopolistic controls and as a vehicle in which they can ride out the storm and continue toward their goal.

⁶ After the firm of Friedrich Krupp A. G. was given a specially favored status by decree of the Führer in December 1943, Gustav Krupp von Bohlen und Halbach announced his retirement in favor of his son Alfred and publicly stated that Alfred would henceforth give personal leadership to the enterprise, in accordance with "the attitude of the National-Socialist state and our own ideas." Alfred, in turn, announced: "The task of carrying out to the best of my abilities the social duties of a National-Socialist enterprise will always be dear to my heart As in the past 132 years, the Krupp works community will always do what Führer, people, and Reich expect of it, especially now that our fatherland is struggling hard for its destiny, defying all powers. Hell Hitler!"—Rheinisch-Westfälische Zeitung, January 11, 1944.

MISCELLANEOUS ORGANIZATIONS OF THE COAL INDUSTRY

The *Pflichtgemeinschaft der Braunkohlenindustrie* (Compulsory Association of the Brown Coal Industry), under direction of Reichscommissar Regel of the Reichsbank, is an investment agency. Members of the brown-coal industry were ordered to unite in this association and act through it in pooling funds for construction of plants to manufacture liquid fuel from brown coal.

Three old private organizations have been permitted to remain in existence. Nominally they are concerned with technical problems of the coal industry; actually they are honorary societies. Founded for political pressure purposes, in the last years of the Republic they levied a tax on every ton of German coal sent to market to build up the fund used, under the guidance of the dominant Ruhr group, secretly to finance the Nazi drive to seize political power. These organizations are:

Organization	Headquarters
Verein für die bergbaulichen Interessen.....	Essen.
Oberschlesischer Berg- und Huttenmännischer Verein E. V.....	Gleiwitz.
Deutsche Braunkohlen-Industrie Verein E. V.....	Halle.

Owing to the small number of coal companies, and their membership in long-established and highly organized syndicates, the *Gruppen* of the industry were of little importance. Leaders of the *Gruppen* were the same men who ran the syndicates. For example, in 1937 the leader of the *Wirtschaftshauptgruppe* that included mining (as well as iron and steel) was Dr. Ernst Poensgen, chairman of the board of management of *Vereinigte Stahlwerke* and deputy chairman of its big mining subsidiary, *Gelsenkirchener*. Poensgen was also chairman of the regional main industrial *Gruppe* of the Ruhr. The leader of the national subgroup of the *Steinkohle* producers was Dr. Gustav Knepper, chairman of the board of management of *Gelsenkirchener* and a director of *Schering* and other mining and mine-holding companies. The leader of the regional mining subgroup in the Ruhr was Brandt, a general handyman of the Ruhr interests, who was also manager of the *Verein für bergbaulichen Interessen*; and the deputy leaders of the Ruhr subgroup were Ernst Buskühl, chairman of the board of management of *Flick's Harpener Bergbau* (and *Flick* representative on the board of various other companies) and the useful Walter Tengelmann.

THE MINE WORKERS

Long before the war began, Germany, like other industrialized countries, was experiencing difficulty in recruiting mine labor from among the native population. Coal mining requires experienced men who have, by and large, entered the trade as apprentices. For various reasons, the factories are more attractive than the mines to boys starting to earn livelihoods. During the period of acute unemployment that began in 1930 many German miners migrated; when production increased again their places were taken by immigrants from the less industrialized countries.

At the time the Nazis turned to open war, the earlier plan of deferring all miners was not adhered to. A serious shortage of labor soon developed. It was not possible to recruit many experienced miners for Germany in the conquered countries since the Nazis desired to exploit the mines in such areas. Moreover, the working force in other countries had been depleted by conscription and evacuation even before the Nazis took charge. A more efficient deferment program was instituted after it became apparent that the whole war production program would fail unless there was a more adequate supply of coal. Later a training program in mining was begun among war prisoners and slave laborers, and in 1944 the German press was proclaiming its success and offering per man output figures to prove that even white-collar workers could be taught coal mining in a few months.

The urgent need for coal has placed the miners, both native and foreign, among the most favored groups of wage earners. By 1943 food rations for them were exceptionally high, and they were also receiving permits for additional clothing. Even prisoners working in the mines were granted special privileges.

THE COAL ECONOMY OF FRANCE

OWNERSHIP AND EXPLOITATION OF FRENCH COAL

STATE OWNERSHIP OF MINERAL RESOURCES

The mineral resources of France are the property of the state. Ownership of the surface gives no rights to what is below it. The state may exploit the minerals itself or it may lease the rights of exploitation to private concessionaires. The latter course was followed with coal and most other minerals. The concessionaire paid a nominal fee per hectare in the concession, the fee increasing slightly when production began; but the state was a minor partner in the exploitation, entitled to a certain percentage of the output. It became customary to have the state's share marketed by the concessionaire, who turned over the proceeds to the public treasury.

The concession contracts were elaborate, with numerous clauses whose interpretation depended on a century of precedents. The state and the concessionaires were enmeshed in a complex of relationships wherein the state was owner, lessor, partner, and regulator all at once. The contracts were predicated on the theory that the exploitation would be carried on in a manner that would serve the interests of the state. If the state finds that its interests become prejudiced, it has the right to terminate the concession; if it desires to continue some exploitation it may do so alone or with a new partner.

STATE MACHINERY FOR CONTROL OF MINING

The representative of the state in exercise of its mineral rights has been the Direction des Mines, in the Ministère des Travaux Publics (Ministry of Public Works).

Bureau I of the Ministry had jurisdiction over mines of all types (including the peat pits, the stone quarries, and the state-owned potash mines), the mine schools, the colliery railroads, the leasing of mining concessions, and the adjudication of disputes over such concessions, and the granting of permits for mineral exploration (except for gas and petroleum). It also supervised mining and fuel utilization research and was responsible for safety in mines and colliery railroad operations.

Bureau II had charge of the mining royalties, verified mining reports, supervised coal imports and exports (including imports under the Versailles Treaty and subsequent international accords), sponsored legislation on mine labor and kindred matters, did geologic mapping, and published the *Annales des Mines*.

Attached to the Direction des Mines were numerous advisory committees representing the mining industry, the coal importers, the mine workers, the mining engineers, the coal wholesalers and retailers, the large private coal consumers, and the public services consuming

coal. Also attached to the Direction were a variety of technical commissions coordinating and carrying on research.

The over-all policy-making body on mining within the Ministry was the Conseil des Mines, consisting of the Minister, the chiefs of the Direction and of the bureaux, the inspecteur general in charge of the Service des Mines, his principal assistants, and two or three other public officials.

The Service des Mines carried on the field work of the Direction, which consisted primarily of mine supervision in connection with the enforcement of the official mining regulations, including those designed to promote safety and worker health. Metropolitan France was divided into six mining districts, each in charge of an official of the Service des Mines, who had reached the rank of inspecteur general, first class. His assistants had similar rank or were of the second class. The mine inspectors usually had the rank of ingénieur ordinaire. They worked out of subdistrict offices, each of which was in charge of an ingénieur en chef. The duties of the men in the field service (as well as those at the higher levels) included the giving of instruction to prospective mine foremen and others in the mining schools and the inspection and supervision of boilers in industrial establishments. They compiled mining statistics that were incorporated in their annual reports on the mines under their jurisdiction. These reports were filed with the prefect of the department concerned, and he, rather than the regional mine inspectors, transmitted them to the Ministry. The mining engineers also performed functions unrelated to mines or mining; for example, they acted regularly as arbitrators in serious traffic accidents.

THE CONCESSIONAIRES

Concentration of interests.—Approximately 77 percent of the French coal output came from 14 companies, of which 1 was a joint subsidiary of several of the others. Moreover, the interests controlling some of the other 13 companies owned or controlled certain of the lesser producers.

Companies producing 77 percent of total French output, 1938

[Metric tons]

	Tonnage
Aniche (Nord)	3, 181, 000
Anzin (Nord)	3, 027, 000
Bethune (Pas-de-Calais)	2, 478, 000
Bianzy (Saone-et-Loire)	2, 141, 000
Bruay (Pas-de-Calais)	3, 162, 000
Courrieres (Pas-de-Calais)	3, 239, 000
Dourges (Pas-de-Calais)	1, 616, 000
Lens (Pas-de-Calais)	2, 960, 000
Lievin (Pas-de-Calais)	1, 419, 000
Marles (Pas-de-Calais)	2, 330, 000
Ostricourt (Pas-de-Calais)	1, 270, 000
Petite-Roselle (Moselle)	2, 601, 000
Sarre-et-Moselle (Moselle) ¹	4, 982, 000
Vicoigne-Noeux-Drocourt (Pas-de-Calais)	2, 354, 000
Total	36, 760, 000

¹ Output includes the tonnage from La Houve, a subsidiary of Sarre-et-Moselle

Sarre-et-Moselle is the subsidiary of about a dozen companies, all but two or three of which were coal producers; the two or three noncoal companies made iron and steel. Until the Faulquemont company entered production in 1936, Sarre-et-Moselle and Les Petit Fils de Francois Wendel together accounted for practically the total output of the Lorraine Basin.¹ Sarre-et-Moselle, founded after the Versailles Treaty returned Alsace-Lorraine to France and gave France control of the Saar mines for at least 15 years, acquired concessionary rights to all mines formerly operated by the Germans in the Lorraine Basin and also the French operating rights for the Saar mines.

The participants in Sarre-et-Moselle were primarily the large companies whose mines in the north basin had been wrecked by the Germans during the last war and also some metallurgical companies affiliated with them. The new enterprise not only offered unusual opportunities for profit but also, by obtaining all the newly available pits, prevented other interests from entering the field or challenging the dominance of the established companies. The latter consideration was important to the participants, especially in the period when Saar coal was at the disposal of France.

The new Faulquemont company expected to be among the million-ton producers by 1939, was also a subsidiary of a number of operating companies, but most of them, with the exception of Escarpelle, belonged primarily to the metallurgical industry. Some, however, had at the same time substantial holdings in other coal mining companies. The participants in the development of Faulquemont were—

Societe Lorraine des Acieries de Rombas.

Societe des Acieries de Longwy.

Cie des Forges et des Acieries de la Marine et d'Homcourt.

Cie des Minerais de Fer Magnetique de Mokta-et-Hadid.

Cie des Mines de l'Escarpelle.

Societe Anonyme des Acieries de Micheville.

Societe Anonyme des Hauts-Fourneaux et Fonderies de Pont-a-Mousson.

Societe des Mines et Usines de Redange-Dilling.

Industrial interests in coal mining.—As indicated above, the private interests controlling French coal mining have belonged largely to the metallurgical industry, but the same groups have also been heavily involved in iron mining, the generation and distribution of electric energy, the manufacture and sale of chemicals, and the operation of financial institutions. The number of these controlling groups, despite the variety and size of their industrial holdings, is small. Moreover, although they can be loosely distinguished according to the dominant lines of their respective operations, or according to their regional concentrations, or at times even according to separate lines of policy, they have in the long run formed a single bloc with a high degree of solidarity.² There was competition between groups, but it was not allowed to disturb their basically united front. This solidarity, as well as the great concentration of French industrial

¹ The only producer outside the two large companies was the small Ronchamp company.

² Regionally, the groups fall generally into those of the north, the east, and the center and south, though their leaders often have interests that are empire-wide and their principal offices are usually in Paris. The de Wendel group was considered dominant in the east, the Schneider in the center, and so on. An example of occasional differences in policy was to be found in such matters as labor relations. Whereas the de Wendel group was paternalistic and hostile to unions, the Schneider group considered them inevitable and sought to dominate them.

interests, is well illustrated by the variety and importance of the concerns united, directly or indirectly, in the board of the Sarre-et-Moselle company.

DIRECTORS OF SARRE-ET-MOSELLE AND INTERESTS THEY REPRESENTED (1937)

Chairman: Henri de Peyerimhoff de Fontanelle (president, Comite Central des Houilleres; vice president, Chambre Syndicale Francaise des Mines Metalliques; director, Confederation Generale du Patronat Francais; president, coal section of the Confederation).

Coal: *Mines de Dourges.

Metallurgy:

Hauts-Fourneaux de Saulnes (J. Raty & Cie).

Soc. Generale de Fonderie.

Electric power:

Cie Generale d'Electricite.

*Forces Motrices de la Truyere.

Chemicals and petroleum:

*Phosphates de Constantin.

Pechelbronn.

Finance:

*Union des Mines.³

Groupement des Houilleres du Nord et du Pas-de-Calais.⁴

Soc. Mosellane Industrielle et Financiere.

Credit National.

Vice chairman: Alfred Descamps.

Coal: *Mines de Lens.

Metallurgy: *Forges & Acieries de Nord et de l'Est.

Electric power: Cie Electrique du Nord.

Chemicals: Matieres Colorantes et Produits Chimiques du Nord (Etab. Kuhlmann).

Finance:

Union des Mines.

Banque Generale du Nord.

Finalens.

Directors:

Charles Barrois:

Coal: Mines d'Aniche.

Finance: Soc. Mosellane Industrielle et Financiere.

Comte Georges de Boisgelin:

Coal:

Mines de Dourges.

Mines de l'Escarpelle.

Metallurgy: Hauts-Fourneaux de Saulnes.

Electric power: Cie Electrique du Nord.

Eugene Courtin:

Coal: *Houillere de Liévin.

Metallurgy: Les Petits-fils des Fr. de Wendel et Cie.

Finance:

Union des Mines.

Groupement des Houilleres du Nord.

Albert Degouay:

Coal: Compagnie de Bethune.

Electric power:

*Soc. Artesienne de Force et de Lumiere.

Soc. Electrique du Nord-Ouest.

Chemicals: Huiles, Goudrons et Derives.

Alfred Dupont-Descat:

Coal: Mines de houille de Courrieres.

Chemicals:

Produits Chimiques Courrieres-Kuhlmann.

Matieres Colorantes et Manufactures de Produits Chimiques du Nord (Kuhlmann).

³ Private bank established by mining companies.

⁴ Founded by northern interests to handle their reparation and other receipts (such as advances by the Government for reconstruction purposes) after the last war.

Louis Dupont:

Coal: *Mines de Vicoigne-Noeux-Drocourt.
 Metallurgy: Hauts-Fourneaux, Forges et Acieries de Pompey.
 Electric power: Soc. Electrique du Nord-Ouest.
 Chemicals and petroleum:
 *Huiles, Goudrons et Derives.
 Raffinerie de Petrole du Nord.

Finance:

*Banque Louis Dupont et Cie.
 Union des Mines.
 Credit Industriel et Commercial.
 Groupement des Houilleres du Nord et du Pas-de-Calais.
 Caisse Fonciere de Credit.

Maurice Flayelle:

Coal: Mines de Bruay.
 Electric power: *Soc. Bethunoise d'Eclairage et d'Energie.

Theodore Laurent (vice president of Comite des Forges and vice president of main metallurgical section of the Confederation).

Coal:

*Mines de l'Escarpelle.
 *Houillere de Saint-Chamond.
 *Charbonnages de Faulquemont.
 Mines d'Anzin.

Metallurgy:

Ateliers et Chantiers de France.
 Hauts-Fourneaux et Fonderies de Brousseval.
 *Cie Francaise de Materiel de Chemins de Fer.
 Mines et Usines de Redange Dilling.
 *Tubes de Vincey.
 Etabls. Delattre et Frouard Reunis.
 Cie de Construction Mecanique Procèdes Sulzer.
 *Forges et Acieries de la Marine et d'Homecourt.
 Hauts-Fourneaux et Fonderies de Givors.
 *Hauts-Fourneaux et Forges d'Allevard.
 *Soc. Lorraine des Acieries de Rombas.
 Forges et Acieries du Nord et de l'Est.
 Soc. Provencale de Constructions Navales.
 Cie pour l'Exportation des Aciers, Tubes et Materiaux.
 Forges et Acieries de Dilling.

Iron mining (in addition to mining carried on under name of above metallurgical companies): Mines d'Anderny-Chevillon.

Electric power: Cie Generale d'Electricite.

Chemicals: Matieres Colorantes et Manufacture de Produits Chimiques du Nord (Kuhlmann).

Finance:

Banque des Pays du Nord.
 Caisse Fonciere de Credit.
 Credit a l'Industrie Francaise.

Marcel Paul (vice president Comite des Forges).

Coal:

Charbonnages de Faulquemont.
 Mines de l'Escarpelle.

Metallurgy:

*Hauts-Fourneaux et Fonderies de Pont-a-Mousson.
 Minerai de fer magnetique de Mokta-el-Hadid.
 Constructions Mecaniques Procèdes Sulzer.
 Soc. Lorraine des Acieries de Rombas.
 Acieries de Micheville.
 Forges et Acieries de Dilling.
 Redange-Dilling.

Electric power:

Hydro-Electrique de la Diege.
 Hydro-Electrique d'Auvergne.

Chemicals:

Huiles, Goudrons et Derives.
 Comptoir de l'Industrie du Sel and des Produits Chimiques de l'Est.

Finances:

Soc. Mosellane Industrielle et Financiere.
Soc. Nancelienne de Credit Industriel et de Depots.

Henri Perret:

Coal: *Mines de houille de Blansy.

Electric power:

Industrie et Force.
Forces Motrices du Centre.
Forces Motrices de la Truyere.

Henri Portier:

Coal:

*Mines de houille de Courrieres.
Mines de houille de Marles.
Mines de Douchy.

Metallurgy: Soc. Metallurgique de Senelle-Maubeuge.

Chemicals: Produits Chimiques Courrieres-Kuhlmann (Etab. Kuhlmann).

Finance:

Union des Mines.
Groupement des Houilleres du Nord et du Pas-de-Calais.

Etienne Thouzellier:

Coal:

*Mines de Carvin.
*Houillere de Haute-Loire.
Mines de Vicoigne-Noeux-Drocourt.

Metallurgy:

Usines Metallurgiques de la Basse-Loire.
Electro-Metallurgie de Dives.
*Etab. J-E Johnson et Cie.
Forges et Acieries du Nord et de l'Est.
Cie Generale d'Electro-Metallurgie.

Electric power: Energie Electrique de la Basse-Loire.

Chemicals: Phosphates de Constantine.

Finance:

Union des Mines.
Groupement des Houilleres du Nord et du Pas-de-Calais.

Andre Vicaire (director general of Etab. Schneider):

Coal: Schneider et Cie.

Metallurgy:

Schneider et Cie.
*Anciens Etab. Chavanne-Brun freres.¹
Forges et Chantiers de la Gironde.
Soc. Metallurgique de Normandie.
Anciens Etab. Skoda a Plzen.
Constructions Mecaniques Cail.
*Soc. Metallurgique d'Aubrives et Villerupt.
Acieries de Burbach-eich-Dudelange.
Soc. Metallurgique de Knutange.

Iron mining (in addition to that carried on by above metallurgical firms):

*Mines de Soumont.

Electric power: Cie Bourguignonne de Transport d'Energie.

Finance: Union Europeene Industrielle et Financiere.

Maurice Wahaert:

Coal: Mines de Lens.

Metallurgy: Forges et Acieries du Nord et de l'Est.

Finance: Finalens.

Paul Weiss:

Coal: Mines de Vicoigne-Noeux-Drocourt.

Metallurgy:

Forges et Ateliers de Commentrey-Oissel.
Soc. Lorraine Miniere et Metallurgique.
Hauts-Fourneaux, Forges et Acieries de Pompey.

¹ Vicaire was president of this company, on whose board sit representatives of Forges de Chatillon, Commentry et Neuves-Maisons; Commentry-Fourchambault et Decazeville; Hauts Fourneaux, Forges et Acieries de Denain et d'Ansin; Forges et Acieries de la Marine et d'Homecourt; Schneider et Cie (Le Creusot); Les Petits-Fils de Francois de Wendel. All of these metallurgical corporations have coal mines.

Electric power:

- Soc. Bethunaise d'Eclairage et d'Energie.
- Cie Electrique du Nord.
- Soc. Electrique du Nord-Ouest.
- Soc. Miniere et Electrique des Landes.

Chemicals and petroleum:

- Huiles, Goudrons et Derives.
- Carbonisation et Distillation des Combustibles.
- Raffinerie de Petrole du Nord.
- Soc. Francaise des Petroles.

Finance:

- Union des Mines.
- Soc. Mosellane Industrielle et Financiere.

While the combination of companies represented on the board of Sarre-et-Moselle illustrates the integration of the great financial and industrial interests of France and the position of the coal industry in the economic structure, the names do not indicate the complexity of the relationships among those interests. Only about a dozen of the listed companies were direct stockholders in the enterprise, but some of the others in turn controlled these participating companies. For example, Courrieres, a stockholder in Sarre-et-Moselle, was controlled by (though not a subsidiary of) Etablissements Kuhlmann.⁶

The family blocs.—While in some cases the link between the coal companies and other industrial enterprises was created by the investments of individuals, much more often it was a result of large investments by closed family corporations. These have long been characteristic instruments of control in France. Family ties have produced a cohesion and permanence of group interests seldom found in firms whose members are united purely by business ties.

The role of such family groups was extremely important in the French coal industry. One alone—the de Wendel family—controlled directly the companies accounting for 15.3 percent of the total French output in 1938, and indirectly enough more to make its share of the output at least twice as great as that of the Republic itself. The coal companies wholly or partly owned by the family were—

- Petite-Rosselle unit of Les Petits-Fils de Francois de Wendel.⁷
- Mines de Douchy of Soc. Metallurgique de Senelle-Maubeuge.
- Mines de Crespin-Nord.
- Houillere de Thivencelles.
- Mines de houille de Clarence.
- Houillere de Lievin.
- Mines de houille Marles.

At the beginning of the nineteenth century, the Code Napoleon established the principle that all heirs standing in the same degree of relationship are entitled to separate equal portions.⁸ But the older

⁶ Indicates that the Sarre-et-Moselle director was either chairman of the designated company in 1937 or had been in such position at some time since 1934; in most cases where an asterisk is lacking the person was a director of the company named, but in a few he was merely a representative of a controlling bloc in the company. Paul Weiss, for example, although not a director of Pompey in 1937, frequently represented the Fould family, which controlled Pompey.

⁷ See appendix K for the affiliations of all directors of French coal companies and for additional ties of those on the board of Sarre-et-Moselle.

⁸ Les Petits-Fils de Francois de Wendel is one of two companies operating and holding the de Wendel family interests. The existence of two companies is a result of the German annexation of Lorraine in 1871, which divided the family properties between the two countries, with the important mills of Les Petits-Fils in Germany. A new company, the Societe de Wendel, was formed to handle the interests of France. Both companies had, and have continued to have, the same trustees and supervisory boards.

⁹ This provision has been a factor in the declining birth rate. Farmers and businessmen alike have had to face the fact that the more children they had the more pieces into which their property would be broken when they died.

system of joint control of family property has been widely continued on a voluntary basis, since it often enabled the members of a family to gain power and prestige that they could seldom achieve alone.

The family blocs have been so significant in the French economy, and their composition so much affected by inheritances and dowries, that a knowledge of genealogies and marriage alliances has been indispensable to persons conducting big business in France. Since a French financier or industrialist frequently speaks not as an individual or as an executive for a widely held corporation but as a member of a family group, the successful negotiator has found it necessary to know not only the group to which the man belongs but also his current degree of importance within the group. The man's ability to promote or hinder a project may depend on such circumstances.

Usually the family business blocs have developed out of some enterprise established by the head of the family two or more generations back. The heirs of the founder pooled their shares and were the first partners. They withdrew only such part of the profits as seemed desirable or necessary for living expenses and used the rest to expand the plant or the family interest in other enterprises. Sometimes one of the partners would withdraw a larger percentage of the profits, or sell part of his share in the firm to another member, in order to establish his son or sons in another business. Even in such cases, however, the new enterprise was usually welded into the general sphere of family interests.⁹ Although this system of expansion was relatively slow it could be financed without issuing securities to the public. The result was that even some of the largest companies were owned by a tightly knit family group.

As the investment portfolio of the family firm expanded, management of the investments often became more important than operation of the industrial enterprises that had furnished the base of the whole development. The industrial operations have sometimes been left entirely to technical employees—the so-called civil servants of industry. As a rule, however, up to recent years, most important business families have endeavored to have at least one or two technically trained members, to provide judgment on some kinds of investments if not for participation in industrial operations.

The power and financial position of such family firms have been fortified by marriages as carefully planned as corporate mergers in the United States. The financial arrangements and other practical features of the marriages have generally been protected by legally executed contracts.

When a new generation takes control, the husbands of female heirs sometimes participate in the family affairs. This has been common in the de Wendel family, which for several generations has produced an exceptionally high proportion of females. But relatives by marriage have not become trustees of the family corporations—that is, held the positions of highest authority on equality with the male de Wendels.

In families where the system of joint-control of family property has prevailed for several generations there has been a tendency to promote marriages among cousins of varying degree in order to limit the number of shareholders in the family corporation.

⁹ Examples of such proliferations of family interests were less common in the heavy industries than in some others, such as the textile industry. See CA Information Guide: The French Textile Industry (War Department Pamphlet No. 31-172).

The carefully arranged alliances by marriage have not been confined to industrial circles. With the growth of wealth and prestige, the important business families have been united with the landed aristocrats, further consolidating the positions of both of these elements of French society.¹⁰

While the de Wendels have the largest and oldest single bloc of family interests in the coal industry, there are others, including some of recent origin, that are important—for example, the Schneider, the Dupont, the Thiriez-Wallaert, the Laurent, the Peyerimhoff, and the de Vogue. Such family blocs are not wholly independent of one another; not only do their spheres of business interest overlap but also their marriage alliances—to the extent, that is, that religious ties and the relative prestige of the various family circles permit.

TRADE AND CARTEL ORGANIZATIONS

Trade organizations.—The Comité Central des Houillères de France (Central Committee of the Collieries of France), whose first constitution was approved in 1892, was formed, according to its charter, for “the study and the defense of the common interests of the coal industry.” The organization had various special committees, one of the most important being devoted to legislative matters.

The Comité was supported by dues levied, like the special taxes collected at intervals and charged by the companies to operating expenses, on the basis of the proportionate output of the member companies. The number of representatives each company was entitled to was in rough proportion to its output, but voting rights were in exact proportion to the contribution of the company to the organization’s support. Thus, 13 companies held more than three-quarters of the votes and the de Wendel family alone at least one-sixth.

The coal producers also belonged to regional organizations. The charters of both the Comité Central and the regional organizations permitted the member companies to be represented either by their officers or by their technical employees. Usually, however, the president-chairman of the board of directors was the principal representative in the central organization, sitting on its governing board, and the higher employees sat on committees whose work involved complex technical matters. The latter also were often the chief representatives in the regional associations.

Other bodies in which leaders of the coal industry were prominent, as representatives either of coal companies or of iron-mining or metallurgical companies, were—

Confederation Generale du Patronat Français (General Confederation of French Employers). This organization was the successor of the Confederation Generale de la Production

¹⁰ Illustrations of nearly all the various types of arrangement found in such family corporations exist in the de Wendel family. The trustees of the family holding companies at latest report were François, Humbert, Maurice, and Guy de Wendel, representing the two main lines now dominant in family affairs; the first three are the sons of Henri and the last is a son of Robert; all four are great-grandsons of the François who died in 1825 after founding the family fortune with his iron furnaces in Moselle. The supervisory boards of the family companies consist of G. de Maille, H. de Montaigu, Jean de Moustier, Charles de Gargan, and L. de Curel. The first two represent sisters of Guy; the third member of the board represents a double crossing of the line created when Maurice married a member of the de Moustier family; the fourth member represents a female line created two generations back in which the de Wendel blood and inheritance was strengthened when the Comte Emanuel de Mity (whose mother was born a Gargan) married the daughter of François. The Baron Jean de Seillière, a son-in-law of Maurice found on the boards of certain de Wendel coal companies, represents another crossing of the lines; his mother, a Demachy of the so-called “de Wendel private bank”—Demachy et Cie.—belonged to yet another female de Wendel line established two or three generations back.

Francaise, reorganized in 1936 after its officials signed the "Matignon Agreement," which bound the Confederation to act as the central employer agency in collective bargaining with workers.

Societe de l'Industrie Minerale (Society of the Mineral Industry).

Comite des Forges (Committee of the Forges). This was originally only a trade association of the *maitres des forges* but eventually became the powerful cartel of the French iron and steel industry.

Numerous advisory and consultative committees sitting with members of the *Direction des Mines*.

The governing boards of the state engineering schools.

The positions held by the leaders of the coal industry in such bodies depended on the importance of the body, on the major line of personal activity, and on politesse. Henri de Peyerimhoff de Fontenelle, long president of the *Comite Central des Houilleres* and active in promoting the interests of the coal industry, was also head of the coal section of the *Confederation Generale*; but Francois de Wendel, who as senior trustee of the vast de Wendel interests might be expected to represent the de Wendel mines either on the governing board of the *Comite Central* or as president of the coal section of the *Confederation*, always appeared as head of the metallurgical interests. Almost automatically the presidency of the *Comite des Forges* went to a de Wendel—in recent decades to Francois, who was also head of the section *Siderurgie et Metallurgie* in the *Confederation*. And Andre Vicaire, Schneider representative on Sarre-et-Moselle, was vice president of the *Constructions Mechaniques et Metalliques* section of the *Confederation*. Moreover, Theodore Laurent, chairman of the board of directors of the *Escarpelle*, the *Saint-Chamond*, and the *Faulquemont* coal companies, and a director of Sarre-et-Moselle, appeared in the *Confederation* as vice president of the section *Siderurgie et Metallurgie*; and on the official list of members of the supervisory board of the state *Ecole des Mines* at Paris Laurent was identified as the president of *Forges et Acieries de la Marine et d'Homecourt* and vice president of the *Comite des Forges*, rather than as a representative of mining interests.

Cartels.—France's coal cartel history runs back about a hundred years. In the first half of the nineteenth century the Loire producers made sales and price agreements that enabled highly profitable monopoly of a large market. This initial combination for control of trade was ended by the building of railroads that widened the sales field both for imported coal and for the coal from other French regions. Attempts to reach marketing agreements in the north failed because of the close ties between some of the largest coal companies and the major consumers; these companies refused to treat the coal that they supplied to their affiliated plants as part of their marketing quotas. Gradually, however, with the concentration of colliery ownership in a few companies, secret price-fixing developed. And in 1932, depressed economic conditions (discussed in the next section) promoted more formal arrangements for market control, not only through price agreements and market division but also through agreements to limit production.

For sales purposes, metropolitan France was divided among the producers of the three major regions—those of the north, the east, and the southeast. Heavy penalties were imposed for violation of the terms of the marketing agreements.

Four major preferential marketing zones were established. Zone A, covering 16 departments in northern France (including Paris), was reserved to the mines of Nord and Pas-de-Calais. Zone B, composed of 8 eastern departments, was reserved to the mines of that region but was permitted to receive coke from zone A. Zone C, covering 41 departments of the south and the center, was subdivided between the mines of the center and those of the Midi. The rest of France, zone D, was open to all French producers, but was primarily a consumer of imported coal (chiefly from Britain). Zone R, the public utilities market of the whole country, was covered by special arrangements. The imported coal, which went primarily to the southwest, was admitted to other zones by agreements with the French cartels that enjoyed the marketing privileges in their respective zones.

So far as zone B was concerned, the imports consisted almost entirely of coke and coking coal for the iron and steel furnaces of the region. But in many cases the metallurgical companies that owned the furnaces had heavy interests in French coal companies both in zone A and zone B. In addition they had iron-mining concessions in zone B that could provide more ore than their mills used. Germany was a particularly desirable customer for their surplus ore. The German heavy-industry combines produced good metallurgical coke, and the exchange of products between Lorraine and the Ruhr insured a load for the barges in both directions. These factors highly complicated any general scheme for limiting or controlling imports.

Practically all arrangements affecting coal imported by sea had to be made by agreement with Worms et Compagnie, which was founded as a coal importer but which later became the owner of nearly all colliers carrying the French flag and of numerous port storage facilities. Worms et Cie also participated heavily in the imports of coal from Germany, which they financed through their own bank, Banque Worms.

In 1937 the Comptoir de Douai, central office of the northern coal companies, initiated a central sales system under which it handled the distribution of all orders for more than 3,000 tons of coal a year. It was already the coal price-fixing office for all France.

RELATIONS OF THE CONCESSIONARIES WITH THE GOVERNMENT

The French attempts to have the state participate with private coal-mining interests, while seeking to regulate the industry in the public interest, were no more successful than similar experiments had been in Germany. The situation was complicated in France by the small size of the reserves and the position of the mines in the defense establishment.

The state's ownership of the mining deposits and the authority vested in the Direction des Mines in connection with the granting and operation of the concessions gave the state engineers great power over the mining industry. Moreover, the authority of the administrators to interpret and apply the body of mining laws and regulations as well as to construe and enforce the elaborate concession contracts

placed the Corps des Mines (as the regulatory personnel were called) in a strategic position with respect to the success or failure of mining enterprises.

But the relations of the industry to the Corps des Mines were such that the state administrators and engineers were conditioned to an atmosphere of smooth cooperation. The relations started at the engineering schools, before the prospective civil servants were embarked on their public careers.

The professional education of French mining engineers, technically excellent, has been conducted on two levels. Each year about 2,500 young men took examinations for admission to l'Ecole Polytechnique, which provides a 2-year preengineering course. Only the 200 top-ranking candidates were admitted. All graduates of l'Ecole Polytechnique were entitled to positions in the public service, civil or military, after advanced training in some special field. The fields they entered largely depended on their ratings at the end of the 2-year course, for the number of appointments made each year to the various state services was limited and the graduates, in the order of their school ratings, were entitled to select the service to which they wished to be appointed. The first 60 positions were in the civilian services, the remainder in the military. At the top of the civilian list were 4 to 6 places in the Corps des Mines. Before the successful candidates in the mining field were appointed to the Corps they spent 2 years at l'Ecole Nationale Supérieure des Mines, at the state expense.

Candidates who failed to gain admission to l'Ecole Polytechnique might still enter l'Ecole Nationale Supérieure des Mines by special examination. They might also enter one of the national mines schools of lesser standing, such as the Ecole des Mines at St. Etienne or Nancy. Graduates of such schools might achieve posts in the lower ranks of the Service des Mines, but were ineligible for the policy-making positions, which went to the graduates of l'Ecole Polytechnique.¹¹

All of the mining schools were under the supervision of the Direction des Mines.¹² While the majority of their officials, faculties, and lecturers were members of the Corps des Mines, some were drawn from leading business and industrial circles. For example, the governing boards of the schools included such prominent industrialists as Laurent, Vicaire, and Francois de Wendel.

The prevailing atmosphere throughout the educational period was one of conscientious harmony between the interests of the state and those of industry. As many of the students aspired to become employees of the mining companies, either directly after completion of their studies or after some experience in the Corps des Mines, it was natural for them to cultivate the good opinion not only of their civil-service instructors but also of those industrialists with whom they came in contact.*

Graduates who wished to become state mining engineers took civil-service examinations. Thereafter their advancement depended no

¹¹ The roster of former students of l'Ecole Polytechnique is considered the Burke's Peerage of the French business and technical world. Graduates who did not achieve a rating that entitled them to advanced training for the Corps des Mines but wished to enroll in l'Ecole Nationale Supérieure des Mines might attend that school by the payment of tuition. This course was frequently followed by men whose family interests involved mining.

¹² The Direction also had jurisdiction over the Ecole des Aspirants-Gouverneurs des Mines (which trained mine controllers) and the Ecoles Techniques des Mines, at Douai and Ales, whose graduates became mine foremen (maîtres-mineurs).

the period of service and on each individual's record. The man who might happen to develop unorthodox views as to the state's best interests or who might create some disturbance in the smooth relations between the administration and the concessionaires could easily be shifted to a remote station or otherwise sidetracked.¹³ The traditional goal of each state engineer was to achieve the rank of inspecteur-general, first class, both because of the perquisites attached to the grade and because of the social prestige.

But, particularly in the last 30 years, an increasing number of state engineers have hoped for promotion to private industry, for the money fluctuations of the period made Government salaries and retirement pensions, even of inspectors-general, relatively unattractive. Among former state mining engineers who have bettered their positions by leaving Government service are Leon Daum, a director of the Anzin coal company and of Marine-Homecourt; Raymond Beer, a director of Mines de Potasse de Blondelsheim; M. Lavaste, director-general of Saint-Gobain, Chauney et Cirey, and its representative on various Government commissions; M. Defline, director of the Kuhlmann-dominated Courrieres mining company; and Albert Lebrun, who became president of the Republic.

When a state engineer, after some years' experience in regulating the concessionaires, had an opportunity advantageously to enter private industry, he could do so by merely taking leave of absence from his Government post. This enabled him to retain his rank and to obtain reinstatement if he should ever desire it. In some cases the Government connection was preserved, even after the engineer-on-leave (*ingenieur en conge*) became a leader of industry. Thus, Monsieur X, director-general of a mining company, might be the official superior of the state engineer whose duties required inspection of Monsieur X's operations. Moreover, when an emergency developed involving the mining industry, Inspecteur-general X might be recalled briefly from his business post to assist the Government in solving the problems.

The decade 1930-40 brought a series of national emergencies that severely tested whether the relationship between the Government and the coal industry could produce public-interest solutions to public-interest problems.

In France the international business depression was accentuated by a reluctance to devalue the franc after Britain abandoned the gold standard in 1931. This led to an increasing gap between French coal production costs and those in the exporting countries. The existing tariff rates were inadequate to prevent importers from underselling domestic coal.

In theory France had a choice between temporarily closing all mines or shutting off all imports not needed to meet the coal deficit. Actually, neither extreme was practicable. The physical conditions and the labor and defense situation (discussed above) barred recourse to the first; and the importance of exports to the French economy barred the second, since both Britain and Germany, the major coal exporters, were determined to buy only where they could sell. The

¹³ The emphasis placed on the importance of safety-regulation enforcement as a duty of the state mining engineer should not be construed as contrary to the harmonious relationship maintained between the Direction and the concessionaires. While some provisions of the code had been promoted by the miners' unions, probably a majority were initiated or approved by the concessionaires, who dreaded having their mines wrecked by fires and explosions.

French export trade in general was declining rapidly, in part because much of it had been in luxury products for which there was currently little demand, but even more because of the high cost of the franc in foreign money markets.

The coal situation was met in the first half of the 1930's by a series of compromises that did not wholly satisfy anyone. These included—

1. Agreements among the coal companies to reduce production, support prices, and otherwise control the markets.

2. An increase from 2.75 percent to 3.5 percent in the import tax levied on the duty-paid value of foreign coal.

3. Import license fees that rose from 2 francs a ton in 1930 to 15 francs a ton on bituminous and 20 francs on anthracite in 1936. The import duty of 2 francs a ton, set in 1928, was not changed.

4. Imposition of import quotas, except on coke. The quotas were initially based on the average quantity of coal imported from various countries in the 1928-30 period, but were successively modified to meet retaliatory measures from other countries or the wishes of French special-interest groups.¹⁴

These measures kept the coal companies in a position to make profits, even though they were lower than in 1930, and to set aside large funds for amortization, in a period when many other French producers were going into bankruptcy or were barely able to avoid it.

In 1936 the popular front government was elected. Immediately after it took office, a wave of sit-down strikes in protest against the current wage situation forced passage of labor legislation that provided for wage increases, paid vacations, and certain other measures, considerably and abruptly raising labor costs. There was an immediate rise in prices, including those of coal.

While the wage adjustments were still in progress, the Government initiated a series of devaluations of the franc. Within a year its value in London had dropped a third, and by 1938 the franc cost only a little more than two-fifths of what it had in 1936. In the meantime the cost of imported coal had been rising, partly as a result of reviving industrial activity abroad and partly of price and marketing agreements among the exporting countries, which also aided their producers with subsidies of one kind and another. Thus, in spite of the rise in French costs of coal production, the French producers were much less in need of protection than they had been in 1932. But the protection devices of the previous years were not generally adjusted to meet the new situation; instead, although the coal import license tax was reduced a fifth, late in 1936 the import duty was raised 50 percent (to 3 francs a ton) and the special import tax was raised, first to 3.05 percent of the duty-paid value of the coal and later to 3.7 percent.

¹⁴ Owing to the heavy subsidies on German coal exports and certain arrangements between the French and the German metallurgical interests, Britain was the chief sufferer when the French quotas were applied. That country at once restricted imports from France, thereby reducing work in such already depressed industries as the textile; the French then adjusted the duties to give British coal preferential treatment in return for trade concessions from Britain. French investors in the new railroad built between the Polish mines and the port of Gdynia applied pressure to increase the French imports of Polish coal in order to provide that railroad with revenue. Worms et Cie., with its colliers and other facilities for bringing in coal, was also interested in promoting both British and Polish coal imports. In return for a considerable increase in the Polish coal quota, Poland agreed to place an order for a mine layer with the naval construction company presided over by Theodore Laurent.

The course of French coal prices in this period were as follows:

Pit-head prices on run-of-the-mine coal, Pas-de-Calais

	<i>Francs per ton</i>
January 1936.....	100
July 1936.....	109
October 1936.....	130
March 1938.....	169
November 1938.....	183

The rise in the cost of coal, which went up at a rate far in excess of the rise in production costs and in consumer income, placed a staggering burden on the lighter industries that did not participate in coal mining. Coming on top of the increased cost of labor, it drove out of business many manufacturers who had survived the earlier difficulties.

The price policies of the industry roused widespread indignation and criticism. A bill was introduced in the parliament for cancellation of the mining concessions and public operation of the collieries. After the bill was defeated,¹⁵ some of the coal companies demanded direct subsidies to meet the new labor costs. Otherwise, their representatives threatened, they would reduce production to the minimum required to meet only their own needs as manufacturers of chemical byproducts and power, operations that had continued to be more profitable than sale of coal. A bill was passed authorizing temporary subsidies to companies that could not continue operations without assistance; on the other hand, the Government was given authority to tax the coal companies on the same basis as other corporations, thus removing them from a favored position they had been enjoying. The Government chose not to exercise its new taxing power; but it did initiate direct subsidies, acting on data and recommendations from the Direction des Mines.

Critics of the Direction des Mines asserted that its reports and recommendations on this and other issues were more attentive to the coal-mining interests than to the public interest and that the direct and indirect subsidies were in excess of the needs created by the situation. Neither the reports on the financial position of the coal companies published in 1937 in the Direction's monthly bulletin, *Annales des Mines*, nor annual reports of the coal companies themselves, offer adequate data for an independent appraisal of this criticism.¹⁶

The defeat of the popular front and the switch in public attention to the threatening international situation pushed into the background the controversy over the relations between the Government and the coal industry, but did not put an end to a widespread conviction that they required reorientation.

¹⁵ The coal industry was well represented in parliament, directly as well as indirectly. The De Wendel family, for example, had several members in legislative seats. One of the senatorial seats from Moselle was almost an hereditary right of the family; the incumbent in 1938 was Guy. His cousin, Francois, was a senator from Meurthe-et-Moselle, and the Marquis Hubert de Montaigu (son of Guy's sister, Caroline) was a deputy from Seine-Inférieure. In addition, several members of families closely related to the De Wendels were in one house or the other.

¹⁶ French corporation reports on such matters as total assets, income, expenditures, and operational expenses are usually so incomplete, and frequently misleading to the uninitiate, that it is almost impossible to analyze the relationship between investment and profits. The general absence in France of modern cost-accounting systems is another factor that renders financial analysis difficult. A special complication in appraising the position of the big coal companies is the extent to which their original investments had been amortized before their collieries were destroyed in 1918 by the Germans, and the extent to which the collieries rebuilt and modernized through German reparations (or French Government advances on them) can be counted as private investments.

COAL PRODUCTION AND CONSUMPTION DURING THE GERMAN OCCUPATION

Coal has been a major supply problem of France since September 1939. The situation created by the deliberate decrease in production early in the 1930's was never wholly remedied. While some French requirements were reduced after the Government's surrender to Germany in 1940, others were increased by the flow of German orders for various products to strengthen the German war potential.

PRODUCTION

The year 1939 began with an increased rate of production achieved to some extent by a partial return to the 6-day workweek. When war was declared, the 6-day week became mandatory and the work-day was set at 9 hours. In the first quarter of 1940 production was at the rate of 51,000,000 tons a year, in spite of temporary stoppages in the Lorraine mines and a considerable loss of labor through unselective military mobilization. Late in the spring older miners who had been mobilized were returned to the mines and retired miners were called back to work.

The rapid German advance in June 1940 caused a temporary stampede from the eastern end of the north basin. The management of the Anzin and Aniche companies abandoned the region with their technical staffs, after stopping the mine ventilators and pumps and removing essential machine parts. Their action caused some minor flooding, taking the mines out of production for about a month. In general, however, there was little damage to the collieries, and operations were fairly normal by late fall. The principal handicap of the early post-armistice period was the disruption of transportation facilities and traffic on the railroads and canals. Another was the departure of some of the Polish miners, who were offered better pay in Germany. At the same time the Germans refused to release French miners who had been made military prisoners. Output was also decreased somewhat by a slight reduction in the hours of work, in answer to demands of the miners who were uninterested in collaboration with the Germans.

Great effort was made to raise the output of coal in what was then called the unoccupied zone, with special attention to the easily worked lignite deposits. During 1941 and 1942 the output in this less important producing area improved. But it gradually decreased in the north, as a result of deliberate slowing-down by the workers, the low level of nourishment made available to them, and the cumulative strain as Allied bombing missions in and across the area increased.

Approximate output of French coal mines outside Lorraine, 1941-42¹

	Thousand metric tons		Percent of 1938 output	
	1941	1942	1941	1942
Unoccupied zone.....	12.9	15.0	135	150
Occupied zone.....	30.0	28.5	97	92

¹ Lorraine, which has accounted for about 12.5 percent of French coal production, was incorporated into the Reich in 1940.

Marked increases in production were achieved only in Bouches-du-Rhone, where lignite output was almost doubled; the Alpine departments producing anthracite; and the Sarlat lignite area along the upper Dordogne, called Sarladais.

The French attempts to increase production were limited by supply shortages. The domestic output of mine timber, for example, had never been large; and when imports were cut off, the only new sources of some size that were available were the new forests around the Bay of Biscay and a few other reforested areas. But the supplies were still inadequate in quantity and quality, and the urgency of the needs frequently prevented proper seasoning. The development of lignite deposits in Landes was prevented by the German refusal to sell equipment for stripping; all Germany could make was being used to expand mining in the vast brown coal fields of Germany. By 1942 electric lamps for the mines were unobtainable. When the shortage of fuel oil made it necessary to abandon the Diesel engines used in some mines, the companies returned to the use of horses. But at times it was almost impossible to buy oats for them.

By the spring of 1944 the cumulative effects of 5 years of malnutrition, overwork, and nerve strain among the miners, lack of machine replacements, and shortages of lubricants and other supplies had materially lessened output. The disruption of communications by Allied preinvasion bombing was an added complication, preventing not only the arrival of supplies but also at times the shipment of coal brought to the surface.

Strikes further lowered the output. While the miners succeeded at intervals in obtaining wage increases to meet the rapidly rising prices of essential foodstuffs and clothing, each increase became inadequate almost as soon as received, the rise in wages being met at once by a rise in prices. In theory Vichy had both prices and distribution of essential commodities under control; actually most of the scarce rationed goods could rarely be found in the markets and people had to buy on the high-priced black market or starve.

The situation was especially bad in the North Basin. Miners began to slip out of the region, alone or with their families, though in April 1943 they had been frozen to their jobs. On the first day of 1944, some 18,000 men in and around Bruay in the Department of Pas-de-Calais began a stay-in strike that spread a week later to the Lens district, where 30,000 workers were involved. The Germans promptly arrested 130 of the men designated as ringleaders and sent them to Germany, but the strike was ended only by the shutting off of all food from the area. Shortly afterward Vichy ordered a "temporary" 10-percent increase in pay, "pending settlement of the dispute."

The Loire Basin miners had also gone on strike against the poor rations; a strike in 1941 brought some concessions, but a later one, stirred by worsening food conditions, was met, as in the North, with arrests.

To some extent these strikes were spontaneous. When the Germans entered the northern mining region many of the union leaders fled. After Vichy dissolved the existing unions and attempted to follow the German model by forming a single union with appointed chiefs, some of the old leaders came back to take their places in it. The miners, however, were hostile to the new organization and refused to follow the labor collaborationists, developing as critical an attitude

toward them as toward the industrialists who were friendly to the Germans and the Vichy New Order.

By the end of 1943 the French Committee of National Liberation in Algiers had indicated that it favored a policy of terminating the concession contracts and having the mines publicly operated. With the uncertain future of private coal-mining rights and with the growing likelihood of renewed land fighting in France, the concessionaires were not disposed, even where equipment might occasionally have been available, to make any further substantial investments in the coal-mining enterprises.

CONSUMPTION

The pattern of French coal utilization changed materially during the war, but the Government's surrender to Germany did not greatly reduce the demands. On the contrary, it is probable that consumption would have been at least as high as in the years preceding the war, had comparable supplies of coal been available. With the signing of the armistice, the cartel agreements between French and German industrialists were suspended for the benefit of the German war machine. Iron and steel mills, machine shops, aluminum plants, chemical factories, linen and military cloth mills, and other industrial establishments for which materials were on hand or could be procured were set to work at capacity to make goods desired by Germany. At first a good part of the production was to meet German "reparation" demands, but in time the Germans found that they could get better results by placing orders on a commercial basis. This greatly stimulated French industrial production, thereby increasing the burden on the limited stocks of coal.

Coal distribution was therefore handled on a priority system, with first place going to industries and services of direct German military importance, second place to industries making goods on other German orders, and last place to enterprises serving the French population.

The reincorporation of Alsace-Lorraine in the Reich removed from French control some 6,000,000 tons of coal a year, but did not complicate the supply situation, for even before the war the East was consuming more coal than it produced. With its iron and steel furnaces working at capacity, the requirements of the East rose rapidly, but they were met largely from local or German sources, rather than French.

In the pre-war period approximately half the coal consumed in the East (not counting coal used at the mines) was of foreign origin, in part because Moselle coal, unless mixed with other types, was not suitable for special needs of the local mills, and in part because the purchase of high-grade Ruhr coal enabled sale of Lorraine iron ore to Germany. The same barges that brought in the Ruhr coal carried back the French ore. In the period immediately following the surrender, the Germans attempted to have the French increase shipments of coal from the North Basin to Alsace-Lorraine, in order to relieve the demands on Ruhr coal, but this limited the coal supply for the northern French industries (also busy on German orders) and upset the established transportation pattern. Some French coal continued to go into Alsace-Lorraine and eventually some eastern coal also came into France, as in the past, but the total volume of

the border transactions (including some between northern France and Belgium) was inconsiderable.

Until the end of 1942 the French African colonies constituted a burden on the French coal supply. They needed coal for their power, transportation, and industrial facilities, which were operated partly for the Afrika Korps and other German beneficiaries. Moreover, the boats bringing back the vegetable oils and other African products desired by the Germans used considerable quantities of coal.

The destruction of French rolling stock during the military operations of 1940 and the removal thereafter of locomotives and even rails to central and eastern Europe reduced the railroad coal requirements only slightly. What equipment remained was worked to capacity. Moreover, the steam locomotives that the Germans left in France were generally old, inefficient types (heavy coal consumers), and as they wore out their fuel consumption progressively increased.

In addition to the rail and industrial requirements there were a variety of unusual coal demands caused by the occupation. For example, the Germans used French coal to heat the barracks and other living quarters for their military and civilian establishments in France. The occupant also required coal for cooking purposes, not only for the troops and missions, but also for the foreign workers brought in to build fortifications. The total requirements having high priority were so great that it was necessary in the early weeks of each year to close all industrial establishments that did not fall into the categories designated by the Nazis as essential. Such nonessential consumers and of course ordinary householders were at all times greatly restricted in their use of coal, gas, and electric power.

The Vichy regime early attempted to relieve the coal situation by further expanding the hydroelectric power facilities. But the efforts were of little avail, for a series of dry summers reduced the amount of power available even from some of the existing plants.

By the spring of 1944 the disruption of transportation by Allied bombing had created a series of supply crises in which at times even the most favored consumers were left without fuel. Subsequent military operations further accentuated the critical transportation situation.

REORGANIZATION AND POSITION OF THE COAL INDUSTRY UNDER VICHY

REORGANIZATION OF THE INDUSTRY

Almost immediately after it came to power, the Vichy government attempted to reorganize French industry in accordance with the German model. This required the dissolution of the existing employer and worker associations and the reunion of employers by industrial groups under Comites d'Organisation (organizing committees). The Comites were intended to be temporary agencies while detailed plans for the corporative state were being worked out. Until the so-called professional families of the new authoritarian economy could be built up, executive functions were vested in the organizing committees. Each Comite consisted of a chairman or director and some other representatives of the industry. Industries that were cartelized before the war usually had very small Comites, since little organizing was required.

The chairman of each Comite had supreme authority over his industry, though he was expected to consult with his colleagues before making his decisions and these were subject to review by the Secretary-Minister of Industrial Production, the chairman's superior officer in the industrial pyramid.

The functions of the Comites initially were—

The making of industry surveys and the planning of production.

The organization of supply procurement to facilitate fulfilment of the production programs.

The control of operations and competition and the rationalization of industry.

The preparation of price schedules for the approval of the national price commissioner.

Although coal was a critical problem from the beginning of the war, it was not found necessary to set up the Comite d'Organisation de l'Industrie des Combustibles Mineraux Solides (Organizing Committee for the Solid Mineral Fuels Industry) until November 9, 1940. Its members were Aime Lepercq, director-general of the Schneider-dominated Union Europeene Industrielle et Financiere; Maxime Bucher, director-general of the Lens mining company; and Emile Marturer, director of the Blanzay mines.

The membership of the fuel Comite was characteristic of those of other industries that had already been highly organized. Whereas businesses not previously cartelized had large Comites consisting of the outstanding men in the most important companies, industries such as coal had Comites whose members were of less than first rank, primarily persons of technical and financial training who had been accustomed to guarding the industries' interests. Bucher had been a member of the executive bureau of the dissolved Comite Central des Houilleres and Marturer had been president of the regional cartel organization in central France.¹⁷

Vichy also established an Office Central de Repartition (Central Distribution Office) with numerous subsections to handle the allocation of materials and products. The decisions of the Repartiteur of each Office were subject to review only by the Secretary-Minister of Industrial Production. In general, the Repartiteur of each industry was also director of the industry's Comite. In time the functions of the two agencies were largely fused, though their separate identities were maintained.

After the war began the powers of the Comptoir des Ventes, sales agency of the Comite Central des Houilleres (the coal cartel, described above) had been strengthened, giving it a semiofficial status. It was abolished with the Comite Central in August 1940. Almost immediately, however, the Comptoir was reconstituted, and gradually both the solid fuel Comite and the fuel Office de Repartition delegated their official functions to the rejuvenated cartel sales office. Such functions included the collection of data on all phases of the industry and the establishment of fuel prices. Thus, the sales office not only

¹⁷ The predominance of men with financial experience as heads of the first Comites of the important industries is noticeable. Jules Aubrun of Lazard Freres became director-general of the Comite that officially replaced the Comite des Forges, with Leon Daum, Jean Dupuis, and Eugene Roy as his official colleagues. The late Pierre Pucheu, closely connected with the Banque Worms, became director-general of the machine industry.

set the prices but also provided the data used in determining the extent to which public subsidies should be provided for the coal companies.

Under the Vichy reorganization of the government, the Direction des Mines and its field organization were placed under the new Secretary for Energy.¹⁸ In 1939 the power of the Direction des Mines over the mining companies had been considerably enlarged, as a wartime measure. It had received authority to transfer men, machinery, and even equipment to the mines where they would be most efficiently used, if such transfers were necessary to the national defense. When, in 1940, Vichy vested this authority in the Comité d'Organisation of the solid fuel industry, some delicate adjustments were necessary to prevent a disruption of the hitherto smooth relations between the Direction and the coal companies.

As the situation was explained in 1942 by a former chief of the Direction,¹⁹ "It is still the official administration that grants mining concessions and determines the closing or amalgamation of enterprises. But it no longer exercises its rights without taking the advice of the Comité d'Organisation." He added that the Comité had "avoided interfering in the operation of enterprises, except by persuasion. Only in one or two limited cases have they asked the Government to requisition a mining concern in order to eject an undesirable owner and put in a company in a better position."²⁰

POSITION OF THE COAL INDUSTRY UNDER VICHY

After the initial period of confusion, the leaders of the coal industry rapidly accommodated themselves to the new system, though the German-inspired demands for detailed operational and financial reports were an annoyance. The situation was less satisfactory, however, to the promoters of the corporate state, who found that the emergency powers granted to the Comités had so strongly fortified the position of the coal and other important industries that it was extremely difficult to displace them with the Fascist corporations in which the industrialists would be subordinate to the politicians.²¹

The mining interests who had successfully defended large price increases by threatening a producer's "sit-down" strike in 1936 were still able to command their own destinies during the German occupation. Dividends were paid regularly. As is the custom in France, however, the dividends represented but a portion of actual operating profits. Substantial returns were retained in the mining corporations by charging additions to reserves against current expenses. Thus liquid assets were accumulated which have been invested, as far as possible, in inflation-proof properties.

The position of the coal companies under Vichy can be gaged by the criticism leveled at the solid fuel and other Comités by the pro-

¹⁸ The first Secretary for Energy was Henry Lafond, a state engineer who had become prominent in the mining and other participations of the Banque de l'Union Parisienne and of Banque Mirabaud.

¹⁹ Inspecteur-general Blum-Picard was removed from his post in deference to the German racial prejudices and left France.

²⁰ Blum-Picard did not specify the criteria used in determining what constituted "desirability"; nor did he name the companies involved in the operations.

²¹ A confused "law" of October 4, 1941, had laid the foundation for the corporate state. In an attempt to adapt the Fascist pattern to France, the industrial "corporations" were to be called "professional families." The plan called for the vertical and horizontal organization of employers and workers by industry and region, with power spiralling downward from appointed leaders, each of whom was to have supreme authority for the layer below him while he himself was responsible to the leader at the layer above. The "law" of October 4, 1941, was never fully effectuated.

ponents of the corporate state. *Les Nouveaux Temps*, for example, on September 7, 1943, said that the Comites were "negators of private initiative, disloyal competitors of the industrialists and merchants who refused to accept their dictation. The most crying abuses are cited in every region: Unjustified withdrawals of purchasing cards; unwarranted suppression of the right to manufacture; systematic refusal of raw materials, etc. Only rarely has the matter received judicial recognition. If it were possible for the courts to go to the bottom of things, how quickly it would be seen that they (the Comites) were the origin of scandalous fortunes and of many ruins."

The mining interests are in an excellent position to profit from nearly any turn of economic events, particularly one involving inflation. Profits and the charges to expenses for plant depreciation have not been utilized to keep up a high state of operating efficiency in the mines and collieries but have been utilized to acquire equities in chemical, electric power, gas, and other enterprises. Even if the mines are nationalized, substantial sources of profit will still be under control of the mining corporations. Any compensation received for their mining properties, if sufficiently liquid, can be utilized for post-war expansion or extension into new fields.

THE GERMAN IRON AND STEEL INDUSTRY

NATURE OF THE GERMAN IRON AND STEEL INDUSTRY

A. INTRODUCTION

The German iron and steel industry, with an annual capacity of approximately 25,000,000 metric tons of crude steel, is second only to that of the United States, and normally is the world's most important exporter of steel products.

The Treaty of Versailles deprived Germany of a considerable proportion of her supply of iron ore (Alsace-Lorraine) and of many important mills. In spite of this handicap, the industry was able to approximate 1913 production figures as early as 1929. This achievement was made possible by a wholesale modernization and rationalization of existing plants, in part, with the aid of American loans under the terms of the Dawes and Young plans. Because the German economy could not absorb the increased product of this augmented industry, a very strong pressure to export at all costs was manifest throughout the period of the Weimar Republic. Soon after the rise of Hitler to power, rearmament took up the slack and exports were made, not because of the absence of domestic outlets, but primarily because of the continuing need for foreign exchange.

B. LOCATION OF THE GERMAN IRON AND STEEL INDUSTRY

Economic factors controlling the location of the iron and steel industry are, primarily, the location of suitable fuels in relation to iron ore and low-cost transportation, both to the point of assembly of the raw materials and for the distribution of end products. The two great coal fields—the Ruhr and Saar Basins, on the one hand, and the Silesian coal fields, on the other—represent by far the largest iron and steel-producing areas.

The Ruhr district, situated at the focal point of an excellent water-transport system, easily accessible to the great minette ore fields of France and overlying enormous high-grade coal deposits, at present accounts for about two-thirds of total German production. In 1937, the Ruhr accounted for about 70 percent; the Saar for 12.1 percent, and the rest of Germany, including Silesia, for about 18 percent of the total German output. This regional concentration has facilitated the organization of industrial combines and cartels.

A regional break-down of German steel production for the period 1929-36 is set forth in appendix II. From an examination of this appendix, it is apparent that the drop in the relative capacity and production of the Ruhr region ("Rhineland-Westphalia") merely reflects the reincorporation of the Saar in 1935. Actual production in the Ruhr increased sharply between 1934 and 1936.

For the 12-month period ending July 31, 1939, German rolling mills and forges produced about 18,000,000 tons of finished and semi-

finished products. The discrepancy between this total and that for crude-steel production for the same period (about 25,000,000 metric tons) is accounted for by the scrap loss inherent in converting steel ingots into rolling-mill products. The detailed break-down of German rolling-mill production for this period, as shown by appendix III, indicates that shapes, forgings, plates, tubes, and wire were the more important products, measured by volume of production.

C. PRESENT PATTERN OF GERMAN STEEL PRODUCTION

Appendix IV sets forth the latest available pattern of German steel production, broken down by process used. Over half of all German steel is produced by the basic open-hearth process, while a little over 40 percent is accounted for by the basic Bessemer (Thomas) process. The remainder of production is accounted for by foundries and electric furnaces, both of which processes are of secondary importance. Residue slag resulting from either the basic Bessemer or basic open-hearth process yields phosphate fertilizer of high quality, which is widely used in German agriculture.

While it is cheaper to produce steel by the basic Bessemer process, the resultant product is inferior in quality to that produced in open-hearth converters.

D. SOURCES OF RAW MATERIALS

In 1938 Germany consumed more than 33,000,000 metric tons of iron ore, of which only 11,145,000 tons were produced domestically. The principal German deposits of iron ore are in the Siegerland, Lahn-Dill, Peine-Salzgitter, and Bavarian districts. Most of these deposits are small, widely scattered, and in many cases remote from the coal fields. The German ore is generally lean, averaging less than 45 percent iron after treatment. In contrast, the Swedish ores imported into Germany range from 58 to 72 percent iron and the Spanish ores from 48 to 58 percent.

The most important sources of imported iron ore are Sweden, France, and Spain in that order. Normally Sweden supplies between 40 and 50 percent of Germany's total iron ore imports. A summary of the sources of Germany's ore supplies is shown in appendix V.

The shift from the lean Lorraine ores to the rich Swedish and Spanish ores after 1925 has been an important factor in revolutionizing German blast furnace practices. This shift has enabled fuel economies and greater output per furnace. As shown by appendix VI, there has been a progressive downward trend in the quantity of material consumed per ton of pig iron and of ferroalloys produced; these amounted to about 4.1 tons in 1913, 3.9 tons in 1923, and 3.5 tons in 1936.

In contrast to the short supplies of iron ore, Germany has abundant resources of coal. German production of coking coal is normally sufficient not only to meet all domestic requirements but also to provide an exportable surplus. The principal coal field is located in the Ruhr; others are found in the Saar, Silesia, and Saxony.

On the other hand, Germany is deficient in manganese, necessary for the deoxidation of steel. The country must also import almost all other ferro-alloys and alloy materials, such as nickel, molybdenum, chrome, and tungsten. In recent years Germany has imported most of its tungsten from the Iberian Peninsula, most of its chrome from

Turkey, and most of its nickel and molybdenum from Scandinavia.

Germany's iron and steel fabricating industry produced great quantities of industrial scrap as a byproduct of operations. However, sharply increasing demand after 1934 made it necessary to increase imports of this commodity. Scrap imports rose from 272,000 long tons in 1935 to 549,000 tons in 1937.

E. FOREIGN TRADE

In pre-war years the German iron and steel industry was dependent upon export trade for a large share of its market. Between 1929 and 1933 the industry exported about half of its total production; after 1934 this percentage dropped to about 25 percent, largely because of the demands of the rearmament program.

In 1936, the last year for which accurate country-destination statistics on German steel exports are available, Germany exported a total of almost 4,000,000 net tons of steel products. As shown by appendix VII, the Netherlands, Denmark, Sweden, Switzerland, and Great Britain were Germany's best European customers; while Brazil, China, and India provided the principal non-European markets. Germany accounted for the bulk of the steel imports of Bulgaria, Greece, Hungary, and Spain; and supplied from one-third to one-half of the import requirements of Italy, the Baltic States, and Rumania.

In terms of value, Germany's principal export products were shapes and rods, plates and sheets, and tubes and pipes, in that order.

OWNERSHIP

A. THE LEADING GERMAN IRON AND STEEL COMBINES

Large industrial units have always been a characteristic of German heavy industry. After the World War and the subsequent inflation these large vertical combines became fewer in number and larger in size. The peak of concentration was reached in 1926 when several large combines, representing more than half of all German iron and steel capacity at the time, merged to form a supercombine, the Vereinigte Stahlwerke. In 1929, 3 firms out of 26 accounted for 68.8 percent of all German pig-iron production; 4 out of 49, for 68.3 percent of crude steel; 3 out of 59, for 55.8 percent of rolling-mill products.

These large combines are also of significance in industries other than iron and steel. They produce almost three-quarters of the German long-distance gas supply, are very important in the cement industry, and own most of the large coal mines in Germany. Because of their ownership of important brown-coal deposits, from which the bulk of German electric power is produced, the iron and steel combines play a leading role in the German electric power industry. Also, many of the recently built plants producing synthetic petroleum from coal are subsidiaries of iron and steel combines. In 1943 it was estimated that no less than 70 percent of total German coal production (in bituminous coal equivalents) were controlled by iron and steel combines.

Several of these so-called iron and steel combines are even more important as fabricators, making armaments, machines, motors, and machine tools. For example, Friedrich Krupp Gusstahlfabrik at

Essen and the Grusonwerk A. G. at Magdeburg are primarily fabricators. The Krupp combine consumes almost all of its considerable steel production in its subsequent operations. Another important fabricator is Gutehoffnungshütte A. V., which controls the following large machine builders: (a) Maschinenfabrik Augsburg-Nürnberg (M. A. N.); (b) Maschinenfabrik Esslingen; (c) Zahnradfabrik Augsburg. The Hoesch combine controls Maschinenfabrik Deutschland. Humboldt-Deutz Motoren, in itself a large combine, is owned by Klöckner Werke, and the Flick combine controls Linke-Hoffman A. G., Breslau. Rheinmetall Borsig A. G., Dusseldorf, is part of the Hermann Göring combine.

The relative importance of the leading German iron and steel combines, based upon 1943 iron and steel capacity, is set forth in appendix IX. Vereinigte Stahlwerke alone accounts for about 40 percent of German steel production; and the following 12 firms are responsible for more than 90 percent of the total German output:

1. Vereinigte Stahlwerke A. G., Düsseldorf.
2. Krupp, A. G., Essen.
3. Gutehoffnungshütte A. V., Oberhausen.
4. Klöckner-Werke, Duisburg.
5. Hoesch-Köln-Neuessen A. G., Dortmund.
6. Hermann Göringswerke.
7. Mannesmann Röhren A. G., Düsseldorf.
8. Flick, K. G., Berlin.
9. Ballestrem Combine (including Vereinigte Oberschlesische Hüttenwerke), Gleiwitz.
10. Röchlingsche Werke, Völklingen.
11. Otto Wolff Eisengrosshandlung, Cologne.
12. Ilseder Hütte.

B. GOVERNMENT PARTICIPATION IN THE STEEL INDUSTRY

At present the German state exercises effective control over an important segment of the iron and steel industry through direct ownership of large blocks of shares in important combines. This control extends to more than 50 percent of Germany's total steel producing capacity. In addition, the state has worked very closely with other combines, especially those important in the manufacture of munitions, through direct subsidies and research grants. The Krupp, Flick, and Mannesmann combines are outstanding examples of this kind of relationship.

The German Reich owns controlling blocks of shares in the A. G. Reichswerke Hermann Göring, Vereinigte Stahlwerke A. G., and Ilseder Hütte A. G.

1. *A. G. Reichswerke Hermann Göring.*—This combine was founded by the Nazi state in 1937 for the purpose of exploiting low-grade domestic ore in the Salzgitter district. With the triumph of German arms, the combine expanded greatly through the acquisition of valuable properties in conquered territories. The German state thus projected its economic domination in this and other fields beyond the borders of Germany. The enterprises of the combine incorporated in greater Germany alone were capitalized at about 2.2 billion reichsmarks in 1941. All the voting stock is vested in the Reich. The annual crude steel capacity of these enterprises is about 2 million metric tons, or approximately 8 percent of the total German steel-making capacity.

Although the properties of the combine are vast and widespread, control is centralized in one holding company, the A. G. Reichswerke Hermann Göring, and its three subsidiary holding and operating companies (1) Reichswerke A. G. für Bergbau und Hüttenbetriebe, Hermann Göring (mining and steel making), (2) Reichswerke A. G. für Waffen und Maschinenbau, Hermann Göring (armaments and machinery), and (3) Reichswerke A. F. für Binnenschifffahrt, Hermann Göring (inland transportation).

The most important holdings of the Göring combine in Germany itself are the iron mines and steel works of Salzgitter, the quality steel armament plants of Rheinmetall Borsig at Berlin and Düsseldorf, and the Luitpoldhütte in Bavaria.

Salzgitter operations were undertaken only as part of the effort to attain national economic self-sufficiency. The steel produced at this plant is of such poor quality that the Nazis themselves have operated it only intermittently. Vereinigte Stahlwerke owned the Salzgitter ore fields for many years but deemed them unsuitable for the manufacture of marketable steel.

2. *Vereinigte Stahlwerke A. G., Düsseldorf.*—This combine is the most important steel producer in Europe and second only to the United States Steel Corporation in the world. It has an annual capacity of almost 10 million metric tons or approximately 40 percent of the total German steel-making capacity.

On March 4, 1932, the Brüning government bought the controlling interest in the combine from Friedrich Flick, who had secured it in 1930. Thus, the largest steel combine in Germany was under state control when Hitler took over the Government a year later. In keeping with the alleged Nazi policy of "reprivatization," Vereinigte Stahlwerke was reprivatized, the process taking place between 1933 and 1935. The capital of Gelsenkirchner Bergwerke, the largest constituent member of the Vereinigte Stahlwerke, was increased to a point where the Reich's holdings in that company amounted to less than a majority.¹ The Reich remained, however, by far the largest stockholder in the combine through its ownership of Gelsenkirchner and other stock.

In 1936, the shares of Vereinigte Stahlwerke were distributed approximately as follows:

<i>Percent of total Vereinigte Stahlwerke share capital</i>	
Holder:	
1. The German Reich (directly or indirectly)	25
2. The Thyssen group	14
3. Rheinische Stahlwerke (I. G. Farben)	12
4. The Otto Wolff combine	9
5. Gutehoffnungshütte	6
6. Small diffused holdings in the hands of the public	34
Total	100

The holdings of the Reich were again increased by the confiscation of the Thyssen holdings after the flight of Fritz Thyssen in 1939. Thus, the Reich may now control as much as 39 percent of the stock of the Steel Trust.

3. *Ilseder Hütte A. G., Peine.*—The combine, in which the German Reich has a holding of 26 percent, owns the only important high-grade

¹ Before the reshuffling, the Reich held 150 million marks out of a total of 250 million marks of Gelsenkirchner shares. Gelsenkirchner, in turn, held 256 million out of a total of 800 million Vereinigte Stahlwerke shares, and 1 of its subsidiaries held another 213 million marks worth of V. S. shares.

ore deposit in Germany. While small by comparison with a few of the Ruhr giants, its capacity of 700,000 tons of high-grade steel per annum compares favorably with that of mills in almost any other section of Europe. In addition, the Reich owns 100 percent of shares of Ilse Bergbau, which provides coal for Ilse Hütte.

C. RELATION BETWEEN LEADERSHIP OF THE IRON AND STEEL COMBINES AND THE NAZI PARTY

While no iron and steel combine as such is the property of the Nazi Party, per se, many of the owners and managers of these combines have been either party members, supporters, or beneficiaries. In 1932 Hitler was introduced to the Ruhr magnates at the Industrialists' Club in Düsseldorf by Geheimrat Kirdorff, of the Vereinigte Stahlwerke. Krupp and Thyssen were among the most important early contributors to the Nazi Party, and continued to support it later on. In some cases the steel combines furnished arms to Hitler's followers.²

Among the present leaders of the German iron and steel industry may be found some of the most ardent Nazi supporters in all Germany. A partial list of these would include Wilhelm Zangen, of Mannesmann; Krupp von Bohlen und Halbach and Loesser, of Krupp; Hermann Röchling, of the Röchlingshe Werke; Poensgen and Voegler, of Vereinigte Stahlwerke; and Friedrich Flick, of Flick K. G. These men hold leading positions in the powerful quasi-governmental control agencies, such as the Reichsvereinigung Eisen and the Eisen und Stahl Gemeinschaft, further consolidating the dominant position of these few combines in the industry. Their companies have been the beneficiaries of industrial pillage in occupied countries, and have benefited from "aryanization" and reprivatization within Germany.

INTEGRATION OF THE CONTINENTAL IRON AND STEEL INDUSTRY INTO THE GERMANY WAR ECONOMY

Whether conquered, neutral, or ally, almost every country in Europe is contributing to the German war machine in a predominantly one-sided arrangement. German methods of exploiting the resources of other nations have been very flexible. In the realm of heavy industry, the Nazi economic programs have integrated the steel industries of the several European countries into one huge tributary iron and steel industry. The result is a flow of finished steel products into the Nazi war machine.

At present, every iron and steel works in German-dominated Europe which is permitted to operate is working on German orders, whether the Germans have taken possession of the plant or have permitted the old management to continue. The Nazis determine how much of a specific plant's capacity to use or whether to close it entirely and divert the raw materials and manpower to a more efficient mill or one making a better grade of steel.

The patterns of expansion and exploitation fall into three main categories:

1. The integration of industries into the state-owned Hermann Goering Works, a prime example of business piracy and exploitation.

² Senate Committee Investigating the Munitions Industry, pt. 5, pp. 1198-1199; pt. 12, pp. 2783, 2809, 2889.

2. The taking over of foreign mines, steel works, and rolling mills by private German concerns.

3. The forcing of those properties, which were not absorbed, to work on German account, with concomitant control and inspection by the Nazis or collaborationist governments, and dependence on the Reich for raw materials and labor supply. In many cases there has been further integration by incorporation of steel works into the German cartels or Government associations.

The net effect of 5 years of seizure, integration, and exploitation has been to increase greatly Germany's capacity to wage war, without a proportionate increase in costs, for, as will be shown, other countries have borne the brunt of financing the expansion of enemy steel capacity.

Because it may be said to personify the Nazi state itself, and because of the remarkable nature of its structure and personnel, the Hermann Goering Works is discussed first.

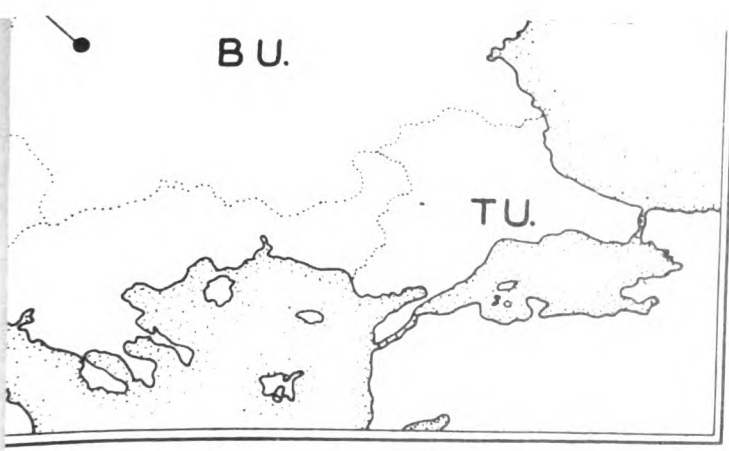
DEVELOPMENT OF THE TOP HOLDING COMPANIES OF THE HERMANN GOERING WORKS

The Reichswerke A. G. fuer Erzbergbau und Eisenhuetten "Hermann Goering" was founded July 15, 1937, with an initial capital of 5 million reichsmarks, provided by the Reich. The justification given for the creation of this Government corporation was that private firms in German heavy industry had opposed the exploitation of low-grade iron ores in the vicinity of Salzgitter, which were regarded by Marshal Goering, in his capacity of director of the four-year plan, as necessary to fill an important gap in the German iron supply.

The powers granted to the new company included the right to acquire title to all unexploited iron ore and other mineral deposits, to exploit these deposits in the national interest, and to issue stock to the holders of these appropriated mining rights and to private investors.

In April 1938 the Goering Iron Works announced an increase of its capital stock from 5 million to 400 million reichsmarks. As a result of this increase, the Goering Works within less than a year after its establishment, became the third largest German corporation; only I. G. Farbenindustrie, with a capital stock of 720 million reichsmarks, and the steel trust, Vereinigte Stahlwerke, with a capital stock of 460 million reichsmarks, surpassed it. Under the 1938 refinancing, the Reich acquired the entire new common stock, 265 million reichsmarks in value, thereby retaining 100 percent voting control of the company. Other shares were issued in the form of nonvoting preferred shares. A small portion of the preferred shares, 10 million reichsmarks, seems to have been turned over to Goering himself and perhaps to other favored Nazi personages. The bulk of the preferred shares, 120 million reichsmarks, was taken over by a bank consortium, which allotted 95 million reichsmarks among the German iron and steel firms connected with the four-year plan. By this device, these industrialists were made to assist in financing a state enterprise that was to be their most powerful rival.

Following the annexation of Austria and, later, the invasion and incorporation of Czechoslovakia, the Goering Works underwent very



extensive expansion in its corporate, territorial, and functional structure. On July 7, 1939, a holding company was created, the A. G. Reichswerke "Hermann Goering," with a stock capital of 100 million reichsmarks completely state owned. The holding company seems to have been formed primarily as a means of controlling the participations obtained by the Goering Works in the well-known Austrian Veitscher Magnesite Works and the Czechoslovak Vitkovice Iron and Steel Works.

According to the German press, however, the purpose of this move was the broader one of concentrating in the new company all holdings of the Reich in the iron-producing industry, as well as the holdings of the companies controlled by the Reichswerke A. G. fuer Erzbergbau und Eisenhuetten "Hermann Goering" in the iron fabricating and river shipping fields. The latter company was thereby supposed to resume its original function as a producer of iron and steel.

Continuing expansion of the Goering interests at home and abroad resulted in January 1941 in a further drastic reorganization of the Goering combine. A new form of organization was created, consisting of a central holding corporation serving to coordinate three distinct holding and operating corporations. The top holding corporation continued to be A. G. Reichswerke "Hermann Goering"; its capital, however, was raised from 100 to 250 million reichsmarks. The largest of the three holding-operating corporations controlled by top corporation comprised mining and iron and steel enterprises; this holding-operating corporation was called Reichswerke A. G. fuer Bergbau und Huettenbetriebe "Hermann Goering," and had a capital stock of 560 million reichsmarks, and reserves of 118 million reichsmarks. The second corporation integrated armaments and machinery works under the name of Reichswerke A. G. fuer Waffen und Maschinenbau "Hermann Goering" with a capital stock amounting to 80 million reichsmarks, and reserves of 13½ million reichsmarks. In the smallest corporation—Reichswerke A. G. fuer Binnenschifffahrt "Hermann Goering"—were concentrated all the Goering transportation interests. The stock capital and reserves of this corporation amounted to 12½ and 11½ million reichsmarks, respectively.

IMPORTANCE OF THE HERMANN GOERING WORKS

By 1941 the enterprises of the Goering Works incorporated in Germany alone reportedly accounted for a capital stock of at least 2.2 billion reichsmarks, or roughly 1 billion dollars at the then current official rate of exchange. Of this sum, 1.7 billion reichsmarks represented the share capital of the combine's German mining, iron production, and refining companies. The over-all importance of the Goering Works in Germany may be judged by the fact that in 1941 its capital stock constituted some 10 percent of the total share capital of all German mining, iron, and steel companies.

The Goering combine now far outranks I. G. Farbenindustrie and Vereinigte Stahlwerke. It constitutes, in fact, the most extensive vertical combine in European heavy industry, employing at least 600,000 persons. Its interests cover many of the most important iron and coal mines, iron and steel mills, armament factories, shipping, building and trading corporations of Nazi Europe, from Norway to Rumania. The extent of its acquisitions and its importance in Euro-

pean mining, heavy industry, and essential enterprises is suggested by the following figures indicating the percentage of output or capacity controlled by the Goering combine in some major fields:

- Nearly 100 percent of Austrian iron and steel production.
- Nearly 100 percent of Rumanian iron and steel production.
- Nearly 100 percent of Yugoslavian copper production.
- Nearly 80 percent of Sudetenland lignite output.
- More than 50 percent of Czechoslovakian iron and steel production.
- More than 50 percent of Polish iron and steel production.
- More than 50 percent of Danubian shipping.

A more detailed account of the power and ramifications of the Goering combine in Axis Europe will be found in appendix A, which lists 128 companies and properties clearly owned or controlled, in whole or in part, by the combine.

The list of controlled enterprises includes many notable names in European industry and commerce. Best known of all is perhaps the Skoda Works of Czechoslovakia. These works constituted one of the major armament centers of Europe, producing such varied products as airplanes, automobiles, tanks, locomotives, and explosives. They have become one of the mainstays of the Wehrmacht, especially after the bombing of the German armament factories which were located nearer the air bases of England.

Another valuable addition to the Goering arsenal was the Ceskoslovenska Zbrojovka. This company, with its 10 branches, specialized in almost every type of armament. These included military binoculars, aviation cameras, artillery range finders, helmets, heavy anti-tank machine guns, airplanes, and submarines. The company also produced automobiles and ships.

The largest single iron and steel corporation outside Germany, Vitkovice Mines, Iron and Steel Works of Czechoslovakia, has also been taken over by the Goering combine. This company produced yearly over 3,000,000 tons of coal, 1,000,000 tons of coke, 750,000 tons of pig iron, and 800,000 tons of steel. It owned iron mines as far away as Sweden, and had its own shipping facilities for the transport of these ores. In Czechoslovakian economy, it occupied a position comparable to that of the United States Steel Corporation in the United States.

Occupying a similar position in Austria to that held by the Vitkovice Works in Czechoslovakia is the Alpine Montan, another member of the Goering combine. This company provided practically all of the iron and steel needed by Austria. In 1939 its mines produced 3,000,000 tons of iron ore; its coal output amounted to 2,000,000 tons, and its foundries turned out 400,000 tons of pig iron and 400,000 tons of steel.

In Poland, the combine acquired, through a special subsidiary, at least 33 percent of the Polish hard-coal mines. In Yugoslavia, the combine obtained one-third ownership of the largest copper mines in Europe, the Bor Mines, which account for 44 percent of the annual copper output of all Axis Europe.

In Roumania, the largest firms in heavy industry, the Reschitza and the Malaxa Iron Works, were incorporated into the combine. Reschitza produced annually 70 percent of Roumania's commercial iron, 80 percent of its steel, and 100 percent of its blast-furnace coke. Malaxa manufactured not only iron and steel, but arms, munitions, and machines.

In order to assure control of transportation, vital to the functioning of heavy industry, the combine had to obtain an adequate shipping fleet. Acquisition of the Erste Donau Dampfschiffahrtsgesellschaft of Vienna gave the combine the dominant position in Danubian shipping. This company not only had the largest fleet on the Danube but also various shipping subsidiaries in Bulgaria and elsewhere, and the largest inland shipyard of Europe, located at Budapest.

TECHNIQUES AND LEGAL BASIS USED IN THE EXPANSION OF THE GOERING COMBINE

On July 23, 1937, eight days after the original Goering Works were established, Marshal Goering bestowed on the Goering Works the benefits of the March 29, 1935, law authorizing the condemnation of land for the purposes of the Reich's defense forces. This grant of power enabled him to announce the compulsory amalgamation of the Salzgitter mining properties into the Goering empire. Thus, as early as 1937 the Goering Works were placed in a position to exercise a right similar to that of eminent domain in America, and almost on a par with the Reich itself.

After the Goering combine was reconstructed at the end of 1940, all of its branches and subsidiaries were forced to incorporate in their company charters a sentence stating that their enterprises belong to the Goering Konzern and that the A. G. Reichswerke "Hermann Goering" acts as a holding company for them. On the basis of this formal act, the benefits of the 1935 expropriation law were extended to the branch enterprises of the Goering Combine. Accordingly, such subsidiaries as Alpine Montan A. G. in Austria, and the Sudetenlaendische Treibstoffwerke in the Sudetenland were permitted to lodge large claims against private real estate and immovables.

The charter provision was also the basis for allowing subsidiaries to offset profits made in one area or sector of their activity against losses incurred in another area or different field of activity. Thus, the losses resulting from the operation of the Salzgitter mines were covered out of the abundant earnings of Rheinmetall-Borsig.

The Goering Combine is one of the greatest industrial empires ever built. The major methods devised and used to achieve this swift development have been the following:

1. *Direct investment by the Reich.*—Examples of this are—

(a) Investment of 270 million reichsmarks in 1937-38 in the Goering Iron Works, Berlin.

(b) Investment of 4½ million reichsmarks in 1939 in the Goering Iron Works, Linz, Austria.

(c) Investment of 250 million reichsmarks between 1939 and 1941 in the A. G. Reichswerke "Hermann Goering."

2. *Transfer of Reich property to the Goering Combine.*—This transfer has been effected usually in exchange for such assets as H. Goering Works shares, or for cash. Examples of such transfers are:

(a) The transfer by the VIAG, the Reich's leading industrial holding company, of its shares in the Rheinmetall-Borsig, A. G., Duesseldorf, one of the leading metallurgical concerns of Germany, and of its shares in large Austrian industrial firms controlled by the leading Austrian bank, the Creditanstalt Bankverein of Vienna, a majority of whose stock VIAG had acquired.

(b) The transfer by the Haupttreuhandstelle Ost, the official German Property Custodian Bureau for Eastern Europe, of various Polish properties acquired by the Reich to the Goering subsidiary in Poland.

3. *Transfer of property by subordinate German state organizations.*—An example of this is the turning over of Luitpold Foundries in Amberg to the Goering Iron Works by the Bavarian state-owned Berg-Huetten-und Salzwerke A. G.

4. *Forced investment by private firms in the Goering combine.*—The only known instance of this is the investment by all of the iron and steel companies of Germany of 95 million reichmarks in the Goering Iron Works in 1938.

5. *Exchange of Properties.*—The most notable example of this is the acquisition by the Goering Iron Works of some valuable coal mines of the Flick combine in exchange for a coal mine in Saxony.

6. *Confiscation of State property.*—For example, in Austria, Czechoslovakia, and Poland.

7. *Confiscation or expropriation of private property without compensation.*—Examples of this are—

(a) The Thyssen G. m. b. H., one of the most important heavy industry combines of Germany.

(b) Properties held by Jews, taken over on various grounds, usually that of "aryanization." The instances of Baron Rothschild in Austria, the Petschek family in Czechoslovakia, the Malaxa Works in Rumania, and the Preussengrube A. B. of German Upper Silesia, are the most notable.

(c) Properties of Polish citizens in the Polish territories incorporated into Germany, in cases where the owners had (1) fled, (2) acquired the property since September 1, 1939, (3) settled after October 1, 1918, in areas which had belonged to the pre-1914 Reich, or (4) owned property required in the public interest, particularly in the defense of the Reich or in the strengthening of German residents or settlers.

8. *Purchase of private property through a grant of shares in the Goering combine.*—The Salzgitter mining rights of Vereinigte Stahlwerke, Ilseder Huette were acquired in this way.

9. *Outright purchase of property at par or above par.*—Examples of such purchase are the:

(a) Rheinmetall-Borsig of Germany.

(b) Steyr-Daimler-Puch, A. G., of Austria.

(c) Steirische Gusstahlwerke, A. G., of Austria.

(d) Simmering Maschinen-und Waggonbaufabrik, A. G., of

Austria.

(e) Mines de Bor of Yugoslavia.

(f) Alpine Montan, A. G., of Austria.

10. *Direct administration, as trustee and manager on behalf of the Reich.*—Such administration has been assumed, for example, over:

(a) De Wendel smelting works in Lorraine.

(b) Union de Consommateurs in Lorraine.

(c) Dunderland Iron Ore Mines in Norway.

APPENDIX A

Companies and properties controlled by A. G. Reichswerke "Hermann Goering"

Name of company or property	Location	Nature of enterprise	Approximate date of acquisition or founding	Control
GERMANY				
1 A. G. Reichswerke "H. G." ¹	Berlin.....	Holding company.	1939	Founded by the Reich.
2 Reichswerke A. G. fuer Bergbau und Huettenebetriebe "H. G."	.....do.....	Holding and operating company.	1939	Founded by "H. G."
3 Reichswerke A. G. fuer Erzbergbau und Eisenerzhuetten "H. G."	.....do.....	.....do.....	1937	Founded by the Reich.
4 Reichswerke A. G. fuer Waffen und Maschinenbau "H. G."	.....do.....	.....do.....	1939	Founded by "H. G."
5 Reichswerke A. G. fuer Binnenschifffahrt "H. G."	.....do.....	.....do.....	1941	Do.
6 Wohnungs A. G. der Reichswerke "H. G."	Braunschweig.....	Building.....	1937	Do.
7 Bergbau A. G. in Salzgitter vormals Anton Raky.	Salzgitter.....	Building and mining machinery.	1937	Owned.
8 Negrella A. G.	.....do.....	Building.....	1937	Do.
9 Diabas-Steinbrueche Neuwerk A. G.	Harz Mountains..	Gravel pits.....	1938	Do.
10 Rheinmetall-Borsig A. G. ²	Duesseldorf.....	Arms and machinery.	1938	Majority stock held.
11 Eisen und Metall A. G.	Essen.....	Iron and steel trading.	1938	Minority stock held by subsidiary.
12 Vertriebsgesellschaft m. b. H. der Reichswerke "H. G."	Berlin.....	Trading.....	1938	Founded by "H. G."
13 Gewerkschaft Eisensteinzeeche "Kleiner Johannes."	Pegnitz.....	Iron ore.....	1938	Full control.
14 Preussengrube A. G.	Upper Silesia.....	Coal.....	1939	Majority stock held by subsidiary.
15 Bergbau A. G. Ewald-Koenig Ludwig.	Herten, Westphalia.	.....do.....	1939	Majority stock owned.
16 Rheinisch-Westfaelische Industrie-Beteiligungs A. G.	Muelheim-Ruhr..	Holding company.	1940	Full control.
17 Ferngasgesellschaft der Reichswerke "H. G."	Braunschweig.....	Gas company.....	1940	Founded by "H. G."
18 Braunkohlen A. G. "Vereinigte Meuselwitz."	Meuselwitz.....	Coal.....	1940	Majority stock owned.
19 Schlesische Dampfer-Compagnie-Berliner-Lloyd A. G.	Hamburg.....	Shipping.....	1941	
20 Bayerischer Lloyd Schifffahrts A. G.	Regensburg.....	.....do.....	1940	Majority stock owned.
21 Bergwerksverwaltung Klein Roseln G. m. b. H. der Reichswerke "H. G."	Saarbruecken.....	Management and construction of mines.	1942	Founded by "H. G."

¹ "Hermann Goering."² No. 10 either owns or has considerable holdings in Nos. 11 and 125.

APPENDIX A—Continued

Companies and properties controlled by A. G. Reichswerke "Hermann Goering"—Con.

Name of company or property	Location	Nature of enterprise	Approximate date of acquisition or founding	Control
GERMANY—continued				
22. Salzgitter quarries ³	Heinemanns Hohe.	Stone.....	1938	Owned.
23. Salzgitter mines and ore fields. ³	Bad Salzgitter....	Iron ore.....	1937	Do.
24. Kalkwerke Walhalla ³	Rogensburg.....	Lime.....	1938	Do.
25. Luitpoldhuetten ³	Amberg.....	Iron and steel.....	1938	Do.
26. Stahlwerke Braunschweig G. m. b. H. ⁴	Brunswick.....	do.....	.....	Founded by "H. G."
27. Deutsche Bergwerks und Huettenbau G. m. b. H.	Berlin.....	Construction.....	.....	Do.
28. Buchtal A. G. Keramische Betriebe der Reichswerke "H. G."	Oeslau, near Coburg.	Fireproof materials.	.....	Do.
29. Mines of Harpener Bergbau A. G. ³	Dortmund, Recklinghausen, Essen, etc.	Coal.....	.....	Owned.
30. Grossdeutsche Umstellungsgesellschaft.	.....	Housing.....	1939	Founded by "H. G."
AUSTRIA				
31. Wohnungs A. G. der Reichswerke "H. G." Linz.	Linz.....	Building.....	1938	Founded by "H. G."
32. Steyr-Daimler-Puch A. G. ⁵	Steyr & Graz.....	Arms and machinery.	1938	Majority stock held.
33. "Chromag" A. G. fuer Werkzeug und Metallindustrie.	Hirschberg.....	do.....	1938	Owned by subsidiary.
34. Steirische Gusseisenwerke A. G.	Vienna.....	Iron and steel.....	1938	Owned.
35. Vertriebs G. m. b. H. der Reichswerke "H. G."	do.....	Trading.....	1938	Founded by "H. G."
36. Veitscher Magnesitwerke A. G.	do.....	Magnesite.....	1939	.....
37. Reichswerke A. G. Alpine Montanbetriebe "H. G." Linz. ³	Linz.....	Iron ore.....	1939	Merger by "H. G."
38. Eisen-und Stahl A. G.	Vienna.....	Trading.....	1939	.....
39. Eisenwerk A. G.	Kreiglach.....	Iron and steel.....	1939	Majority stock held by subsidiary.
40. Graz-Koefacher Eisenbahn-und Bergbau Gesellschaft.	Graz.....	Railroad and coal.	1939	Do.
41. Bau A. G. Negrelli.....	Vienna.....	Building.....	1939	Do.
42. Stahl und Temperguss A. G. vormals Fischer-Traisen.	do.....	Iron and steel.....	1939	Majority stock held.
43. Erste Donau Pampfschiffahrtsgesellschaft. ⁷	do.....	Shipping.....	1940	Owned by subsidiary.
44. Schiffswerft Linz A. G.	Linz.....	Shipbuilding.....	1939	Owned.
45. Omnipol Handels A. G.	Vienna.....	Trading.....	1941	Founded by "H. G."
46. Simmering-Graz-Pauker A. G. fuer Maschinen-Kessel-und Waggonbau.	do.....	Arms and machinery.	1941	Merger by "H. G."
CZECHOSLOVAKIA				
47. Vitkovic horni a hutni tezitvo.	Moravska Ostrava.	Iron and steel.....	1939	Management and minority stock held.
48. "Ruda" Bergbau-und Huettenbetriebe A. G. ³	Bratislava.....	Iron ore.....	1941	Founded by "H. G."
49. Cechoslovakische Oder-Schiffahrts A. G.	Praha.....	Shipping.....	1939	Controlling stock held by subsidiary.

³ Properties as distinguished from companies.⁴ No. 26 either owns or has considerable holdings in Nos. 100, 101, and 102.⁵ No. 32 either owns or has considerable holdings in Nos. 33 and 87.⁶ No. 37 either owns or has considerable holdings in Nos. 38, 49, 40, and 41.⁷ No. 43 either owns or has considerable holdings in Nos. 44, 115, 116, 117, 118, and 123.⁸ Founded out of Slovakian properties of No. 47.

APPENDIX A—Continued

Companies and properties controlled by A. G. Reichswerke "Hermann Goering"—Con.

Name of company or property	Location	Nature of enterprise	Approximate date of acquisition or founding	Control
CZECHOSLOVAKIA—continued				
50. Krompacher Kupferwerke A. G.	Krompachy.....	Copper.....	1941	Owned by subsidiary.
51. A. G. vormal's Skodawerke in Pilsen.	Pilsen, etc.....	Arms and machinery.	1939	Full control.
52. Omlipol A. G.....	Praha.....	Trading.....	1939	Full control through subsidiary.
53. Akciová spločnost pro automobilový průmysl ("ASAP").	Pilsen, Mlada, Boleslav.	Arms and machinery.	1939	Full control by subsidiary.
54. Novak & Jahn A. G. fuer Maschinen und Brueckenbau.	Praha.....	Airplanes.....	1939	Majority control by subsidiaries.
55. "Avia" (A. G. fuer Flugzeugbau).	Sathlitz.....	Arms and machinery.	1939	Majority control held by subsidiary.
56. Konstruktiva A. G. fuer Strassenbau.	Praha.....	Road construction.	1939	
57. Ceskoslovenska Zbrojovka A. S. (Bruenn Waffenwerke A. G.).	Brno.....	Arms and machinery.	1939	Important minority holdings.
58. "Montania" banska hutna v. o. spol.	Bratislava.....	Iron ore, iron, copper, and chemicals.	1939	Owned by subsidiary.
59. Erste Bruenner Maschinen-Fabriks-Gesellschaft.	Brno.....	Arms and machinery.	1939	Management and large holdings.
60. Bruenn-Koenigsfelder Maschinen-und Wagon-Fabriks, A. G.	.....do.....	.....do.....	1939	Majority stock held by subsidiary.
61. "Gefia" A. G. fuer Industrielle Anlagen.	Praha, Brno.....	.....do.....	1939	Do.
62. Sudetenlandische Bergbau A. G.	Bruex.....	Coal.....	1939	Full control.
63. Nordboehmische Kohlenwerksgesellschaft.	.....do.....	.....do.....	1939	Owned by subsidiary.
64. Brucher Kohlenwerke A. G.	Teplitz-Schoenau.....	.....do.....	1940	Full control through subsidiary.
65. Bruexer Kohlenbergbau Gesellschaft.	Bruex.....	.....do.....	1939	Owned by subsidiary.
66. Boehmische Handelsgesellschaft.	Praha.....	.....do.....	1939	Do.
67. Vereinigte Britannia Kohlenwerke A. G.	Seestadt, etc.....	.....do.....	1940	Full control.
68. Zieditz-Haberspirker Braun und Glanzkohlen-gewerkschaft.	Karlsbad.....	.....do.....	1940	Controlling stock held by subsidiary.
69. Duxer Kohlegesellschaft auf Aktien.	Teplitz-Schoenau.....	.....do.....	1940	Full control.
70. A. G. Grube "Minerva," Bruex.	Bruex.....	.....do.....	1940	Full control by subsidiary.
71. A. G. Grube "Poseidon," Bruex.	.....do.....	.....do.....	1940	Do.
72. Wenzels Braunkohlenwerke. ⁹	.....do.....	.....do.....	1940	Owned by subsidiary.
73. Dreieinigkeits Gewerkschaft. ⁹	.....do.....	.....do.....	1940	Do.
74. Johan-Nepomuk Braunkohlegewerkschaft. ⁹	.....do.....	.....do.....	1940	Do.
75. Mines of Berg Direktion Bruex. ⁹	Bruex.....	.....do.....	1939	Do.
76. Braunkohlen A. G.....	Praha.....	.....do.....	1940	
77. Westboehmischer Bergbau Aktien-Verein.	.....do.....	Hard coal.....	1941	Large block of stock held by subsidiary.
78. Egerlaender Erzbergbau G. m. b. H.	Schlagenwald.....	Tin and wolfram ores.	1939	Founded by "H. G." and Krupp.

⁹ Properties as distinguished from companies.

NOTE.—In the following, "holds" means "either owns or has considerable holdings in": No. 47 holds No. 49; 48 holds 50; 51 holds 52, 53, 54, 55, 56, 57, 85, 86, 108, 119; 57 holds 58, 104, 105, 106, 112, 113; 59 holds 60, 61, 111, 126; 62 holds 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77; 80 holds 114; 106 holds 107, 110.

APPENDIX A—Continued

Companies and properties controlled by A. G. Reichswerke "Hermann Goering"—Con.

Name of company or property	Location	Nature of enterprise	Approximate date of acquisition or founding	Control
CZECHOSLOVAKIA—continued				
79. Sudetenlaendische Treibstoffwerke A. G.	Bruex.....	Synthetic oil refinery.	1939	Founded by "H. G."
80. Poldihuette A. G.	Kladno, and Komotau.	Arms, machinery, and coal.	1939	Management, and minority stock held.
81. Cechoslovakische Donauschiffahrts A. G.	Bratislava.....	Shipping.....	1939	
82. Podbrezova banska a hutni A. S.	Podbrezova.....	Iron ore and iron.	1939	Majority stock held.
83. Steinkohlen-Bergbau Orlau Lazy A. G.	Moravia-Silesia..	Hard coal.....	1940	Large minority stock held.
84. Handlovaer Kohlenbergbau A. G.	Bratislava.....	Coal.....	1941	Controlling stock held by subsidiary.
POLAND				
85. Polnische Skoda Ges. m. b. H.	Warsaw.....	Trading.....	1939	Full control by subsidiary.
86. "Polnische Skodawerke" A. G.	.....do.....	Arms and machinery.	1939	Do.
87. State Arms Factories ¹⁰	Radom and Warsaw.	Arms and munitions.	1939	Owned by subsidiary.
88. Bergwerksverwaltung-Oberschlesien G. m. b. H. der Reichswerke "H. G." ¹¹	Kattowitz.....	Holding company.	1940	Founded by "H. G."
89. Mines of Wspolnata Interesow S. A. ¹⁰	.....do.....	Coal and iron.	1940	Owned by subsidiary.
90. Skarboferme, S. A.	Chorzow, etc.	Coal.....	1940	Do.
91. Rybnickie Gwarectwo Weglowe.	Pasow, Radlin, etc.	Hard coal.....	1940	Do.
92. Czernitzer Steinkohlenberg A. G.	.....do.....	.....do.....	1940	Do.
93. Mines at Oehrigen and Sosnitz. ¹⁰	Oehrigen and Sosnitz.	Coal.....	1940	Do.
94. Brzeszcze State Coal Mine. ¹⁰	Brzeszcze.....	Hard coal.....	1940	Do.
95. Hohenloherwerke ¹⁰	Welnowice.....	.....do.....	1940	Do.
96. Steinkohlen Gewerkschaft Charlotte. ¹⁰	Kattowitz.....	Coal.....	1942	Do.
97. Petschek-und Hohenlohe ¹⁰	Teschen.....	Coal and zinc.	1940	Do.
98. Friedlander und Guttman. ¹⁰	.....do.....	.....do.....	1940	Do.
99. Zinc Mines: Neue Helene & Brzosowitz. ¹⁰	Beuthen and Tarnowitz.	Zinc.....	1940	Do.
100. Tow. Starakowickich Zakl.	Starachowice.....	Iron and steel.	1940	Full control by subsidiary.
101. Stalowa Wola	Stalowa Wola.....	.....do.....	1940	Do.
102. Ostroweckie Zakl. Iron & Steel Works.	Warsaw.....	.....do.....	1940	Do.
103. Spolka Gorniczo-Hutnicza Trinec & Karvinna.	Trinec and Karvinna.	.....do.....	1941	Half ownership.
ROUMANIA				
104. Uzinele de fier si Domeniile din Resita S. A. ¹²	Resita, Bucuresti.	Iron, steel, arms, and machinery.	1940	Management, and minority stock held.
105. "Astra" S. A. R. Prima Fabrica Romana de vagoane si motoare.	Arad.....	Arms and machinery.	1940	Minority stock held by subsidiaries.
106. Uzinele metalurgice Copsa Mica si Cugir, S. A. R.	Bucuresti.....	.....do.....	1939	Do.
107. Industria Aeronautica Romana, S. A.	Brasov.....	.....do.....	1940	Do.
108. Uzinele Metalurgice in Ploesti S. A. R.	Ploesti.....	.....do.....	1939	Majority stock held by subsidiaries.
109. Malaxa Konzern ¹³	Bucuresti.....	.....do.....	1941	Management and half stock held.

¹⁰ Properties as distinguished from companies.¹¹ No. 88 either owns or has considerable holdings in Nos. 14, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99.¹² No. 104 either owns or has considerable holdings in Nos. 105 and 106.¹³ No. 109 either owns or has considerable holdings in No. 106.

APPENDIX A—Continued

Companies and properties controlled by A. G. Reichswerke "Hermann Goering"—Con.

Name of company or property	Location	Nature of enterprise	Approximate date of acquisition or founding	Control
ROMANIA—continued				
110. Santierele Navale din Galati of "S. R. D." S. A.	Galati.....	Shipbuilding.....	1940	
111. "Petrol Block"	Bucuresti.....	Petroleum.....	1939	Minority stock held by subsidiary.
112. Exploatarea, "Farola", S. A.	.....do.....	Rolled and drawn metals.	1939	Large stock holdings by subsidiary.
113. Prima Fabrica Metalurgica Romana S. A. ("Metrom")	Bucuresti, Brasov.	Arms and machinery.	1939	Large minority stock held by subsidiary.
114. Forja Poldi, I. A. R. s. a. r.	Bucuresti.....	.....do.....	1939	Minority stock held by subsidiary.
HUNGARY				
115. Schiffswerft ¹⁴	Budapest.....	Shipbuilding.....	1939	Owned by subsidiary.
116. Pécs-Baranyaer Steinkohlenbergbau A. G.	Pécs.....	Hard coal.....	1939	Majority stock held by subsidiary.
117. Fuenfkirchener Kohlenwerke der Erste Donau Dampfschiffahrtsgesellschaft. ¹⁴	Fuenfkirchen.....	.....do.....	1939	Owned by subsidiary.
118. Mohács Fuenfkirchener Eisenbahn. ¹⁴	Mohács.....	Railroad.....	1939	Do.
YUGOSLAVIA				
119. Yugo Skoda A. G.	Beograd.....	Trading.....	1939	Owned by subsidiary.
120. Yugo chrom A. G.	Rabrovo, Trnovo, and Presovo.	Chromium ore...	1940	Founded by "H. G." and Krupp.
121. Compagnie Francaise des Mines de Bor ¹⁴	Bor.....	Copper ore.....	1941	Minority stock held.
122. Drina Mining Co., Ltd.	Ljubovje.....	Lead and zinc ore..	1941	Majority stock held by subsidiary.
BULGARIA				
123. "Dunav" Koeniglich Bulgarische Schiffahrts A. G.	Sofia.....	Shipping.....	1939	Owned by subsidiary.
NORWAY				
124. Dunderland Iron Ore Co., Ltd.	Nord Rana.....	Iron ore.....	1940	Management.
THE NETHERLANDS				
125. De Werkspoor.....	Amsterdam.....	Machinery and locomotives.	1942	Minority stock held by subsidiary.
126. N. V. Turbo A. G.	.....do.....		1939	Owned by subsidiary.
FRANCE				
127. Union des Consommateurs de Produits Metalurgiques et Industriels.	Hagondange.....	Iron and steel.....	1941	Trusteeship.
128. Les Petits Fils de François Wendel et Cie.	Hayange-Moeyuvre.	.....do.....	1941	Do.

¹⁴ Properties as distinguished from companies.¹⁴ No. 121 either owns or has considerable holdings in No. 122.

APPENDIX B.—Companies and properties allegedly controlled by A. G. Reichswerks "Hermann Goering" but for which evidence is not conclusive at this time


Country	Name of company or property	Location	Nature of enterprise
Germany	Grossdeutsche Schachtbau und Tiefbohr G. m. b. H.	Mulheim-Ruhr	Mining company.
Austria	Kaertherische Eisen und Stahlwerke A. G.		Iron and steel.
	Vereinigte Wildstein Neudorfer Tonwerke A. G.	Eger	
Czechoslovakia	Ferdinands Nordbahn	Moravska-Ostrava.	Coal.
	Metallwerke F. A. Lange A. G.	Gruenthal	
	Optikotechna, spol. s. n. o.	Prerov	Optical goods.
	"Kablo" Aktienkabel und Drahtseilfabrik.	Kladno	Wire and cable.
	"Union" Portland-Zement-fabriks A. G.	Bratislava	Cement.
Rumania	Rumaenisch-Deutsche A. G. fuer Eisenindustrie und-handel.	Bucuresti	Managing company.
	Uzinele Metalurgice Unite Titan, Nadrag, Calan, S. A. R.	do	Iron and steel.
	"Unio" S. A.		
	"Romloc" S. A.	Brasov	Railroad rolling stock.
	Interprinderile Metalurgice David Goldenberg, Fii, S. A.	Braila	
	"Vulcan" Nota societate a atelieroelor.	Bucuresti	Machinery.
	"Industria Fierului"	Ploesti	Repairing machinery.
	General Oil Wells	do	Oil wells.
Hungary	Magnesit-Industrie A. G.	Budapest	Magnesite.
	Stefan Roeck Maschinen-fabrik A. G.	do	Machinery.
Greece	Greek lignite mine.		
Yugoslavia	Yugoslavia Solvay Works, Ltd.	Lukavac and Tuzla.	Soda.
	Kroatische Fluss-schiffahrt A. G.	Agram	Shipping.
Bulgaria	Road building company.		Road building.
	Compagnie Francaise des Mines de Louda Yana.		
	Steyr-Skoda	Sofia	Trading.
Sweden	Vitkovice Iron Mines		Iron ore.
Belgium	Solvay Trust	Brussels	Soda and plate glass.
Baltic, Union of Soviet Socialist Republics and other eastern European territories.	Goering Werke im Osten.		Wartime industries.
	Berg-und Huettenwerks-Gesellschaft "Ost" m. b. H.		Mining and smelting.

Penetration of European industry.—Although the Goering Works had been originally founded for the purpose of filling a gap in Germany's wartime self-sufficiency, it soon expanded into many other fields (some only incidentally related to the production of steel), and took on all of the characteristics of a vertical trust. It acquired many companies, not all of which formed valuable supplements to an already existing organic structure. Rapid expansion was made possible by the succession of German conquests after 1938. The Goering concern turned from the exploitation of domestic ore deposits to the much more profitable task of taking over large parts of the heavy industries of the conquered nations.

Austria.—One month after the conquest of Austria the Goering concern established a branch at Linz on the Danube. Within a short time it had acquired control of the extensive properties of the Austrian state, and had taken over the Rothschild holdings.

In this manner it acquired a virtual monopoly on all Austrian heavy industry. Its loot included Steyr-Daimler-Puch A. G., the leading automobile manufacturer in Austria and an important armaments producer; Simmering-Graz-Pauker Werke A. G.,³ the leading automotive and machine-building combine in the country; Steirische Gus-

³ This property was sold to the Kloeckner combine in 1943. There are also reports that Steyr-Daimler-Puch has been sold to the public.



DRAWN IN THE CARTOGRAPHIC SECTION, D.E.W., NO. 500

stahlwerke A. G.;⁴ a producer of special steels; Veitscher Magnesite A. G., the most important magnesite mining company in Europe; and the Alpine Montangesellschaft A. G., which accounted for 90 percent of total Austrian steel production.

Since 1924, Vereinigte Stahlwerke had held 56 percent of the Alpine shares. In March 1939 the Goering concern bought up this holding which, added to the 30 percent minority it already held, gave it complete control of Alpine. In August 1939 Alpine was merged with the Goering subsidiary at Linz under the name of Alpine Montanaktiengesellschaft "Hermann Goering," Linz. Plans were made for exploiting the Erzberg (ore mountain), which Alpine owned, by building a new plant for steel production at Linz, and devoting Alpine's plant at Donawitz to special steels. While the Linz plant, with a projected capacity of 1,000,000 tons per annum, has already produced considerable quantities of coke and pig iron, the latest reports indicate that the converters and rolling mills are not yet in operation.

When Goering took over Alpine, the capital of the new amalgamated company was raised from 60,000,000 Austrian schillings to 160,000,000 reichsmarks, and was further increased to 180,000,000 marks in 1941. In 1924, Alpine Montan had issued \$5,000,000 worth of bonds in the United States, of which more than \$4,000,000 are still unpaid.

Czechoslovakia.—In Czechoslovakia, the Hermann Goering Works took over most of the heavy industry of the country. The most important lignite mines of northern Czechoslovakia, part of which had belonged to the Czech state, were either confiscated outright or purchased at a low figure under duress, and then amalgamated into the Sudetenlaendische Bergbau A. G. under the joint control of VIAG (Reich-owned holding company), and the Goering concern. Using these lignite mines as a raw-material base, Hermann Goering next set up the Sudetenlaendische Treibstoffwerke A. G. at Bruex, one of the largest synthetic oil plants in the entire Reich.⁵

The concern's richest hauls were in the fields of armament and heavy industry. Since 1920, 77 percent of the share capital of the Bruenn (Brno) Waffenwerke A. G.⁶ had belonged to the Czech state, and the rest to the Skoda Works. Skoda in turn was controlled by a French-Czech combine, in which Schneider-Creusot, through its Union Europeenne, held 45 percent of the share capital. After the Munich Pact, Schneider-Creusot sold his shares to the Czech Government, thus escaping the financial loss which followed the Nazi conquest of Czechoslovakia.⁷ Since the Czech state had majority holdings in both Skoda and Brno, it was an easy matter for the Goering Works to take over after the occupation of Bohemia-Moravia. As early as May 1939, members of the board of directors of the Goering group appeared on the board of the Skoda Works. When a protectorate was set up in Bohemia, the Quisling government of the protectorate took control of the state-owned companies from the defunct Czech state, and gave them to the Goering Works in trustee-

⁴ In 1943, the Goering combine increased the capital of Steirische Gusstahlwerke from 5 to 10 million marks.

⁵ Reports differ as to whether this plant has commenced operations or is still in the project stage.

⁶ The Czech name for this company is Zbrojovka.

⁷ A British loan was made available to the Czech Government so that Schneider could be paid.

ship. When the Goering concern was reorganized in December 1940, these newly acquired works were specifically designated as belonging to the combine. Another rich prize was the Vitkovice Works, a large vertically integrated concern employing more than 50,000 workers. The firm owned ore mines in Sweden and Slovakia and 5 blast furnaces, 2 steel works, and a large rolling mill.

The Allied Insurance Co., a British company owned by the Rothschilds, held full control of Vitkovice. The holdings were in the form of "Kuxe" because Vitkovice was incorporated as a mining company,⁸ with a total participation of 100 "Kuxe." Hence, although the Goering Works took over and operated Vitkovice they have not been able to acquire title, which to this date resides in the British holding company. In this case, Goering's possession was outright robbery, unmitigated by the slightest hint of German legalistic "correctness."

Early in 1939, the protectorate government passed a law requiring that at least three-quarters of the management of any company in the protectorate must be composed either of Germans or of citizens of the country. The attempts by this means to bring the British-owned Vitkovice completely into German hands have been interrupted by the war and its plants are now held in "trusteeship."

Rumania.—Rumania offers a striking example of German penetration of the economy of an ally with the aid of its own Government. The two most important companies in Rumanian heavy industry are the Resita Iron Works and N. Malaxa & Co., accounting between them for more than 90 percent of Rumanian steel production, 90 percent of coke production, and 100 percent of locomotive manufacture.

Resita, by far the more important of the two, had until 1936 been jointly owned by the Rumanian industrialists, Max and Edgar Ausnit, and the British Vickers combine. In that year, Csekslovenska Zbrojovka (Bruenn Waffenwerke) took over the Vickers holdings, but the British firm retained some influence through the holdings of "Cepi" (Companie Europeenne des Participations Industrielles), which represented the Ausnit and Vickers interests. In 1938 these shareholders, together with the Malaxa Co., another important shareholder, concluded a syndicate agreement whereby all three shareholders deposited their shares with the Westminster Bank in London.

In November 1939 the Rumanian Government issued a decree invalidating the syndicate agreement. In order to enforce the dissolution, the shares deposited in London were declared invalid and the companies were compelled to issue duplicates. The decree purportedly was aimed at ending foreign influence in Rumanian heavy industry. With the elimination of Vickers after the outbreak of war, and the ousting of the Ausnits as non-Aryans, Bruenn Waffenwerke became majority holder of the new trust. By the summer of 1940, Albert Goering, a nephew of Hermann, and Guido Schmidt, the Austrian Quisling, had become members of the board of directors of Resita as representatives of the Goering concern.

Malaxa is better known for locomotive manufacture and metals fabrication than as a steel producer. The history of this company is largely the story of its founder and president, Nicolai Malaxa, who possessed great influence during King Carol's reign. Between 1936 and 1940 Malaxa attempted to achieve a virtual monopoly of Ru-

⁸ Under continental law, a mining company (which often also smelted and refined ore) was called a "Gewerkschaft" and had a special form of corporate organization. Its shares consist of either 100 or 1,000 shares called "Kuxe."

manian heavy industry by buying into the Resita Works. Although he managed to purchase considerable stock, he was not able to oust the majority shareholders in Resita, Max and Edgar Ausnit. In 1940 Max Ausnit was arrested by the Carol government, purportedly at the instigation of Nicolai Malaxa, and remained in custody until 1942, when there were rumors of his release by General Antonescu.

In 1940 Malaxa helped finance the abortive Iron Guard Revolution. After Antonescu came to power in January 1941, Malaxa tried unsuccessfully to ingratiate himself with the new regime. In February 1941 the Antonescu government confiscated all the Malaxa's holdings. The Rumanian Government nationalized the Malaxa concern and leased the works to the Rumaenisch-Deutsche Eisenindustrie und Handels. The Malaxa plants were actually managed by technicians from the Goering Works until late in 1943.

The Rumaenisch-Deutsche Eisenindustrie und Handels A. G., with the Goering concern and the Rumanian Government participating equally, had been founded in 1940. This joint ownership established Nazi control over Rumanian heavy industry inasmuch as the Rumanian Government does not have equal voice or bargaining power.

A decree passed late in 1942 compelled Resita to change its bylaws so that it held only registered shares (i. e., the duplicates issued for the shares deposited in London in 1938; see third paragraph under "Rumania", above). Furthermore, Resita was permitted to sell these registered shares only to "ethnic" Rumanians (Rumanian citizens of Rumanian nationality). As in all other Rumanian companies, at least 60 percent of share capital must be held by such "ethnics." In addition, a state commissioner was to supervise all activities of Resita. This decree is, in effect, a bill of attainder against one company and is actually called the Lex Resita.

Another casualty of Nazi penetration was the Ausnits' personal cartel. The sales organization for all of the Ausnit holdings in Rumanian heavy industry was the Socomet S. A. R., with headquarters at Bucharest. As a result of "Aryanization," this organization, which included the Resita Works and Titan-Nadrag, came to an end in April 1940, after an existence of more than 10 years. While Socomet had represented over 80 percent of Rumanian heavy industry at the time of its formation, this large percentage declined after other enterprises, notably Malaxa, gained in importance.

Within the past year certain events have obscured the patterns of control exercised by the Germans in Rumania. First, there were reports that the German representatives had withdrawn from the Rumaenisch-Deutsche Eisenindustrie and that Guido Schmidt of the Goering Works, had resigned from the board of directors of the Resita Works. Later in the year the Rumaenisch-Deutsche Eisenindustrie was actually dissolved. Even before its dissolution, the lease it held on the Malaxa concern was ordered canceled, as was the 1941 decree which had expropriated Nicolai Malaxa. At present it appears that the Malaxa combine will be operated by another mixed company in which the Rumanian Government and Nicolai Malaxa himself will each hold a half interest.

Poland.—In 1940 the Goering Works was awarded trusteeship of valuable Polish iron, steel, and coal companies by the Hauptreuehandstelle Ost, the agency set up to acquire Polish properties and

distribute them to German combines in trusteeship. The most important of the properties awarded are the steel mill at Stalowa Wola and the coal and ore properties owned by the Petschek and Friedlander interests in the Teschen area. A special holding company, Bergwerksverwaltung Oberschlesien G. m. b. H. der Reichswerke "Hermann Goering" was set up at Kattowitz in 1940 for the purpose of holding and operating Goering's mining interests in Poland.

Western Europe.—In France and the Low Countries the Goering Works acquired few holdings. The claims of the privately owned German steel companies to their pre-1919 holdings were recognized, and Goering's acquisitions consisted primarily of the mining property previously belonging to the de Wendel interests in Lorraine. This property, together with the important Hagalingen Works of the Thyssen concern, was taken over in trusteeship.

In Belgium, Rheinmetall-Borsig, a Goering subsidiary, took over the armament-making plants of John Cockerill, and Vereinigte Stahlwerke, the operation of the company's steel works and rolling mills.

Dominant personalities of the concern.—The leaders of the Goering combine represent a new order of industrialists; very few members of its staff or management have come from the long-established iron and steel companies, nor have they enjoyed outstanding reputations in other lines of business.

An examination of the membership of the board of trustees of the three operating-holding companies of the Goering Works reveals the community of interest between the rulers of the State and the rulers of heavy industry. On the board of the Mining & Steel Works Co. are the Undersecretary of the Prussian State Ministry, representatives of the Ministries of Economics and Finance, and one of the highest officials of the Speer Ministry. On the board of the Shipping Co. was the Prime Minister of Bavaria.⁹ How much Hermann Goering himself has to do with the firm is not readily ascertainable. However, Albert Goering, reported to be his nephew, has been active in the firm's operation in Czechoslovakia, and more especially, in Roumania. Paul Pleiger, general manager of the Mining & Steel Works Co., is chairman of the Reich Association for Coal. Since the Goering concern is the largest coal-mining company in the Reich, the importance of this connection is apparent. Prior to 1937, Pleiger was head of a medium-sized machine-tool concern. Paul Koerner is chairman of the holding company, and also of the Mining & Steel Works Co. Since February 1943, he has reported directly to Hermann Goering himself and is considered the latter's personal representative. Hellmuth Roenert, general director of the Armaments & Machinery Co. and director general of the holding company, is one of the most influential men in the entire Goering enterprise. Moreover, he was one of the few men who came to the Goering Works as a recognized business leader, having previously been an executive with Busch-Jaeger Luedenscheider Metallwerke A. G., with which he still retains his connections. William Voss, manager of the Armaments & Machinery Co., is chairman of the board of Skoda and of Rhein-

⁹ There have been reports in the German press that Siebert, who held the position, died recently.

metall-Borsig, and held a similar position in Steyer-Daimler-Puch until it was sold by the combine.

Conclusions.—It is doubtful whether the Hermann Goering Works as at present constituted, can be considered a "company" or a "combine" as these terms are currently understood. Neither Salzgitter nor Linz can be run at a profit; both require huge subsidies and can be justified only on grounds of economic autarchy. In peacetime they will not be able to compete with the better-situated Ruhr firms.

At present, the Goering concern mostly resembles a huge state-owned holding company for the properties of victims of Nazi looting. Traditional concepts of profit or loss have little bearing in a discussion of this combine, which does not even possess title to some of its most important holdings—holdings which are much greater than the mills built at Salzgitter and Linz. Since expansion of plant in occupied countries is paid for out of the occupation charges, it has been possible for the Goering combine greatly to increase, without German financing, the military potential of the expanded Reich. The Hermann Goering Works has become a gigantic smithy for forging the weapons of the Reich. Production has been organized, as in a vertical trust, from the ore through the final delivery of rifles, armor plate, and tanks. Operations of newly acquired coal mines are subordinated to the needs of the Hermann Goering steel works. Lignite mines serve plants producing synthetic gasoline. In sum, the "combine" is the personification of Nazi aggression and exploitation.

EXPANSION OF PRIVATELY OWNED GERMAN CONCERNS

While the Hermann Goering Works doubtless acquired more steel mills, coking plants, and coal mines than any other German company, the aggregate penetration on the part of the privately owned German steel combines was considerable. The chief areas of penetration, although by no means the only ones, of the private combines are Lorraine, Luxembourg, Poland, and Belgium. After the first three regions were annexed to the Reich, a systematic Germanization of industry took place. In most cases, German firms which had owned properties in these regions prior to 1919 were permitted to repossess them.

Poland.—Although the Goering Works took over several Polish coal and steel properties, other important holdings were taken over by private concerns. Ballestrem recovered its 52-percent interest in Oberschlesische Friedenshuette A. G., at Kattowitz, which it had been obliged to sell to the Polish Government in 1919. Ballestrem also acquired a majority holding in Ferrum A. G. at Kattowitz, which, in turn, controlled two machinery companies and had a minority holding in a locomotive-manufacturing concern.

The largest Polish concern, Wapolnota Interesow, which in peacetime accounted for about 34 percent of Polish production, has been divided between two private firms, Krupp A. G. and Roehlingsches Eisenwerk G. m. b. H. The Polish combine was a holding company set up to administer five German plants acquired after 1919, Huta Batory (Bismarckhuette), Huta Florian (Flavahuette), Huta Laura (Laurahuette), Huta Pilsudski (Koenigshuette), and Huta Silesia (Silesiahuette). The aggregate annual capacity of the five plants is estimated at 540,000 metric tons.

After the conquest of Poland the country was divided into two administrative areas. One area, consisting of Upper Silesia, the Warthegau, Pomorze, and Danzig, was incorporated into the Reich and a systematic Nazification of industry and trade followed. The other, called the Government General, is treated as an occupied area. In the annexed area, all plants were placed under the administration of the Hauptreihandstelle Ost, which in turn gave them, either in trusteeship or outright, to individual German companies. Most of the former Polish iron and steel mills and coal properties are in the annexed area.

In the Government General, the steel plants are administered by a syndicate called the Eisenhuettegemeinschaft Ost G. m. b. H. (Iron Works Association East, Inc.) with headquarters at Cracow. This syndicate, founded in 1941, is sole sales agent for the products of the companies which it administers, and sells only to designated wholesalers and warehousemen. The syndicate is under the control of a board of trustees on which are represented the Economic Department of the Government General (the supervisors of the Reich armament program), and the Central Office for Government Orders.

There have been cases where the facilities of specific companies in the Government General were made available to private concerns through lease contracts. Thus, Vereinigte Oberschlesische Huettenwerke A. G. leased the Vereinigte Maschinen-Kessel und Wagonfabriken in Cracow from its trustees.

Austria.—Although most of the iron and steel industry of Austria was absorbed by the Goering Works, private firms also participated in the penetration. In 1939, the Vereinigte Oberschlesische Huettenwerke acquired the Payerbacher Eisengewerkschaft of Wiener-Neustadt. According to one report the Kapfenberg plant of Gebrueder Boehler, high-grade steel manufacturers, was taken over by Vereinigte Stahlwerke in 1940, but another report states that Boehler has been permitted to retain its independence and has even acquired an arms plant.

In 1943, Kloeckner acquired from the Goering Works three-quarters of the stock of Simmering-Graz-Pauker A. G., important manufacturer of machinery, boilers, and railroad cars. The company was added to the other iron and steel fabricating plants controlled by the Kloeckner subsidiary, Locckner-Deutz, A. G. Simmering had lost money under Goering management, and the German press notes that considerable additional capital will be required to put the firm on a solid foundation.

Mannesmann has taken over Tranzl A. G. of Vienna, a manufacturer of steel tubes.

Czechoslovakia.—In taking over the Bohemian Discount Bank, the Dresdner Bank acquired control of the famous Poldihuette steel works, formerly under the financial control of the discount bank through its affiliate, the Zivnostenska Bank. It is not known as yet if this valuable property (Poldihuette) has subsequently been turned over to a German steel company. Before the war, Mannesmann, together with the Zivnostenska Bank, had a substantial interest in the Prague Iron Co. The Zivnostenska Bank was permitted to retain formal independence after it has relinquished certain of its industrial holdings, exclusive of the Prague Iron Co., which increased its capital in 1939 and doubled it again in 1940. There have been reports of a recent merger of Poldihuette and the Prague Iron Co., with the

Dresdner Bank, Zivnostenska, and Mannesmann pooling their interests.

The Netherlands.—In 1941, the Vereinigte Stahlwerke acquired the shares of both the Dutch Government and of the city of Amsterdam in Nederlandsche Hoogovens en Staalfabrieken at IJmuiden, thus acquiring a controlling interest. Prior to the Nazi conquest the Hoogovens had held 20,000,000 shares in Vereinigte Stahlwerke; while the Dutch continue to hold the shares, relationships between the two concerns have necessarily changed. Van Vlissingen, of Hoogovens, and also a member of the board of Vereinigte Stahlwerke for many years, is one of the foremost Dutch collaborationists.

Belgium.—Relatively few Belgian firms have been taken over by German combines, principally because the majority of Belgian mills are small and produce only Thomas steel.

For a number of years prior to the conquest of Belgium, Otto Wolff, Cologne, had had an informal sales agreement with Ougree-Marihayé, by far the most important Belgian steel producer. In 1940 the two companies, under the leadership of Wolff, formed an export firm called Wolff-Ougree A. G., with its main offices in Cologne. According to one source, Ougree, with Baron de Lannoy as president, collaborated with the Germans, but retained its corporate independence. Another report states that Ougree-Marihayé was taken over by Wolff, and assimilated into the German steel cartel. Ougree-Marihayé controlled half the open-hearth capacity and a third of the electric-steel capacity in Belgium.

Vereinigte Stahlwerke took over the Belgian Phoenix Works, one of the most important producers of galvanized sheets in Europe, and entered into an arrangement with John Cockerill, Belgium's other important open-hearth steel producer, whereby it obtained the use of that plant's steel-making facilities. Cockerill's armament works were placed under the jurisdiction of Rheinmetal-Borsig, part of the Hermann Goering concern. A different source, while mentioning Borsig's participation in the armament division of John Cockerill, makes no mention of the Vereinigte Stahlwerke arrangements.

Because Germany itself had redundant Thomas-steel capacity, and because of the susceptibility of Belgium to air attack, the Germans, instead of expanding steel production after the conquest of the country, drastically reduced operations with a view to saving raw materials and releasing manpower.

In 1939 Belgium was able to process about 3,000,000 tons of domestically-produced steel. In 1942, this production declined to 1,000,000 tons because of a shortage of blast-furnace coke. The latest estimates (January 1943) indicate that the Belgian works were producing 112,000 tons of crude steel monthly, as compared to the 325,000-ton monthly average of 1937. It is not improbable that Germany is operating all of Belgium's limited open-hearth and electric-steel capacity, while neglecting the Thomas steel facilities.

In 1940, "Cosibel," the pre-war sales syndicate, was replaced by "Sybelac" (Syndicat Belge de l'Acier) a much more powerful organization. Not only sales, but also production, standardization, and raw-material supply are under the jurisdiction and control of Sybelac.

Luxembourg.—The iron and steel industry of Luxembourg was completely absorbed by German firms after the incorporation of the country into the Reich. All industry was placed under the control

of W. G. Koenigs, the Reich trustee, who was awarded Hadir, which had been formed in 1920 for the purpose of operating former German properties in Luxembourg and Lorraine, to Vereinigte Stahlwerke; the Hadir firm is currently known as Differdinger Stahlwerke.

The Otto Wolff combine was granted control over the Redingen plant of the Belgian firm of Ougree-Marihaye, a logical consequence of its close association with the parent company in Belgium.

The most important steel combine in Luxembourg, ARBED, is still under the trusteeship of Koenigs. Important foreign holdings have been squeezed out and the Nazis now have full financial control of the company. Of a total of 250,000 shares, 54,747 were in German hands and Koenigs, in his capacity of alien property custodian, was trustee for a much larger number of Belgian- and French-held shares. At a shareholders' meeting held on January 13, 1943, Koenigs stated that he would waive his right of voting these shares so that the majority, now German, could "decide according to their own wishes." Because they alone voted, the German shareholders, although possessing only 20 percent of ARBED's share capital, acquired control of the firm. On April 18, 1943, another shareholders' meeting was held when the capital of the company was converted from francs into Reichsmarks. Capitalized at 300,000,000 reichsmarks, ARBED is now the third largest iron and steel company in Europe, ranking second only to Vereinigte Stahlwerke and the Goering Works. As yet, no board of directors has been selected.

A new company, the Luxembourg Iron & Steel Co., was set up as the exclusive sales agency for all ARBED products. Its 1943 capitalization was set at 1.5 million Reichsmarks.

All of the iron mines in Luxembourg have been combined and amalgamated into a unified association under German direction and control, in the interests of maximum production and smoother allocation of iron ore. This compulsory amalgamation, applying to foreign concessionaries in Luxembourg, Luxembourg companies under trusteeship, and German-owned mines, requires that adjacent properties must cooperate. The association named "Luetzellurg," has an advisory board and a chairman appointed by the chief of the civil administration. Koenigs, the Reich trustee, is president of the board of "Luetzellurg."

France.—There has been a notable difference between German penetration of the steel industry in Lorraine and in the rest of France. Lorraine was annexed to the Reich and all of its industry Germanized. German firms acquired valuable mills and mines, and in most cases pre-1919 holders of these properties were given special consideration. Except for the acquisition of the former Thyssen mining properties by the Goering Works, all Lorraine companies were taken over by privately owned German firms. Until March 1, 1941, the Lorraine steel works were administered by special delegates of the Reich. After that date, the works and mines were temporarily allotted to the so-called trusteeship of various German concerns. In this manner Roehlingsche Eisenwerk took over Hauts Fourneaux et Acieries de Thionville;¹⁰ Kloeckner acquired Société Metallurgique de Knutange;¹¹ Forges et Acieries du Nord et Lorraine¹² became the property of

¹⁰ This plant, again called the Karlshuette, belonged to the Roehling concern until 1919.

¹¹ Now called Kneuttlinger Konzern.

¹² Now known as Ueckingen.

Neunkircher Eisenwerk; and Friedrich Flick was awarded Société Lorraine des Acieries de Rombas.¹³ Also according to a recent report, Eschweiler Bergwerks Verein, a German mining and metallurgical concern in which ARBED had long held a controlling interest, is now completely owned by ARBED.

In October 1943 it was reported that Roechling had organized his French holdings into three companies: Drahtindustrie G.m.b.H., Reichenhofen, Alsace, capitalized at 450,000 marks; Karlshuette G.m.b.H., Diedenhofen, capitalized at 3,000,000 marks; and Karlshuette Iron & Steel Works, Metz, capitalized at 3,000,000 marks.

Outside Lorraine, French steel companies have not been subject to direct capital penetration. The Germans attempted to exceed 1942 production, especially in open-hearth steel, but have had serious difficulties in meeting minimum coke requirements. The measure of their success can be gaged by the fact that in 1943 French monthly production (exclusive of Meurthe and Moselle) was only about one-third of the prewar monthly average.

SUPPLIES OF FERRO-ALLOYS IN ENEMY EUROPE IN 1943

The German policy of exploiting to the full the economic resources of occupied Europe has been particularly important in the case of ferro-alloys.

Possessing no alloying elements within its own borders, except vanadium (and even this is obtained chiefly from the iron ore of France, Belgium, and Luxembourg), Germany in 1943 depended on supplies of manganese from occupied U. S. S. R., molybdenum from Norway, nickel from Finland, and chrome from the Balkans. In addition, the few countries remaining neutral have been unable to resist entirely the pressure of German demands for ferro-alloys. Important supplies of chrome have been obtained from Turkey and tungsten from Spain and Portugal.

Even with these resources at its command, Germany has had to make existing supplies of ferro-alloys go as far as possible. Two factors have contributed to their most efficient utilization in war material: (1) The introduction of the so-called "substitute steels," and (2) the total mobilization of scrap throughout the entire area under German control.

SUBSTITUTE STEELS IN GERMANY

The United States and Great Britain responded to the shortage of certain ferro-alloys by introducing national emergency steels and war emergency engineering steels, respectively. Germany introduced substitute steels (Austausch-Stähle). The aim was the same—to economize in the use of those ferro-alloys of limited supply by shifting to others more readily available.

In order to close all avenues of waste, meticulous studies were made of steel compositions used, extensive tests were conducted, and interested industries were consulted. As a result, a relatively small number of the most appropriate steel types were selected, and the steel-makers were ordered not to demand for their products any physical properties in excess of the absolute minimum essential to safety.

¹³ Now called Rombacher Huetttenwerke.

As has been noted, in general the war emergency steels, although containing less alloy metals than the pre-war steels, are not inferior in quality or effectiveness. While leaner in alloy composition and offering a lower safety insurance, they are adequate for the purposes for which they are made. This holds true for Germany as well as for the United States.

Recently, Germany tightened the regulations on substitute steels. On June 10, 1943, the German Metal and Iron Board issued a ruling containing lists of materials to be used in each industry. These lists constitute actual specifications for the manufacture of various products; arbitrary changes in the specifications are forbidden. About 30 lists have been made public so far, and new lists continue to appear. They are compulsory not only for Germany but also for the occupied countries so that ferro-alloy practices throughout enemy Europe have been standardized.

SCRAP MOBILIZATION IN ENEMY EUROPE

The importance of scrap in steel making has already been described. (See Use of Scrap in Making Alloy Steel.) Without the ferro-alloy supplies provided by scrap, it would have been impossible to manufacture ammunition or other military steel products of the quality achieved by the belligerents on both sides.

However, it should be stressed that Germany is making more exhaustive use of scrap and is segregating it in a more systematic way than is either the United States or Great Britain. Total scrap mobilization has been effected in Germany, and every item that was not absolutely necessary for the functioning of a minimum civilian economy was withdrawn from private households and even factories. Scrap-collecting units for each block or street in every city have been responsible for a complete combing for every possible scrap item. The railways have set up a special department for salvage of waste material which is usually considered not worth collecting because of labor cost. Prisoners were put at the disposal of the railways for this purpose, and the results have been declared very satisfactory.

The concept of "scrap" was broadened when the Germans initiated looting campaigns in the conquered countries. Requisitioning and compulsory collections have been systematically carried out in all of the occupied territories. In addition, the Germans introduced battlefield collections. Each division of the German Army has one or more companies for salvaging scrap, particularly alloy-steel parts. The officers of these companies are trained to recognize parts containing important alloys which are shipped in separate boxes directly to specific mills. Aside from the regular salvage troops, the Army in general has been made scrap conscious, and each platoon has two or more men able to assist technically in salvage operations and scrap segregation. While it is true that little or no salvaging can be expected during retreat, stationary operations permit the salvaging of a high percentage of scrap.

The Germans began to economize on ferro-alloys long before the war—much earlier than did the United States—and they have made substantial recoveries of scrap both at home and in occupied territories. However, as they have been producing lean-alloy steel for years, the quality of domestic scrap available has continually declined. Thus

Ferro-alloys is more urgent than is that of the United States, although the Germans claim that, as a result of their efforts in scrap salvage as well as their economy in the utilization of virgin ferro-alloys, they have been able, up to the present, to satisfy the pyramiding demands of the steel industry for ferro-alloys.

INDIVIDUAL FERRO-ALLOYS

Manganese.—Thanks to the rich manganese mines of Nikopol, German supplies of manganese, the indispensable ferro-alloy, were relatively ample in 1943. Before their withdrawal from Nikopol, the Russians reportedly destroyed the ground installations and flooded the pits of the mines. The stocks of ore which fell into German hands and were shipped to Germany in 1942 were not very large, about 165,000 tons, or 60,000 to 65,000 tons of contained manganese. The work of rehabilitating the mines started at once. According to an official Russian source, new pits were opened in November and December 1942, and the output of ore in the first 8 months of 1943 amounted to 500,000 tons, or 180,000 tons of contained manganese. In view of the importance of this metal to the German steel industry, the Germans probably spared no efforts to obtain as much manganese as possible from the Nikopol mines in the last 4 months of 1943. However, because of the difficulties arising from the proximity of the battle front, it is assumed that the Germans produced and shipped out of Nikopol in that period only about as much manganese as they did in any other 2 months of the year, making a total of about 625,000 tons of ore (225,000 tons of contained manganese) obtained during the entire year of 1943.

With the exception of Nikopol, there are under German control no manganese deposits which produce a high-grade ore, although many small mines supply Germany with quantities of low-grade ore. Such mines are found in Germany proper, in the Balkans, in Hungary in Czechoslovakia, and in Italy. The Czechoslovakian annual output amounts to approximately 100,000 tons of 17-percent manganese or about 14,000 to 15,000 tons of recoverable manganese. Even before the war, Hungarian production was in German hands, the Deutsche Bank holding the largest interest in the chief manganese deposit near Urkut. At the present time the Hungarian output may be close to 10,000 or 12,000 tons of contained manganese. Altogether, the mines in enemy Europe, outside of Germany proper, and excluding Nikopol, may have produced about 75,000 tons of manganese metal in 1943.

Also important to Germany as a source of manganese is the deposit of manganiferous iron carbonate ore in the district of Siegerland. Crude ore from this deposit contains 4 to 5 percent manganese, but roasting raises the manganese content to about 9 percent. The roasting process is, however, a costly one and involves large equipment. Germany is producing ferromanganese from this ore by first smelting the ore into spiegeleisen. Later, part of the spiegel is treated in a basic converter, and part in an acid converter. The two slags are mixed for a blast-furnace charge, the silica content of one being neutralized by the lime content of the other. The Germans claimed before the war that the ferromanganese produced was of good quality.

According to some reports, the annual production of manganese from this source can theoretically be stepped up to the almost incredible figure of 550,000 tons of high-grade manganese ore, or approximately 190,000 tons of contained manganese. However, competent metallurgists in the United States are inclined to discount the possibility that any important amount of manganese can be obtained from this source.

Chromium.—Most of Germany's supplies of chrome ore are obtained either from the Balkan areas or from Turkey. The Allatini Mines of Yugoslavia, with an annual output of about 16,000 tons (metal content) are the most important source. Of the chrome ore supplied to Germany in 1943, about two-thirds came from Yugoslavia, Greece, and Albania, and one-third from Turkey. The so-called second Clodius Trade Agreement between Germany and Turkey provided for Turkish delivery to Germany of 90,000 tons of chrome ore in 1943, contingent on German delivery to Turkey of compensative commodities. About 40,000 to 42,000 tons of chrome ore (48 percent metal content) were shipped from Turkey to Germany in 1943. In view of the fact that some ships may have been sunk, it is believed that the amount of contained chromium obtained by Germany from this source could not have been more than 12,000 tons. Including stocks on hand at the beginning of the year and small amounts from Bulgaria and Rumania, the total quantity of chromium available to Germany in 1943 is estimated at about 49,000 tons. (See table 10.)

Molybdenum is produced chiefly in Norway, the Knaben mines accounting for about 90 percent of the total Norwegian output. Their normal production ranged between 250 and 400 tons of metal a year. In March 1943, the Knaben mines were heavily bombed, and the production almost stopped for 2 months. In June and July the output was only about 10 to 12 tons a month. It may be assumed that in the second half of 1943, production again reached almost normal level, so that German molybdenum supplies from Norway may have amounted to 300 tons in 1943.

Late in that year, the mines were again subjected to intensive bombing, and the crushing, grinding, and classifying plant was badly damaged. Restoration was delayed, because Germany was unable to secure from Sweden all the necessary machinery.

Finland's new and only mine, Maetegvara, turned out about 30 tons of molybdenum in 1942. A 1943 program called for the production of about 200 tons. Rumania supplied about 100 tons of molybdenum in 1943.

Making some allowance for the production in the Balkans and assuming reserves from 1942 of about 200 tons, it is estimated that total supplies of molybdenum in enemy Europe in 1943 may have reached 850 to 900 tons.

Tungsten, vanadium, and cobalt.—Of the three alloying metals used mainly in the production of high-speed and tool steels, tungsten and vanadium were probably available in quantities sufficient to meet essential 1943 allocations, while the cobalt position was very tight. Tungsten is produced almost exclusively in the Iberian Peninsula, and the exports to Germany in 1943 amounted to 1,300 tons from Spain and 1,800 tons from Portugal. It has also been reported, but not verified, that Germany moved from Spain 500 to 600 tons of stored tungsten. Germany derives small additional supplies of tung-

sten, perhaps 200 tons a year, from domestic production. Whether Germany is obtaining further supplies from the Far East via blockade running is questionable. One indication of such a possibility is the fact that crews captured from ships and submarines sunk on this route testified that tungsten was a part of the cargo, though in small quantities, and that it always rated the highest priority. However, since no direct information is available on this point, supplies from this source have not been considered in the estimates of German supplies.

No vanadium ores are commercially mined within enemy Europe or, for that matter, on the European Continent, but Germany has developed a method of obtaining vanadium from minette iron ore as well as from vanadium-bearing ores in its own territory. This method, introduced in its final form by Von Seth, calls for an extra reblowing of molten pig iron in the acid Bessemer converter, which results in the isolation of slag with rich vanadium content. After this, a complicated chemical treatment completes the extraction of vanadium. From every 1,000,000 tons of minette ore treated this way, about 250 tons of vanadium can be produced. In other words, to obtain 1 ton of vanadium, over 4,000 tons of iron ore must be subjected to special treatment. As this process of vanadium separation introduces an additional step in steel making, it necessarily slows down the output of steel. Although the steel plants of enemy Europe have excess capacity, there are manpower and transportation limitations. It is, therefore, assumed that only about 5 percent of total steel production within the German-controlled area is subjected to the onerous process of vanadium extraction. Current annual supplies of vanadium, therefore, are probably no more than about 1,000 tons.

Cobalt supplies are extremely short, amounting to perhaps 250 or 300 tons in 1943. About half of this amount comes from Germany proper, the balance from Finland.

Supplies of alloying metals available in enemy Europe in 1943 are summarized in table 11.

THE IRON AND STEEL CARTELS

The German iron and steel industry is not only characterized by a high degree of concentration of ownership in a few vast combines; in the past further integration has been achieved through an elaborate system of cartels. During the Nazi regime, the cartels have been largely replaced by new public and semipublic agencies of control and coordination. Although the new administrative machinery places control more firmly in the hands of the Nazi regime, it has evolved out of the former cartel system and is, to a considerable extent, directed by the officials and staffed with the employees of the old cartels. A brief discussion of the cartels is, therefore, essential to a full explanation of the present system of administration.

The German iron and steel cartels, which had their origin about 1890, were organized on a product basis. Thus there was a pig-iron cartel, a steel-ingot cartel, a bar-iron cartel, a tube cartel, etc. Most of these product cartels were members of an industry-wide "peak cartel," the Stahlwerksverband. A number of product cartels were, however, formally independent of the Stahlwerksverband although they maintained close liaison with that organization and adjusted

their policies to conform to those of the peak association. The membership of each product cartel was composed of the individual operating companies producing the products over which the cartel claimed jurisdiction. The iron and steel combines, as such, were not members of the product cartels; but since each combine comprises a large number of operating companies producing a wide range of products, every large combine was represented—through its subsidiary companies—on most, if not all, of these cartels. All iron and steel combines, as well as the majority of the product cartels, maintained membership in the *Stahlwerksverband*. The number of votes of each member of a cartel was determined by its production quota which, in turn, was based upon its production capacity. The largest combines were, therefore, able to control cartel policy.

The cartels exercised complete control over German iron and steel production and distribution. They set prices for all steel products, administered the basing-point system, and set production quotas for all mills. Customers could not deal directly with the steel mills, but had to clear their orders through the cartel office. Discipline was maintained by means of fines, boycotts, and other measures.

The influence of the cartels, however, was not confined to German production and distribution. In 1926, an International Steel Cartel was organized by Germany, Belgium, France, Luxembourg, and the Saar. Later it was extended to include the Central European producers. Great Britain and the United States were not formal participants in the organization but their export policies were coordinated with that of International Steel Cartel. The steel cartel was largely patterned upon the German organization. Thus the membership of the central international cartel was composed of a number of international product cartels, each of which controlled the foreign trade in particular steel products. The *Stahlwerksverband* represented German interests in the International Steel Cartel, and the several German product cartels acted as that country's representatives on the corresponding international bodies. Because of its large steel capacity, its dependence upon foreign markets, and the effectiveness of its national organization, the German steel industry was not only very active in the formation of the international organization, but had also an inordinately strong voice in the formulation of its policies.

The International Steel Cartel and the several product cartels represented two-fifths of the world steel production and five-sixths of the total foreign trade in steel. They fixed prices and determined export quotas. In fact, the power of these cartels was so great that in areas under their domination, governmental trade barriers for steel were practically superseded by private economic agreements among cartel members. Export prices were well maintained even during the depression, and were even increased by reduced export quotas intended to create artificially short supplies.

The German steel cartels continued to operate for more than a decade under the Nazi regime. The number of product cartels was reduced by consolidation, however, and the remaining cartels were reorganized according to the "leadership principle," thereby placing them more firmly under the control of the Government authorities.

Even after the reorganization, the cartels were apparently unable or unwilling to rid themselves of their traditional policies of restricted

production, high prices, and controlled distribution. As the demands of rearmament placed increasing emphasis on the need for maximum production at low prices, it became apparent that the control of the iron and steel industry could not be entrusted to organizations, such as the cartels, which were motivated primarily by private interests. The powers of the cartels were, therefore, gradually reduced and their functions transferred to new public and semipublic agencies. Late in 1942 the cartels were formally dissolved.

It should be emphasized, however, that the new central organization does not represent a complete break with the cartel system of administration. Many of the new Nazi agencies are directed by officials who were formerly active in the cartels, and are staffed with personnel from the cartel offices. If, upon Germany's surrender, these agencies should disintegrate or be dissolved, it may be expected that the steel industry will make every effort to reconstitute the old cartels.

THE NEED FOR CONTROLS

It appears probable that, even assuming a considerable amount of destruction, the German iron and steel-producing capacity will be far greater than that required by any reasonable domestic demand during the early postsurrender period. It is also likely that, for some time, the military and industrial scrap made available by disarmament could largely free the industry from its dependence upon imported raw materials. The existence of ample capacity and easy supplies, however, emphasizes the need for close control over the iron and steel industry by the occupation authorities.

The German iron and steel industry constitutes the very foundation of Germany's military might, and directions from higher authority with respect to economic disarmament will have to take into account the security problems which the industry presents. Such considerations may demand the prohibition of production of certain types of steel, the reduction of capacity by the destruction of plant or the dismantling and removal of plant to United Nations countries for the purpose of restitution or reparations. Close control of the iron and steel industry is, of course, essential to the successful execution of any such program. Moreover, as any reconversion, or rehabilitation and reconstruction of the German economy depend to a considerable extent upon the production and allocation of iron and steel products, control of the industry constitutes a key to the control of all German economic development and affords a means by which that economy can be molded into a pattern for peaceful pursuits.

THE DEVELOPMENT OF THE IRON AND STEEL CARTELS

A. THE NATURE OF CARTEL ADMINISTRATION

Cartels administered the German iron and steel industry until the outbreak of war in 1939, and retained a vestige of control until formal dissolution in 1943. They are old established institutions which are likely to attempt to reestablish themselves after the collapse of Government controls following a German defeat.

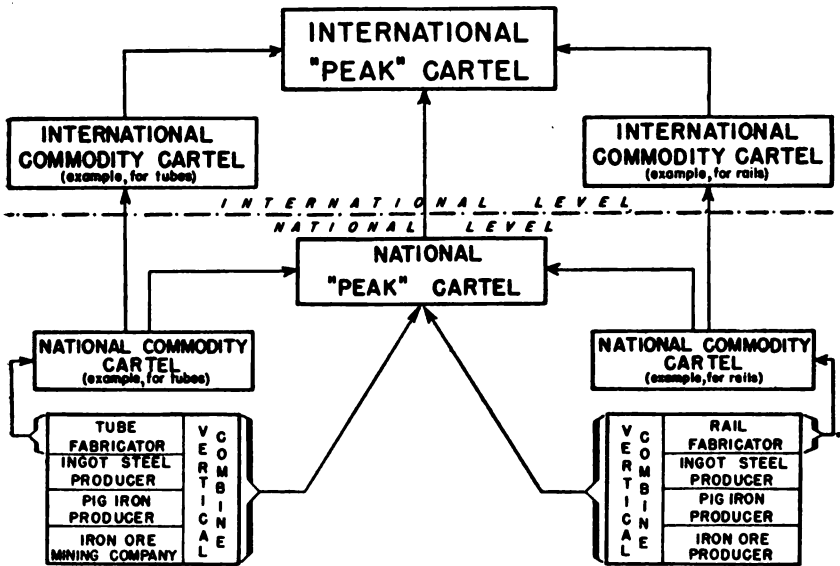
The cartels controls were very strict and discipline was maintained by means of fines, boycotts, and other disciplinary measures. The

cartels set prices for all steel products, administered the basing point system, and set production quotas for all German mills. Customers could not deal directly with the steel mill itself, but had to clear their orders through the cartel office. There was a cartel for each product and over these product cartels was a "peak" cartel, which coordinated their policies, and acted as lobbying and publicity agent for the industry. This organization was the Stahlwerksverband (steel works cartel).

The web of cartel controls extended beyond the national level into the international sphere. The Stahlwerksverband acted as the

CHART I

TYPICAL CARTEL STRUCTURE (STEEL)



1209-C APRIL 11, 1944

UNRESTRICTED

DRAWN IN THE CARTOGRAPHIC SECTION, F.E.A.

German national group in the international steel cartel, while each products cartel simultaneously represented Germany in the international syndicate for its particular product. For example, the Röhrenverband G. m. b. H. (steel tube cartel) represented Germany in the International Tube Convention.

Chart I gives a simplified picture of the structure of the relations between steel companies, steel combines, cartels for iron and steel products on the national level, and international steel cartels, and cartels for specific steel products. As indicated, each iron and steel combine is composed of a number of integrated companies manufacturing different steel products. Each company is a member of the national cartel for its particular product, so that a combine, through its constituent companies, may be represented in many cartels. Each of these national cartels for a specific product is a member of

the international cartel covering that particular product. The international product cartels (such as the International Tube Convention) maintain connections of varying strength with the international "peak" cartel, which, in the case of steel, is the International Steel Cartel.

On the national level, both the national cartels for specific products and the steel combines themselves are members of the national "peak" cartel; in the case of Germany, the Stahlwerksverband. The national peak cartel acts as the national group in the International Steel Cartel. While this description is oversimplified and is not applicable to an international cartel based upon patent agreements, it indicates the positions of company, combine, and cartel in the complicated structural organization of the steel industry.

B. THE DOMESTIC STEEL CARTELS

By 1930, 100 percent of steel-mill production was cartelized, the last few outsiders having been bought up by cartel members during the preceding years.

Because the number of votes in the cartel was determined by the quotas of the respective combines, the combines with the largest quotas were able to control cartel policy and thus the entire German steel industry. The extent of concentration in the industry is shown by the following table which gives the quotas of the Vereinigte Stahlwerke, the largest German steel combine in the various heavy industry syndicates for 1930 and 1937.

Cartel	Percent of total quotas		Cartel	Percent of total quotas	
	1930	1937		1930	1937
Pig-iron cartel.....	48.47	39.19	Rolled-wire cartel.....	38.75	27.68
Steel-ingot cartel.....	46.82	.....	Heavy-plate cartel.....	47.13	36.01
A—Products cartel.....	48.96	34.74	Tube cartel.....	50.20	45.53
Bar-iron cartel.....	41.94	24.48	Coal cartels.....	35.84	21.04
Flat-bar cartel.....	48.59	.....		

Until its dissolution in 1942, the Stahlwerksverband controlled the German steel market with the aid of the following commodity syndicates:

1. Rohstahlgemeinschaft (steel-ingot cartel).
2. A-Produkte Verband (a-products cartel—semimanufacturers, railway superstructure material, shapes).
3. Stabeisen-Verband (rod-iron cartel).
4. Grobblech-Verband (heavy-plate cartel).
5. Mittelblech-Verband (medium-plate cartel).
6. Universaleisen-Verband (universal iron cartel).
7. Bandeisen-Verband (cartel for strips, skelps, and hoops).
8. Feinblech-Verband (thin sheet cartel).
9. Verzinkerie-Verband (cartel for galvanized material).

In addition, the following cartels harmonized their policies with the Stahlwerksverband, although independent of that organization:

1. Deutsche Drehtwalzwerke A.G., Düsseldorf (rolled-wire cartel).
2. Deutsche Stahlgemeinschaft G.m.b.H., Essen (German steel forgings cartel).
3. Edelstahl-Verband, Düsseldorf (high-grade steel cartel).

4. Grossrohr-Verband, G.m.b.H., Düsseldorf (cartel for large tubes).
5. Radsatz-Gemeinschaft, Bochum (cartel for railway wheel sets).
6. Roheisen-Verband G.m.b.H., Essen (pig-iron cartel).
7. Spundwandeisen-Vereinigung, Essen (steel-piling cartel).
8. Roehrenverband G.m.b.H., Düsseldorf (steel-tube cartel).

This listing is exclusive of two fields of the industry which account for a relatively small percentage of total German iron and steel production although they consist of a large number of enterprises. These are steel castings and gray iron castings. Since these industries generally manufacture to order, and do not make a standardized product, price fixing is difficult. In the steel castings field, the bulk of the 80 producers were organized in the Association of German Steel Castings Manufacturers, with headquarters at Düsseldorf. This association was chiefly a price cartel concentrating on the domestic market, since unlike the situation in other steel products, Germany exports only a negligible fraction of her foundry production.

The gray iron foundry industry is characterized by a large number of small enterprises, and the total cumulative production of the industry is small in relation to the number of producers. This industry was the least organized of any branch of iron and steel production. Only a small percentage of this industry was cartelized at all as late as 1936, in which year the Minister of Economics ordered the compulsory incorporation of all German iron foundries into a price-calculation cartel, which was to examine the existing competitive prices and adjust them to "proper" levels. The new compulsory cartel called Verein Deutscher Eisengiessereien, reported that in spite of this order only about 1,300 foundries representing but 35 percent of the industry had joined the cartel and that no agreement had yet been reached on price fixing.

C. GERMAN PARTICIPATION IN INTERNATIONAL STEEL CARTELS

From the time of the formation of the International Steel Cartel in 1926 until its dissolution because of the war, in 1939, the Stahlwerksverband represented Germany in this international body. In its first phase (1926-31) this international body attempted to set both production and export quotas for its member nations. These attempts did not work out very well, and it was necessary to reorganize the cartel in 1933 so that it controlled export quotas, translated into crude steel ton equivalents, only. The German national group was by far the most cohesive and disciplined of any of the national groups within the International Steel Cartel, giving it great advantages in negotiations. After the adoption of export controls by the Reichsbank in 1934, it can be truly said that the policy of the German national group in the International Steel Cartel was dictated by the Ministry of Economics and that the Stahlwerksverband fought the Government's battles in the economic sphere.

In addition to the International Steel Cartel, there existed concurrently various cartels controlling the export of specific steel products; for example, tubes and structural shapes. These cartels may be placed into three categories:

- (a) Those directly subordinated to the International Steel Cartel.

(b) Those maintaining close connections with the International Steel Cartel.

(c) Those maintaining very loose or no connections with the International Steel Cartel.

The following international commodity cartels were directly subordinated to the International Steel Cartel:

- (a) Semifinished products.
- (b) Structural shapes.
- (c) Merchant bars.
- (d) Thick plates ($\frac{1}{2}$ of an inch and up).
- (e) Medium plates ($\frac{1}{8}$ to $\frac{1}{2}$ of an inch).
- (f) Universal steel.

The constitutions of these cartels did not indicate their close relations with the International Steel Cartel: this could be inferred only from provisions for their dissolution in the event that the International Steel Cartel should disintegrate and for the participation of the International Steel Cartel in the settlement of disputes. Also, the management committee of the International Steel Cartel operated de facto as the management committees of these cartels.

In the second category, consisting of cartels whose policies were heavily influenced by the cartel committee of the International Steel Cartel, although they maintained separate business administrations were:

- (a) Wire-rod cartel.
- (b) Hot-rolled bands and strips cartel.
- (c) Cold-rolled bands and strips cartel.
- (d) Wide-flange beams.
- (e) Sheet pilings.

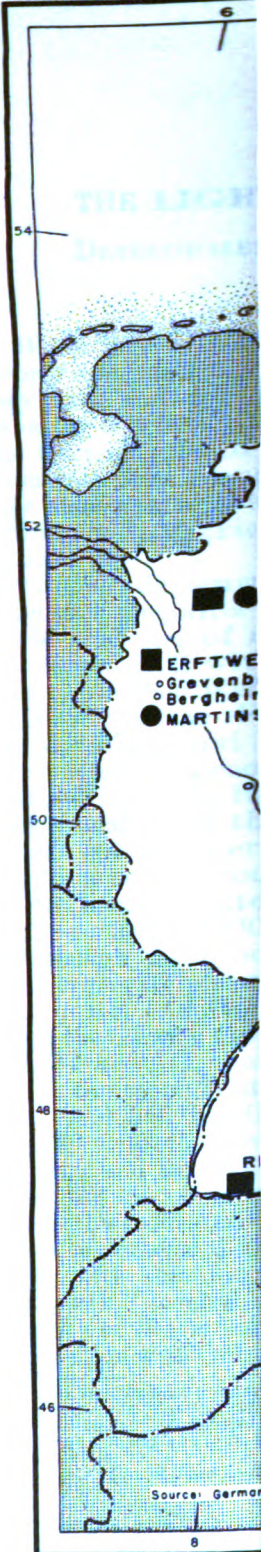
In the third category were cartels which while carefully maintaining their formal independence often collaborated with the International Steel Cartel in general policies. These were:

- (a) The International Black Sheets Comptoir.
- (b) The International Galvanized Sheets Comptoir.
- (c) The International Rail Makers Association (I. R. M. A.).
- (d) The International Tube Convention.
- (e) The International Wire Export Co. (I. W. E. C. O.).
- (f) The International Tinplate Association.
- (g) The International Scrap Purchasing Cartel.

During its brief life the International Steel Cartel drew into its orbit the great majority of the previously independent steel cartels for specific commodities and represented two-fifths of the world steel production and five-ninths of the total international trade in steel. Together with the specific commodity cartels it was able to fix prices and determine export quotas for this huge percentage of the world's steel trade, resulting in a system of regimented prices and export levels for the world's basic industry. The power of the cartel was so great that in areas subject to cartel domination governmental trade barriers for steel products were practically superseded by private economic agreements between cartel members. Export prices in steel have in general been well maintained. The general rule was for each cartel to adopt the prevailing open-market price at the time of its formation

and then to increase this price even further. Also, there have been numerous instances of cartels keeping steel prices artificially rigid by reducing global export quotas, in order to create an artificially short supply.

Germany was the initiator of the International Steel Cartel in 1925. In the ensuing period, the cartel collapsed several times, but it was always the Germans who kept pressing for resumption of negotiations. Since that country possessed the best domestic steel cartel system, the most efficient and largest steel mills, and the highest degree of governmental "cooperation" with the industry, it was easy for her to occupy a dominant position in the International Steel Cartel.



CONTROLLED ALUMINUM
AND MAGNESIUM PLANTS

THE LIGHT METALS INDUSTRY IN GERMANY

DEVELOPMENT OF THE GERMAN ALUMINUM INDUSTRY

CAPACITY AND PRODUCTION

World War I-1933.—The outbreak of war in 1914 found Germany poorly equipped to meet her war needs of aluminum for direct military uses and for substitution. Only one reduction plant with a capacity of 1,000 tons a year was in operation. This was located on the German side of the Rhine in southern Baden, across the border from the Swiss town of Rheinfelden which gave the plant its name. The plant was, and still is, owned by the Swiss-incorporated company, Aluminum-Industrie A. G. Neuhausen (referred to hereafter as "AIAG").¹

To meet the emergency, Germany undertook the first of the two expansion programs which have made her one of the most important world producers of aluminum. During the war, five new reduction plants were built with a total annual capacity of 35,000 tons of metal, and a sixth plant was begun.

The Chemische Fabrik Griesheim Elektron² in association with the Metallbank und Metallurgische Gesellschaft A. G.³ undertook the construction of three of the plants, all of which were in operation in 1916. The first at Rummelsberg near Berlin, with a capacity of 4,000 tons annually, and the second at Horrem near Cologne, with a capacity of 3,000 tons, were built near existing thermal power plants. The third was advantageously located in Bitterfeld, an already established electrochemical center near enormous brown-coal deposits. Its original capacity of 4,000 tons has since been greatly expanded.

Although the production of these three works slightly exceeded their aggregate planned capacity, the supply of aluminum remained inadequate. Additional works were then designed and built with the aid of the German Government. In April 1917, the Vereinigte Aluminium Werke A. G. (hereafter referred to as "VAWAG") was founded with a capital of 50 million marks, half of it subscribed by the Government and half by Griesheim Elektron and Metallbank, who also brought into the new organization their plants at Rummelsberg, Horrem, and Bitterfeld. The "Lautawerk," which came into operation a few days before the armistice, had an annual capacity of 12,000 tons and was located near the town of Lauta in the district of Lausitz, where brown-coal deposits provided fuel for a thermal power plant.

The fifth aluminum reduction plant built during the war was the "Erfwerk," located at Grevenbroich, Niederrhein, with an annual capacity of 12,000 tons. This plant was built by the Government in cooperation with Gebrüder Giuliani G. m. b. H. (a producer of alumina)

¹ Known as Aluminum-Industrie A. G. Chipplis after 1940 when the headquarters were moved from Neuhausen to Chipplis. See Ch. VII for the history and organization of this and other firms mentioned later.

² Chemische Fabrik Griesheim Elektron was in 1917 brought into the combine of seven chemical and dye companies which was later to be known as I. G. Farbenindustrie A. G. (often referred to as "I. G. Farben" or simply "I. G.').

³ In 1928 this firm changed its name to Metallgesellschaft A. G. (frequently shortened to "Metall").

and the Rheinische-Westfälisches Electricitätswerk A. G. It too used steam power produced from brown coal.

The sixth aluminum project was not completed during the war. The Innwerk Bayerische Aluminium A. G. was founded in 1917 by the German Government in cooperation with the State of Bavaria, Allgemeine Elektrizitäts-Gesellschaft, Gebr. Giulini, and the Siemens Schukertwerke.⁴ The company undertook construction of a hydroelectric power plant at Mühlendorf on the River Inn in Southern Bavaria, and of an aluminum plant, known as the Innwerk, at Töging nearby. The plant did not come into operation until 1925, when its rated annual capacity was 11,000 tons.

At the end of 1918, therefore, the total reduction capacity of the Reich was about 36,000 tons of aluminum annually. The closing and dismantling of the Rummelsburg plant at the end of the war, and the closing of the Horrem plant in 1920 reduced the total capacity to 29,000 tons. In 1925, production at the Innwerk brought the figure up to 40,000 tons, where it remained until 1933. During this interval, German military preparations were prevented by the Treaty of Versailles and, it should also be remembered, German production was restricted by the international aluminum cartel. (See Ch. VIII.)

The alumina required by these wartime projects was supplied by a new extraction plant built in conjunction with the Lautawerk, and three plants already in operation:

1. The Martinswerk on the Erft River at Bergheim near Köln, owned by Aluminium-Industrie A. G. Neuhausen (AIAG);
2. A plant at Goldschmieden near Breslau, owned by H. Bergius und Co., a subsidiary of AIAG;
3. A plant at Mundenheim near Ludwigshafen, owned by Gebr. Giulini.

The Goldschmieden plant was closed down in 1928, and its movable equipment and assets transferred to the Martinswerk, whose capacity has been considerably enlarged. The Mundenheim plant is also still operating.

Certain changes in ownership and administration of the reduction plants occurred after 1920. Griesheim Elektron and Metallbank retired from VAWAG, leaving the latter in exclusive possession of the Lautawerk, and themselves taking possession of the Bitterfeld plant. This plant is now operated by Aluminiumwerk G. m. b. H., joint subsidiary of I. G. Farbenindustrie A. G. and Metallgesellschaft A. G. VAWAG in 1925 bought out the participants in the Innwerk project for a consideration of 3,200,000⁵ reichsmarks and in 1932, took over the Erftwerk in the course of a merger for the purpose of simplification and efficiency.

1934-38.—When Hitler came to power, Germany undertook her second aluminum expansion program. Stimulated by the demands made by military preparations, Germany's aluminum reduction capacity was increased from 40,000 tons in 1933 to at least 174,000 tons in 1938, while annual production rose in the same period from 19,200 to 160,000 tons. (See table 2.) The increase in capacity was obtained by the expansion of existing plants and the erection by VAWAG of a new plant, the Lippewerk at Lünen, with a reported initial capacity of 25,000 tons a year.

⁴ Some authorities do not associate Siemens with this project.

⁵ Innwerk A. G. München retained a small interest in VAWAG. See ch. VII.

In 1938 Germany's alumina capacity was estimated at 430,000 tons from five plants: AIAG's plant at Bergheim, Giuliani's at Mundenheim, and three plants owned by VAWAG—the Nabwerk, the Lautawerk, and the Lippewerk. (See table 3, below.) All produced alumina from bauxite by the Bayer process.⁶ Their capacity was ample for the requirements of the reduction plants, which at that time were below 350,000 tons of alumina annually.⁷ In addition to this production by the Bayer process, the Lautawerk and the Lippewerk were reported to be producing alumina from clay as a raw material by means of a process called the "Goldschmidt Sulphite." The plants were said to have a capacity of 48,000 tons a year for this process, the product of which was reported to be chiefly used for the manufacture of silicon aluminum alloys, required as a deoxidizing agent in making iron and steel alloys. Small scale use of a "Seailles process" for low grade raw materials has also been reported. Domestic alumina production was supplemented by small imports of some 10,000 tons annually from Italy, and in 1938, 14,000 tons of alumina were exported to Norway.

World War II.—Since 1938, Germany proper's capacity for aluminum reduction has been increased by extensions to VAWAG's Lautawerk at Lausitz and Lippewerk at Lünen and to the AIAG plant at Rheinfelden, as well as by the building of a new I. G.-Metall unit of 10,000 tons capacity at Aken, near Dessau. The estimated capacity and production of the aluminum plants in Germany proper are given in table 2.

To this production Germany has been able to add since 1938 the aluminum production of Austria. In 1943 Austrian facilities increased the aluminum reduction capacity of Greater Germany by 90,000 tons to a total of 341,000 tons, and production by 57,000 tons to a total of 282,000 tons.

The reported shortage of electric power is probably the reason why production has not been up to capacity. The hydroelectric power which the Germans expected to develop in Austria apparently has failed to keep pace with the expansion of reduction capacity.

During the war, the alumina capacity of Germany proper is believed to have been raised to 600,000 tons annually by extensions to the Martinswerk and Lautawerk and to the Mundenheim plant. (See table 3.) An unconfirmed report states that extraction plants have also been built in connection with the Erftwerk and the Innwerk reduction plants.

Unless extraction plants have been added to the Erftwerk and the Innwerk, however, the extension of alumina capacity in Germany proper during the war has not progressed in proportion to the increasing demands of reduction capacity in Germany and Austria. The output of alumina is estimated to have risen as follows between 1940 and 1943:

Year:	Tons
1940	480,000
1941	500,000
1942	530,000
1943	550,000

⁶ See appendix A for a description of the Bayer process.

⁷ About 2 tons of alumina are required for the production of 1 ton of aluminum.

Actual alumina requirements for the estimated aluminum production of 282,000 tons in Greater Germany in 1943 would be about 570,000 tons, 20,000 tons above the estimated alumina output. Moreover, Germany has been supplying some 20,000 to 30,000 tons of alumina annually to the Norwegian aluminum plants and in addition would have had to allocate at least 60,000 tons of alumina for the production of abrasives, refractories, and chemicals.

The Germans obviously intended to meet the alumina requirements of the new reduction capacity in Europe from extraction plants under construction in Hungary and Yugoslavia. In the meantime, the deficiency was made good by imports from France, from which Germany took between 30,000 to 40,000 tons in 1941-42, and 60,000 to 70,000 tons in 1943.

RAW MATERIAL SUPPLIES

Bauxite.—Because of her lack of domestic bauxite deposits, Germany took steps as early as 1925 to ensure supplies from abroad (see table 10). In that year VAWAG obtained a major interest in the Bauxit-Trust A. G., a holding company established in Zurich in 1923 with a capital of 11,000,000 Swiss francs and controlled by German and Hungarian interests. VAWAG and Otavi Minen und Eisenbahn Gesellschaft were the German participants, and the Hungarians were Ungarische Allgemeine Kreditbank, Ungarische Allgemeine Kohlenbergbau A. G., Manfred Weiss A. G., and Salgotarjaner Steinkohlenbergbau A. G.

In addition to the ore supplied by the Bauxit Trust, AIAG delivered bauxite from its mining subsidiaries in France, Italy, Yugoslavia, Greece, and Rumania to its own extraction plant at Bergheim and to the VAWAG extraction plants. Gebr. Giuliani G. m. b. H. secured bauxite concessions in Italy and Yugoslavia, thus ensuring the ore supply of their extraction plant at Mundenheim.

TABLE 10.—Some German interests in the European bauxite industry, 1939

	Company	Location of properties
Hungary.....	Bauxit-Trust A. G.: Aluminiumerz-Bergbau u. Industrie A. G....	Numerous mines in the region of Gant and Nyirad.
Roumania.....	Bauxit-Industrie A. G	
	Bauxit-Trust A. G.: Alumina S. A. R.....	Concessions in the Jad valley, principally near Baratka.
Yugoslavia.....	Bauxit-Trust A. G.: Kontinentalno Bauksito Rudokopno i Industrijsko d. d., Zagreb.	Numerous concessions in the regions of Drnis and Mostar.
	Gebr. Giuliani: Dalmacija Bauksit d. s. o. J. Split.....	
	Adria Bauksit Rudarsko.....	Drnis and Mostar.
	Industrijsko d. d., Zagreb.....	Drnis and Sinj.
	Aluminium Walzwerk Singen: ¹ Ugrovac Minen A. G.....	Mostar.
Italy.....	Bauxit-Trust A. G.: S. A. per l'Escavo e l'Industria di Minerali d'Alluminio.	Concessions in Istria.
	Gebr. Giuliani: Bauxiti Istriane Soc. a. g. l., Trieste.....	

¹ Owned by Aluminium-Industrie A. G. Neuhausen. One source says the Ugrovac mine is owned directly by AIAG.

Source: MEW Econ. Survey, Sec. H, p. 72 and German Penetration of Corporate Holdings in Croatia (FEA report EIS-68b and Civil Affairs Guide).

Before the war, Hungary was Germany's most important source of bauxite, supplying 30 to 50 percent of Germany's annual requirements. Yugoslavia was next in importance. Germany took practically the entire bauxite exports of both countries and nearly all of Yugoslavia's output. After exploitation of Greek deposits began in 1935, Greece became an increasingly important supplier. Although no German bauxite or aluminum interests were operating in Greece, most of the Greek output went to the Reich.

After 1934, German bauxite imports were considerably in excess of annual requirements. The accumulated stock pile is estimated to have been 1.5 million tons at the outbreak of hostilities.

While as a result of the victories of 1940 and 1941, the Germans obtained control of most of the bauxite deposits of the continent, the unlimited and uninterrupted supplies they had hoped for were not forthcoming. Their plans called for increasing the total annual output to the following levels: France, from 1 to 1½ million tons; Hungary, 1 million tons; Greece, 1 million tons; and Yugoslavia, from 400,000 to 500,000 tons. Fulfillment of the plans was hindered, however, by transport difficulties and popular resistance movements. Consequently, imports were about the same as in pre-war years and fluctuated little from 1940 to 1943. As compared with the pre-war period, imports increased from France and Hungary but this increase was counterbalanced by a decline of shipments from Yugoslavia and Greece.

Because imports have probably not replaced existing stocks, the ore stock pile is believed to have declined from the pre-war figure of 1.5 million tons to less than 1 million tons by the beginning of 1944. These reserves must have been considerably depleted during 1944 when the liberation of France shut off one major source of supply and supplies from another major source were reduced by the liberation of part of Croatia, and the cutting of the main rail line to Yugoslavia. At the end of the year, the advance of Soviet forces shut off some of the important ore deposits of Hungary, now Germany's sole source of supply. If the Germans try to maintain the present rate of production in Germany and Austria, the stock pile may be well on the way to exhaustion by July 1945.

GERMAN PENETRATION OF THE EUROPEAN ALUMINUM INDUSTRY

The German Government, as has been noted earlier, was considering before the outbreak of World War II the development of an integrated aluminum industry in central and in eastern Europe where bauxite supplies are unlimited and water power is ample. Military occupation opened the way to the realization of this far-reaching scheme for which German combines supplied the capital, the technicians, and the management. Aside from a very large reduction plant in Austria, however, no developments were undertaken in these regions until German hopes of a short war had diminished. The first light metals ventures on the periphery of Europe occurred in Norway.

In order to ensure supplies of light metals for the German aircraft industry as well as to exploit the reduction facilities and water power of German-occupied France and Norway, a new concern, Nordische Aluminium A. G., was established in Berlin on November 6, 1940 by

the Junkers Flugzeug und Motorenwerke, Dürener Metallwerk A. G. and VAWAG. The capital of close to 20,000,000 reichsmark was underwritten by the Bank der Deutschen Luftfahrt, which was represented on the advisory committee along with representatives from the German Ministry of Finance, the Air Ministry, and the Reich Commissariat. Dr. H. Koppenberg, general manager of the Junkers Werke and a close friend of Goering, was made chairman of the board. In July 1941 the name of the new concern was changed to Hansa Leichtmetall A. G. and its principal activities became the following: (1) To allocate the supplies of bauxite from European areas, where they were not already held by the Bauxit Trust; (2) to allocate the finished metal exported from the occupied territories; and (3) to expand aluminum production in these territories.

In southeastern Europe, following its occupation by the Germans in 1941, VAWAG and the Bauxit Trust were the chief factors in light metals developments. Both already had bauxite interests in the region. The former was less interested in developing metal production in the area than in expanding the output of ore and erecting new facilities for the extraction of alumina, measures which would assure the requirements of their increased reduction capacity in Germany and Austria. This was a departure from the pre-war policy of the company under which the self-contained alumina-aluminum plants at Lauta and Lünen had been built. The new policy was probably adopted at this time as a means of saving transport. To finance these undertakings, VAWAG established two subsidiaries: Donautaler Alaunerde Industrie A. G. in Hungary, and Kroatische Aluminium A. G. in Yugoslavia. By 1942 Donautaler's capital had been increased by more than four times to 35,000,000 pengö, held one-third each by VAWAG, the Bauxit Trust, and the Hungarian Government. Directors and managers for both Donautaler and Kroatische Aluminium came from VAWAG and the Bauxit Trust, and Dr. Luther Westrick, chairman of VAWAG, became chairman of both companies.

I. G. Farbenindustrie is believed to be associated with a light metals development in Austria and another in Czechoslovakia. It has been rumored that this company, in cooperation with Hansa Leichtmetall, was planning to construct plants in Roumania and Yugoslavia, but the projects did not materialize. There is no evidence that Gebr. Giulini, another German concern with pre-war interests in southeastern Europe, have expanded their operations.

German plans and achievements in the light metals industry of German-dominated Europe are described in some detail below, in the order of occupation or Gleichschaltung of the producing country. The record of the Germans on the whole offers no convincing proof of their purported organizational genius. They have been able to loot properties, to take over existing facilities and to construct new ones, and to impress labor to work under their direction. But except where they have found collaborators in the financial and industrial leadership of national companies and in puppet governments, they have been unable to achieve any marked success. One reason for their failure may be their inability to mobilize the working people of Europe willingly to fulfill German orders.

AUSTRIA

Before the annexation, Austria's aluminum industry was unimportant. Up to 1935 metal production was less than 2,500 tons from two reduction plants located at Lend and Steeg. The plant at Lend was erected in 1897 by the Aluminium-Industrie A. G. Neuhausen, and is operated by a subsidiary, the Salzburger Aluminium G. m. b. H. While its original capacity was 4,000 tons per year, production never exceeded 2,500 tons before 1938 because of inadequate supplies of water power. The plant at Steeg, near Gmunden, was erected in 1916-17 by the Stern und Hafferl Elektrizitätswerke A. G., and is operated by the Oesterreichische Kraftwerke A. G. (Oeka). Its annual capacity in 1938 was 2,000 tons. The small quantities of alumina and cryolite required for production were imported, the former mainly from Yugoslavia, Italy, and France, and the latter from Denmark. Electrodes were produced at Steeg. Statistics of production, trade, and supplies for the preannexation Austrian industry are given in table 14.

TABLE 14.—Austria: Supplies of aluminum and raw materials, 1934-38

[In tons]

	Aluminum	Alumina	Cryolite
1934—Production	2,100		
Imports	544	4,993	236
Exports	2,687		30
1935—Production	2,400		
Imports	488	4,857	207
Exports	2,394		26
1936—Production	3,300		
Imports	560	6,855	436
Exports	2,394		8
1937—Production	4,400		
Imports	685	7,490	406
Exports	3,370		15
1938—Production	5,000		
Imports	125	11,242	518
Exports	910		1

Source: MEW Economic Survey, sec. H, p. 80.

Under German domination, Austrian reduction capacity was increased by 15 times, and aluminum output by over 11. This was accomplished by extensions to the plants at Lend and Steeg, and the erection of a new plant at Braunau-am-Inn which, with its planned capacity of 90,000 tons, will be the largest in Europe on completion.

CZECHOSLOVAKIA

A project on which information is conflicting is a plant believed to be situated at Engerau, between Bratislava and Kittsee, near the Hungarian frontier. The company concerned is the Leipziger Leichtmetallwerk Rackwitz, Bernhard Berghaus K. G. of Rackwitz, near Leipzig. This company, founded shortly before the outbreak of war with the probable backing of the Reich Air Ministry, is now one of the leading German producers of light alloys and semimanufactures, and is believed to be controlled by I. G. Farben. Reports in 1943 gave the planned capacity of the Engerau plant as 10,000 tons of aluminum

and 20,000 tons of alumina; later reports doubled these figures, while a report from a different source maintained that aluminum only was to be produced from alumina supplied from Almasfuzito. If the plant is to produce alumina, bauxite supplies could be brought up the Danube from Hungary, and power for both alumina and aluminum operations would be available from hydroelectric developments on the River Waag. Two new power stations, one at Ilava and the other at Dubnica, now reported to be in operation, could supply between them more than sufficient power for the needs of a 10,000-ton reduction works. In any event, the project at Engerau represents a new departure in the policy of the Berghaus company, which previously was concerned with metal fabrication, not metal production. Together with the project at Moosbierbaum, it may indicate that I. G. intended to compete with VAWAG in light metals production in southeastern Europe.

NORWAY

Before the war Norway, while it had no bauxite, had a considerable aluminum industry based on its water power resources. Six reduction plants, one of which also extracted alumina, were located along the coast where transportation costs were low. Their pre-war capacities are given in table 16.

TABLE 16.—Norway: Capacity of aluminum plants, 1939

Company	Location	Capacity
		<i>Tons</i>
A/s Norsk Aluminium Co.....	Hoyanger, Sogn ¹	8,500
Det Norske Nitrid A/s.....	Eydehavn, Aust-Agder.....	5,000
Do.....	Tysedal, Hordaland.....	9,500
A/s Haugvik Smeltewerk.....	Glomfjord, Nordland.....	8,000
A/s Vigelands Brug.....	Vigeland, Aust-Agder.....	3,500
A/s Stangfjordens Elektrochemiske Fabrik.....	Stangfjord, Sogn.....	1,000
Total.....	.....	35,500

¹ This plant also has a capacity of 22,000 tons for the extraction of alumina.

Source: Unpublished Foreign Economic Administration report prepared by the economic institution's staff.

As all of these companies were almost wholly owned and controlled by British, French, and Canadian interests,⁸ they clearly came under the provisions of an order of the Quisling government of August 17, 1940, which provided for the appointment of a German administrator for all Norwegian enterprises which directly or indirectly were under "enemy" control. The plants were accordingly put under the administration of a German organization known as Norsk Aluminium Kontor ("NAK"), and Dr. Koppenberg, chairman of the boards of the Flugzeug und Motoren Werke and Nordische Aluminium, was designated trustee and property administrator.

On May 2, 1941, Nordisk Lettmetall A/s was established in Oslo with a share capital of 45,000,000 kroner, held in equal amounts by I. G. Farbenindustrie, Norsk Hydro-Elektrisk Kvaeststofaktielstab, and Hansa Leichtmetall, then still known as Nordische Aluminium. I. G. Farben already had a controlling interest in Norsk Hydro, which

⁸ The Canadian interest was that of Aluminium, Ltd., which is associated with the Aluminum Co. of America.

before the German invasion was in possession of most of the elements needed for the manufacture of aluminum—patented processes, water power, building sites, and skilled workers. The task of the newly organized Nordisk Lettmetall, in which Dr. Koppenberg assumed management of the work committee, was the enlargement and management of the facilities in the Heroya area formerly owned by Norsk Hydro.

A day after Nordisk Lettmetall was organized, Hansa Leichtmetall formed under Norwegian law a subsidiary stock company, A/s Nordag, with head offices in Oslo and a capital of 70,000,000 kroner. This company was charged with the task of putting into effect the German program for expanding the Norwegian aluminum industry.

FRANCE

Ninety percent of the pre-war French aluminum production was controlled directly or indirectly by Cie. de Produits Chimiques et Electrometallurgiques Alais Froges et Camargue (usually referred to as "AFC" or "Pechiney"). Its sole competitor was Ste. d'Electrochimie, d'Electrometallurgie et des Acieries Electriques d'Ugine (referred to as "Ugine"). AFC was not only a giant and self-contained producer of aluminum and magnesium but was also a large producer of aluminum products and the third largest French producer of chemicals. Through membership in the French chemical cartel organized in 1927, AFC had close connections with I. G. Farben.

AFC's activities were concentrated in four regions. Bauxite was obtained from the Mediterranean region where practically all of the French bauxite deposits are located, and here, because of the local availability of lignite for fuel, two of AFC's three large alumina plants were located. The abundant water power of the Alpine region made it the center of AFC's aluminum reduction operations, which for the same reason were carried on to a smaller extent in the Pyrenees. In the central plateau region, AFC obtained auxiliary minerals such as fluorspar and pyrites, a small amount of bauxite, and some water power.

Inasmuch as the French aluminum industry was concentrated in southern France, which was not occupied by the Germans until November 1942, German economic penetration was accomplished by less overt means than in Norway. No new companies were established but the Germans were able to dominate the industry by means of direct and indirect investments (the capitalization of AFC was tripled between 1940 and 1941), concentration of administrative and managerial responsibility in the hands of a group responsive to their wishes, and allocation of raw materials and products. As noted earlier, two of the tasks of Hansa Leichtmetall were to allocate bauxite from European deposits not already controlled by the Bauxit-Trust and to allocate the metal exported from occupied territories. In allotting the supplies of French bauxite, Hansa Leichtmetall cooperated with the Groupement de Repartition de la Bauxite, established in January 1941 at German instigation by a number of French concerns in addition to AFC for the purchase, transportation, import and export, allocation, sale, and use of bauxite. In the spring of 1941, the Bank der Deutschen Luftfahrt, which had underwritten the stock issue of Hansa Leichtmetall, founded the Aero Bank as its Paris sub-

siduary to help finance French producers of light metals. By the reorganization in September 1941 of all French electric power companies into three "fusion" groups, on each of which the Vichy government was represented by a commissioner, the Germans were able to dominate the production and transmission of power.

German expansion plans for the aluminum industry of France appear to have been rather successful. The ready market offered by the German aircraft plants was an incentive to increased production. The output of aluminum is estimated to have risen from a 1936-38 average of 35,000 tons to between 60,000 and 70,000 tons in 1943, of which the Germans took about 70 percent. Alumina production, which had averaged 110,000 tons before the war, must have risen sharply or it could not have met the demands made upon the extraction plants. These demands included the increased requirements of the French reduction plants, requisitions for German reduction plants which rose from 30,000-40,000 tons in 1941-42, to 60,000-70,000 tons in 1943, and German requisitions for reduction plants in Austria and Norway. Bauxite production also had to rise from the pre-war level of 675,000 tons annually in order to meet not only the steeply rising requirements of French alumina plants but also requisitions for German plants which in 1943 called for—but may not have received—as much as 60,000 tons per month.

HUNGARY

A small light-metals industry was in existence in Hungary before the war, in addition to considerable ore production. An alumina plant at Magyarovar with a capacity of 10,000 tons, owned by Bauxit-Industrie A. G. (a subsidiary of the Bauxit-Trust), supplied the reduction plant on the island of Csepel, which was owned by Manfred Weiss Stahl und Metallwerke A. G. of Budapest. The Ungarische Allgemeine Kohlenbergbau A. G. must have begun its aluminum plant at Felsögalla before the outbreak of hostilities since it commenced operations in 1940. Up to this point, the Hungarian industry appears to have been more or less independent of German control; Manfred Weiss, in fact, had no connection with the international aluminum cartel. German light-metals interests may have taken over these concerns during the last 4 years, and it is well known that they have instituted new developments with the collaboration of Hungarian interests.

YUGOSLAVIA

Pre-war German interests in the exploitation of Croatia's rich bauxite deposits are shown in table 10. If this region had not been the scene of Yugoslav Partisan activities, ore output after the invasion might well have been expanded to meet German plans. Instead production fell from 400,000 tons in 1938 to 70,000 tons in 1941, and by 1943 had reached only half the pre-war figure. The only new company appears to be the Rudnica A. G. of Dubrovnik, established with the open participation of the Reichswerke "Hermann Goering" A. G. to operate bauxite mines in Herzegovina.

Before the war Gebr. Giulini G. m. b. H. owned an alumina plant at Moste, Slovenia, with a reported capacity of 10,000 tons. It supplied the oxide reduced at the Fabrika Aluminijuma A. D. in

Sibenik until 1940 when an alumina-plant was also brought into operation by Fabrika. This company, established in 1938 by a group of Yugoslav industrialists, some of whom were Jews, was put under the administration of a German commissioner after the occupation, presumably on the basis of a German-Italian agreement since it was located in an area under Italian administration. The plant had a capacity of 2,000 tons when built and was enlarged to 3,250 tons in 1940. By 1943 it may have had a capacity of 5,000 tons but would be unlikely to produce at this level because its source of power, a hydroelectric station at the Krka falls, would be affected by seasonal water shortages.

DEVELOPMENT OF THE GERMAN MAGNESIUM INDUSTRY

CAPACITY AND PRODUCTION

The modern magnesium industry dates from 1896, when electrolytic reduction of fused magnesium salts began at Bitterfeld. Chemische Fabrik Griesheim Elektron controlled the basic patents for the manufacture of magnesium, which they began to produce commercially in 1912. Just as the First World War supplied the initial impetus for the development of the aluminum industry in Germany, it stimulated the production of magnesium, chiefly for the reason that magnesium could be used as a substitute for copper and aluminum, which were in short supply. Griesheim Elektron brought its patents and know-how into the great chemical combine, I. G. Farbenindustrie A. G., which by these means and subsequent research and development was able to control world production of the metal until the advent of World War II.^{9 10} For many years, moreover, the world outside of Germany ignored the commercial possibilities of magnesium. Not only did I. G. put its mammoth economic resources behind the development of magnesium, but in addition the Hitler government aggressively promoted its production because it is the only nonferrous metal that can be produced in virtually unlimited quantities from domestic raw materials.

Magnesium-bearing raw materials are plentiful and widespread but facilities for production of the metal are concentrated in electrochemical plants where equipment is costly and specialized. The raw materials used in Germany are believed to be dolomite, which occurs widely; carnallite; and magnesite, which must be imported.¹¹ European sources of crude magnesite are Austria, Yugoslavia, Greece, and Italy. In 1939 European magnesite shipments were reported to be double those of 1938, and in 1940 had by October reached the volume of the 1939 shipments. I. G.'s subsidiary, the Alpenlandisch Bergbaugesellschaft m. b. H. of Mayrhofen, Austria, owns a mine in the nearby Zillertal, a short distance east of Innsbruck. This mine was reported to have shipped 20,000 tons of magnesite in 1939.

For many years magnesium was produced in Germany solely at I. G.'s Bitterfeld works. Crowded conditions there led them in the middle thirties to build another plant in Aken, to which an aluminum reduction works was added after the war began. It is believed that

⁹ The world's basic magnesium patents are listed in the hearings before the Committee on Patents, U. S. Senate, 77th Cong., pt. 2, pp. 1012-1026.

¹⁰ See section on Control of World Magnesium Production by I. G. Farbenindustrie A. G.

¹¹ See also section below, German Penetration of Occupied Territories.

they now have two magnesium reduction plants in Stassfurt. In addition, they built in 1937 a separate plant for the production of magnesium oxide at Teutschenthal, near a large carnallite mine. Magnesium chloride solution is piped from the mine to the plant where magnesium hydrate is precipitated with calcined dolomite, and then calcined to produce magnesium oxide or magnesia.

I. G.'s aluminum and magnesium operations are independent of each other as well as largely independent of I. G.'s other manifold activities. The electrolytic equipment for the reduction of aluminum cannot be used for the reduction of magnesium, and vice versa. It is the presence of large resources of thermal electric power and technical experts which was chiefly responsible for bringing the two operations together at Bitterfeld and Aken. I. G. Farben maintains at Bitterfeld the largest laboratory in Germany devoted exclusively to research in the light metals.

Not until 1938 did I. G. Farben have any competitor in the magnesium field in Germany. At that time, Wintershall A. G., the giant potash concern, began producing magnesium by an old Farben electrolysis process, the patent of which had expired. Metallgesellschaft A. G., according to rumor, agreed to stay out of the field.¹² Wintershall used its plant at Heringen-a-Werra as the site of its magnesium production, and specially selected carnallite as the raw material. Possibly in preparation for this activity Siemens in 1936 built a 15,000-ampere rectifier of 400 volts at the Wintershall mine at Heringen (Gewerkschaft Wintershall).

In the absence of any published information (including trade statistics) on the magnesium industry in Germany, capacity and production can only be estimated. Annual capacity just before the war is believed to have been some 20,000 tons. At the end of 1943, five plants were believed to have been in operation with a total annual capacity of 31,500 tons. The increase in capacity may have been effected by extensions to an existing plant at Stassfurt and erection there of a second plant.

Annual production is estimated to have risen as follows:

Year:	Tons
1937-----	12, 000
1938-----	14, 000
1939-----	16, 000
1940-----	20, 000
1941-43 (annually)-----	25, 000-30, 000

The possibilities for the application of magnesium and its alloys are far from being exhausted and there is no doubt that many new uses will be devised in the future. Nevertheless it is likely that the cessation of hostilities will, as in the aluminum industry, find Germany with capacity far in excess of peacetime requirements.

GERMAN PENETRATION OF OCCUPIED TERRITORIES

Since there were few known magnesium developments outside of Germany prior to the war, it is not surprising that information is lacking concerning German penetration of magnesium production in

¹² There is an unconfirmed report that Aluminium-Industrie A. G. Neuhausen (AIAG) was producing magnesium in 1938. The location of the plant was not stated. Another report mentions among wartime projects of this company the expenditure of Sfr. 640,231 for a new installation at their Chippis (Switzerland) plant for the manufacture of magnesium.

occupied areas. It is justifiable, however, to assume that, wherever in Europe I. G. Farben patents and techniques were utilized before the war, I. G. took over the facilities upon occupation. The combine had no known magnesium interests on the Continent until the annexation of Austria.

After this event, I. G. acquired through forced sale the rich magnesite deposits, the pilot plant, and the patents of Oesterreichische Magnesit A. G. of Radentheim, Austria. The Austrian company was the second largest magnesite producer before the war, accounting for about 30 percent of the refractory magnesite produced on the Continent. The acquisition of these deposits is said to have been responsible for I. G.'s shifting to a very large extent from dolomite to magnesite as the basic raw material used at its plants in Bitterfeld and Aken. Up to August 1939 when an explosion occurred, the pilot plant at Radentheim produced 1 to 1½ tons of magnesium a day by direct thermal reduction. It is strongly believed that I. G. has since built a metal reduction plant there.

It is not unlikely, in view of I. G.'s participation in Hansa Leichtmetall A. G. and its pre-war connections with Alais Forges et Camargue, that I. G. was able to dominate the magnesium industry of France during the occupation. France had hitherto been the second largest European producer with an output of 1,500 tons in 1938 and 2,500 in 1939. AFC and Ugine were the principal producers, pooling for sales purposes into the Société Generale du Magnesium. Two plants, each with a capacity of 1,000 tons, were operated by Ste. Generale, one at Saint-Auban, Basse-Alpes, and the other at Jarrie, Isere.

ORGANIZATION OF THE GERMAN LIGHT METALS INDUSTRY

ALUMINIUM-INDUSTRIE A. G. CHIPPIS ("AIAG")¹³

This company, known as the nursery of the European aluminum industry, has during both World Wars found itself in an equivocal position. Incorporated in Switzerland and insisting on its neutral personality, AIAG has nevertheless owned plants in countries at war with one another. During the First World War, its assets in France, consisting of bauxite mines and an alumina plant, were sequestered by the French Government, and during the present conflict, it was placed on the Statutory List for a few months in 1941.

In the eighties, the firm of J. G. Neher Sons, proprietor of an iron foundry near Neuhausen since 1810, was in search of an industry which would exploit the water power available from the adjacent falls of the Rhine. The manufacture of aluminum appeared to be an electrometallurgical process of considerable promise and one which both met the firm's needs and would make use of its experience. After experiments with the electrolytic reduction of aluminum from cryolite proved unsuccessful in 1886, the firm was ready to welcome proposals in May 1887 to try out the new patents of Paul Heroult, the French inventor of a process similar to the one developed in the

¹³ This producer is described at some length for the following reasons: While it has neutral status, it is an important producer of alumina and aluminum in an enemy country and thus is subject, insofar as its production in Germany is concerned, to United Nations control following the military defeat or surrender of Germany; (2) it is not well known in the United States whose representatives will be dealing with the special problem it represents on various levels of occupation authority; and (3) it has held a balance of power position in the international aluminum cartel during the Second World War.

United States by Charles Hall. These experiments were so successful that a new company, the Schweizerische Metallurgische Gesellschaft, was founded a few months later to take over the rights of all the Heroult patents for all countries, except France.¹⁴ Toward the end of 1888, production was at the rate of 2 tons per day of aluminum-bronze, and the company was seeking new capital. On November 12, 1888, the Aluminium-Industrie A. G. Neuhausen was incorporated by the Swiss company with the assistance of the Allgemeine Elektrizitäts Gesellschaft ("AEG") of Berlin; its share capital was 10,000,000 Swiss francs, of which 3,000,000 Swiss francs were paid up. Dr. Martin Kiliani, who had been experimenting with aluminum reduction for AEG, was made managing director of the Neuhausen works where production of pure aluminum was initiated in 1889. Like the Pittsburgh Reduction Co. (predecessor of the Aluminum Co. of America, referred to as Alcoa), AIAG had difficulty in finding a market for its new product, but between 1890 and 1900 uses for aluminum were developed to such an extent that the company constructed a second plant at Rheinfelden in Germany in 1896 and a third at Lend in Austria in 1897. AIAG's largest works are at Chippis in Canton Wallis, where water power is furnished by the upper Rhone. Construction of these was begun in 1907.

On its fiftieth anniversary in 1938, AIAG had a paid-in capital of 60,000,000 Swiss francs and fixed assets of 159,189,000 Swiss francs. Its interests were scattered throughout Europe, and extended even to China, as follows:

AIAG INTERESTS, 1938¹⁵

(NOTE.—The symbol (D) following a company name indicates that it is a "daughter" company, owned 100 percent by AIAG unless a smaller percentage is stated; the symbol (DD) indicates a subsidiary of AIAG and a daughter company. The percentages for less than 100 percent participation are only approximate.)

Bauxite.—Ugrovaca Minen, Zagreb (D); Bauxita S. A. Bucharest (D); Ste. des Bauxites de France, Marseille (D).

Alumina extraction plants.—Martinswerk G. m. b. H., Bergheim-Köln (D); Chemische Fabrik Goldschmieden, Breslau (D) and Filiale Halle-Trotha (DD), both in Germany; Ste. Francaise pour l'Industrie de l'Aluminium (SFIA), Marseille (D); Sta. Industrie Minerarie ed. Elettrochimie, Bussi, Italy (D).

Aluminum reduction plants.—Aluminium-Hütte, Neuhausen (D) and Aluminium-Hütte, Chippis (D), both in Switzerland; Aluminum G. m. b. H., Rheinfelden, Germany (D); Salzburger Aluminium G. m. b. H., Lend, Austria (D); Soc. Alluminio Espanol, Sabinango, Spain (D, approximately a 20 percent interest);¹⁶ South Wales Co., Rheola, Wales (D, 50 percent).¹⁷

Power plants.—Kraftwerk Neuhausen (DD); Kraftwerk Chippis (DD); Kraftwerk Rhienfelden (DD); Kraftwerk Kitzloch (DD) and Kraftwerk Klammstein

¹⁴ Source: Geschichte der Aluminium-Industrie A. G. Neuhausen, 1888-1938. Chippts, published by the Directorium, 1942. 2 v. This is a Festschrift celebrating the company's fiftieth anniversary.

¹⁵ Aluminium Francaise is also a part owner.

¹⁶ The British Aluminium Co., Ltd., founded in 1894, acquired from AIAG rights to the Heroult patents for Great Britain and her colonies.

¹⁷ The remaining 50 percent is owned by the British Aluminium Co., Ltd., and Aluminium, Ltd., of Toronto. (One source says that each participant owns a third interest.) AIAG's interest in the project has been attributed to the fact that they could produce on the British quota at the Rheola plant. The South Wales Co. was founded in 1937 with a capital of £300,000, and AIAG was charged with constructing and operating the Rheola works. When more capital was needed, AIAG appears to have contributed willingly and to have induced the other participants to make further advances. These considerations were a strong argument for lifting the blacklisting of AIAG, which had been made effective in July 1941 primarily because of AIAG's position in the cartel. At that time, moreover, AIAG was believed to be willing to purchase in Switzerland plant to the value of \$150,000, needed for the completion of the Rheola works whose output was essential to Britain's war effort. Representations were also made concerning the pro-Ally sympathies of the AIAG directors. The company was removed from the Statutory List in October 1941.

(DD), both furnishing power to the reduction plant at Lend; Kraftwerk Navisance (DB); Kraftwerk Borgne (DD); Illsee-Turtmann A. G. Oberems ("ITAG") (DD).

Fabricating plants.—Aluminium Walzwerk Chippis ("LWW") (DD); R. V. Neher, A. G. Kreuzlingen (D) and its subsidiary, Walzwerk Neuhausen (DD); Aluminium-Warenfabrik Gontenschwill A. G. (D, approximately 20 percent)—all of Switzerland. Breisgau Walzwerk Singen, Germany (D); Aluminium Walzwerk Singen and its subsidiaries: Aluminium Giesserei Villingen (D); Kluge & Winter, Hamburg (D, approximately 20 percent); "TANTAL" Verarbeitungswerk, Warsaw (D, 50 percent); and "ENOKA" Verarbeitungswerk, Warsaw (D, approximately 40 percent). Also Star Aluminium Works, Wolverhampton, England (D); Nederlandsch-Indische Aluminium Verwerkings Industrie Mij. ("NIAVI"), The Hague (D, approximately 33 percent); Coquillard Froges, France (D, approximately 20 percent); Aluminium Belge, Liege (D, approximately 40 percent); S. A. Lavorazione Leghe Leggere ("LLL"), Italy (D, approximately 50 percent); Chinese Aluminium Rolling Mills, Char (D, approximately 20 percent) together with the Werk Shanghai (DD, approximately 20 percent)—both in China.

Sales offices.—Lasa Kreuzlingen (D, approximately 80 percent), joint subsidiary of R. V. Neher A. G. and Al.-Warenfabrik Gontenschwill A. G.; Allega, Zurich (D); Anglo-Swiss Aluminium Co., Ltd., Sheffield, England (D).

Other interests.—Wohn-kolonie, Bergheim (D); Forschungs-anstalt, Neuhausen (D); Stuvag, Neuhausen (D, approximately 50 percent); Sta. Esercizio Impianti Portuali Abruzzesi ("SEIPA"), Milan (D, approximately 50 percent), subsidiary of Sta. Industrie Minerarie ed. Elettrochimie, Bussi; Sta. Alluminio Veneto Anonima ("SAVA"), Venice (D). SAVA in turn controls a complex: Tonerdefabrik, Marghera (DD), an alumina plant; Aluminium-Hütte, Porto Marghera (DD), a reduction plant, together with "SMIRREL," Venice (D, approximately 80 percent); Sta. Idroelettrica ("SIC"), Venice (D, approximately 50 percent); a sales office, "Alluminio S. A." Verkaufsbureau ("ASA"), Milan (D, approximately 50 percent); and a shipping company, Sta. Abruzzesi di Navigazione Anonima ("SANA"), Venice (D, approximately 50 percent).

Details of the shareholdings in AIAG have long been unavailable because there is no published register and the bearer-shares are apparently handled free on the stock exchange. Although the notion that the shares are widely dispersed in the hands of private Swiss individuals has been sedulously cultivated, speculation as to the corporation's ownership has not been quieted. The far-flung and multifarious activities of AIAG, as listed above, suggest that private Swiss capital alone could hardly provide sufficient financing. Official United Nations sources have recently indicated that the shares in AIAG are held approximately as follows:

Company:	Percent of holding
British Aluminium Co., Ltd.....	15.5
Aluminium, Ltd.....	28.5
Alais Froges et Camargue } ¹	21.0
Ste. de l'Electrochimie Ugine }.....	
Vereinigte Aluminium Werke A. G. }.....	20.0
Aluminiumwerk G. m. b. H. }.....	
Swiss interests.....	15.5
Total.....	100.0

¹ It is not known whether the French companies participate in AIAG as two separate entities, or through their combined sales company, Aluminium Francais.

The "Swiss interests" listed above are identified as those which have long been active in the company; whether they are vested in the Swiss management or in an undisclosed holding company is not known. The significant factor is that the foreign ownership is held by the same British, Canadian, French, and German corporations—and in

practically the same proportions—which participate in the Alliance Aluminium Compagnie.¹⁸

After the collapse of France, the combined participation of the British and Canadian interests, amounting to 43.5 percent, was offset by the German and German-dominated French participation of 41 percent. Consequently, the Swiss interests, domiciled in a neutral country surrounded by Germany and German-dominated areas, held the balance of power in AIAG from June 1940 until the liberation of France, and during that time could direct company policy by voting either with the Allied or with the enemy interests. During this same period AIAG, as the Swiss participant in the cartel, occupied the identical ambivalent position between the British and Canadian participants on the one hand, and the German and German-dominated French participants on the other.

Swiss law requires that in a company incorporated in Switzerland the majority of the board of directors be Swiss nationals. According to the 1943 edition of the Swiss Federal Register, the present administration comprises the following individuals, all of whom have Swiss addresses:

ALUMINIUM-INDUSTRIE A. G.

(Chippis, Canton Wallis, Switzerland)

Council of administration:	Prokurators: ¹⁹
Alfred Hofmann-Schmid, president.	Willy Corti.
Gottfried Keller, vice president.	Henri Froidevaux.
Directors:	Albert Gubler.
Arnold Bloch.	Kaspar Guler.
Emile Kaufmann.	Erhart Herrmann.
Anton Bettseart.	Alexander Hürzler.
Werner Kurz.	Hans Hurter.
Fritz Schnorf.	Robert Niederer.
Directors of departments:	Max Preiswerk.
Rudolf Hartmyer.	Jules Riby.
Max Hintermann.	Walter Heinrich Ruegg.
Hans Scherer.	Emile Sulser.
Heinrich Wanner.	Werner Sulzer.
Director of Laboratories and Research:	Paul Toschanz.
Dr. Alfred von Zeerleder, at Neuhausen.	Jakob Weber.
	Georg Thoma.

The company has expanded its investments during the war, presumably in order to accommodate increased orders.

In general, aluminum production has not been maintained at maximum during the war at the company's reduction plants in Switzerland, owing to a shortage of electric power. Late in December 1944 the *Neue Züricher Zeitung* reported large-scale unemployment at the reduction plants because of their inability to obtain alumina. With the exception of plants manufacturing aluminum foil and other products for which the use of aluminum has been restricted or prohibited, the fabricating plants have worked at full capacity throughout the war, and have increased their deliveries. Reported deliveries to Germany from the Chippis works in January 1943 are given in table 20; deliveries reported may not include all deliveries. It will be noted that the recipients in many cases are aircraft plants.

The growth of production and capacity at AIAG's aluminum plant at Rheinfelden and alumina plant at Bergheim is discussed in

¹⁸ This is the name of the international aluminum cartel.

¹⁹ Officials authorized to sign on behalf of the firm.

chapter II. The company's fabricating subsidiary in Germany, Aluminum Walzwerk Singen, was the most important producer of aluminum foil before the war, consuming in 1937 approximately 2,000 tons of metal per month, which was obtained from the Rheinfelden plant. A year earlier, a foundry had been built at Singen to produce 99, 99.5, and 99.8 percent pure aluminum and four trade-marked alloys—Avional (hard aluminum alloy), Anticorodal (copper-free alloy), Aluman (corrosive-resistant alloy), and Peraluman (salt- and sea-water-resistant alloy in sheets, ribbons, tubes, sticks, wire, and bars). Later the Singen plant was again expanded to produce aircraft components of aluminum and aluminum alloys.

AIAG at one time owned another foil plant at Teningen which also received metal from Rheinfelden. The Teningen factory was sold about 20 years ago to Emil Tscheulin and is now known as Aluminiumwerk Tscheulin G. m. b. H.

GEBRÜDER GIULINI G. M. B. H.

This firm was founded by two brothers, both Italian citizens. Since the death of one, it has been carried on by his brother and his son. The uncle has never renounced his Italian citizenship and lives in Lugano, in the Italian-speaking part of Switzerland. He has been known for many years as a shrewd businessman who drives hard bargains and who prefers to follow a lone course. Consequently he kept out of the cartel until the advent of Hitler and the promise of a profitable contract made it expedient for him to accept an engagement with the Alliance Aluminum Compagnie. He does not have the extensive intercorporate connections which characterize the careers of most of the light metals producers, and he has never sought the aid of such banks as the Deutsche and the Dresdner. He has, however, had a very close association with the private banking firm of Delbrück Schickler & Co., in which Metallgesellschaft has an interest. Carl Joerger, one of the partners of Delbrück Schickler, is comanager of Gebr. Giuliani, along with the Giuliani nephew who married Joerger's daughter. The nephew is a German citizen, who is reported to have remained deaf to VAWAG offers to participate in the Giuliani firm.

Information is unavailable concerning the capitalization of the firm and the extent to which Delbrück Schickler has invested therein. The physical properties of the firm include bauxite deposits, alumina plants in Yugoslavia and Germany, and a reduction plant, Usine d'Aluminium Martigny S. A., on the upper Rhone in Switzerland. Although the latter had an annual capacity of 5,000 tons, its production before the war was nowhere near that figure. The most important Giuliani property is the alumina extraction plant at Mundenheim near Ludwigshafen.

I. G. FARBENINDUSTRIE A. G. ("I. G.")

Light metals production is a relatively minor activity in the sum total of I. G.'s vast operations. No other industrial organization in Germany or in the world compares with I. G. in its wide range of interests, and no other single concern contributes so heavily to the war-making power of the state in which it is incorporated. It controls practically two-thirds of Germany's highly developed chemical

industry, with its participation ranging from slight through majority interest to absolute monopoly. Its principal activities are the following:

Chemicals and related lines: Inorganic, organic, and intermediate organic chemicals; coal tar, mineral, and bacteriological dyes; nitrates and nitrogenous fertilizer; solvents and emollients; adhesives and glue; synthetic perfumes and oil extracts; chrome and synthetic tanning agents.

Gases: Compressed and rare gases; poison gas; smoke-screen gas.

Explosives, powder, and fuzes.

Photographic materials: Chemicals and fixatives, film ("Agfa"), and paper.

Pharmaceuticals: Sera and vaccines; veterinary products.

Artificial fibers and plastics: Continuous-filament rayon and rayon staple (Zellwolle); polyvinyl chloride fibers; viscose sponges; artificial sausage casings; cellophane.

Light and heavy metals and their alloys.

"Autarchic" lines of manufacture for increasing Germany's independence of foreign raw material sources: Synthetic rubber, motor fuels, lubricants, technical fats, plastics, lacquers, and metal alloys.

Brown coal, bituminous coal, iron, and steel.

The two aluminum plants, together with the magnesium plant at Bitterfeld, comprise but a small part of all the I. G. works in this locality. I. G.'s light-metals production has been concentrated here since 1917, when the Chemische Fabrik Griesheim Elektron brought its participation in three aluminum plants and its magnesium patents into the Interessengemeinschaft der Deutschen Teerfabriken. The original participants in this combine were six chemical and dye producers, who have since been joined by many others. Public announcement of the combine was delayed until 1925, when it became known as the Interessengemeinschaft Farbenindustrie A. G.

I. G. owns 50 percent of the capital of the Aluminiumwerk G. m. b. H., which operates the aluminum plants at Bitterfeld and Aken and itself produces magnesium. It has never produced alumina but has instead purchased its requirements from Gebr. Giulini and Aluminium-Industrie A. G. (AIAG). It has been said that these firms, by keeping the price of alumina sufficiently low, prevented I. G. from entering the extraction field.

Like other German stock corporations and the other light metal producers discussed below, I. G. has an Aufsichtsrat (supervisory board or board of directors) and a Vorstand (board of managers). The Aufsichtsrat is elected by the stockholders, its members usually being the holders of the largest blocks of stock or their representatives. The Aufsichtsrat selects the board of managers, who in the past were often technical employees who had worked their way up through the company. Both the Vorstand and Aufsichtsrat are concerned with policy making and general administrative matters. The full responsibility for all ordinary operations is borne by the Geschäftsführer (business manager or managers of the plant), who ask for authorization from the Vorstand or Aufsichtsrat only in the case of unusual expenditures and matters involving long-term policy.

I. G. FARBENINDUSTRIE A. G.

(Grüneburgplatz, Frankfurt-am-Main)

Vorstand, 1940:

Hermann Schmitz.	Paul Haefliger.
Fritz Gajewski.	Constantin Jacobi.
Heinrich Horlein.	Friedrich Jähne.
August von Knieriem.	Hans Kühne.
Fritz ter Meer.	Carl Ludwig Lautenschläger.
Christian Schneider.	Wilhelm Rudolf Mann.
Georg von Schnitzler.	Heinrich Oster.
Otto Ambros.	Wilhelm Otto.
Max Brüggemann.	Hermann Waibel.
Ernst Bürgin.	Hans Walther.
Heinrich Bütefisch.	Otto Scharf.
Bernhard Buhl.	Eduard Weber-Andrae.
Max Ilgner.	Carl Wurster.

Aufsichtsrat, 1940:

Carl Krauch.	Karl Krekeler.
Wilhelm Ferdinand Kalle.	Paul Müller.
Wilhelm Gaus.	Karl Pfeiffer.
Hermann J. Abs.	Gustav Pistor.
Axel Aubert.	Graf Rudiger Schimmelpenninck.
Richard Bayer.	Friedrich Schmidt-Ott.
Waldemar von Böttinger.	Leopold von Schrenck-Notzing.
Walter von Brüning.	Erwin Seleck.
Lothar Brunck.	Johannes Hess.
Carl Ludwig Duisberg.	Jakob Hasslacher.

Aluminiumwerk G. m. b. H., Bitterfeld, 1939:

Directors.²⁰

Albert Meyer-Küster.
Heinrich Reuleaux.

Works manager: Richard Schall.

Chief chemist: Dr. Fuldner.

Chemist: Dr. Ing. Eduard Altenburg.

Head of research laboratory: Dr. R. Suchy.

Research staff:

H. Seliger.
Dr. Ing. H. G. Petri.
G. Siebel.
H. Vosskühler.

Manager, light metals department: Dr. A. Beck.

Manager, light metals fabricating department: Dr. Schütz.

Foundry manager: Mr. P. van Spitaler.

Engineer: Dr. E. Ritter.

Aluminiumwerk G. m. b. H., Aken, 1939:

Research staff: W. Mannheim, H. Bothmann.

That I. G.'s operations have expanded during the war is evident from the growth of capitalization and assets:

	1939	1942
Stock capital.....	RM720,000,000	RM1,165,000,000
Total assets.....	1,623,609,229	2,332,801,080

Aside from the fabrication which I. G. carries on directly in its own plants, it is believed to control at least two fabricating companies, the Leipziger Leichtmetall Werke A. G. at Rachwitz and Mahle K. G., with plants at Bad Cannstadt, Felsbach, and Berlin. Up to the outbreak of war, the former produced practically all the magnesium sheet manufactured in Germany, and the latter was the only German source for magnesium die castings.

²⁰ See those listed for Metallgesellschaft A. G., below.

METALLGESELLSCHAFT A. G. ("METALL")

Metallgesellschaft, another industrial giant, is the largest nonferrous metal concern in Germany; and, because of its connections in Great Britain and Switzerland, is the world's most powerful single concern in this field. It represents the outgrowth of a metal business founded by Philip Abram Cohn in Frankfurt-am-Main early in the nineteenth or late in the eighteenth century. Early in the 1860's a relative of Cohn's named Moses, founded a metal firm in London under the name of Henry R. Merton & Co., Ltd., which has since worked closely with Metall. Together with Aron Hirsch & Sohn and Beer Sondheimer & Co., Metall and Merton controlled before the First World War the zinc and lead industries of the world, with the exception of the United States, and exerted a powerful influence over the world price of copper. Metall's operations now include production and trading in antimony, aluminum, cadmium, copper, lead, tin, zinc, composite metals, and alloys. It has also acquired extensive interests in the chemical field, in oil, and in synthetic rubber.

Metall has a 50-percent interest in Aluminum G. m. b. H. of Bitterfeld and Aken and is the exclusive sales agent for the aluminum produced by this private concern and the Government-owned VAWAG. One of the conditions of sale of Metall's interest in VAWAG to the Government was that it should continue to handle VAWAG's sales.

The officers of the company are as follows:

METALLGESELLSCHAFT A. G.

(Bockenheimer Anlage 45, Frankfurt-am-Main)

Vorstand 1940:

Wilhelm Avieny.
Rudolf Kissel.
Franz Traudes.
Rudolf Euler.
Kurt Heide.
Ludolf Plass.

Deputy members:

Wolf von Eichorn.
Julius Fuchs.
Fritz Hrdina.
Georg Müller.
Friedrich August Oetken.

Aufsichtsrat 1940:

Carl Lüer.
Felix Warlimont.
Hermann J. Abs.
Hans Schneider.
Erich Tgahrt.
Walter Gardner (Amalgamated
Metal Corporation, London).
Franz Koenigs (Amsterdam).

Capt. Oliver Lyttelton (Amalgamated Metal Corporation, London).
Karl Rasche.
Carl Schaefer.
Hermann Schmitz.
Bernhard Unholtz.
Hans Weltzien.
Ludger Westrick.

Geschäftsführer, Aluminiumwerk G. m. b. H.:

Albert Meyer-Küster.
Heinrich Reuleaux.

Richard Schall.

The share capital in 1940 was 42,000,000 reichsmarks, and assets were valued at approximately 150,000,000 reichsmarks. Since then both capital and assets must have greatly increased due to war profits and war booty. The principal shareholders are: I. G. Farben, directly and indirectly through the Deutsche Gold-und Silber Scheideanstalt ("Degussa"), the British Metal Corporation of London, and the Schweizerische Gesellschaft für Metallwerke of Basel. In the last company Metallgesellschaft, in turns, holds shares valued at 25,000,000 Swiss francs.

Of Metall's 50 or more subsidiaries and affiliates, mention is made below only of those trading in the light metals and producing or fabricating light metals alloys.

Aluminium-Verkaufs-Gesellschaft, Berlin. This company is capitalized at 50,000 reichsmarks, of which Metall owns 40 percent and VAWAG, 60 percent. Geschäftsführer are Kurt Beyer, of Berlin, and Julius Fuchs.

Honsel Werke A. G., Meschede. While Metall does not list this company as an affiliate, it is associated with Metall by several experts, one of whom would rate Rautenbach, Schmidt, and Honsel Werke in that order as the most important firms in the casting field.

Norddeutsche Leichtmetall-und Kolbenwerke G. m. b. H., Hamburg and Altona. This firm is capitalized at 500,000 reichsmarks and is wholly owned by Metall. Geschäftsführer are Wilhelm Bröhmer; August Christian, of Heilbronn; Ernst Hofer and Lothar Stahl, both of Altona.

Karl Schmidt G. m. b. H., Neckarsulm and Hamburg. This company, capitalized at 1,000,000 reichsmarks, is owned 100 percent by Metall. The largest pre-war item of its aluminum foundry was rough piston castings which were sent on for further finishing to Mahle K. G. (See under I. G. Farben, above.) Today it is probably the largest producer of corrosion-resistant aluminum castings for the Navy, since it was the only firm to manufacture this item in 1936. Geschäftsführer are Wilhelm Bröhmer; August Christian, of Heilbronn; Otto Schliebner, of Neckarsulm; and Lothar Stahl, of Altona.

Silumin Gesellschaft m. b. H., Frankfurt-a-Main. Metall and VAWAG each own a 50-percent participation in this firm, which is capitalized at 50,000 reichsmarks. Geschäftsführer are Theodor Dirksen and Carl Freiherr von Göler zu Ravensburg.

Vereinigte Deutsche Metallwerke A. G. ("VDM"), Frankfurt-a-Main-Heddernheim, Altona-Bahrenfeld, and Borstel. Metall has the majority holding (50.24 percent) in this company, which is capitalized at 31,000,000 reichsmarks, and Metall board members are prominent on its boards. The plant at Heddernheim is Germany's prime-producer of wrought aluminum, while the plants at Altona and Borstel make aircraft wheels and magnesium castings, respectively.

Vorstand, 1940: Bernhard Unholtz, Franz Horster, Walter Raymond, Rudolf Berg, Hugo Barbeck, Hermann von Forster, Werner Heckmann, Karl Krauskopf, Heinrich Philippi, Erich Plesse, Karl Dornemann, Emil Schulte.

Aufsichtsrat, 1940: Rudolf Kissel, Ludger Westrick, Wilhelm Avieny, Josef Abs, Fritz Eulenstein, Hans Harney, Wilhelm Hedemann, Kurt Heide, Emil Merwitz, Ludolf Plass, Adolf Schaeffer, Walther von Selve, Otto Strack, Franz Traudes, Fritz Werner.

Vereinigte Leichtmetallwerke G. m. b. H., Hannover-Linden, Bonn, and Laatzen. Of this company's share capital of 6,000,000 reichsmarks, Metall owns a minority share (exact amount unknown); and VAWAG, 37.5 percent. Together with Dürener Metallwerke A. G., it produced 80 percent of all the duralumin produced in Germany in 1936. Geschäftsführer are Fritz Liese, of Hannover; Otto Reul-eaux; Josef Schulte and Henrich Procker, deputy, both of Hannover.

VEREINIGTE ALUMINIUM WERKE A. G. ("VAWAG")

In 1943 this concern is believed to have accounted for slightly over 70 percent of the aluminum production of Germany proper and 76 percent of the production of Greater Germany. Since its founding during World War I, its ownership and its properties have gone through many changes, some of which are described in chapter II. Until 1928 its principal shareholders were reported to be the Government, Allgemeine Elektrizitäts Gesellschaft, Siemens, and Gebr. Giulini. Of its present share capital of 40,000,000 reichsmarks, Innwerk A. G., München, owns 17,000 reichsmarks,²¹ and the remaining 39,983,000 reichsmarks are in the hands of the Vereinigte Industrie-Unternehmungen A. G. ("VIAG"). The latter is a Government-owned superholding company which, among its various assets, owns the stock of important holding companies and operating enterprises in banking, electricity, coal mining, munitions and armaments, and metals. The share capital of VIAG (230,000,000 reichsmarks in 1940) is unified, but there is no sort of unified administration exercised over its conglomeration of enterprises.

The members of the supervisory and management boards of Reich-owned companies are appointed. In the past, they were often civil servants who represented the public treasury or state financial institutions and performed their board duties without relinquishing their regular positions in the Government. Under the Nazis, the board members represent that community of interests between Wehrmacht, Party, and big business which is so unique a characteristic of the Third Reich.

VEREINIGTE ALUMINIUM WERKE A. G.

(Friedrichstrasse 169, W8, Berlin)

Vorstand:

Ludger Westrick.
 Wilhelm Hübsch.
 Wilhelm Fulda.
 Friedrich Mette.
 Theodor Menzen.
 Adolph Pistor.
 Heinrich Philippi.
 Gustav Romer.
 Gerhard Rüter.

Aufsichtsrat:

Ernst Trendelenburg.
 Otto Naubahr.
 Wilhelm Avieny.
 Herman Forkel.
 Erich Heller.
 Erich Heller.
 Arthur Koepchen.
 August Menge.
 Hans Posse.
 Hans von Raumer.
 Karl Schirner.
 Konrad Sterner.
 Franz Urbig.
 Max Wessig.

VAWAG's assets today must be much larger than the 1939 figure of 131,190,030 reichsmarks because of the wartime investments made by the company in aluminum and alumina plants in Austria, Hungary, and Yugoslavia. Before the war it had a substantial participation in the Bauxit-Trust A. G. of Zürich, which was capitalized at 11,000,000 Swiss francs; its participation may now have increased as a result of "coordination" of the Hungarian interests originally participating in the Trust. VAWAG once had a large interest in the Società Italiana.

²¹ VIAG, in turn, owns 90 percent of the share capital of Innwerk A. G.

del Alluminio, which it founded in cooperation with Montecatini and licensed to use VAWAG's "Haglund process."

Together with Metallgesellschaft, VAWAG participates in the following light-metals subsidiaries: Aluminium-Verkaufs-Gesellschaft (60 percent); Silumin Gesellschaft m. b. H. (50 percent); Vereinigte Deutsche Metallwerke A. G. (25.09 percent), and Vereinigte Leichtmetallwerke G. m. b. H. (37.5 percent).²²

Rheinische Blattmetall A. G., of Grevenbroich, the home of the Erftwerk, was founded in 1922, and is VAWAG's only wholly owned subsidiary. It is capitalized at 600,000 reichsmarks and in 1939 its executives were as follows:

Vorstand: Wilhelm Gräser; Deputies: Otto Jöckel and Herbert Rubach, the latter of Grevenbroich.

Aufsichtsrat: Ludger Westrick, Adolph Pistor, and Gerhard Rüter.

VAWAG also has a third interest in the Aluminium-Zentrale G. m. b. H. of Berlin, capitalized at 21,000 reichsmarks.

WINTERSHALL A. G.

Even under the Weimar Republic, this combine accounted for about 50 percent of all the potash produced in Germany. Under the Nazis, it strengthened its position by incorporating a competitor, the Burbach combine, and by reaching out into oil production, oil refining, coal and brown-coal mining, and then into the production of synthetic gasoline. Its holdings are so diversified and its financial backing so powerful that it is able to engage in new and untried processes, such as coal hydrogenation, when the risks involved are extremely heavy. Its magnesium production activities represent but a small part of its total operations.

The principal stockholder of the combine is Gewerkschaft Wintershall, which is controlled by the Rosterg family and the Gunther Quandt combine.

WINTERSHALL A. G.

(Hohenzollernstrasse 139, Kassel)

Vorstand 1940:

August Rosterg.

Gustav Römer.

Curt Beil.

Otto Werthmann.

Deputy members:

Heinz Rosterg

Hans Schmalfeld.

Willy Krieger.

Aufsichtsrat 1940:

Heinrich Schmidt I.

Gunther Quandt.

Otto Bollman.²³

Carl Brüggemann.

Arnold Cremer.

Max Esser.

Ernest Hagemeier.²³

Carl Harter.

Gustav Hilgenberg.

Max Koswig.

Maria Marckhoff.²³

Deputy members:

Carl Moskopp.

Karl Müller.

August Peters.

Clemens Plassman.

Herbert Quandt.

Hugo Ratzmann.

Oswald Rösler.²³

Wilhelm Schmidt.

Theodor Seifer.

August Strube.

Wilhelm von Waldthausen.

²² Details of these subsidiaries are given above, under "Metallgesellschaft."

²³ Reported to have been dropped from the board of directors in accordance with a wartime decree limiting the size of such boards.

Wintershall has probably profited from the war to a greater degree than is evident from available statistics.

	1939	1942
Stock capital.....	RM 125,000,000	RM 150,000,000
Total assets.....	RM 297,915,516	

The combine appears to have no fabricating subsidiaries but instead engages directly in the production of light-metals alloys and fabricated shapes. The presence of members of the Quandt family on the boards of both Wintershall and Dürener Metallwerke A. G. (see below) may indicate an association between the two which does not appear on corporate balance sheets.

OTHER FABRICATING COMPANIES

Four important fabricating companies, having no apparent connection with the light-metals producers, turn out light-metals alloys and various fabricated shapes.

Dürener Metallwerke A. G., Berlin-Borsigwalde: This is an old firm, founded in 1900. It is capitalized at 4,000,000 reichsmarks, 53 percent of which is owned by the Deutsche Waffen-und Munitionsfabriken A. G. of Berlin. The latter, in turn, is controlled by the Quandt combine, Gunthur Quandt being called the "munitions king." In 1940 the officers of Dürener were as follows:

Vorstand: Karl Hermann Werning, of Berlin; Heinz Mossdorf; Matthias Wilhelm Nollen.

Aufsichtsrat: Gunther Quandt; Paul Rhode; Paul Hamel; Heinrich Koppenberg; Emil Georg von Stauss; Herbert Quandt.

Felten & Guilleaume Carlswerk A. G., Köln-Mülheim: This is a wire and cable concern which has widened its sphere of production into several neighboring fields of light-metals work. It is capitalized at 64,500,000 reichsmarks, the majority shareholder being the Arbed-Konzern (steel and iron) of Luxembourg. It is more closely associated with steel and electrical concerns than with light-metals producers. The chairman of its Aufsichtsrat is Kurt Freiherr von Schröder, one of the most powerful figures in Nazi financial and industrial circles.

Rudolf Rautenbach Leichtmetallgiesserei G. m. b. H., Solingen and Wernigerode: Little information is available about this company which before the war turned out one-fourth of the light alloy castings produced in Germany. The plant at Wernigerode was built in 1934 with Government money, primarily for the production of aircraft-engine castings. It supplies the Junkers plants which also purchase from Vereinigte Deutsche Metallwerke A. G.

Südmittel A. G. (vorm. Süddeutsche Metallwarenfabrik K. G.), Mussbach: This is one of the oldest aluminum-working firms in Germany, having been in operation since 1888. For many years it specialized in the manufacture of kitchen and table utensils, although its normal capacity of 500 tons a year was converted to production for army use during the First World War. The son of the founder was squeezed out after 1933, and the majority stockholder now is the

Weck Konzern. Südmetall is capitalized at 1,200,000 reichsmarks. Its directors are as follows:

Vorstand: Adolf Josen, August Weis.

Aufsichtsrat: Senator Paul Rott, Ed. Pape, Eugen Graf von Quadt zu Mykradt und isny, Dr. Maria Plum.

INTERNATIONAL ORGANIZATION OF THE LIGHT METALS INDUSTRY

THE INTERNATIONAL ALUMINUM CARTEL

Early agreements.—As is the case with every commodity produced by a patented process, the rights to which are rigidly held by an entity having full appreciation of their value, aluminum lent itself to restriction of production by international agreement and licensing. In the early days of the industry, every producer in Europe outside of France was beholden to the Aluminium-Industrie A. G. Neuhausen ("AIAG") as licensor of the Heroult patents. The French producers, later organized into Cie. de Produits Chimiques et Electrometallurgiques Alais Froges et Camargue ("AFC"), used the old Deville process until they were licensed in the 1890's to use the Hall patents by the Pittsburgh Reduction Co. In 1896 the latter made an agreement with AIAG which set the pattern for every subsequent aluminum cartel.

The first actual cartel was formed in 1901 and, after renewal in 1905, lasted until 1908 when the rapid growth of independent companies, notably in France, no longer permitted binding cartel restrictions. The Aluminum Co. of America ("Alcoa"), successor to the Pittsburgh Reduction Co., was not a signatory, but organized, 2 days prior to the signing, the wholly owned Northern Aluminum Co., which was a signatory. The agreement reserved to the several members their respective markets, which were called "closed." The United States market was closed to European producers (nominally it was reserved to Northern), and the rest of the world, which then included Germany, was an "open" market in which sales had to be made at prices fixed by agreement. After the dissolution of this first cartel, AIAG and Northern agreed to reserve to themselves their respective home markets and share other markets on a stipulated basis. Because of its limited domestic market, AIAG at this time dominated the European export trade although its metal production was less than that of the French group.

The second international cartel (1912-15) followed the general pattern of the first with the added feature that members were prohibited from dealing with nonmembers. Gebr. Giuliani was not a signatory. The agreement was suspended on January 23, 1915.

After the First World War ended, the cartel was not immediately revived. A new factor, however, had entered the picture: Germany had become a major European producer. Gentlemen's agreements between the European producers, negotiated in 1923 and renewed in 1926 and 1928, provided for (1) control of sales of members on the basis of quota allocations; (2) application of these quotas to domestic and export sales; (3) application of quotas both to ingot and alloy production; (4) quarterly accounting; and (5) fixing of a standard price.

Alliance Aluminum Compagnie ("AAC")²⁴: Under this name, the third and still current cartel was incorporated in Basel, Switzerland, in October 1941, with a capital of 35,000,000 Swiss francs. One thousand four hundred class A shares were issued and subscribed to by members on the basis of 1 share for each 100 metric tons of annual capacity; 1,200 additional shares were authorized for distribution to new members or old members if additional productive capacity was approved by the cartel. The share capital is distributed as follows:

	Percent	Shares
British Aluminum Co., Ltd.	15	210
Aluminium Ltd., Toronto ¹	28.57	400
Aluminium Francais ¹	21.36	299
Vereinigte Aluminium Werke A. G.	19.64	275
Aluminiumwerk G. m. b. H., Bitterfeld		
Aluminium-Industrie A. G. Chippis ¹	15.43	216
Total	100.00	1,400

¹ On May 31, 1928, Alcoa caused the founding in Canada of Aluminum, Ltd. ("Alted") and transferred thereto all of Alcoa's foreign properties except its interests in 4 companies and certain mining rights. Alcoa then distributed pro rata to its stockholders the 490,576 shares of Alted stock in its treasury. Alted did not act as an independent until 3 years later, after the stockholder list of both corporations had undergone inconsequential revision by time and events. Alted is thus considered in the public mind as the alter ego of Alcoa, although its separate identity has been established by court decision. While Alcoa is not a member of Alliance, possibly because of the restrictions of the Webb-Pomerene Act, it is not unreasonable to assume that Alliance was greatly influenced by Alcoa at least until war broke out in 1939.

² Joint sales agent of AFC and Ugine.

³ AIA's interest is not held directly, but is exercised through its holding company, Aluminum Walzwerke A. G. of Schaffhausen, which it controls as to 80 percent.

Alliance is administered by a board of directors and a board of governors. The function of the first, as stated by the cartel, is to formulate resolutions and bylaws for submission to the general assembly; to determine capital changes and financial policy; to consider such corporate problems as it deems important; and to approve or disapprove the decisions of the board of governors. The duties of the latter are those delegated to it by the board of directors. It will be noticed, however, that the majority of the members of the board of directors are Swiss nationals, as required by Swiss law, while members of the board of governors are powerful figures in the companies they represent. It is likely that events have forced the board of directors to take leadership of the cartel in the present conflict in areas apparently reserved formerly to the board of governors.

ALLIANCE ALUMINIUM COMPAGNIE (BASEL, SWITZERLAND)

BOARD OF DIRECTORS, 1939¹

Office	Name	Business connection
Chairman	Louis Marlo	Managing director, Alais Froges et Camargue (now in the United States).
Vice chairman	Dr. Rudolf Bindscheder	Managing director, Schweizerische Kreditanstalt, Zurich.
Do.	Robert W. Cooper	Chairman of board, British Aluminium Co., Ltd.
Member	Arnold Bloch	Board member, Aluminium-Industrie A. G.
Do.	Andre Henry-Couannier (French subject).	Vice chairman of board, Aluminium, Ltd.
Do.	Dr. Maurice Lugeon (eminent mineralogist).	Professor, University of Lausanne.
Do.	Karl Schirner	Board member, Vereinigte Aluminium Werke A. G.
Do.	Dr. Max Staehelin	Chairman of board, Schweiz Bankverein.
Do.	Gerhard Steck	Board member, Aluminium-Industrie A. G.
Do.	H. Haerberlin	Former Swiss Federal Councillor.

¹ Source: Confidential memorandum from the United States Embassy in London.

²⁴ The influence of the German group in AAC upon the shaping of cartel policy has been of sufficient importance, it is felt to warrant considerable discussion of the cartel in this report. For the same reason, the role of the cartel will necessarily be a matter for consideration by the United Nations authority empowered to deal with the German aluminum industry.

ALLIANCE ALUMINIUM COMPAGNIE (BASEL SWITZERLAND)—Continued

BOARD OF GOVERNORS:

Name	Concern represented	Term
Mr. Marlio.....	L'Aluminium Francais.....	Oct. 21, 1931-present.
Mr. Bouchayer.....	do.....	Do.
Mr. Vanderporten.....	Vereinigete Aluminium Werke A. G.....	Oct. 21, 1931-Sept. 18, 1933.
Mr. Schirner.....	do.....	Sept. 18, 1933-present.
Mr. Rauch.....	do.....	Oct. 21, 1931-Aug. 25, 1933.
Mr. Westrick.....	do.....	Aug. 25, 1933-present.
Mr. A. Merton ³	Aluminiumwerk, G. m. b. H.....	Oct. 21, 1931-May 26, 1936.
Mr. R. Merton ³	do.....	May 26, 1936-present.
Mr. Bloch.....	Aluminium-Industrie A. G.....	Oct. 21, 1931-present.
Mr. Cooper.....	British Aluminium Co., Ltd.....	Do.
Mr. Morrison.....	do.....	Do.
Mr. E. K. Davis ⁴	Aluminium Ltd.....	Do.
Mr. Henry Couannier.....	do.....	Do.
Mr. Braasch ⁵	do.....	Do.

MANAGEMENT

Mr. Ludwig Braasch ⁵	Resident managing officer, Basel.....	Oct. 21, 1931-present.
Mr. George Hodson ⁶	Resident assistant manager, Basel.....	Do.

³ Source: U. S. Circuit Court of Appeals, Second Circuit, *United States of America v. Aluminum Company of America* (vol. 3, pp. 933-936). Date of list is not available.

⁴ Of the British affiliate of Metallgesellschaft A. G.

⁵ President of Altd and brother of A. V. Davis, president of Alcoa.

⁶ Long-time employees of Altd, Braasch and Hodson constituted, at least until 1939, the entire executive staff of Alliance. It has been reported that in 1939 Braasch and Hodson were instructed to continue to deal, as managers of Alliance, with the enemy countries, i. e., with the Germans.

The tonnage production quota of each national group was 100 times the number of shares held, i. e., British, 21,000 tons; Canadian, 40,000 tons; French, 29,900 tons; German, 27,500 tons; and Swiss, 21,600 tons.²⁵ The only national production which remained outside the cartel quotas was that of the United States, the Union of Soviet Socialist Republics, and Japan.²⁶ Norwegian production came within the quotas of the national groups which owned most of the Norwegian facilities, and part of Italy's production was contained in the quota assigned to the Swiss group. Production in excess of quota was subject to forfeiture without compensation to Alliance. The quotas were policed by the international accounting firm of Price, Waterhouse & Co., whose representatives were permitted to enter all the plants of cartel members to check on actual production.

Besides restricting production, AAC fixed from time to time a minimum price below which members were not supposed to sell ingot or fabricated aluminum. These prices were maintained by the following device. AAC was constituted as a dealer in aluminum metal with transactions limited solely to cartel members. At the outset, AAC removed from the market, by purchase at £55 per ton, all accumulated stocks of members in excess of 40 tons per Alliance share. Periodically thereafter AAC was authorized to fix an official "buying price," at which members were entitled to transfer to Alliance whatever part of their production, within current quota limits, they had been unable to market at a higher price. There was thus no incentive for members to sell in the open market at less than the current AAC "buying price."

²⁵ The Swiss appear to have been dissatisfied with their quota.

²⁶ Japanese production was negligible in 1931, when the cartel was formed.

The foundation agreement setting up AAC did not make the specific distinction between home markets and foreign markets which had characterized earlier agreements. Prices everywhere were to be uniformly regulated by Alliance. Also unlike some previous agreements, the United States market was not expressly excepted but members of the cartel appear to have observed an unwritten agreement to keep out.

Gebr. Giulini, who was not a signatory of earlier agreements, was brought under cartel control by a contract executed in February 1934. In return for an AAC undertaking that its members would purchase 12 percent of their alumina requirements from Giulini, the latter undertook (1) not to furnish technical assistance to any noncartel member engaging in the production of alumina and aluminum; (2) not to supply alumina to Giulini affiliates beyond stipulated limits; and (3) not to sell alumina to any producer not affiliated with the cartel without AAC's consent. In addition, Giulini agreed to observe minimum selling prices fixed by AAC. Three months later, the German group, consisting of VAWAG and Aluminiumwerk, assumed all obligations contracted by AAC with Giulini. All of the alumina capacity of Giulini thus became available, with cartel consent, to satisfy the requirements of Germany's reduction plants, then being rapidly increased in size under the military program of the Hitler government.

When this new reduction capacity came into operation, the German group sought quota concessions from the cartel, instead of resigning their membership and producing unrestrictedly. It was to their interest to have production quotas remain in effect in those countries which were prospective victims or potential opponents. The other national groups in Alliance eventually gave in to German demands in consideration of VAWAG's undertaking that none of its enlarged output would be exported. This was hardly a quid pro quo inasmuch as German military preparations were consuming so much aluminum that civilian consumption was being restricted.

Effective as of January 1, 1936, a new cartel agreement replaced the foundation agreement of 1931. Whereas production in excess of quota had previously been subject to forfeiture, a graduated royalty tax payable to AAC was now imposed on members who produced in excess of the running rate approved by AAC, and a graduated tax was imposed on accumulated stocks. However, the ensuing worldwide boom in the armament industry made minimum price conventions superfluous, and the insistent demands of governments for expansion of aluminum supplies and productive capacity made impolitic continued restrictions on output on an international scale. Since 1938, therefore, the essential functions of AAC have been in abeyance.

With the fall of France in 1940, the German and German-dominated groups in the Alliance controlled 574 shares to 610 controlled by the British and Canadian groups. AIAG, itself controlled by the cartel participants, was left with the balance of power. In 1941 the Alliance had gold to the value of \$1,120,000 on deposit in the Royal Bank of Canada, and assets valued at 7,000,000 Swiss francs in the United States. In May the directors, with the exception of the Canadian representative, voted to transfer immediately to Switzerland 2,000,000 of the assets on deposit in the United States.

(Hitherto the AIAG shares had voted with the British and Canadian against transfer proposals made by the Germans.)²⁷ As a result, the credits of the Alliance were blocked in the United States although not until after the transfer had taken place, Alliance was placed on the Statutory List, and AIAG was temporarily blacklisted. A recent statement of the cartel is given in Table 21.

CONTROL OF WORLD MAGNESIUM PRODUCTION BY I. G. FARBENINDUSTRIE

Since I. G. Farben controlled the most important patents for the production and fabrication of magnesium, there was no need for an international cartel. I. G. alone dominated the field, accounting for about 68 percent of world production, and 90 percent of Germany's. Every country in the world, with the exception of the United States, was dependent upon I. G. for its major requirements of magnesium until 1936, when I. G. began to license national producers to use I. G. patents. It is believed that there was an understanding between I. G. and these producers by which tonnage quotas were assigned somewhat as they were assigned for aluminum production among the members of AAC. The agreement between I. G. and Alcoa in 1931, relative to magnesium production in the United States, contained the condition that I. G. retained sole and exclusive right to limit the quantity of magnesium produced under the agreement.²⁸

The price level of magnesium was maintained in the European market by controlling production and the market for magnesium scrap. All foundries licensed to cast magnesium alloy were obligated to return to I. G. Farbenindustrie all scrap metal they could not utilize, and not to buy scrap metal from any other source but to forward the offers to I. G.

²⁷ Dr. Staehelin, representing the British Aluminium Co., Ltd., said that he voted for the transfer in order to prevent the Germans from transferring the whole amount.

²⁸ The text of the agreement is given in Hearings Before the Committee on Patents, U. S. Senate, 77th Cong., Pt. 2, pp. 1036-1062. Testimony as to magnesium transactions between Alcoa and the Dow Chemical Co. is given on pp. 933-1112, *passim*.

THE BELGIAN ECONOMY AND ITS CONTRIBUTIONS TO ENEMY EUROPE

MANPOWER

In Belgium, as in other occupied countries, the aim of German economic policy has been to exploit all available productive forces in the interest of the German war economy. In order to maintain and extend war production, Germany required ever-increasing supplies of labor and raw materials. A very valuable—if not the most valuable—productive factor that Belgium could supply was labor.

BEFORE THE WAR

According to the census of 1930, the total population of Belgium was 8,092,004 (4,007,418 males and 4,084,586 females), of whom 3,750,285 (46.35 percent) were gainfully employed.¹ The distribution by economic status or by occupational groups is shown in table 1.

TABLE 1.—*Belgium: Distribution by occupations of gainfully employed, 1930*

Occupation	Males	Females	Total	Percent
Agriculture and forestry.....	494,507	140,525	635,032	16.9
Fishing.....	2,565	7	2,572	.1
Industry.....	1,210,590	359,518	1,570,108	41.9
Mines and quarries.....	215,299	6,393	221,692	5.9
Transport and communications.....	244,292	11,813	256,105	6.8
Commerce, banking, insurance (including hotels).....	315,299	228,458	543,757	14.5
Liberal professions.....	73,698	66,838	140,536	3.7
Public administration.....	143,084	25,577	168,661	4.5
Domestic and personal services.....	38,021	145,775	183,796	4.9
Other and unspecified occupations.....	20,600	7,626	28,226	.8
Total.....	2,757,955	992,330	3,750,285	100.0

Source: *Annuaire Statistique de la Belgique et du Congo Belge, 1938.*

It is apparent from the table that reserves of industrial labor were relatively large in Belgium. Of the total gainfully employed, 2,047,905 persons (54.6 percent) were normally engaged in industry, mining, and transportation. Metal workers constituted the largest single industrial labor group (343,905), followed by textile workers (269,286), construction workers (230,122), clothing industry (157,634), wood and furniture (152,210), food (113,593), leather (63,022), chemicals (60,713), and glass (31,317). All other industrial workers totaled 148,306. Immediately before the invasion, about 160,000 unemployed were registered.

¹ Belgium is the most densely populated country on the European Continent. At the end of 1939 the population was 8,398,000 in an area of 11,778 square miles. After the invasion in May 1940, Germany annexed the cantons of Eupen, Malmédy, and St. Vith, which had some 70,000 inhabitants. The population figures were also affected by the displacement and deportation of a substantial number of persons. By the end of 1942, as a result of these changes, the total population was about 8,230,000.

Before the war, Belgian labor enjoyed an advanced policy of social security, state protection, and labor organization. Of the 3,750,285 workers of both sexes employed in 1930, about 900,000 were members of Socialist, Christian, or Liberal Syndicates. Although labor matters were under the control of the Ministry of Labor and Social Welfare, collective bargaining, wages and hours legislation, unemployment insurance, and mutual aid societies were the focal points of the activities of the trade unions. Prior to the invasion, the 8-hour day and 48-hour week were guaranteed by law for most industries, but wages were low in comparison with those of Great Britain, Sweden, Germany, and particularly the United States.

AFTER THE GERMAN OCCUPATION

After the invasion the various Belgian trade unions were dissolved, and a Belgian collaborationist, Henri de Man, organized, under the supervision of the Germans, a single, official labor union called Union des Travailleurs Manuels et Intellectuels (U. T. M. I.). It is reported that about 200,000 workers joined the new organization.

May 1940 to March 1942: "Voluntary" recruitment.—At first, the Germans used indirect methods of pressing Belgian workers into production for German benefit. Unemployed persons² were deprived of relief benefits, industrial production was curtailed and appeals were made to register voluntarily for work in Germany, where labor conditions were represented as excellent and wages as attractive. As a consequence, weekly convoys of 1,500 to 2,000 workers were organized and sent to the Reich. The weekly average later fell to 500 or 600 as a result of unfavorable reports regarding food, earnings, and treatment in Germany. In December 1940 the recruitment was even stopped completely for a while. Nevertheless, by the end of 1940, 70,000 Belgians were reported to be working in Germany. On April 1, 1941, their number had increased to 87,000. By the end of September 1941 (3 months after the invasion of Russia), 121,500 Belgian workers were employed in the Reich. A substantial rise came in the beginning of 1942, and in March of that year the Germans announced that 250,000 Belgian civilians were working in Germany.

The method of "voluntary" recruitment, however, was unsatisfactory to the Germans. Therefore, they decided to tighten their control over Belgian labor. The transfer of workers to Germany remained the most important factor in this policy.

March 1942: Ordinance on "procurement of labor."—The first step in the German program was the publication on March 6, 1942, by the military commander for Belgium and northern France, of an ordinance on "The procurement of labor necessary for works of special importance." For all practical purposes this ordinance introduced compulsory labor service over and above the needs of the authorities of occupation, and was designed to organize Belgian manpower within the framework of a general economic plan. The principal points of this decree were: (1) The inhabitants of Belgium were compelled to execute certain kinds of work within the territory of the military commander; (2) private and public enterprises and

² In June 1940 it was reported that about 600,000 workers were unemployed, of whom 160,000 were already registered. About 440,000 refugees who returned to Belgium after capitulation made up the total.

administrations were ordered to surrender a portion of their personnel for the purpose of this ordinance; (3) when persons were called for compulsory labor service their previous contract of employment was ended; (4) employment could not be ended without previous authorization; (5) an authorization was required for the placement of workers; (6) the execution of this ordinance was placed in the hands of the German military authorities and the Offices de Travail (Belgian Labor Offices), thus forcing the Belgian Labor Offices to cooperate with the German authorities. Later, various public notices and decrees supplemented the general terms of the ordinance. These obliged the chiefs of private enterprises to send to the Labor Office a list of their employees, enforced reduction and concentration of industrial activity, ordered selection of workers for compulsory labor service, etc.

The Germans made a point of calming the fears and anxiety aroused by this ordinance by making certain promises and by stressing that the measures decreed would not affect the system of voluntary recruitment for work in Germany. The promises were not kept.

October 1942: Compulsory labor service.—In October 1942, the military commander for Belgium and Northern France issued a new decree supplementing the ordinance of March 6, 1942, whereby the German military administration was given new and broader powers for conscription of workers for service in Germany. At that time the reserves of Belgian skilled labor were already almost exhausted and conscription for work abroad was meeting with increasing difficulties.

Under this new order a minimum working period of 8 hours a day and 48 hours a week was introduced, and all male Belgians between the ages of 18 and 50, inclusive, and all unmarried women between the ages of 21 and 35, inclusive, were liable for conscription for work either in Belgium or in German-dominated territories. The order also outlines further measures for the nationalization of industry and government services, and stipulated that labor books would be introduced in order to ensure a more "equitable" distribution of the country's labor resources. Part-time and independent workers were required to report to the labor offices.

The new decree modified to a great extent the ordinance of March 6, 1942, because it applied to employment of all kinds and consequently placed the entire activity of the Belgian Labor Offices under the orders of the Feldkommendaturen and Oberfelkommendaturen. The decree provoked fresh tension in Belgium. Belgian labor authorities made vigorous protests, and some of the top officials resigned. Numerous strikes broke out, especially in the coal and metal industries in the Liege and Hainaut districts, and sabotage was intensified. On December 10, 1942, the military administration, in the face of increasing difficulties, issued a new ordinance regarding "the protection of labor peace," which introduced severe punishments, including the death penalty. This ordinance applied not only to the working class but to all professions and to the holders of public office, such as those in the administrative and judicial fields.

The objectives of the various German ordinances were clear: (1) the Germans were anxious to remove as many Belgians as possible, especially young men; (2) they desired to break the resistance of the workers by taking them from their homes and by putting them under the strict military discipline of the authorities of occupation, an action

that was possible because Belgium is subject to military as opposed to civil administration; (3) they hoped to ruin Belgium's economy by stripping it of its last remaining asset, manpower. These objectives dictated the course that was pursued.

Allocation of labor.—After the publication of the compulsory labor law of October 1942, the allocation of Belgian labor for work abroad was begun. In January 1943 Belgians already employed in France numbered 35,000. As of the same date about 300,000 Belgian civilians were working in Germany.

As far as allocation of labor within Belgium is concerned, the Germans tried to adhere as far as possible to the following priorities: (1) fortifications, (2) coal mines, (3) armament factories and other establishments producing war materials, (4) transportation, (5) agriculture, and (6) all other activities.

In view of the great importance of coal mining for the Reich's war industry, the Germans have been pursuing an active policy of recruitment for such work. Prisoners of war from the East are sent to the Belgian coal mining districts. According to a Belgian source, the Germans have also decided to stop the deportation of Belgian coal miners to the Reich. This exemption, however, does not extend to surface workers between the ages of 18 and 30 who are not indispensable for special jobs or particularly hard work. Instead of being deported they will have to work under ground.

Methods of recruitment for Germany.—Since October 1942, the utilization of Belgian labor for work both inside and outside Belgium has been systematically proceeding on a more intensive scale than in any other western European country. Methods of mobilization, in fact, differ little from those employed in the eastern European territories under German control. Each town or rural district must supply its quota of workers, and frequently persons are mobilized indiscriminately, regardless of their qualifications. Officially, the recruiting centers in Belgium are the German *Werbestellen* and the Belgian Labor Office. The latter, however, generally sends all persons seeking employment to the *Werbestellen*. Moreover, the Germans themselves regularly inspect Belgian factories—a great number of which have been closed—and select the workers they want sent to the Reich.

In general, nearly all Belgian factories have been compelled to release from 10 to 25 percent—and in many instances as many as 50 percent—of their employees for work in Germany. This has meant that Belgian industry has had to engage old and unskilled workers, whereas the young and more productive men have been deported. A number of these workers, especially those from the Liege and Hainaut areas, are sent to the Junkers school at Herstal or to other readaptation centers in Belgium and, after a short period of apprenticeship, are transferred to Germany.

Exemptions from deportation are few. It is reported that in agriculture, for example, only those who work on their own farms during the crop season are not compelled to go to the Reich. Certain categories of workmen employed in the food producing industry may also be exempt. Some family reasons are also taken into account for those wishing to avoid compulsory labor service. Persons born in 1922, 1923, and 1924, however, are obliged to go to Germany.

Those who try to escape from forced labor and deportation to Germany are deprived of their ration cards and threatened with

reprisals against their families. In addition, large scale round-ups are organized by the German military police. Belgian patriots are attempting to frustrate the labor mobilization either by raiding the labor offices and stealing the lists of names or by hiding workers and those who return illegally from the Reich. In general, however, these efforts have not prevented the Germans from successfully continuing labor conscription.

Salaries paid in Germany.—The salaries which Belgian workers in Germany receive vary from 0.65 to one Reichsmark per hour according to qualifications, plus a separation indemnity for the married. Allowances are given to the families of workers in Germany. The amounts are deducted from the wages. Recently, subsidiary grants have been introduced which need not be repaid. The amount of the grants is reported to be 300 francs per month for a wife and 100 francs for each child. Belgian workers in Germany are also allowed to transfer their wages to Belgium through the clearing system. Maintenance and housing allowances amount to about 18 Reichsmarks per week. The salaries actually paid, however, are much lower; deductions are sometimes as high as 25 percent of the gross income, and are not mentioned by the *Werbstellen* at the time of recruitment. On the other hand, workers are often out of work in Germany, and consequently receive reduced wages.

Number of Belgians in Germany.—By April 1, 1943, it was reported that Belgian civilian workers, both volunteers and draftees, in Germany totaled about 430,000, consisting chiefly of engineering, metal, transport, textile and clothing workers, and miners who were deported in 1942. This total did not include students, several thousand girls and women working as nurses and administrative assistants, Flemings enlisted in the various auxiliary services in the Wehrmacht, or members of the Walloon Legion on the eastern front. An official German report published in May 1943, stated that the number of Belgian civilians working in Germany was 472,590. In addition, 86,800 Belgians consisting entirely of Walloons (the Flemish prisoners were released in 1941 as a political gesture) were held in Germany as prisoners of war. Since the beginning of April, however, large new contingents of workers have been sent to Germany. Adding to these, some 20,000 prisoners of war who are being transferred to the status of civilian workmen in Germany, plus a number of agricultural laborers who were deported to Germany because they were not fully employed on their own farms at home, it is estimated that by the end of October 1943, the number of Belgians living and working in Germany amounted to approximately 550,000, while about 40,000 Belgians were employed in France on fortifications, and about 20,000 in other German-dominated countries.

Workers in Belgium on German account.—In Belgium itself the entire economic life, including industry, agriculture, and commerce, has been affected by the various German ordinances regarding utilization of labor. All hoarding of labor is forbidden. Concentration of Belgian industry has been followed by a drastic comb-out in order that the workers recruited from the metallurgical industry for work in Germany may be replaced, and that larger numbers may be made available for coal mining and for factories engaged in war production.

This change of employment has caused much hardship to the members of the professions who have been transferred to industry in Belgium and Germany. Besides the question of general adaptation to the new occupation, there are other problems concerning wages, pensions, clothing, food, etc.

The textile industry has suffered the greatest curtailment and has lost approximately 65 percent of its workers. About 30 percent of the workers of the food industry, and a large number of trade, insurance, and banking employees have been drafted for compulsory labor service. Moreover, all replaceable men aged 21 to 25 are being removed from agriculture. According to a decree of March 1943, all male and female students of the Belgian universities have been ordered to do 6 months' manual work either in Belgium or in Germany. It is also reported that a number of Flemish boys between 14 and 16 years of age will be trained for 2 years under German instruction and supervision in Belgium and will then be sent to work in factories in the Reich.

All in all, it is estimated that at the present approximately 1,825,000 persons are working for German account in Belgium. This number is over 60 percent of the 3,000,000 gainfully employed still living in the country, a figure that takes into account displaced persons, i. e., workers in Germany, France, and other countries, war prisoners and civilian deportees, and other war fugitives.

The living conditions of Belgian workers in Belgium are difficult. Wages have been increased by only eight percent since May 1940, whereas prices of the principal foods have increased out of all proportion. For example, certain prices have increased as follows: Bread, 40 percent; potatoes, 90 percent; milk, 57 percent; meat, 75 to 116 percent; butter, 87 percent; margarine, 188 percent; eggs, 150 percent; and sugar, 94 percent. When food is available, the workers, of course, enjoy better food allocation than other consumers under the present rationing system, but the country in general has had to face one of the poorest food situations on the continent.

Belgium's manpower contribution to enemy Europe.—Various reports have stated that the Germans were seeking about 700,000 to 800,000 Belgians for work in the Reich. So far, the Nazis have succeeded in satisfying their demand by 80 percent (see table 2), and it can be reasonably assumed that the Germans will reach their goal by the end of 1943 or in the first months of 1944.

The Germans have recently asked for 150,000 more workers for Germany. Consequently, persons born in 1920 and 1921 are to be mobilized in order to supply these 150,000 workers.

TABLE 2.—Belgium: Manpower contribution to enemy Europe

Workers in Germany:	
Employed prisoners of war.....	20, 000
Civilian workers.....	530, 000
Prisoners of war.....	66, 800
Total.....	616, 800
Workers abroad (but not in Germany):	
Civilian workers in France.....	40, 000
Other countries (excluding Holland).....	20, 000
Total.....	60, 000

TABLE 2.—*Belgium: Manpower contribution to enemy Europe—Continued*

On German account at home:	
In agriculture.....	300,000
In industry, transport.....	1,500,000
Totd organization (coastal defenses).....	25,000
Total.....	<u>1,825,000</u>
Grand total.....	<u>2,501,800</u>

Source: Confidential.

AFTER THE GERMAN INVASION

The coal mines were the first Belgian industry to resume work after the German occupation.

Average monthly production of coal in Belgium before the war was about 2,500,000 metric tons. By April 1940 (1 month before the invasion) output had reached almost 3,000,000 tons. After a drastic reduction during the period May to September 1940, production increased again and reached the pre-war level. During 1941, however, production decreased sharply once more, and the maximum monthly output was about 2,060,000 tons. At the same time the number of miners dropped from more than 125,000 to about 120,000.

It was believed at the time that this decrease in production was caused by the departure of Belgium and foreign workers to the mines of the Ruhr, by the departure of miners to other industries, and by a decrease in the output per miner because of malnutrition and other factors. In an effort to make the work more attractive, the Germans enacted a series of exceptional measures in favor of the miners, including the granting of supplementary rations of food, an increase in salaries, and the creation of a variety of other premiums. Moreover, other industries were prohibited from enticing the miners away, and an equalization office was created to assist coal mines in financial difficulties.³ These measures, however, have not produced the hoped-for results, and sabotage and slow-downs have aggravated the situation. In 1942, the Nazis decided to introduce additional regulations in order to increase production. Some of the measures were (1) introduction of "dominal" work (2 Sundays out of 4); (2) transfer of surface workers below 30 years of age to underground work; (3) importation of Ukrainian miners; (4) use of eastern European prisoners of war in the coal mines; (5) exemption of miners from deportation to Germany; and (6) obligatory or persuasive transfer of miners from some districts of the southern basin to the rich northern basin which produces an excellent coal, particularly suitable for coking. Recently, a purely Flemish company, Kolendelving, has been organized to promote the coal industry in Flanders, i. e., in the northern basin. Some results were obtained by these measures, and the Belgian mines produced about 25,000,000 tons in 1942. However, in spite of all the efforts of the occupying authorities, the Belgian coal mines are working about 15 to 20 percent below normal capacity, and the actual maximum monthly output is about 2,100,000 metric tons, although the German program calls for a monthly production of 2,300,000

³ Since April 1943, new regulations have been in force regarding the coal market. All producers of coal and briquettes continue to belong to the Comptoir Belge des Charbons (Cobechar). The Cobechar represents the Belgian producers, and is, in principle, the sole seller of coal. It maintains close contacts with the equalization office. In spite of all subsidies from public funds, the Belgian mines continue to operate with losses.

metric tons, or over 27,000,000 metric tons per year. It is not believed that the Germans can obtain an immediate increase in production. The drop in output is due to the continuous shortage of mine props, cables, and oil in the mines, to transport difficulties, to sabotage and slow-downs, to the deterioration of the equipment, and to the general state of the mines which need to be rehabilitated.

The index of average daily coal production in Belgium fell from 100 in 1941 (87,950 tons) to 89.17 in 1942 (79,637 tons) and 84.64 (74,441 tons) during the period January to April 1943. Collieries where production still continues to fall will be closed down.

However, Belgium constitutes a large potential source of coal for enemy Europe's needs. At present, Belgium's production is about 25,000,000 tons per year or approximately 8 percent of enemy Europe's coal supplies of 340,000,000 tons, excluding brown coal.

DISTRIBUTION

The importance of Belgian coal to enemy Europe is illustrated by the story of its distribution:

1. It is believed that out of the actual monthly production of about 2,100,000 metric tons of coal, 700,000 tons are exported to Germany (including the Grand Duchy of Luxembourg and Alsace-Lorraine).
2. About 500,000 tons go to the coke plants in Belgium.
3. About 500,000 tons are distributed among railways and industries in Belgium.
4. About 400,000 tons go to the civilian population which is strictly rationed. It is reported that there was a severe coal shortage during the last two winters, partly as a result of transport difficulties but chiefly because important deliveries of household coal were made to Germany and to German-occupied countries.

COAL CONTRIBUTION TO ENEMY EUROPE

It is reasonable to assume that about 1,700,000 tons of coal per month (out of 2,100,000 tons produced) represent Belgium's contribution of coal to the German war effort, while the remaining 400,000 tons are put to civilian uses in the economy of enemy Europe. The relation of direct war use to essential civilian use is probably about the same as for Germany. Belgian coal contribution to enemy Europe is equal to that of Germany itself.

SINCE THE GERMAN OCCUPATION

It is estimated that the output of coke in Belgium in 1943 amounted to 80 percent of the pre-war figure, or about 4 to 4.5 million metric tons.

The decrease in production is due to the cessation of all imports of coking coal, to large exports of coking coal to enemy areas outside of Belgium, and to the decline in Belgian coal output in spite of Germany's effort to increase production in the northern basin. The Germans are apparently allotting about 6,000,000 metric tons of Belgian coking coal yearly to the Belgian coking plants which is the equivalent of approximately 4 to 4.5 million metric tons of coke.

Belgium's present production of coke is about 6 percent of enemy Europe's total output of about 75,000,000 metric tons per year. The

uses of Belgium's coke are such that virtually the entire output constitutes a contribution to Germany's war effort. It is estimated that out of a total yearly production of about 4 to 4.5 million metric tons, about 2,000,000 metric tons go to Belgian blast furnaces;⁴ about 1.8 to 2,000,000 metric tons are exported to German-occupied areas, namely Luxembourg and France,⁵ and about 500,000 metric tons are used by various Belgian industries and as household coke. In spite of the shortage of coke in Belgium, coke deliveries to the blast furnaces are expected to increase in the near future as it appears that Germany is planning an increase in Belgian iron and steel production.

AFTER THE GERMAN OCCUPATION

Since the German occupation, all Belgian public utilities—gas, electricity, and water—have been further consolidated. The entire electric supply system is subordinated to German needs and is under strict German supervision.

It is reported, however, that the power plants often operate at a reduced rate. The coal supply on which practically all Belgian plants depend is said to be insufficient as a result of large coal exports to Germany. Moreover, several important power stations, especially those at Schelle, Zeebrugge, Langerbrugge, and Sweveghem, suffered damages during Allied air attacks. Frequent sabotage has, apparently, also caused a decline in output of power. Furthermore, it has been reported that the Belgian electric companies have received orders to replace their copper high-tension wires by galvanized iron and steel. Although technically this conversion did not meet with insurmountable difficulties, it may involve a certain increase in transmission losses.

Nevertheless, Belgium's indirect contribution in electric power to the German war potential is important. The Belgian plants were ordered in 1941 to supply Germany with 400,000,000 kilowatt-hours of electricity per year. This would save Germany a substantial amount of coal. Moreover, to transmit electricity rather than coal from Belgium to the Reich would also assist to a certain extent in preventing further congestion on the transport system. To permit the export of this power the Germans constructed a substation at Jupille, near Bressoux, from which a current of 220 kilovolts is transmitted to Brauweiler, near Cologne. Although this line was sabotaged in 1941, service was resumed by January 1942. The recently completed southern portion of a projected transmission line from Schelle to Guy-lez-Pieton, connecting the isolated Brabant network to the rest of the national grid, is also contributing to German demands. In addition, it has been reported that a high-tension power line was under construction south of Brussels for the Rheinisch-Westfälisches Elektrizitätsnetzwerk (RWE), connecting the Brussels group of stations to the plants in the industrial area of Liege and the south. It has also been stated that another high-tension line was being built from Charleroi southward to Convin and beyond. In general, the southern network, besides supplying the heavily industrialized part of Belgium, is conveniently located for the transmission of electric power either to Germany, via Bressoux, or to northern France.

⁴ It is reported that during January, February, June, and July 1943, the average coke consumption of the Belgian blast furnaces was 160,000 tons, compared with about 120,000 in 1942.

⁵ The average monthly export of coke from Belgium to the Luxembourg blast furnaces was 80,000 tons during the first 6 months of 1943 as compared with 110,000 tons in 1942.

On the other hand, recent reports state that Germany, in a strenuous effort to exploit the industrial area of Liege, is supplying some power to Belgium. During the period from May 26, 1943, to June 17, 1943 (both dates inclusive), the Belgian power plants transmitted 3,180,000 kilowatt-hours to Germany, whereas German plants supplied Belgium with 5,045,000 kilowatt-hours during the same period. This type of transmission, which takes place at night and on Sundays, does not constitute a serious drain on German power supplies, and undoubtedly Germany is gaining some advantage from the arrangement.

GERMAN CONTROL OF INDUSTRY

The Germans have taken over complete control of the iron and steel industry. They exercise this control indirectly through a corporation⁶ organized on Nazi lines which regulates prices, output, and requirements, and directly⁷ by German supervisors and the merging of Belgian and German firms.

Various reports also indicate that the Belgian iron and steel industry has been concentrated and rationalized by the Germans. In pursuance of this policy, as an example, the two blast furnaces of the Thy-le-Chateau works were extinguished on March 18, 1943. In the future this firm will merely reroll the products of La Providence works, which will relight two furnaces. This process of rationalization has been carried on for more than a year. In July 1942, the Esperance-Long-doiz works had to extinguish two of their furnaces, whereas the John Cockerill and Ougree works were each ordered to relight one of theirs.

Moreover, suspecting that their orders were being sabotaged by the Belgians, the Germans have installed their own experts to supervise the workers, and armed guards now patrol the workshops.

CHANGE IN PROCESS OF MANUFACTURE

Immediately after the country was invaded, the Germans began to change the process of manufacture of iron and steel from basic Bessemer to open hearth. All open-hearth plants were operated at full capacity whereas production of basic Bessemer plants was reduced. This change may be explained by the fact that Germany has been taking away all of the coke and coal that could possibly be obtained. Moreover, as long as scrap is available, it is to the Germans' advantage to produce open-hearth steel. Furthermore, byproduct gas is more readily available than coke and is used in its place. It is also true that open-hearth steel is of better quality than Bessemer, especially for armaments.

TREND OF PRODUCTION

In October 1942, the Germans announced plans for a substantial increase in steel production, the goal for the last quarter of 1942 being 60 percent of capacity, which would be equivalent to about 200,000

⁶ Moreover, in 1940, Cosibel, the prewar sales syndicate, was replaced by the Syndicate Belge de l'Acier (Sibelac), a much more powerful organization controlling not only sales but also production, standardization, and raw material supplies. It was recently reported that Sibelac had decided to raise the home-market price of manufactured iron and steel products, whereas the export prices will remain unchanged.

⁷ Ougree-Marihaye, the largest metallurgical concern in Belgium, has been amalgamated with the German enterprise of Otto Wolff of Cologne with whom the former had an informal sales arrangement prior to the war. The second most important open-hearth producer, John Cockerill, was forced to divide its productive capacity between Vereiniigte Stahlwerk which obtained the use of its steel-making facilities, and Rheinmetall Borsig which is running the plant's armament production.

tons a month. However, production in October 1942 was 131,500 tons and in November only 124,900 tons.

Several reasons may be advanced as to why production of iron and steel in Belgium during 1943 may have exceeded that of 1942.

1. German pressure to deport workers from the metallurgical industry has recently been relaxed. In fact, many firms that have released steel workers to Germany have now been declared exempt from any further recruitment obligation.

2. Latest reports indicate that the Germans have gradually been increasing coke allotments to Belgian firms. On an average, it takes nearly 1 ton of coke to produce 1 ton of pig iron. The Germans, heretofore, have not supplied Belgian firms with the quantities of coke commensurate with their productive capacities.

3. The Lorraine iron ore which was normally imported by Belgium, and which is of richer iron content than that of the Luxembourg deposits, is at present allocated more freely by the Germans.

4. As a result of the growing weight of air raids in the Ruhr, the Germans are attempting to increase production of iron and steel in Belgium.

BELGIAN CONSUMPTION

Since the German occupation, Belgium's requirements in iron and steel have been largely disregarded in order to cover German demands. In September 1941, for example, only 30,000 tons of steel were available for Belgian orders as compared with normal pre-war requirements of 80,000 tons per month. By the third quarter of 1942 this figure had been reduced to 22,400 tons per month. It is stated, moreover, that in allocating the reduced quota, orders can be taken only when extremely urgent and if an old order is canceled. Allocations of iron and steel for inland waterways, armaments, and fortifications receive priority.

CONTRIBUTIONS TO ENEMY EUROPE

As indicated above, German policy until the middle of 1942 was to deprive Belgium of coke, thereby causing a gradual decline in the production of iron and steel. This is evidenced by the following production estimates which are based upon various reports of average monthly production figures:

	Pig Iron	Crude steel
1940.....	2,450,000	2,500,000
1941.....	1,484,000	1,681,000
1942.....	1,400,000	1,500,000

The drive to increase Belgian iron and steel output was announced in October 1942. Since then, there has been a marked upward trend in production.

It is conservatively estimated that the present annual production rate is approximately 1,800,000 tons of pig iron and 2,000,000 tons of crude steel. Thus Belgium's present production is equal to about 5 percent of total European enemy supplies of pig iron (29,500,000 tons) and to about 6 percent of the supplies of crude steel (38,000,000 tons).

It may be concluded that whether pig iron and crude steel are exported to Germany or German-dominated countries, or consumed in part by domestic metal industries which operate on German account, virtually the entire Belgian iron and steel industry works for enemy Europe

ARMAMENTS SINCE MAY 1940

Soon after the invasion of Belgium the Germans began to take an active interest in the armament industry of the country. The Belgian armament works were forced to adopt the German policy of concentration, and are now completely under German domination. The factories either have been taken over by German armament concerns or are under strict German supervision and control.

As there were no important facilities for the manufacture of heavy equipment, the Germans directed their efforts toward small arms and component parts and repairs. However, because of the nature of Belgian industry, the Germans were able to convert numerous general engineering and industrial plants to the manufacture of implements of war, such as electric batteries, air compressors, heavy cables, cocks for submarines, etc. In addition, some factories are used for the manufacture and repair of motor vehicles, mainly trucks, and for the repair of aircraft and aeroengines. The Germans also found in Belgium important facilities for the manufacture of special films and other photographic products which are used by the Luftwaffe. Belgium's chemical and explosives industry contributes significantly to the German war effort.

In general, the Belgian armament industry is at present working at capacity, although it is reported that raw material and steel supply shortages, slow-downs, and sabotage occur occasionally.

Arms and ammunition.—The principal Belgian firms working for the Germans and producing all types of arms and ammunition are listed in appendix C. This list is not exhaustive. In many cases, the manufacture of implements of war constitutes a part of the activities of the large steel plants and of smaller manufacturing plants whose production is reserved for the Wehrmacht.

Mechanized equipment.—Prior to the war, the Belgian motor-vehicle industry confined its operations, in general, to the assembly of vehicles, parts for which were imported chiefly from the United States. Belgium also assembled its army transport vehicles from imported parts. Some light tanks, however, were made domestically under a Vickers license.

After the invasion, the Germans developed the manufacturing facilities considerably, and it has been reported that Belgian plants are now producing motor vehicles, especially trucks, in great numbers. In addition, the Germans are making the maximum use of the repair facilities available in Belgium.

The three main firms engaged in these activities are discussed below.

1. The Ford establishment, at Hoboken, Antwerp, is the most important of the Belgian motor-vehicle producers. In November 1940 the plant began to manufacture parts for, and to assemble, 3- and 5-ton German Army trucks.

It was reported at the time that parts of an army truck of the same model would be produced in the Ford plants in Belgium, France,

Holland, and Germany. Each of these plants would divide the production of such parts in order to obtain a highly integrated over-all production. An elaborate machine-tool department is reported to have been established at the Antwerp plant equipped with machines procured from the Ford plants in France, probably Poissy, and Cologne, as well as from local Belgian sources. Additional parts were to be obtained locally by the Antwerp plant for use in truck-assembly work. Moreover, while previously the plant received the main components from the Matford plant at Poissy, at present it has developed its manufacturing resources to such an extent that it supplies components to the Ford plant at Amsterdam, Holland. Certain parts continue to be received from the Ford Werke at Cologne, and the Fabrique Nationale at Herstal, Belgium.

The Ford plant is, according to various reports, producing about 500 trucks per month. In addition, it is an important repair center, and handles from 150 to 300 trucks monthly.

2. The General Motors plant at Eeckeren, Antwerp, is much larger than the Ford plant. It is utilized mainly by the latter for the production of trucks and for storage.

The General Motors plant is also a major repair center for trucks and motor vehicle engines, which can be repaired at the rate of 40 per day.

3. Before the war, the Fabrique Nationale d'Armes de Guerre (F. N.), at Herstal, near Liege, produced passenger cars and motorcycles. At present, it is believed to be manufacturing Renault trucks, but its main activity in the motor-vehicles line consists of manufacturing parts for the Ford plant at Antwerp. The factory is also a leading producer of small arms.

In addition to these three major motor-vehicle manufacturers, it is reported that Latil at Haren-Vilvorde, Usines Doyen at Haren, Imperia at Liege, Ateliers de Construction de Familleureux at Familleureux, near Manage, and a number of small plants throughout the country are repairing trucks and other mechanized equipment for the Germans. Some Belgian factories are engaged in transforming requisitioned passenger automobiles into light armored cars.

Aircraft.—Belgium's aircraft production has always been small. Under German occupation, however, a few specialized factories and a number of converted general plants are doing some assembly work, but the majority of the plants are engaged in repair work and the manufacture of spare parts. The plants are under the control and strict surveillance of the military authorities, and their activities are considered of first importance to the Luftwaffe.

The following plants are reported to be the principal repair centers for the German Air Force:

1. Erla Maschinenfabrik, at Mortsels, Antwerp, is probably the largest repair depot in Belgium for single-engine fighter planes, and for reconditioning engines. Airframe components may also be produced there. Output was 100 repairs per month up to the raid of April 1943, when output was reported to have fallen to 6 per month.

2. Erla Maschinenfabrik, at Evere, Brussels, is housed in a converted textile plant and repairs Me. 110's and 210's, Do. 217's, He. 111's, and Ju. 88's. The plant consists of several workshops, and a report of August 1943 states that 4,000 to 10,000 workers are employed there. An air raid on September 7, 1943, did considerable damage to the workshop.

3. Erla, at Malines, in early 1943 was repairing He. and Me. 110 wings.

4. Erla, at Berchem St. Agathe, is a new plant formed in early 1942 by the amalgamation of LACAB and SABCA. It makes landing gears and tail units, and employs about 250 workers.

5. Fairey-Aviation, at Gosselies, near Charleroi, repairs He. 111's and Ju. 88's. Photo reconnaissance in September 1942, however, showed little activity.

6. Daimler-Benz, at Mortsel (Antwerp), is located beside the Erla works. The plant is reported to have been damaged in an air raid.

7. Soc. An. des Glaces de Courcelles, at Courcelles, formerly manufactured plate glass but has been taken over by the Luftwaffe and reequipped with new machinery for aircraft repair work. Estimates of personnel vary from 300 to 3,000.

8. Usines Doyen, at Haren, Brussels, repairs engines. According to reports in late 1942, 1,500 to 2,000 workers are employed in 2 shifts and their rate of output is 2 aircraft engines per day.

9. Unconfirmed reports state that the following are also engaged in engine repairs: Bennert et Bivort, at Jumet; Societe Renard, at Evere, Brussels; Peignage de Laine, at Hoboken, Antwerp; Latil, at Haren, Brussels; and NAFMEC, at Brussels, which was reported in March 1942 to be the principal Jumo engine-repair depot.

The two following factories are reported, without confirmation, to be aircraft assembly plants:

10. Stampe and Vertongen, at Deurene, Antwerp, which used to build trainer planes, with Renard, Armstrong-Siddeley, Hispano-Suiza, and Gypsy engines.

11. Ancienne Compagnie SABCA, at Neder-Over-Heembeek, which in May 1943 was reported to be making complete airframes.

Photographic materials for military and general use.—An important contribution to the German war effort is made by the Belgian photographic industry which manufactures photographic plates, paper, and films (largely from domestically produced paper), glass plastics, and gelatin. In 1939 the value of Belgian photographic materials was about \$5,000,000, which was approximately 5 percent of the total value of Belgian chemical production.

The photographic materials plants in Belgium are: Photo-Produits Gevaert S. A., at Vieux-Dieu, near Antwerp; the Gevaert factory, at Westerloo, which makes nitrocellulose and other plastics for the film industry; Union Chimique, at Evere, near Brussels; Societe Industrielle de la Cellulose (Sidac) at Ghent, which make films; and Etablissements des Produits Photo-Chimiques, S. A. at Courtrai, which produces photographic plates.

The Gevaert Co. is one of the largest photographic equipment manufacturers in the world, and dominates the business in Belgium. Employing approximately 3,000 to 3,500 workers, the Gevaert Vieux-Dieu plant produced in 1939, its peak year, the following materials:

Sensitized photographic paper.....	square feet.....	64, 450, 400
Plates.....	do.....	2, 259, 264
X-ray film.....	do.....	2, 151, 680
Graphic film.....	do.....	1, 344, 800
Cut film.....	do.....	644, 504
Aero film.....	do.....	46, 261
Moving picture 35-millimeter film.....	linear feet.....	98, 400, 000
Roll film.....	spools.....	12, 000, 000

At the outbreak of World War I, Gevaert had branches not only in Europe, but also in South America. The company's expansion continued after the war and in 1939 its products were being manufactured in its subsidiary plant in the United States and under license in Germany (Voigtlander-Gevaert G. m. b. H., Berlin); France (S. A. Industrie Photographique, Paris); and Spain (Industria Fotoquímica Nacional S. A., Barcelona).

After May 1940 the Vieux-Dieu plant continued its operations, its products going to the Luftwaffe.

The importance of the Gevaert Film Works to the Luftwaffe can be judged by the following facts: (1) It is the largest photographic film plant in Europe outside Germany; (2) its plant for the production of baryta-coated photographic paper—is the largest in Europe; (3) in addition to the Vieux-Dieu factory it has a plant at Westerloo which produces nitrocellulose, the principal constituent of film base and an important ingredient in explosives; (4) since the German occupation, the plant has been working at capacity and its profit is at a higher rate than at any previous time in its history (it has been reported that in 1941 the company made a profit of 40,000,000 Belgian francs); (5) the management of the plant is cooperating wholeheartedly with the Germans, and no sabotage or slow-downs have occurred to date; (6) the plant has never complained of a shortage of raw materials.

In April 1943 the factory was bombed by the Allied Air Force. Partial destruction resulted, and, according to the manager of the plant, the manufacture of film could not be resumed for 3 months.

Explosives.—Besides being a large producer of explosives for industrial use (quarrying, mining, tunneling, and road and railway building), Belgium after 1940 became an important manufacturer of military explosives as well.

Of the 27 explosive plants in Belgium, 9 made nitrocellulose powder, 2 (both completed in 1939), made TNT, 3 made dynamite, 10 made safety explosives, 4 made cheddites, 7 made detonators and safety fuses, 4 made black powder, and 2 made other high explosives. Before the German occupation, Belgium exported a large part of its output of black powder, safety explosives, detonators and safety fuses, and imported TNT and smokeless powder.

Since the occupation, the Germans have managed to keep the manufacture of military explosives at a fairly high level, although no specific data are available as to the quantities produced. It is reported that dynamite output is rising constantly as a result of the fact that German glycerin, the only kind available today, is at present allocated to Belgium in greater quantities than in 1942.

AFTER THE OCCUPATION

Supply.—When Belgium capitulated, the Germans found in the country over 3,500 main-line locomotives (3,377 in service and 215 inactive in reserve) and about 500 engines in use on the light railways. After the occupation was completed, the German military authorities transferred the newest and most powerful locomotives to Germany, reducing drastically the Belgian pre-war stock. It is re-

ported that by October 1942 the Germans had removed to the Reich 1,072 locomotives, of which 1,002 were on "hire" and 70 were booty. These 70 locomotives were shedded in the cantons of Eupen-Malmedy-Moresnet and were confiscated by the Germans when they annexed that territory.

In addition, about 100 locomotives were either destroyed during the military operations of May 1940, or have been lost or scrapped, making a total reduction of 1,172 engines. Apparently no further requisitions have occurred since October 1942. According to official reports of the Société Nationale des Chemins de Fer, the number of locomotives as of January 1943 was 2,152 available for use and 290 awaiting repair, or a total available of 2,442.

The removal of the best engines to Germany made the locomotive position in Belgium very difficult. The Belgian railways were obliged to put back into service every locomotive capable of running, and the workshops were ordered to speed repairs.⁸ Their task is complicated, however, by continuous shortages of materials and replacement parts. Moreover, lubricating oil of good quality is not available. The shortage of motive power in Belgium is acute, and there is no indication that the situation can be improved. Sabotage and air raids further aggravate the situation. As a result of the difficulties arising from the shortage of locomotives, the average monthly traffic on the Belgian railways fell from 3,613,930 tons in 1941 to 3,186,773 tons in 1942 and to 2,539,069 in January 1943.

Production.—The program for the production of new locomotives for German account began in the second quarter of 1941,⁹ when the principal Belgian builders received orders for 200 units of the class "50's." Although the order was placed about April, actual production probably did not begin until September. From the very beginning, because of slow-downs and lack of materials, the Germans experienced great difficulties in maintaining production in the Belgian locomotive industry. It is believed, therefore, that deliveries did not start until the beginning of 1942.

But in spite of the fact that the first order of 200 locomotives was not completed within the scheduled period, a further order for 250 engines was placed by the Germans in October 1942. The order did not specify the type, but it has been stated several times that the engines would be class "52's."

At that time the German orders were distributed as shown in the list on the next page.

Thus, by the end of 1942 the Belgian locomotive works had orders on hand for 450 engines for German account, a number of which may already have been delivered.

⁸ The percentage of locomotives undergoing or awaiting repair dropped from 20.9 in May 1941, to 12.3 in May 1942, and to 9 in September 1942 (figures of the Société Nationale des Chemins de Fer Belges). The total staff engaged primarily on locomotive repair work in Belgian railway shops amounted to 7,379 in June 1943, compared with 3,692 in May 1940. Completed repairs frequently show signs of poor workmanship. Also, machines and hand tools available in the shops are said to be inadequate, and locomotives are often sent out from repair depots with defects unremedied. According to reports, all Belgian workshops have been notified that a fine will be imposed for such instances of faulty workmanship.

⁹ The first German order for locomotives were placed in Belgium prior to the German program of April 1942, which called for 7,500 engines per year.

Distribution of German locomotive orders to Belgian firms

Firm	German orders
S. A. John Cockerill.....	First order for 42 locomotives class "50's". Second order (October 1942) for 50 locomotives of unspecified type.
S. A. Usines Metallurgiques du Hainaut.	First order for 24 locomotives class "50's". Second order (October 1942) for 50 locomotives of unspecified type.
S. A. Ateliers Metallurgiques de Nivelles.	First order for 38 locomotives class "50's". Second order (October 1942) for 50 locomotives of unspecified type.
Societe Anglo-Franco-Belge de Matériel de Chemins de Fer.	First order for 26 locomotives class "50's". Second order (October 1942) for 50 locomotives of unspecified type.
S. A. des Ateliers de Construction de la Meuse.	First order for 26 locomotives class "50's".
Societe des Forges, Usines et Fonderies de Haine St. Pierre.	First order for 28 locomotives class "50's". Second order (October 1942) for 50 locomotives of unspecified type.
S. A. Energie.....	First order for 16 locomotives class "50's."

The Germans have taken several measures to speed up locomotive production, such as larger allocations of materials, higher priority in utilization of manpower, etc., and at the present time the Belgian locomotive industry is fully occupied.

By the end of 1943, in view of the capacity of their works, the Belgian locomotive manufacturers should be able to produce between 400 and 450 locomotives—complete engines or equivalent parts¹⁰—a quantity somewhat less than 10 percent of the total output of enemy Europe.

ROLLING STOCK: PRE-WAR POSITION

Supply.—In 1939 Belgian rolling stock in service consisted of 115,373 freight cars, 7,010 passenger cars, and 2,899 other types, classified as follows:

Freight cars:

Open 4-wheeled, 10- to 20-ton freight cars.....	63, 982
Open bogie, 30- to 40-ton freight cars (Of the open freight cars 10,788 are low-sided or flat).....	4, 008
Covered 4-wheeled, 10- to 20-ton freight cars.....	30, 714
Brake cars, also used to load freight, and service cars.....	5, 662
Others.....	158
<hr/>	
Total of freight cars belonging to the Belgian railways (Societe Nationale des Chemins de Fer Belges).....	104, 524
Privately owned freight cars.....	4, 226
Freight cars operated by the Nord Belge.....	4, 998
Freight cars of the Mechlin-Terneuzen Railway.....	1, 429
Freight cars of the Chimay Railway.....	196
<hr/>	
Total of freight cars.....	115, 373

Passenger cars:

Passenger cars belonging to the Belgian railways (Societe Nationale des Chemins de Fer Belges).....	6, 928
Passenger cars operated by the Mechlin-Terneuzen Railway.....	68
Passenger cars of the Chimay Railways.....	14

AFTER THE OCCUPATION

Supply.—At the time of the invasion in 1940, according to a reliable source, the number of freight cars available to the Belgian railways was 111,378. After the occupation of the country was completed, the

¹⁰ It has been reported that the Belgian locomotive manufacturers have been supplying locomotive and rolling stock parts to German firms, such as Krupp, Borsig, and Krauss-Maffel.

Germans transferred the best freight cars to the Reich. According to a census taken in October 1942, the Nazis by that time had removed 45,639 freight cars, of which 27,500 were "requisitioned" and 18,139 were "detained." In addition, 5,965 freight cars were in France and 4,400 in other countries, making a total of 56,004 Belgian freight cars abroad. To this number should be added about 3,500 cars destroyed or lost during the military operations. Thus, in 1943, assuming that no further German requisitions have been made since October 1942,¹¹ a little more than 50,000 Belgian freight cars remained within the country. (In addition, a number of foreign freight cars were in Belgium. In October 1942, for example, there were 11,334 German cars, 6,285 French cars, and 802 from other countries.) This number is not adequate for the needs of the Belgian railways.¹² In order to maintain essential traffic, 5,340 freight cars of small tonnage and old design were put back into service. This, however, did not improve the situation to any great extent. Moreover, the general condition of the cars is reported to be very poor,¹³ and repairs are far behind schedule.¹⁴

Production.—It is reported that in the early months of 1940, the Belgian rolling stock manufacturers had on hand orders for 9,200 freight cars, 6,000 of which were coal cars for delivery to France. Between June 1940, after Belgium had been occupied, and the end of 1942, the Germans placed orders for 8,395 freight cars, of which 5,000 were coal cars and 3,395 tank cars. It has been reported that the majority of these orders were placed with Societe Anglo-Franco-Belge, at La Croyere; S. A. Baume et Marpent, at Haine Saint Pierre; Ateliers Metallurgiques de Nivelles, at Nivelles; Ateliers de Constructions de Familleureux, at Familleureux; Ateliers de la Dyle, at Louvain; Compagnie Centrale de Construction, at Haine Saint Perre; La Bourgeoise et Nicaise et Delcuve, at La Louviere and Saint-Michel-Lez-Bruges; and Ateliers de Trazegnies, at Trazegnies.

Including orders on hand before the invasion and new German orders, the Belgian builders have probably produced for the Germans at least 17,500 freight cars, of which about 11,500 were coal cars and 5,000 were tank cars. Even with the present reduced capacity of 45,000 cars per year the Belgian plants could easily carry out the German orders.

In addition to complete cars, it is reported that the Belgian manufacturers have received orders for about 5,000 wheel sets from the German railways. In general, the manufacture of wheel sets is one of the most important contributions of the Belgian rolling-stock manufacturers to the German war effort.

¹¹ Early in 1943 the Germans approached the Belgian National Railways to institute a "common user" arrangement (or formal pool) for the German, French, and Belgian freight cars. The Belgians refused since it was evident that this pool would permit the Germans to secure a firmer control over the remaining Belgian cars.

¹² Due to the shortage of freight cars, a recent decree provided for compulsory loading and unloading on Sundays. The time allowed has been reduced from 8 hours to 4 hours per car. Belgian cars engaged in internal traffic are also to be overloaded by 10 percent.

¹³ It is reported that in May 1943, 42,741 freight cars were marked for repairs. This means that although all these freight cars need not necessarily be sent into the workshops but can be dealt with by the fitters on the spot, nearly every Belgian freight car now in the country requires some sort of repair once a month. The following figures of the number of defective cars reported by 100 freight cars loaded show the present condition of the rolling stock. 1935-36, 7.20 per 100; 1939, 8.30; 1941, 12.80; 1942, 14.50; January to May 1943, 15.80.

¹⁴ Up to the end of October 1942, major repairs were 10 percent and light repairs were 30 percent behind schedule. In an effort to remedy this situation the Germans, in May 1943, introduced a 60-hour week in the workshops. An unconfirmed report states also that one of the main Belgian repair shops, at Salzinnes, has been dismantled and sent to Germany.

SINCE THE OCCUPATION

Principally because of the lack of raw materials, the chemical industry is at present working at a reduced rate. It has been reorganized on German lines. According to reports, it is divided into 10 special groups: (1) Coal chemistry; (2) nitrogen industry; (3) distillation industry and organic chemistry; (4) oils and fats; (5) rubber; (6) glue and gelatins; (7) dyes and lacquers; (8) explosives; (9) compressed gases; and (10) pharmaceutical products.

It was stated at the time of the reorganization that this grouping would simplify and facilitate the supply of raw materials and improve regulation of the market, especially as far as foreign trade is concerned. The close ties which existed between the German and Belgian chemical industries before the war, were further strengthened by the German Chemical Trust under the pressure of military conquest. In at least one case, that of Solvay & Co., these ties took the form of a partial corporate penetration. Also, the tendency of the Union Chimique Belge is pro-German, and in some of its subsidiaries and closely related industries, German penetration is very marked. However, the leaders of the Union Chimique Belge, in spite of their pro-totalitarian leanings, are apparently adopting a watchful attitude in the light of present events in Europe.

All the long-term economic agreements, clearing agreements, and so-called free export agreements that Belgium has made with other European countries include chemical products. Under the German occupation, the Belgian chemical industry manages to export its products though under close German surveillance.

In addition to exporting its products to German-occupied countries, the Belgian chemical industry contributes directly to Germany in the fields of explosives (see armaments) and synthetic fibers (see textiles).

THE TEXTILE INDUSTRY OF FRANCE

CHARACTERISTICS OF FRENCH TEXTILE INDUSTRY BEFORE THE WAR

DEPENDENCE ON IMPORTED RAW MATERIALS

The French textile industries depended on imports for more than 90 percent of their raw materials.

Sources of major raw materials for the French textile industries

[Percent]

	France	French colonies	Outside the Empire
Cotton.....	0	2	98
Wool.....	7	3	90
Silk.....	4	6	90
Jute.....	0	0	100

Cotton.—No cotton was grown in France and very little in the French colonies. When the war began, some results were beginning to appear from a long-term program to increase colonial production for the purpose of freeing the cotton-textile industry from some of its dependence on foreign raw material markets, where it sometimes found itself at a disadvantage because of the changing value of the franc in international exchange. The United States was always the major source of raw cotton, but the proportion of imports from this country declined considerably in the 1930's. In 1938 total imports of raw cotton (some of which may have been used outside the textile industry) were 277,800 metric tons.

Sources of raw cotton imports, 1938

	<i>Metric tons</i>		<i>Metric tons</i>
United States.....	143, 500	Brazil.....	28, 000
Egypt.....	43, 400	French colonies.....	10, 500
India.....	38, 000	Miscellaneous.....	14, 400

Wool.—In the pre-war period (1929–39), France produced annually about 16,000 to 18,000 metric tons of wool. Production had been declining steadily during the preceding 50 years.

In 1938 about 172,800 metric tons of greasy or backwashed wool and 3,100 metric tons of clean wool were imported; also, nearly 10,000 metric tons of wool waste, ravelings, rabbit, and other spinnable animal hairs. In addition, France imported some 55,000 metric tons of woolskins, to be dehaired largely at Mazamet in the southwestern department of Tarn. Some French woolskins were also dehaired at this center, which in 1935 turned out 6,000 metric tons of scoured, 24,000 of backwashed, and 10,700 of greasy wool. Part of this production was exported, chiefly to England. Most of the

imported wool and woolskins came from Australia, Argentina, and South Africa.

Silk.—The production of raw silk in France declined fairly steadily after 1868, and in 1938 reached an all-time low of 599 metric tons, in spite of governmental efforts to encourage production by subsidies and other means.

Imports did not rise, however, in proportion to the decline in domestic production. In 1938 only 242 metric tons of silk in the cocoon were imported (more than half from Syria) 1,700 of silk noils and waste, and 2,463 of reeled silk (largely from China and Japan).

Flax.—Despite governmental subsidies and other measures to encourage the cultivation of flax, French production was declining in the 10 years preceding the outbreak of war. In 1929 the country produced 39,500 metric tons of tow; in 1938, only 23,800. The principal reason for this decline was that flax production brought only small profits. Seed had to be imported, usually from Turkey; also a great deal of imported fertilizer was required because the crop makes heavy demands on the soil—so heavy that it was customary to plant flax only once in 6 to 8 years on the same plot. The approximate yields from 100 kilos of raw flax were generally as follows:

	Kilograms
Seed (sold for oil, with yield at best of 25 percent)	10
Capsules (used as fodder)	10
Fine tow	10
Short tow	4
"Wood" (used as fuel)	46
Refuse	20

In 1938, the domestic production was supplemented by imports of nearly 39,000 tons of stripped flax and tow. More than half the stripped flax and three-fourths of the tow came from Belgium, but to a considerable extent this tow was from French flax that had been sent to Belgium for retting and scutching. About a quarter of the stripped flax and tow came from the Soviet Union.

Hemp, jute, and other hard fibers.—French production of hemp declined steadily between 1890 and 1918 and thereafter leveled off at about 4,000 to 5,000 metric tons a year. In 1938 when 4,200 metric tons were produced, three-fourths of it in the Department of Sarthe, 11,277 metric tons of hemp and hemp tow were imported, a third of it from British India and the rest from eastern and southern Europe.

No jute was produced in France. Practically all of the 81,800 metric tons of jute and jute tow imported came from British India. Nearly 53,000 metric tons of other hard vegetable fibers used for textile manufacturing were also imported.

Wood pulp and cotton linters for rayon.—French forests provided little if any wood pulp for the manufacture of rayon, though there was hope that improved methods of removing resin might eventually enable use of domestic pine. About 9,600 metric tons of cotton linters were imported, principally for manufacture of acetate rayon. The viscose-rayon industry depended on wood pulp for cellulose; it is estimated that in 1939, about 30,000 metric tons of pure cellulose pulp were imported for this purpose.

Lubricants and chemicals.—Nearly all lubricants for the textile as well as other industries were imported. Also, a considerable part of the fats and oils for soaps came from abroad.

Domestic deposits of potash were ample in Alsace, and there was an abundance of limestone and salt for the manufacture of the soda ash and caustic soda needed for soap making. Pyrites, used in the manufacture of sulfuric acid, were imported from Spain. Sulfur, which was needed in the rayon and other textile industries, was imported, mostly from the United States and Italy.

No reliable estimates are available as to the amounts of chemicals and lubricants used by the French textile industries, since practices varied widely from plant to plant and from year to year.

BULK OF PRODUCTION IN 6 PERCENT OF THE PLANTS

According to the census of 1931, there were 29,349 textile-manufacturing and 82,767 textile-transforming establishments in France. The census found 920,460 people in the former and 892,543 in the latter. But most of the establishments were small, many of them being home workshops.

Number and size of textile establishments, 1931

Employees	Manufacturing establishments	Transforming establishments	Employees	Manufacturing establishments	Transforming establishments
Number of wage earners.....	6,446	12,452	201 to 500	669	90
1 to 5 employees.....	13,218	48,879	501 to 1,000.....	198	13
6 to 10.....	2,292	5,172	More than 1,000.....	84	9
11 to 50.....	4,342	5,245	Total.....	29,349	82,767
51 to 100.....	1,200	626			
101 to 200.....	900	281			

It will be observed that only 1,851 (6.2 percent) of the manufacturing plants employed more than 100 workers. Yet these plants accounted for fully two-thirds of the people engaged in such operations; and it is estimated that they accounted for three-fourths of the production.

The large manufacturing plants were heavily concentrated in a few departments.

Distribution of large textile mills, 1931

Department	Mills employing 101 to 500 workers	Mills employing more than 500 workers
Nord.....	405	105
Vosges.....	115	22
Bas and Haut-Rhin.....	128	40
Scattered.....	920	115
Total.....	1,569	282

Of the 22 textile-transforming plants having more than 500 workers, 13 were in or near Paris, 2 in Rhone, and 1 in Nord. There was none in Alsace.

CONCENTRATED FAMILY TYPE OF OWNERSHIP

The 29,349 manufacturing establishments were owned by about 14,500 persons and concerns. Excepting those manufacturing rayon filament or staple and those operating finishing, dyeing, and printing plants, most of the concerns, whether large or small, were of a family character. Until 1920 they generally operated as partnerships; but even when incorporation for tax purposes and business convenience later became common among the larger enterprises, the shares were usually held in the hands of a limited family group. Very few textile manufacturing concerns were listed on the Bourse.

It was customary to set up a new company for each new enterprise. When a family engaged in woolen manufacture bought or built a new plant or branched out into the cotton or rayon field, a separate company was formed. The partners or shareholders were not identical in each undertaking, but seldom did the participants include anyone outside of the family. One man might participate in a wool-combing business with his brother, a cotton-spinning business with his sons, and a linen-weaving business with a nephew or a son-in-law. This proliferation of family companies is well illustrated in the Directory of the Chamber of Commerce of Roubaix (in the department of Nord) which listed 17 establishments, in the Roubaix area alone, bearing the name of Motte, a leading textile family of the region:

Company	Book capitalization	Business
Alfred Motte & Cie.....	21,875,000 francs.....	Wool combing.
Les Fils d'Alfred Motte (partnership)....	Not listed.....	Cotton spinning, weaving, and finishing; wool dyeing; weaving draperies.
Etienne Motte & Cie.....	7,500,000 francs.....	Cotton spinning.
Gerard Motte & Cie.....	Not listed.....	Doubling and weaving draperies.
Paul Motte & Cie.....	do.....	Spinning.
Motte Fils & Cie.....	1,000,000 francs.....	Wool spinning, doubling, dyeing.
Motte & Cousin.....	Not listed.....	Weaving.
Etablissements L. & J. Motte Freres.....	17,000,000 francs.....	Cotton spinning, doubling, dyeing.
Etablissements Gerard Motte.....	Not listed.....	Spinning.
Alfred Motte Freres & J. Porisse (formerly Alfred Motte Freres).....	25,800,000 francs.....	Spinning and doubling combed wool, manufacturing knitted goods.
Motte & Blanchot (partnership).....	Not listed.....	Cotton spinning and doubling.
Etablissements Motte-Meillassoux et Caulliez.....	21,600,000 francs.....	Spinning of combed wool.
Les Fils de Motte-Meillassoux.....	Not listed.....	Spinning and doubling combed wool.
Etablissements Motte-Bossut Fils.....	15,000,000 francs.....	Cotton spinning and weaving; spinning combed wool manufacture of velours.
Etablissements Motte-Dewavrin.....	Not listed.....	Wool.
Desurmont-Motte & Cie. (formerly Motte & Cie.).....	do.....	Not listed.
Motte-Vandewynckele.....	do.....	Spinning.

Some textile companies, though owned by well-known textileists, did not bear the family name. For example, the following companies were all controlled by Marcel Boussac, an important textileist in the region of Alsace and the East:

Company	Location	Business
Manufacture de Senones.....	Senones (Vosges).....	Cotton spinning, weaving, and printing.
Gros Roman et Cie.....	Wesserling (Haut-Rhin).....	Do.
Filature de Thaon.....	Thaon (Vosges).....	Cotton spinning.
Filature et Tissages de Nomexy.....	Nomexy (Vosges).....	Cotton spinning and weaving.
Tissage de la-Gosse.....	Golbey (Vosges).....	Cotton weaving.
Filature de Drusenheim.....	Drusenheim (Bas-Rhin).....	Wool spinning.
Tissage de Bar le Duc.....	Bar le Duc (Meuse).....	Cotton weaving.

Of the 1,851 manufacturing plants that accounted for the bulk of France's textile production, most were owned by a relatively small group of families, some of which had been in the business for generations. The important families in the major textile regions, outside the hard fiber industry, included the following:

The north:¹

Beghin
Bossut
Brevart
Caulliez
Delcourt
Delesalle
Descamps
Desurmont
D'Hallouin
Dubar
Dupleix
Flipo
Le Blan
Lefebvre
Lepoutre
Leurent
Lorthiois
Masarel
Mathon
Motte
Pollet
Prouvost
Roussel
Salmon
Thiriez
Tiberghien
Toulemonde
Vandenberghé

The north—Continued.

Vanoutryve
Verley
Wallaert
Watine

Alsace and the east:²

Boussac
Dollfus
Herrenschmidt
Koechlin
Lang
Lederlin
Mieg
Scheurer
Schlumberger
Schwartz
Schwob d'Hericourt

Normandy and the west:³

Balsan
Fraenckel
Hertzog
Schwob

The southeast:⁴

Balay
Barioz
Bizot
Doll
Gillet
Hoppenot

Ownership of the producing facilities became increasingly concentrated as the textile families within each region intermarried. In some cases, the wife's surname was hyphenated to that of the husband; the extent of intermarriage may accordingly be inferred from the following partial list of hyphenated names found among the textile families of the North.

Bossut-Motte	Flipo-Lefebvre	Lepoutre-Flipo
Brevart-Motte	Flipo-Thiriez	Lepoutre-Mathon
Brevart-Flipo	Flipo-Vandenberghé	Lepoutre-Motte
Brevart-Tiberghien	LeBlan-Tiberghien	Lepoutre-Toulemonde
Caulliez-Flipo	LeBlan-Wallaert	Lorthiois-Motte
Caulliez-Tiberghien	Leurent-Beghin	Masurel-Lepoutre
Delcourt-Tiberghien	Leurent-Flipo	Masurel-Leurent
Desurmont-Delcourt	Leurent-Tiberghien	Masurel-Prouvost
Desurmont-Pollet	Leurent-Toulemonde	Masurel-Watine
Desurmont-Prouvost	Leurent-Thiriez	Mathon-Masurel
D'Hallouin-Desurmont	Leurent-Watine	Mathon-Motte
D'Hallouin-Lepoutre	Lefebvre Flipo	Motte-Brevart
D'Hallouin-Leurent	Lefebvre-D'Hallouin	Motte-Delesalle
D'Hallouin-Prouvost	Lefebvre-Motte	Motte-Descamps
Flipo-Caulliez	Lefebvre-Watine	Motte-D'Hallouin
Flipo-Tiberghien	Lepoutre-Caulliez	Motte-Dubar
Flipo-Toulemonde	Lepoutre-Desurmont	Motte-Flipo

¹ Includes the departments of Nord, Pas-de-Calais, Somme, Aisne, Ardennes, and Marne.

² Includes the departments of Meurthe-et-Moselle, Meuse, Moselle, Vosges, Doubs, Bas-Rhin, Haut-Rhin, Haute-Saône, and the territory of Belfort.

³ Includes the departments of Seine-Inférieure, Eure, Calvados, Manche, Mayenne, and Main-et-Loire, Orne, Sarthe, and Brittany.

⁴ Includes the departments of Loire, Rhone, Ain, Isere, Haute-Loire, Drôme, and Ardeche.

Motte-Lepoutre	Roussel-Masurel	Tiberghien-Vanoutryve
Motte-Leurent	Roussel-Motte	Toulemonde-Flipo
Motte-Lorthiois	Thiriez-Caulliez	Toulemonde-Le Blan
Motte-Tiberghien	Thiriez-Delesalle	Toulemonde-Lorthiois
Motte-Toulemonde	Thiriez-Mathon	Toulemonde-Masurel
Motte-Vandenberghé	Thiriez-Motte	Toulemonde-Motte
Motte-Vanoutryve	Thiriez-Wallaert	Toulemonde-Pollet
Pollet-Beghin	Tiberghien-Breuvart	Toulemonde-Prouvost
Pollet-Descamps	Tiberghien-Caulliez	Toulemonde-Vandenberghé
Pollet-Dubar	Tiberghien-Delcourt	Toulemonde-Verley
Pollet-Lorthiois	Tiberghien-Delesalle	Vandenberghé-Desurmout
Pollet-Masurel	Tiberghien-D'Hallouin	Vandenberghé-Flipo
Pollet-Motte	Tiberghien-Flipo	Vandenberghé-Toulemonde
Pollet-Thiriez	Tiberghien-Lorthiois	Verley-Lorthiois
Pollet-Tiberghien	Tiberghien-Masurel	Verley-Wallaert
Pollet-Watine	Tiberghien-Motte	Wallaert-Prouvost
Prouvost-Lefebvre	Tiberghien-Pollet	Watine-Desurnont
Prouvost-Masurel	Tiberghien-Salmon	Watine-Lorthiois
Prouvost-Motte	Tiberghien-Thiriez	
Prouvost-Pollet	Tiberghien-Toulemonde	
Prouvost-Vanoutryve	Tiberghien-Vandenberghé	

In some cases, the complexity of relationships became so great that some members resorted to hyphenations such as Flipo-Flipo and Motte-Motte to clarify their identity.

The concentration of ownership became still more intense when textilists of one region began to intermarry with those of another. Religious and other personal factors seem to have deterred the textile families of Alsace and Normandy from intermarrying to any great extent with those of the north and southeast; but families of the two latter regions frequently intermarried. Thus, a granddaughter of Alfred Motte, founder of the Motte interests in the north, married Edmond Gillet, in the 1920's head of the Gillet silk and rayon interests in the southeast, and brother of the present head, Charles Gillet. Fernand Motte, grandson of Alfred Motte and present head of the Motte interests, married Mathilde Balay, of the southeastern textile family, into which the sister of Edmond and Charles Gillet also married. Other interregional marriages are indicated by such hyphenations of northern and southeastern textile family names as D'Hallouin-Balay and Motte-Balay.

In addition to the regional and interregional tie-ups of blood and marriage, the textilists of one region often expanded their interests by undertakings in other regions. Thus, some of the Alsatian textilists spread their activities into Normandy and the west; some textilists of the southeast participated in enterprises in the north, etc.

The various family and financial relationships of the important textile interests became so interwoven that in France it is sometimes said all the well-known textilists of the country belong to "a single clan."

DIVERSIFIED SOURCES OF PROFIT

In general, the larger textile firms had three lines of activity, any one of which might yield good profits when the other two were less profitable. The first was textile manufacturing itself, which frequently became subordinate to the others and was left in the hands of technicians. The second was speculation in raw materials. It was long customary for French mill owners to start their sons in the business by sending them to New Orleans to learn the intricacies of the cotton market or to Buenos Aires or Melbourne, to learn how to buy

and speculate in wool. This activity sometimes led to the establishment of wool and cotton buying companies in the producing areas. The Motte, Lefebvre, Prouvost, and Caulliez families participated in such business in South America, South Africa, and Australia.

The third and usually the most important source of profits was the firm portfolio of investments. Members of a manufacturing firm drew out individually only a certain percentage of the profits; the remainder was invested in the name of the company. A major purpose of this investment system, as well as of the interfamily marriages, was to prevent the breaking up of fortunes under the inheritance laws of the Napoleonic Code.

In effect, the family firm frequently became a private holding company, acquiring large blocks of stock in nontextile enterprises. Family members became officials and directors in banking, insurance, and finance, railroads and utilities, mineral, metallurgical, construction and automotive industries, real estate, petroleum, newspapers, and all sorts of other enterprises.⁶ For example, the Gillet family of the southeast (the head of which was commonly called "Le roi de Lyon") was represented by one member or another on a wide variety of companies, as indicated by the following partial list:

Name	Position	Company
Gillet, Charles	Director	Credit Lyonnais (finance).
Do.	Managing director	Usines Chimique Rhone Poulenc (chemicals and pharmaceuticals).
Gillet, Paul	Director	Chemin de fer du Congo (colonial railroad).
Do.	President	Logements Economiques (real estate).
Do.	Director	Produits chimiques et Electrometallurgie Alais, Froges, et Camarque (aluminum and chemicals).
Do.	President	Hydroelectrique "Drac-Romanche" (water power).
Do.	Vice president	Franco-Belge pour la Fabrication mecanique du Verre (glass).
Gillet, Edmond	Director	Produits du Lion Noir (chemical products).
Do.	President	Societe "Frogil" (tanning materials) (Charles Gillet, a director).
Do.	do	Hydroelectrique du Drac-Inferieur (water power).
Do.	Director	Societe des Produits Chimiques de Clamecy (chemical products) (Charles and Paul Gillet also on directorate).

Similarly, the Schlumberger family of Alsace was connected with numerous nontextile operations, including, among others, the following:

Name	Position	Company
Schlumberger, Camille	President	Compagnie Rhin et Moselle (insurance) (Nicolas Schlumberger also a director).
Do.	Director	Eaux Minerales de Ribauville (mineral waters).
Schlumberger, Conrad	do	Societe Alsacienne de Carburants (fuels) (Henry Schlumberger also a director).
Do.	do	Pechelbronn (petroleum) Nicholas Schlumberger also a director).
Do.	do	La Concorde (insurance).

⁶ Some of these were not unrelated to the textile activities. For example, one Motte company not only handled the real estate used for the textile enterprises but also owned farm and other properties which it rented to workers in the Motte mills. Another Motte company operated breweries, distilleries, and wineries, whose products were distributed through a third Motte company operating a chain of cafes and taverns in the textile towns. Similarly, the Verley family participated in a company processing foodstuffs and operating a chain of grocery stores in textile towns.

Name	Position	Company
Schlumberger, Godefroy.....	Director.....	Alsacienne et Lorraine d'Electricite (electric power).
Do.....	Vice president.....	Forces Metriques du Haut Rhin (power utility) (Nicholas and Jacques Schlumberger also on directorate).
Do.....	Director.....	Energie Electrique du Rhin (power utility) (Nicolas and Paul Schlumberger also on directorate).
Do.....	do.....	Industriels Alsaciens (finance) (Robert Schlumberger-Mirabeau also on directorate).
Do.....	do.....	Chaux et Ciments Portland du Haut-Rhin (lime and cement).
Schlumberger, Maurice.....	Partner.....	Schlumberger et Cie. (bank).
Schlumberger, Nicolas.....	Director.....	Societe Generale Alsacienne de Banque (bank).
Schlumberger, Paul.....	do.....	Credit Foncier Commercial d'Alsace et de Lorraine (finance).
Do.....	do.....	Culture Cotonniere du Niger (colonial cotton-growing project).
Do.....	do.....	Banque Nationale Francaise du Commerce Exterieur (bank).
Do.....	do.....	Societe Alsacienne de Constructions Mecaniques (machinery).
Do.....	do.....	Houilleres de Ronchamps (coal mining and electric power).

Further data of this sort are in the appendix.

DECLINING EXPORT MARKETS

In the 1920's, it was estimated that about one-third of the textile products of France were exported. As much of the export trade was in luxury goods—of which the domestic market could absorb not more than about 5 percent—this was much the most profitable part of the textile business.

The recovery of Alsace after the last war increased France's earlier textile productive capacity by at least 25 percent; this offset the war-time destruction of equipment in the north, so that in 1920 France's productive capacity was at least at the pre-war level. During the following decade, despite the fact that forces were already in operation that were eventually to reduce the foreign demand for French textiles, a set of abnormal circumstances encouraged the industry not only to reconstruct the northern mills but also to undertake a general expansion of production. These circumstances included: (a) An abnormal demand for textiles all over the world, but especially in Europe, as householders, institutions, wholesalers, retailers, and such textile users as the automobile and railroad passenger-car manufacturers, rebuilt the stocks that had been depleted during the war; (b) the very low value of the franc, which enabled the French to sell cheaply, in some cases to countries that would not otherwise have been able to buy; and (c) the clause in the Versailles Treaty that provided for the movement of Alsatian textiles into Germany duty free until 1925. Moreover, by the time the franc was stabilized in 1926 at one-fifth its pre-war value, the post-war boom was on in the United States and other countries where large war profits had been made; this not only bolstered the markets for France's luxury goods after the earlier textile demands subsided, but it also brought thousands of tourists to France, where the favorable exchange rate encouraged lavish buying of clothing, embroideries, laces, and other textiles that were specialties of the country.

But the abnormal circumstances that had promoted the export trade after the war were temporary and of diminishing consequence in the face of counteracting factors. Chief among these factors were: (a) The rapid expansion and development of textile manufacturing all over the world, above all in cotton but also in wool, lace, knit goods, hosiery, and, in the United States, silk; (b) great improvement in the quality of textiles produced in the United States and other countries, with the result that French goods had to depend more on prestige and less on quality in the growing competition; (c) the rising tariff barriers designed to protect the new and expanding foreign industries; (d) great improvement in the quality and utilization of artificial fibers, with the cost of production abroad becoming so low that they could compete with silk, cotton, linen, and, to some extent, with wool—the traditional fibers to which French manufacturers clung; (e) the expiration in 1925 of the Versailles clause favoring Alsatian exports to Germany; (f) the world-wide economic depression after 1929; and (g) the development in the 1930's of international trade agreements and import quotas under German guidance and example.

The first of these factors was of special importance. Historically, French textiles had had two major assets—quality and prestige value. Major specialties had been goods for women's wear. The industry had its origin in the period when the French court set the pace for the fashionable world; under the court's patronage, French craftsmen developed such skill in handling fibers and design that their products were prized throughout the world. This skill, as well as the prestige originally derived from the court's patronage, was carried over into machine production. In many parts of the world, people who could afford fine textiles, especially women, habitually bought French goods.

The 1914–20 interruption of the French export trade gave manufacturers in the United States and other countries the opportunity to bring their best goods to the attention of these habitual patrons of French products. A considerable number of these lost the habit of demanding French cloth, hosiery, lace, and ribbons. Import duties abetted this change.

The decline in the market for fine French textiles was not immediately apparent after the war, being masked by the abnormal demand and by the prevailing exchange rates. But some French manufacturers saw the trend; and, in the 1920's a few of them set up establishments abroad to manufacture French-type goods in countries that formerly imported them. By 1934 seven such companies, controlled by the closely related families of Tiberghien, Prouvost, Masurel, and Lepoutre, were operating in the area of Woonsocket, R. I.

The downward trend of French exports was apparent even before 1929, and thereafter the decline was abrupt.

LIMITED NUMBER OF PRICE AND PRODUCTION AGREEMENTS

Until 1925 the French textile industry had no known combinations (except in the related field of dye manufacture) for regulation of production, prices, and market.

The Gillet group (in cooperation with the Carrrot family) continued to strengthen their organizations, founding such subsidiaries as the Societe Textile (capitalization 75,000,000 francs), Societe de Participation Industrielle et d'Etudes Minieres (capitalization 11,000,000 francs), and Societe Bernarc, which performed intergroup liaison services and managed and controlled foreign investments. They also formed SOPARA (Societe de Participations de Rayonne), which handled their interests in Viscose Suisse. By 1936 French rayon producers were participating in international agreements covering both prices and markets.

Bleaching, dyeing, and printing.—While the Gillet family was engaged in drawing together the rayon interests of the country, it was also assembling with the Lederlins of the east, a variety of bleaching, dyeing, and printing units. In 1932 they promoted the formation of Societe Nouvelle de la Blanchisserie et Teinturerie de Thaon, which combined the interests of several companies, including the Blanchisserie et Teinturerie de Thaon, Societe Ed. Broaways de Geyter et Fils, and the Societe de Teintures Apprets et Impressions du Nord (the last having itself resulted from a merger of two firms—Etablissements Motte et Delacluse Freres and Etablissements Stalars). The board of the new Thaon company included representatives of the Kuhlmann chemical interests and the Motte family, as well as the Gillet family.

Thaon was later merged with Gillet Cic, and became known as Gillet-Thaon. This corporation was set up with a capitalization of 250 million francs based on 2.5 million shares; in 1935 an additional 600,000 shares were issued, all to the Gillet family firm. By 1938 Gillet-Thaon had obtained interests in Etablissements Marechal, Societe de Blanchiments Teintures et Impressions de Lyon, Teinturerie et Retorderie de l'Est (of which Paul Lederlin was president), Societe d'Impression des Vosges et de Normandie (of which Charles and Paul Gillet were vice presidents), Teintureries et Apprets Roannais Reunis (of which Charles Gillet was president) and others. When the war began the corporation had bleaching, dyeing, printing, and finishing plants in all the main textile centers of the country. Outside the wool branch, most of the textiles manufactured in France had to pass through these plants for final processing before they were ready for the market.

Spinning and weaving.—After the economic collapse of 1929 there were some attempts to form combinations in the spinning and weaving branches of the textile industries, and agreement was reached on prices for certain high-count yarns. In 1934 Alsatian producers entered into an agreement on production and prices, which was so satisfactory that it was renewed the following year. In general, however, the producers in these branches, especially the weavers, resisted attempts at combination, preferring to take their chances as competitors.

After the acute decline in foreign trade, attempts were also made to allot export quotas and to set prices at which the exports were to be sold. Since this movement was sponsored by the less efficient producers in an attempt to prevent successful competition by manufacturers whose production costs were lower, it was only partly successful.

Manufacturers' associations.—The relative absence of combinations to allot markets and to set prices and production quotas was not due

to any lack of experience in group operation for common objectives. The textile manufacturers of France were highly organized, first at the local, next at the regional, and, finally, at the national level, both by branches and by the industry as a whole. The cotton manufacturers had one of the most active national associations, the Syndicat General de l'Industrie Cotonniere, and the Comite Central de la Laine in the wool field was of almost equal importance. These, as well as other national, regional, and local textile organizations, were united in the Union des Syndicats Patronaux des Industries Textiles. Further, textile manufacturers were represented on the Conseil National Economique; in 1938 the honorary vice president of the Union, Pierre Thiriez, sat on the permanent commission of the Conseil.

In general, these organizations worked together for tariff protection and other legislation desired by the textile industries; after 1936 their efforts were directed largely toward obtaining changes in or exceptions to the labor legislation of that year.

INCREASED CENTRALIZATION OF TEXTILE BANKING AND CREDIT

In the early days of the modern French textile industry, the importation of raw materials and the export trade were largely financed through local institutions. In the southeast, one of the oldest banks in this field was Credit Lyonnais, founded in 1863 and built up by the Germain and Fabre-Luce families; later, in the twentieth century, many industrial and commercial interests, including the Gillet family, participated in the bank.

At the outset, the chief textile activities of Credit Lyonnais were concerned with the importation of raw silk and the export of Lyon silks, ribbons, velvets, and laces; later, however, it established a branch in Egypt to finance French imports of long-staple cotton. Other credit institutions of importance to the textile industries around Lyon were the Comptoir Morin-Pons and Saint Olive-Cambefort et Cie.

In the north, the textile industries used to depend largely on such local institutions as Credit du Nord, Banque Scalbert, Banque Dupont, and Banque Regionale du Nord. Later the joint-stock company, Credit Industriel et Commercial, and the Comptoir National d'Escompte de Paris came to play a considerable role in the foreign transactions of the northern textile industry.

After the last war, the financial houses as well as the textile manufacturers were caught with foreign commitments priced in francs and with the rapid decline in the value of the franc, the results were almost disastrous.

At this point an old institution, the Banque de Paris et des Pays-Bas, formed in 1872 by a merger of the Banque de Paris and the Amsterdam Banque de Credit et de Depots, came under control of a new group whose leader was the Hungarian, Horace Finaly. This institution began an aggressive expansion in large-scale financing operations in utilities, chemicals, coal, metallurgy, and textiles, abroad as well as in France. It soon became important in the silk trade through participation in the Banque Franco-Chinoise pour le Commerce et l'Industrie. Instead of setting up branch offices along geographical lines it created subsidiary banks along functional lines.

Thus, to finance imports of cotton, it established a separate subsidiary in 1927, the Banque Cotonniere. It also gained participation in the Banque Francaise et Italienne pour l'Amerique du Sud, but shared control with the Banca Italiana. The Banque Francaise et Italienne engaged extensively in the purchase of wool in Argentina and Uruguay. Later, it also became an intermediary between the Italian and French rayon manufacturing interests (represented in Italy by Snia). In 1928 the Banque de Paris et des Pays-Bas participated in a movement to coordinate the activities of the regional banks, which resulted in the north in the formation of the Union Bancaire du Nord. As a matter of policy, local industrialists were drawn into the management of these regional banks.

The French branches of some American banks expanded their activities after the last war. In the field of textiles such institutions as the Chase National Bank, Guaranty Trust Co., National City Bank, and J. P. Morgan & Co. financed imports of American cotton. They also entered the field of wool purchasing, which for many years had been handled largely through the city of London.

THE FRENCH TEXTILE INDUSTRY SINCE SEPTEMBER 1, 1939

RAW MATERIALS

On September 2, 1939, on the eve of France's entrance into the war' the Groupement d'Importation et de Repartition du Coton en Temps de Guerre (GIRC) took control of the stocks of cotton and their distribution and manufacture. Similar groupements assumed control of other textile materials. GIRC had been set up very quietly on July 11, 1938, as part of the general organization of the nation for war. It was reported to be a societe anonyme with a capitalization of half a million francs, and was referred to as an offspring of the Syndicat General de l'Industrie Cotonniere Francaise and of the Syndicat du Commerce des Cotons, of Le Havre, major port of entry for cotton. GIRC's operations were directed by the military authorities through the Ministry of Commerce.

GIRC took over all private contracts for the purchase of cotton and negotiated others. It was estimated that its total purchases during the first 7 months of operation totalled 826,000 bales, three-fourths, of which came from the United States. Another 140,000 bales, more than half from Egypt, came in by direct purchase of spinners presumably on pre-war contracts. In late May 1940, with the Germans advancing rapidly toward the chief cotton port of Le Havre, GIRC stopped purchases and began to cancel contracts. On June 7 GIRC left Le Havre, abandoning 150,000 bales of cotton in local warehouses. Representatives returning late in July found that two-thirds of the cotton had been destroyed by military action, more than a third of the remainder was in process of shipment to Germany, and the rest earmarked for later shipment. In addition, 30,000 bales landed at St. Nazaire in an attempt to prevent capture had also been confiscated, as well as minor amounts in other Atlantic ports. About 139,000 bales, largely Egyptian cotton in Mediterranean ports, escaped immediate confiscation. It was estimated that at the time of the armistice the cotton mills of the occupied zone, which, with Alsace, contained nearly all the cotton spindles and most of the cotton looms, had stocks

sufficient for 3 months of operation on a 24-hour week. Later the American consul general in France estimated that 550,000 bales of cotton were in the country in August 1940—that is, approximately 45 percent of the pre-war annual consumption.

There is very little information on stocks of wool and other fibers in 1939 and 1940, but a considerable part of the imported wool usually came to the channel ports, near the wool manufacturing plants of the north.

The German advance was so rapid that there was very little opportunity to move stocks to safer zones, though some importers had anticipated the situation and moved them at an earlier period. The mills likewise fell into German hands practically intact. Economic officers of the German Army took immediate control of mill warehouses, made inventories of all raw materials and manufactures, and in some places began to move them toward Germany. A short time afterward, however, the removal of stocks and semifinished goods was stopped, to save German labor by having the materials manufactured in France.

Within a few weeks a so-called Kehrl plan (named for Hans Kehrl, president of the Reichswirtschaftsministerium) was submitted to the French for signature, and presumably signed. The "plan," which was partly retroactive to cover prior confiscations in the occupied zone, was for the period between June 1940 and October 1941. The French were to deliver to the Nazis (in satisfaction of one "claim" or another) one-third of the 1940 wool clip, two-thirds of the 1941 clip, and large quantities of semi-finished textiles, as follows:

	<i>Metric tons</i>
Greasy wool.....	30,000
Carded wool.....	5,593
Wool combings and waste.....	6,000
Wool cloth and yarn.....	2,217
Cotton goods.....	24,000
Jute.....	2,500
Rags (at least one-half of them wool).....	50,000

At the same time Germany was to make available for purchase by the French 80,000 metric tons of wood pulp for rayon manufacture. This was to enable France to triple its annual output of artificial fiber, but part of such output was to be sent back to Germany in the form of fiber or cloth.

A "second Kehrl plan" was made for the year between October 1941 and October 1942. It was estimated that during that period 150,000 metric tons of materials would be available in France. The plan called for delivery to the Nazis of one-third of this amount, in the form of raw, semifinished, and finished materials. Although the German deliveries of wood pulp under the first Kehrl plan were not completed until midsummer of 1942, the French were not excused from shipping the stipulated amount of rayon to Germany by October 1941; and the second Kehrl plan, on the presumption that Germany would thenceforth provide all wood pulp deliveries on time, called for rayon shipments by the French equivalent to those made under the first plan. In addition to the requisitions, the agreement provided that Germans could purchase "manufactured textile products which are not indispensable for French needs, such as decorative fabrics for theaters and cinemas, tapestries, carpets, upholstery fabrics" up to a total of 10,000,000 reichmarks. In a related agreement, the Nazis, facing

their first winter in Russia, demanded 100,000 woolskins a month from the French; after 6 months the French managed to have the quantity reduced to 50,000 a month.

In August 1942, negotiations were begun on a third Kehrl plan to cover the year October 1942 to October 1943. Under this plan the Nazis were to obtain 78 percent of the estimated wool, 50 percent of the estimated cotton, and 67 percent of the estimated flax supplies, either raw or in manufactures, along with quantities of other textile materials and goods, as follows:

	<i>Metric tons</i>
Wool (washed or in manufactures).....	7, 800
Cotton (raw or in manufactures, half to be in American cotton).....	3, 100
Flax tow (in yarn or fabrics).....	8, 400
Rags (at least one-third to be of wool).....	20, 000
Animal hair.....	2, 200
Rayon (fiber or in fabrics).....	20, 000

The wool requisition was based on an estimate that a total of 10,000 metric tons of washed wool would be available in France, a fifth of it expected from north Africa and the rest from sheep in France itself. The estimate of domestic wool in turn was based on an ovine census of November 1941, which disclosed only 8,000,000 sheep, exclusive of lambs. It is believed that the French had managed to conceal some sheep from the census takers and that the actual number was higher. The domestic estimate was further based on a yield of only 1,000 grams of washed wool per sheep, whereas the pre-war yield had averaged 1,200.

The cotton requisition was based on an estimate that a total of 6,200 metric tons would be available in France.

The flax tow requisition was based on an estimate that total French production would amount to 13,200 metric tons. The "plan" provided that, if actual production should exceed this amount, half the excess was to go to the Nazis in the form of yarn or fabrics. And the whole line spinning and weaving capacity of France was to be held available for manufacture of whatever tow might be sent into France from Germany or German-held areas.

As in the previous "plan," Germany was to deliver wood pulp for purchase by the French rayon manufacturers. This time the French were to receive, "subject to possibilities of delivery," a total of 60,000 metric tons; one-third of it was to be sent back to Germany in the form of rayon fiber or in fabrics.⁶ In addition, the French were to be permitted to buy through the Nazis 20,000 metric tons of bisulfite wood pulp and 18,000 metric tons of "soda-pulp paper" for manufacture of binder twine, 10,000 metric tons of binder twine made in Germany, Belgium, and Holland, 20,000 metric tons of bisulfite paper for twisting into cord, and 200 metric tons of bemberg rayon. None of the twine or cord had to be sent back to Germany; but it was used to bind wheat and other products, some of which were requisitioned by the Nazis.

Over and above the requisitions, the Germans were again to be free to buy up to 10,000,000 reichmarks worth of any textiles that were "not indispensable for French needs."

All in all, the third Kehrl plan contemplated that over 60,000 metric tons of "true textile materials" were to go to Germany and slightly

⁶ Under the third Kehrl plan Germany was to sell sulfuric acid and other chemicals that France could not obtain elsewhere for the artificial fiber industry.

over 70,000 were to be available for the French. The Germans took the position that the latter would be enough to provide 1 kilogram a year of textiles per capita (the standard established by the Nazis for the rest of Europe, according to the German negotiators) and 0.33 kilogram extra a year for persons in the French military postal, police, and other government services. The French negotiators pointed out that there were also 40,000,000 colonials who lacked the reserves of metropolitan France and were dependent on France for textiles; but this, along with several other arguments for increased supplies, was ignored by the Nazis.

The Allied invasion of north Africa came when operations under the third Kehrl plan were hardly more than a month old. It lessened by a fifth the amount of wool that was expected to be available; it also lessened the supplies of certain other fibers, such as miscellaneous animal hairs. Moreover, when Madagascar, west Africa, and other parts of the French Empire came into the Allied camp, some supplies of cotton, sisal and other fibers were cut off from the Continent. On the other hand the French had concealed the real yield of wool, and, until the occupation of southern France, there were certain other hidden stocks in the metropolitan area. Moreover, the loss of north Africa and other parts of the empire removed the colonial demand upon Vichy for textiles; and with the German occupation of southern France, the last remnants of the Vichy French Army were demobilized, which lessened the textile needs of government services.

After the loss of the north African and other colonial sources, the supplies of textile materials available for the period ending in October 1943 in metropolitan France, exclusive of such stocks as may still have remained hidden and exclusive of materials allotted to the Nazis under the third Kehrl plan, are estimated to have been roughly as follows:

	Metric tons	Remarks
Cotton.....	3,000	
Wool (washed).....	2,000	Most of this was going into raw materials black markets; only 200 metric tons were officially recognized as available under the Kehrl plan.
Flax tow.....	9,000	Production exceeded the estimates by at least 10,000 metric tons of which half was to go to the Nazis; this left about 9,000 for France, of which a considerable part probably went into black markets.
Hemp and "neglected" hard fibers.....	4,000	Hemp production declined in 1943, due to lack of imported seeds, to about 3,000 metric tons. Broom (gerista), Jutuphax, and other formerly neglected fibers probably totaled about 1,000 metric tons.
Alpha grass.....	6,000	Available from stocks in southern France.
Sisal.....	2,000	Do.
Hair.....	(?)	Supplies uncertain. Collection of human hair from barber and beauty shops was made compulsory in towns of 10,000 people or more.
Rags.....	10,000	Mostly nonwool. Though the Nazis estimated that 22,000 metric tons could be collected for French needs, this was undoubtedly high. Collection for the previous German requisition had fallen short by 8,000 metric tons. People preferred to wear patched garments of natural fiber rather than turn them in for a permit to buy new garments of rayon, reworked or mixed fibers.
Rayon.....	28,000	Estimate based on rate of production in March 1943.
Lanital and nylon.....	100	Mostly lanital.

While the foregoing supplies were presumably available for French needs, the amounts actually available were still further reduced by purchases of so-called dispensable goods, made by semiofficial German civilian organizations both on the black markets and elsewhere. Purchases of linen goods for use as fire-hose lining were especially heavy.

In July 1943, the Nazis presented a fourth Kehrl plan—not for a 1-year period as theretofore, but for a 6-month period, October 1943 to April 1944. The demands to be fulfilled in this period included principally:

	Metric tons	Remarks
Wool uniform cloth.....	4,000	Equivalent to 7,250 metric tons of raw wool. The Nazis to conduct the collection in case the French do not fulfill the quota.
Wool rags.....	7,000	
Flax tow.....	15,000	Two-thirds of the 1943 crop. This requisition apparently superseded that of the third plan, which covered the same crop.

¹ Circa.

The Germans again said that, "subject to possibilities of delivery," 60,000 metric tons of wood pulp could be bought by the French, for manufacture of artificial fiber. They also agreed to deliver a sulfuric acid substitute for use in the rayon mills.

It is reported that in the second half of 1943 the Germans were relying less on the Kehrl plan requisitions than on buying what they wanted at high prices through the semiofficial Nazi organizations. This method was found to achieve "more satisfactory results."

The requisitions and semiofficial purchases under the Kehrl plans and the unofficial black market and other purchases by the Nazis have had the effect of progressively exhausting the limited textile raw material supplies of France. Excepting the flax crop and wool clips each year (which are diminishing for lack of seed, fertilizers, fodder, etc.) and excepting German deliveries of wood pulp and possibly some still hidden miscellaneous stocks, France has virtually no textile raw materials left.

REORGANIZATION OF THE INDUSTRY

Shortly after the armistice of June 1940, the textile and other industries of France were reorganized along Fascist lines. A Vichy "law" of August 16, 1940, laid the foundation for the new economic order. It provided, first, for the dissolution of all national labor, employer, and other organizations "likely to be harmful to the functioning of any branch of economic activity," and, second, for the establishment of a framework of industrial and other organizations under the so-called Minister-Secretary of Industrial Production and Labor (Rene Belin).

This was followed by a series of implementing decrees, dissolving specific labor and employer groups and creating Comites d'Organisation (organizing committees) for the various industries and commercial enterprises of the country. By the middle of November 1940 all national confederations with which textile workers or employers had been associated were specifically dissolved, including the Confederation

Generale du Travail, the Confederation Francaise de Travailleurs Chretiens, the Confederation des Syndicats Professionels Francais, and the Confederation Generale du Patronat.

Textile manufacturing.—A decree of October 26, 1940, established the Comite General d'Organisation de l'Industrie Textile (general organizing committee for the textile industry) with headquarters at Paris. On the next day a further decree named as director general, Robert Carmichael, a leader of the French jute industry.

The objectives of the reorganization were to centralize control of the industry and to obtain maximum efficiency in the use of plants, materials, and labor for production that would meet the needs of Germany and its occupation. Textile production and distribution were to be handled in accordance with certain priorities. The order of priorities became established as follows:

1. German military requisitions (designated Rustung).
2. Other German requisitions and private orders (designated Verteidigt).
3. Colonial requirements (i. e., trade goods, etc., needed to obtain colonial products used largely by the Germans). This priority was eliminated after the Allied invasion of north Africa.
4. French official requirements (including those for the Army which Vichy was permitted to maintain until the Germans occupied southern France). This priority, so far as the French Army was concerned, was also eliminated in November 1942.
5. French technical and industrial requirements (used in producing various items, some of which went to the Germans).
6. French civilian goods.

In line with these objectives, the major functions of the Comite were designated as follows:

To make a survey of the enterprises in each branch of the textile industry, their means of production, stocks and labor supply;

To set up programs of production;

To organize procurement of raw materials (through the appropriate authorities) and arrange for their distribution among the various branches of the industry;

To make rules for controlling conditions of operation, quality of production, employment of labor, exchange of products and services, and "proper competition";

To propose (to proper authorities) prices of goods and services.

In addition to the director general, the Comite consisted of directors, appointed one from each branch of the industry, as follows:⁷

Cotton.....	Fernand Motte.
Wool.....	Alphonse Tiberghien.
Silk, silk goods and rayon fabrics.....	Jean Berioz.
Artificial fibers.....	Ennemond Bizot.
Flax and hemp.....	Jean Le Blan.
Jute and hard fibers.....	Yves-Marcel Latieulle.
New fibers (added July 1, 1941).....	Jacques Leonhart.
Rags.....	Georges Soulier.
Dyeing and finishing.....	Francois-Henri Balay.
Hosiery, knit goods, etc.....	Georges Babeau
Clothing and accessories.....	(See next section.)

⁷ For family and other interrelationships among the branch directors, see previous section, "Concentrated family type of ownership."

Each branch director had power to make decisions and orders affecting the branch which he headed. He had the assistance (if he wished to use it) of an advisory committee, but this committee was without executive authority of any kind. The advisory committees for the various branch directors included:

Cotton:	Jute and hard fibers:
Marcel Boussac.	Georges d'Acremont.
Andre Cartier-Bresson.	Pierre Beguene.
Robert Grosse.	Fernand Dalle.
Georges Lederlich.	Emile Dumont.
Robert de Menibus.	Louis Roulet.
Victor Tenthorey.	Roger Saint.
Jacques Westphalen.	New fibers:
Wool:	Louis Blanc.
Pierre Bochez.	Pierre Bourcier.
Edmond Bouteille.	Charles Cazave.
Jean Clarenson.	Max Descamps.
Maurice Dubrilie.	Alphonse Dingemons.
Eugene Dyant.	Pierre Formege.
Emile Gental.	Bernard Maisant.
Michel Lalour.	Felix Parisot.
Edouard Ricalens.	Francois Vaganay.
Jacques Segard.	Rags:
Silk:	Robert Angles.
Marcel Chabrieres.	Paul Lamourelle.
Henri Doll.	Albert Laroche.
Paul Durange.	Etienne Liagre.
Jean Martin.	Antoine Silvestre.
Guillaume Pomeon.	Dyeing and finishing:
Jean Rochette.	Pierre Baumgartner.
Paul Vincent.	Lamourelle Blanchot.
Artificial fibers:	Jean Christophe.
Henri Augulhon.	Paul Delannoy-Rousel.
Marcel Bo.	Andre Morot.
Franck Morin-Pons.	Georges Polino.
Flax and hemp:	Georges Rivat.
Maurice Brevet.	Jules Staat.
Hubert Crespel.	Hosiery, knit goods, etc.:
Rene Descamps.	Marcel Brun.
Marcel Decrocq.	Eugene Bury.
Leon Dufour.	Pierre Clayette.
Roger Gourdon.	Sylvain Hemery.
Edouard Levy.	Rene Marc.
	Louis-Emile Menuiel.
	Maurice Ollivier.
	Albert Waldmann.

Orders of the branch directors were subject to review by the director general; orders of the director general were final, unless vetoed by the Minister-Secretary of Industrial Production and Labor. Jacques Charbonneau, a representative of the Minister-Secretary, sat with the Comite.⁸

The Comite was supported by dues levied on the members of the industry, who were organized into regional and local groups. Persons who wished to remain in business had no choice but to join these groups and follow orders of the Comite; only members in good standing could obtain raw materials, fuel, power, etc., and only such members could market their products. Jews and certain other persons deemed undesirable were excluded from membership and hence from business.

⁸ The departments of Pas-de-Calais and Nord, being under the German administration for Belgium with the commander in Brussels, had a separate system of Comites d'Organisation, but these took orders from the general committees in Paris, which included representatives of northern interests. Alsace-Lorraine, which was actually incorporated into the Reich, came under direct German administration and was outside the jurisdiction of the Comites.

The Comité established regional offices as needed; local enforcement of Comité orders generally rested in the hands of local economic officials appointed to coordinate and control local industrial activity of all types. In the occupied zone, and later throughout France, Germans were assigned to work with the regional and other offices of the Comité.

During the first 2 years of the new order, there were few changes in the directorate of the Comité. In December 1941 Robert Carmichael left to devote himself to his other interests. Alphonse Tiberghien, of the prominent textile family from Roubaix-Toucoing, became the new director general. In May 1942 Andre Liebaut replaced Yves-Marcel Latiouille as director of the jute and hard fibers branch.

During the latter part of 1942 and the early part of 1943, however, the personnel of the directorate changed greatly.⁹ On October 15, 1942, Alphonse Tiberghien, the director general, was "dismissed for personal convenience" and replaced by Ariste Potton, silk merchant and chairman of the Chamber of Commerce of Lyon. This change occurred shortly after members of the firm Etablissements Tiberghien were arrested for concealment of illegal profits.¹⁰ By April 1943 the directors of the various branches (which had been somewhat reorganized by a decree of June 19, 1942) were:

Cotton spinning.....	Marcel Mieg.
Wool (all operations).....	_____ Genty.
Silk (all operations) and rayon weaving.....	Joseph Brochier.
Flax spinning.....	Jean Le Blan.
Jute and hard fibers.....	_____ Faix.
Artificial fibers.....	Ennemonid Bizot.
New fibers.....	Jacques Leonhart.
Rags.....	Georges Soulier.
Weaving of cotton, flax, and miscellaneous yarns.....	Etienne Richard.
Hosiery, knit goods, etc.....	Georges Babeau.
Dyeing and finishing.....	Francois-Henri Balay.

By a decree of June 19, 1942, a separate committee was set up to control wholesalers and retailers, other than those supplying the textile-transforming industries. This committee was called the Comité General d'Organisation du Commerce de l'Habillement et des Tissus. Its director general was Georges Soudre; a deputy director was also appointed, Pierre Faivret.

Textile transforming.—Under the decree of October 26, 1940, special provision was to be made from the clothing branch of the industry. In addition to the branch director, each section for the clothing branch was to have a chief. Accordingly on October 27, 1940, a decree established, within the Comité General, a Comité du Vetement, divided into seven sections with chiefs as follows:

Fashion models, made-to-measure clothing, laces, tulle, embroideries.....	Lucien Lelong.
Men's ready-to-wear clothing.....	Henri Darnat.
Women's ready-to-wear clothing.....	Jacques Guenat.
Underwear, lingerie.....	Jean Berthelot.
Furs.....	Roger Binet.
Accessories (buttons, ties, trimmings, etc.).....	Jacques Deligny.
Wholesale goods for the transforming industry.....	Denys Moreau.

⁹ It is reported that some of these changes have come about as a result of resignations after the Allied invasion of north Africa and the Russian success at Stalingrad.

¹⁰ The details of this situation have not been ascertained; but it has been learned that family holding companies, such as Textiles, A. G., were formed in Switzerland and elsewhere by Alphonse, Charles, and Georges Tiberghien to handle various properties, some of which were acquired from Jews at forced sales. One of these properties was called Tapis d'Avignon.

Apparently the position of branch director was not filled until March 1941, when Jacques Deligny was appointed. His position as chief of the accessories section was then taken by Aime Baboin-Jaubert.

Advisory committees for the various group chiefs included:

Fashion models, etc.:	Underwear, lingerie, etc.—Continued.
Fernand Bardet.	Roger Lheureux.
Jacques Bouchinot.	Raymond Limondin.
Marcel Dhorme.	Pierre Regnier.
Pierre Faivret.	Jean Vermeersch.
Pierre Hurel.	Accessories:
Jeanne Lanvin.	Jean Bernard.
Andre Pilmis.	Henri Clerembault.
Marcel Reneault.	Max Flechet.
Men's ready-to-wear:	Pierre Jachiet.
Jean Baillet.	Louis Leglise.
Rene Derred.	Andre Marck.
Marsel Lemaire.	Furs:
Jacques Pepaudin.	Gustav Bernard.
Andre Sohm.	Jean Bardinon.
Roger Stoll.	Max Delahaye.
Women's ready-to-wear:	Henri Fousse.
Gabriel Chabaud.	Joan-Marie Revillon (shortly re-
Henri Dalet.	placed by Victor Revillon).
Andre Gobert.	Wholesale goods:
Pierre Laurain.	Maurice Cauchois.
Underwear, lingerie, etc.:	Paul Dormeuil.
Edouard Desembre.	Raymond Popelin.
Robert Disle.	Emmanuel Simonnot.
Philippe Gravereaux.	Auguste Testard.

In June 1942 control of the transforming industries was transferred. By a decree of June 19, 1942, the Comite du Vetement was separated from the Comite General d'Organisation de l'Industrie Textile and made a distinct committee with a director general directly responsible to the Minister-Secretary of Industrial Production. The new committee was called Comite General d'Organisation de l'Habillement et du Travail des Etoffes (general committee of organization for clothing and work on fabrics).

Jacques Deligny, who had been branch director, became director general. The branches of the transforming industry were divided into two main categories with branch directors as follows:

A. Industrial:	
Fashion models and made-to-measure clothing.....	Lucien Lelong.
Men's ready-made clothing.....	Henri Darnat.
Women's ready-made clothing.....	Jacques Guenin.
Underwear, lingerie.....	Jean Berthelot.
Miscellaneous articles of textiles.....	Louis Leglise.
B. Commercial:	
Wholesale trade-in goods used by the industry.....	Maurice Cauchois.

Distribution of raw materials.—Control of allocation of raw materials was basic in the new economic order. A decree of September 10, 1940, established the Office Central de Repartition des Produits Industriels (central office for the distribution of industrial materials) under the Minister-Secretary for Industrial Production and Labor. This central office was divided into sections corresponding to the major groups of French industries; each section was headed by a Repartiteur (distributor) who was assisted by an advisory committee.

The textile section was called the Office de Repartition du Textile (office of distribution for the textile industry) with jurisdiction over the procurement and distribution of all fibers for the textile industries.

The head of the textile section, or *Repartiteur du Textile*, was the same person who held the position of director general of the *Comite General* for the textile industry. Thus, the first *Repartiteur* was Robert Carmichael; in December 1941 he was replaced by Alphonse Tiberghien, who in turn was replaced in October 1942 by Ariste Potton. Andre Descamps, a representative of the Minister-Secretary for Industrial Production and Labor, sat with the textile section.

Up to October 1942, when Alphonse Tiberghien was dismissed, the advisory committee for the head of the textile section in the office of distribution included at one time or another:

Position in the Textile Committee

Georges Babeau.....	Director for hosiery and knit goods.
Alme Baboin-Jaubert.....	Chief of accessories section.
Jean Barioz.....	Director for silk and rayon fabrics.
Jean Victor Berthelot.....	Chief of underwear and lingerie section.
Pierre Besancon.....	
Ennemond Bizot.....	Director for artificial fibers.
Henri Darnat.....	Chief of men's ready-to-wear section.
Jacques Deligny.....	Director for clothing.
Jacques Guenin.....	Chief of women's ready-to-wear section.
Yves-Marcel Latieulle.....	Director for jute and hard fibers.
Jean Le Blan.....	Director for flax and hemp.
Lucien Lelong.....	Chief of fashion section.
Denys Moreau.....	Chief of wholesale goods section.
Fernand Motte.....	Director for cotton.
Georges Soulier.....	Director for rags.
Alphonse Tiberghien.....	Director for wool.
de Wagner.....	

A special order of December 12, 1940, added to the committee "Mlle. Schaff (Maria)."

In October 1942 the advisory committee was composed of:

Name	Directorship in Textile Comite	Directorship in Clothing Comite
Georges Babeau.....	Hosiery and knit goods.....	
Francois-Henri-Balay.....	Dyeing and finishing.....	
Jean Berthelot.....		Underwear and lingerie.
Ennemond Bizot.....	Artificial fibers.....	
Joseph Brochier.....	Silks and rayon weaving.....	
Maurice Cauchois.....		Wholesale goods trade.
Henri Darnat.....		Men's ready-to-wear.
Jacques Deligny.....		Director general.
Rene Descamps.....	Regional director general ¹	
Maurice Glorieux.....		
Jacques Guenin.....		Women's ready-to-wear.
Jean Le Blan.....	Flax and hemp.....	
Louis Leglise.....		Miscellaneous articles.
Lucien Lelong.....		Fashion models.
Jacques Leonhart.....	New fibers.....	
Andre Liebaut.....	Jute and hard fibers.....	
Marcel Mieg.....	Cotton spinning.....	
Etienne Richard.....	Cotton and flax weaving.....	
Georges Soulier.....	Rags.....	

¹ Of the Textile Comite for Nord and Pas-de-Calais. In January 1943 M. Descamps resigned to take a position with the Kuhlmann interests and was replaced by M. Toulemonde.

At first, the major function of the Office Central was to procure and allot raw materials and other supplies among the various French industries.¹¹ Later, as supplies decreased, it had power to determine the uses to which the materials were to be put. In the case of the textile section, this included the power to determine what percentages

¹¹ As in the case of the *Comites Generals*, the Office Central could give orders affecting Nord and Pas-de-Calais (though these departments were under the German military administration at Brussels) but had no jurisdiction over Alsace-Lorraine.

of natural, reworked, and artificial fibers were to be used in the new textile mixtures. It also had power to transfer stocks from one plant to another, if it deemed such a transfer desirable for speedier production or for other purposes. These determinations were to be made in accordance with the system of priorities established by the Nazis, described above. In addition to powers over production, the textile section had considerable responsibilities (in collaboration with the Ministry of Production and the Rationing Service) in regard to rationing and distribution of finished textile products; these extended even to the printing of clothing ration cards. As in the case of the Comite, certain Germans were assigned to work in various parts of the Office Central.

The textile section of the Office Central and the Comite General d'Organisation for the textile industry had to work closely together; but, as the leaders of the two institutions were practically identical cooperation was easy. Joint services were maintained in the field of statistics, legal matters, publicity, and coordination.

In negotiations with the Germans regarding raw materials, production, requisitions, etc., persons from the Office Central and the Comite were prominent. For example, the negotiators of the third Kehrl plan (who included some of the leading French and German textile figures, or their representatives) were:

FRENCH

M. Alphonse Tiberghien (directeur general and repartiteur du textile).	M. Gourlet.
M. Georges Babeau.	M. Jarillot.
M. Ennemond Bizot.	M. Jean le Blan.
M. Carrissino.	M. Andre Liebaut.
M. Jacques Charbonneaux.	M. Marcel Mieg.
M. Coohévits.	M. Rene Pollet.
M. Rene Descamps.	M. Robichez.
M. Dussart.	M. Schroeder.
M. Maurice Glorieux.	M. Georges Soulier.

GERMAN

Dr. Wilhelm Gruber (Wehrwirtschaftsfuhrer).	Herr Doebener.
Herr Conze.	Herr Rausch.
Herr Delius.	Herr Schilling.
	Herr Werk.

The "Labor Charter": The Comites Generals and the Office Central were considered temporary agencies, while plans for systematic fascist corporatism were being drawn up.

On October 4, 1941, a "law" was passed relating to "Social organization of occupations." In the preamble Admiral Darlan referred to the document as the "Labor Charter"; and it has been so publicized by Vichy and the Nazis. Consisting of 80 articles, this law provided for an elaborate network of organizations for employers and workers and for strict regimentation of labor and industrial relations.

The active population was to be divided into professional (occupational) "families," one for each section of French industry or commerce. Each "family" was to be divided into five classes.

- Employers.
- Managerial agents.
- Technical, administrative, and commercial personnel.
- Salaried employees.
- Workers.

In each locality the "family" members in each class were to belong to a single "syndicat." For example, in Lille, all owners of textile mills and of textile raw-material establishments would have to belong to one syndicate; their managerial agents would, likewise, belong to one syndicate; and so on, for each class within the occupational "family." Every syndicate was to be guided by an administrative council, whose composition was to be fixed by later decree.

Each administrative council was to select from its own members a limited number to represent the syndicate in a regional organization to be called a "union." Similarly each regional "union" was to select from its membership a small number to represent it in a national organization, to be called a "federation." Certain seats in each "federation," however, were to be reserved for persons having national or multiregional interests.

In addition to this organizational hierarchy, the "Labor Charter" provided for another interlocking system of "corporative organisms," called "social committees," composed of representatives of each class within a "family." These were to be formed in each plant, as well as at the local, regional, and national levels. At the plant level the "social committee" was to be organized in agreement with the head of the establishment and was to achieve "social and professional collaboration between management and personnel"; but the composition of the plant committee had to be approved by the "social committee" of the locality, under whose "corporative authority and control" it was placed. The local committee, composed of between 12 and 24 members, was to be divided into 3 equal groups: Employers, wage and salary earners, and the others (managerial agents and technical, administrative, and commercial personnel). This tripartite division was to be maintained also at the regional and national levels. The members of the regional committee were to be designated by the constituent local committees; and those of the national committee were to be designated by the constituent regional committees. A certain number at each level had to be chosen from the executive committees of the occupational "syndicates," "unions," and "federations" described above. Further details concerning conditions of designating members of the "social committees" at the various levels were left to later decrees of the Secretary of State for Labor.

The "social committees" were to have power over "occupational and social" but not "political or religious" activities. They could handle questions of wages, collective agreements, vocational education, hiring and firing, recreation, etc., but not questions pertaining to "plant management." Strikes and lock-outs are banned.

In addition to these various organizations, the "Labor Charter" provided for "corporative commissaries" with "power to control labor conditions in all the establishments connected with the social committees."

On November 13, 1941, a superior council was appointed to put the "Labor Charter" into effect.

A decree of January 10, 1942, defined as one "occupational family" all persons engaged in textile manufacturing and trade in textile raw materials. It defined as another "occupational family" all persons engaged in manufacturing of clothing and accessories. Decrees of July 22 and August 12, 1942, defined two further "families" in the textile field, one consisting of all producers, retters, and scutchers of

flax and hemp, and the other consisting of all producers and primary processors of wool. But the corporatism of the "Labor Charter" has not yet supplanted the "provisional" system of the Comites d'Organisation and the Office Central de Repartition.

POLICIES OF THE NEW TEXTILE ORGANIZATIONS

After the armistice was signed in June 1940, the French textile and textile-transforming interests faced the choice of closing their plants or accepting orders from the Nazis. A decision to refuse German orders meant that plants could not obtain raw materials, power, lubricants, and other supplies; that in all probability the unused equipment would be confiscated or scrapped—or at the least would deteriorate; that skilled workers would be scattered; that internal markets would be lost to rivals; and that other business interests of the owners, in banking, finance, and so on, would be jeopardized. On the other hand, collaboration offered a means of preserving family interests and of making profits: the Germans were willing to pay well for anything they wanted and profits could be rapidly invested in properties that were being thrown hastily on the market by owners fleeing the country or forced out of business, or could be used to amortize debts contracted before the inflation that followed the armistice of June 1940.

Except for people who feared violence as a result of racial discrimination, practically all owners of textile and textile-transforming plants decided to continue operations, though the firms with direct and indirect investments outside the country arranged for someone, usually a member of the family, to go abroad to safeguard and manage those interests. Thus, for example, Charles Tiberghien, brother of Alphonse, came to the United States to manage the Tiberghien affiliate, the French Worsted Co. of Woonsocket, and his son went to north Africa to manage Société Africaine de Filature et Tissages (SAFT), the Tiberghien affiliate operating at Rabat in Morocco. Similarly in the case of the Schlumberger family, while Godefroy, Paul, and Marcel Schlumberger remained to handle their utility and textile interests in Alsace (which was incorporated into the Reich) and their banking interests in Paris, other members of the family (Maurice Schlumberger, Henri Doll, and Baron Jean de Menil) went to the United States and South America to handle the affairs of the Schlumberger Well Surveying Corporation and its South American affiliate, Surenco.

As the textile Comite and the textile section of the Office Central were composed of the industry's leaders, or their representatives, the policies of these organizations have reflected in general the decisions of firms that were permitted to, and did, remain in business. They have endeavored: To keep staffs and plants intact in preparation for the abnormal post-war demand they anticipate; to protect their competitive position in relation to German and other foreign producers, as well as internally.

A Vichy law of February 22, 1941, forbade the transfer of stock in French-owned companies without personal endorsement by the buyer. This was an attempt to prevent the acquisition of French properties by the Germans. Owners of the leading textile plants

worked constantly to prevent certain members of the industry from accepting Nazi inducements to move their equipment across the Rhine.¹²

In their attempts to keep staffs intact the French textile officials and mill owners have also supported limitation of the workweek to 40 hours (which they had opposed before the war); the shorter workweek tended to decrease the number of workers that might be forced to work in Germany. The Comite has used the incomplete census figures of 1931 to conceal the number of people actually employed, for example, convincing the Germans that only 3,000 workers were employed in Nord in the manufacture of fancy knit goods, whereas the actual figures were nearer 12,000. The Comite has quietly acquiesced in various devices used by manufacturers in resisting Nazi attempts to drain manpower, especially skilled manpower, from the textile plants. Such devices include: Premature retirement of older skilled workers to make places for younger men; placement of skilled textile workers in such operations as timber cutting; and replacement of women workers with men.

While these measures have helped Frenchmen avoid the Nazi labor draft, other acts of the Comite and the Office Central have apparently caused wide popular criticism among small businessmen as well as workers. Officials have been charged, for example, with inequitable distribution of raw materials, with undue favoritism to the fashion industry and with protecting black markets in raw materials and clothing. (See later section of this report.) *Les Nouveaux Temps* (Paris, September 7, 1943), attempting to use the unpopularity of the provisional Comites Generals and Offices de Repartition to promote the all-out corporatism of the "Labor Charter," referred to the Comites as "sad gifts of defeat" and as "temporary expedients." Their powers, it said, enabled them to "set up their own 'good pleasure' as the sovereign law." According to the newspaper, the Comites,

consisting of unknown or prominent personalities, but in any case both judges and interested parties, have deviated, from the beginning, from their route * * *. Organizers, mediators, allocators, and controllers—they have soon become negators of private initiative, disloyal competitors of the industrialists and merchants who refused to accept their dictation. The most crying abuses are cited in every region: Unjustified withdrawals of purchasing cards; unmotivated suppression of the right to manufacture; systematic refusal of raw materials, etc. Only rarely has the matter received judicial recognition. If it were possible for the courts to go to the bottom of things, how quickly it would be seen that they [the Comites] were the origin of scandalous fortunes and of many ruins.]

TEXTILE OPERATIONS SINCE THE ARMISTICE OF JUNE 1940

Number of plants in operation.—It is estimated that at the time of the armistice there were about 12,000 companies or firms. The number of plants or shops then in operation is estimated to have been at least 25,000. During the following years some of these have been put completely or partly out of operation. Reports from Switzerland at the end of 1942 estimated the number of companies and firms still in existence at about 8,500, but did not attempt to estimate the number of plants. Reports from other sources, however, indicate

¹² For the most part, the Reich was not in need of French equipment, having acquired more plants in Poland and Czechoslovakia than it could supply with fibers.

that as of April 1943 the following plants were entirely closed or destroyed:

- 130 cotton-spinning plants (out of a pre-war total of about 400).
- 600 knit-goods plants (out of about 6,000).
- 400 dyeing and printing plants (out of about 1,000).

But the mortality has been largely in the small plants and home workshops. Few of the larger plants, which had accounted for the bulk of the country's pre-war production, have ceased operations.

The principal cause for the decline in the number of operating plants has been the shortage of raw materials and supplies, coupled with the system of allocation introduced under the new economic order. In August 1940 allocations of raw materials were restricted to 30 percent of the quantities consumed by each plant in 1938. While the larger plants managed to survive this restriction, there were many small plants that could not. Later, the restriction was lifted in the case of mills handling German orders, but as these were usually the large plants, this modification offered no help to the small establishments. The Nazis wanted to close all except the most efficient mills. Through 1941 and 1942 the French succeeded in resisting this demand; some members of the Comité General and Office Central had interests in mills that would have been affected by such a drastic measure, and also there was risk of considerable unrest among people who would have become unemployed. But as the Nazis later coupled their demand with a call for more forced labor for Germany, the problem of unemployment disappeared. It is believed that some of the small plants that still remained in operation were now refused supplies entirely.

Shortage of fuel and power has sometimes forced the temporary shut down of many plants. For example, on January 22, 1943, the German military authorities ordered the closing for 1 month of all textile mills, except those working on Rustung and Verteidigt orders and those working on artificial fiber, rags, or waste.

Lack of special items closed down some plants that might otherwise have continued in operation. For example, cotton-spinning mills that formerly used long-staple Egyptian cotton could not operate unless their spindles could be adjusted to use shorter staple. It is estimated that only about half of these spindles could be so adjusted. Shortages of dyes, of course, forced down a number of dyeing and printing plants.

In addition to the shortage of supplies and the allocation restrictions, Allied bombing has put some textile plants out of business. According to a report in November 1943 the following mills have been completely destroyed:

Company	Location of plant	Operations
Boutry-Droulers	Fives (near Lille)	Cotton spinning and doubling.
Delasalle Frères	Lomme (near Lille)	Do.
Delcort-Mallet	Loos (near Lille)	Cotton spinning and weaving.
Filature de Strasbourg	Strasbourg (Bas Rhin)	Making parachute cloth.
Filature et Tissage de Jute	Bischoff (Bas Rhin)	Jute spinning and jute weaving.
Fremaux	Lomme	Cotton spinning.
Thiriez Frères	do.	Cotton spinning and doubling.

The following mills are reported to have been damaged:

Company	Location of plant	Operations
Comptoir Linier.....	Several mills near Lille.....	Linen spinning and weaving.
Filature de Schappe.....	Tenay (Ain).....	Silk floss spinning.
Files de Calais.....	Calais.....	Rayon manufacturing.
Leon Crepy.....	Lambersart (near Lille).....	Cotton spinning.

Sabotage, as well as Allied bombing, has caused some damage. At least one important plant, the National Viscose factory at Grenoble, is reported to have been completely destroyed by sabotage.

Another factor that has reduced textile operations has been the removal of equipment by the Nazis. Though this practice has apparently not been widespread in the textile industries, some instances have been reported. For example, copper from the rollers in dyeing and printing plants has been confiscated to meet the Nazi levies. Plants in Caudry, equipped with machinery originally obtained from Germany as reparations after the last war, were stripped again by the Germans in 1940. The Gobelin and Beauvais tapestry looms have all been removed to Germany, and the Nazis were demanding the Aubusson looms in October 1943. It is reported that some circular net-making equipment at Le Puy (Haute Loire) may have been removed to replace equipment destroyed by Allied bombing at Wupperthal, in the Ruhr. It is also reported that some textile equipment in Alsace has been removed to make place for machine-tool and other equipment brought in from the Ruhr.

Despite the number of firms that have gone out of business, most of the large plants appear to have continued some measure of operations, and the textile productive capacity of the country has not been greatly reduced.

Types of goods produced.—As the Nazis have been the most important customers, the types of goods produced have been largely those ordered by the Germans. Military cloth seems to have been the biggest item. Mills at Sedan and elsewhere have usually been engaged full-time in turning out such fabric. In attempting to extend scarce natural fibers as far as possible, the Nazis have ordered that they be used in mixtures with reworked fibers and rayon staple; and the required percentages of such fibers and staple have increased from year to year. Under the third Kehrl plan, for example, wool mixtures were to meet these specifications:

Wool.....	50
Rayon staple.....	30
Rag ravelings (wool).....	20

Cotton knit goods for the Wehrmacht were to be:

Cotton.....	16.6
Rayon.....	16.6
Rayon staple.....	66.8

Goods made for French civilian needs have been of similar or poorer composition.

Mills of the Roubaix-Tourcoing region have long been busy with orders for blankets for the Wehrmacht. The flax-spinning and linen-weaving mills have at times been working to full capacity on Nazi

orders; in the summer of 1943, with the acceleration in Allied air warfare, they were exceptionally busy meeting German needs for linen fire-hose lining.

The silk and rayon mills in the Lyon area have been producing parachute cloth for the Nazis; this business started long before the Germans occupied Lyon and the rest of southern France. At first, the Lyon mills not only turned out the cloth but also made up the parachutes themselves. However, the workmanship was so defective that the Nazis soon found it expedient to have the transforming done in Germany.

The net-making facilities, especially those at Calais and Caudry, were used to manufacture mosquito netting for Rommel's Afrika Korps. These and other plants have also been used to make camouflage nets.

The Haute Couture.—While some companies have gone out of business, others, through the inequitable system of allocating materials and orders, have prospered to an extraordinary degree. For example, over half of all available wool went to two wool-combing firms, S. A. de Peignage of Roubaix and S. A. de Peignage of Rheims.¹⁴

Still more striking has been the generous treatment accorded the nonessential fashion industry. A decree in February 1941 gave the director general of the textile Comite General and the Repartiteur du Textile (one and the same person) power to make exceptions to the textile-rationing law in favor of the maisons de couture. Although their allocation of materials could still not exceed "a percentage" of their 1938 consumption, it was not fixed at 30 percent, as in the case of other branches of the industry, but was left to the determination of the Directeur General and the Repartiteur. They could also determine what houses were to be considered maisons de couture within the meaning of the new provision. In 1941 the haute couture received 800 metric tons of supplies out of the limited amount available for the civilian population. In 1942 the German fashion houses were closed and some Germans wanted the French houses closed too; but still the haute couture received 160 metric tons of supplies. Even in 1943, when the annual needs of the civilian population were supposed to be covered by 1 kilo of goods per capita, the haute couture received 80 metric tons, enough to fill the regular rations of 80,000 persons.

The French people have 100 ration points a year for clothing. To obtain a suit, even of the poorest quality, the ordinary citizen surrenders 30 points and at least one worn suit. But customers of the maisons de couture including wives and favorites of the Nazis surrender only 15 points a season for an entire wardrobe of fineries. To compensate for this privilege the customer is required to contribute 5 percent of the purchase price to the Secours National (national relief).

Although the Vichy price-control system has been applied to all other branches of the textile and textile-transforming industries, the haute couture was left free, up to the latter part of 1943, to charge

¹⁴ The Rheims company is owned by Wenz et Cie. The Roubaix company, formerly called Etablissement Amedee Prouvost et Cie., is owned by the Prouvost family. Jean Prouvost published the *Paris Soir* and was Vichy's first Minister of Information. The Roubaix company has a subsidiary near Woonsocket, Rhode Island, called the Branch River Wool Combing Company, and is affiliated with Prouvost Lefebvre et Cie., a wool importing firm with offices in Roubaix, Buenos Aires, and Boston.

any prices it could obtain. This exception to the price-control law, as well as the exceptions to the rationing laws, was predicated on the view that the haute couture is of special importance to the textile industries, the export trade, and other sections of French business.

Encouraged by these circumstances, Lucien Lelong, Directeur of the fashion industry since the collapse of France, has been busy, along with other leaders of the haute couture, developing a plan for continued operations. Under the plan, only a carefully selected group of French maisons de couture are to be permitted to work for the export trade; these are to be united in a single organization that will select the models and deal with foreign buyers. The foreign buyers from each country must also organize themselves into a syndicate and bargain with the haute couture as a group for the whole collection of models. The foreign syndicates are to take responsibility for preventing the immediate copying of French models in their own countries.

There are some indications that the Lelong plan, designed primarily for the post-war period, may already have been put into partial execution. It is reported, for example that only about 60 maisons de couture now participate in the seasonal fashion shows in Paris; this is only about half the usual number. Furthermore, in spite of war and blockade, French fashion models have continued to reach the best buying markets abroad.¹⁵

GERMAN PENETRATION OF THE FRENCH TEXTILE INDUSTRY

The condition of the French textile industry made it an unpromising investment; moreover, as most of the basic processes are simple and many of the machines are no longer covered by patents, the industry as a whole does not lend itself readily to cartelization. There is no evidence that the Germans have attempted to gain direct ownership of the traditional textile industries in France;¹⁶ for control they have relied on their own military and economic administration and on the collaboration of French officials and mill owners.

But there has been one important exception—the rayon industry. The Gillet-Carnot organization of the French rayon interests and the close pre-war collaboration in price control and markets with the German Kunstseide und Zellwolle Ring laid the foundation for closer relations after the collapse of France. In December 1940 most of the rayon-production facilities in France were united under a new consortium or holding company, France-Rayonne, to which (according to the *Chemiker Zeitung*) the Ring “contributed” 33 percent of the capital, in the form of patent rights and “technical advice.” As Dr. Hans Kehrl explained, the Ring was being expanded by “administrative pressure,” as well as legal methods. A 10-year agreement was made between France-Rayonne and the Ring, covering raw materials, processes, prices, and domestic and international markets.

¹⁵ Each season, for example, 1 or 2 fashionable women have been “expelled” and made their way to New York or Buenos Aires with numerous trunks containing the latest creations of Lelong and his group.

¹⁶ A number of textile companies, such as some owned by Marcel Boussac, the Gillets, Hoppenots, and others, have substantially increased their capitalization since the collapse of France; but there is no evidence that the new stock has been obtained by Germans. Some of the increases may have represented acquisitions of property of persons forced out of business for racial or other reasons.

The purpose of France-Rayonne was announced as follows:

Centralization, supervision, management, and control of all organizations, institutions, and services involving the commerce and industry of artificial textiles; the obtention, management, and negotiation of all quotas; acquisition, construction, exploitation, and location of all industrial and commercial establishments; in general all operations, personal, real, industrial, commercial and financial of interest, to any extent whatsoever, directly or indirectly, to the production and trade in artificial textiles, or capable of aiding their development.

The capital of the French companies that became subsidiaries of France-Rayonne totaled over 800,000,000 francs. Three-quarters of this amount was represented by National Viscose and Givet-Izieux, in which the Gillet and related families, such as Balay, Bizot, and Motte, were heavily interested. Chief among the French leaders of France-Rayonne have been Charles and Paul Gillet.

After formation of France-Rayonne, the textile Comite General issued an order that standardized the nomenclature for artificial fibers to correspond with the system used by the Ring. All types of artificial filament (not merely, as in this country, those having a cellulose base) were to be called rayonne, and all types of staple made from such filaments were to be called fibranne (the zellwolle of the Germans). The chemical composition of the various filaments and staples was to be indicated by an accompanying word—for example, rayonne-nylon, rayonne-viscose, fibranne-acetate, fibrannelanital, and so on.

In December 1940 it was announced that some old plants at Roanne (Loire) were to be repaired, expanded, and reequipped to produce annually 100,000 metric tons of rayon, chiefly staple (more than three times the total rayon production of all French plants in 1938). As previously noted, this goal was not yet achieved up to the end of 1943.

In 1941 another new corporation, Societe Francaise de la Cellulose, was created with capitalization of 100,000,000 francs; its announced function was to "explore and exploit the uses of reeds, broom, thistles, pine needles, and other sources of cellulose." French newspapers have reported that it is buying coal fields and the few sulfur deposits of the country; it may be the nucleus of an organization to control various materials used in the manufacture of artificial fibers. The details of its relations with France-Rayonne and the Ring have not been ascertained.

In addition to their interest in the French rayon industry, the Nazis showed an extraordinary interest in the haute couture. They wanted to capture it for Germany; but as its principal assets are skill and prestige, dominion could not be gained by the usual processes. The Nazis exerted pressure to move the entire haute couture to Berlin. However, Lucien Ielong and other leaders of the industry, aware that part of their prestige derived from the milieu in which they operated, resisted the pressure and succeeded in remaining in Paris.

Related to, but not a part of, the French textile industry was the manufacture of dyes and chemicals used in textile production. As indicated in a previous section of this report, the great French chemical interests of Kuhlmann had relations and agreements with the German I. G. Farbenindustrie long before the war. After the collapse of France, this relationship ripened rapidly and resulted in German control. A new holding company (capitalization, 800 million francs) was formed, called Francolor, to hold the stock of Kuhlmann and other dye and chemical interests. Fifty-one percent of the stock of Francolor was acquired by I. G. Farbenindustrie.

GERMAN ECONOMIC PENETRATION AND EXPLOITATION OF SOUTHEASTERN EUROPE

GERMAN PENETRATION AND EXPLOITATION OF SOUTHEASTERN EUROPE BEFORE THE WAR

WORLD WAR I TO THE RISE OF NATIONAL SOCIALISM

Prior to the outbreak of World War I in 1914, the Germans had considerable holdings in public loans, railways, banks, and mining, oil, and other industries of southeastern European countries. Between 1914 and 1918 Germany somewhat increased her investments in certain industries, such as in mining of nonferrous metals (copper, chrome, antimony), and in oil, but the total increases were not large. In many cases investments increased because Germany was forced to produce, even at high cost, materials cut off by the blockade.

However, Germany and to a lesser extent Austria-Hungary made large investments of another type in southeastern Europe. They had to finance the bulk of the war expenditures of their allies, Bulgaria and Turkey, just as the war expenditures of Serbia, Greece, and Rumania had to be financed by the Allies.

By the terms of the peace treaties, Germany lost all her holdings in southeastern Europe, and moreover had to pay reparations to those countries that were on the side of the Allies. Properties that belonged to the Austro-Hungarian state were taken over by the new states in whose territories they were located. Private holdings of citizens of Austria and Hungary were usually nationalized, i. e., a local branch of a Viennese or Budapest company became a national corporation, with its share capital expressed in the national currency. Owing to the lack of capital and managerial skill in the new countries, there was usually no basic change in the ownership of the new company except that a few carefully selected men, native residents of the newly created states, were placed on the board of directors. Part of the Austrian and Hungarian holdings, especially in the heavy and armaments industries and in banking, were later taken over by France and Great Britain, as well as by Belgium, Switzerland, and other countries.

Up to 1934 German holdings in southeastern European countries were relatively small and slowly acquired, chiefly because Germany was unable to export capital. The investments which German banks, insurance companies, and industrial corporations made in that region were for the purpose of profit rather than for the purpose of achieving political control by means of economic subjugation. The small amount of German investments in southeastern Europe up to the middle of the 1930's can be judged from the fact that German industrial holdings accounted for only 1 percent of the total foreign investments in Yugoslav industry and less than 1 percent of total foreign investments in Yugoslav banking.

During the period of 1918-35, Germany had nevertheless been a very important factor in the economic life of southeastern Europe in

other respects. Germany was an important buyer of the agricultural and mineral products of these countries and an important supplier of machinery, tools, chemicals, pharmaceuticals, coke, and coal. These countries came to be especially dependent on Germany for spare parts, and often for skilled workmen.

German corporations were among the leading foreign contractors in all large-scale construction programs in this area. Up to 1931 these contracts were either bid in by German firms, or, in some countries such as Yugoslavia, the contracts were paid for out of German reparations. Many of the leading German manufacturers and contracting firms maintained distribution and promotion branches in these countries. Whether German firms controlled the markets of southeastern European countries or were only important competitors, their pressure was strong enough to impose on these countries many cartel agreements which assured Germany of important controls.

A special way in which Germany was important to the economy of southeastern Europe was by supplying specialists, primarily in the fields of engineering and chemistry. In addition, many of the leaders in the technical and economic fields of southeastern Europe were trained in German universities, and the German technical literature was more widely used than that of any other country. In Yugoslavia, Rumania, and Hungary there are large German minorities who provide the most efficient agricultural population of these states.

INITIATION OF PLANNED PENETRATION

The systematic economic drive of the National Socialists in southeastern Europe began soon after their accession to power. The German aim was (1) to import as much from southeastern Europe as possible, and to pay only through the clearing mechanism; and (2) to develop the economy of the region as a complementary unit to the German economy of rearmament. The region could supply items in which the German economy was short, such as foodstuffs, certain types of fibres, oil, and nonferrous metals. Moreover, supplies from this region were safe from blockade.

In this economic drive Germany employed many new techniques. Germany pressed for delivery of all exportable surpluses of certain articles, for which she was willing to pay higher than prevailing world-market prices. She sold on credit machinery to be used to develop certain resources. Almost all payments involved in these transactions were effected in clearing. Germany often gave quite liberal preferential tariffs to these countries.

In the beginning, the southeastern European countries were glad to sell to Germany inasmuch as they were unable to sell their agricultural surpluses on other markets because of high tariffs and other protectionist measures in many importing countries, high costs of production and transportation and the lower quality of many of their products. Moreover in 1936, the sanctions against Italy cut off one of their important markets. The internal economic situation of these countries and their external trade and international position combined to make almost inevitable an intensification of trade with Germany.

The results of this closer collaboration with Germany were, however, more than these small and economically and politically weak

countries bargained for. Germany's policy of maximum buying and minimum selling resulted in the creation of large clearing balances in favor of the exporting countries. To satisfy their exporters, central banks of the exporting countries had to mobilize these balances, thus increasing the note circulating and the domestic price level and impairing still further their competitive position on the world market. When they tried to realize the clearing balances, they often were forced to import from Germany articles for which they had little use. In importing from Germany they often had to be satisfied with goods of lower quality than were available elsewhere, for which they had to pay high prices. The terms of trade differed from year to year and from country to country, as did the price and payment conditions under which various products were traded. On the whole, there is a strong presumption that the higher than world prices willingly paid by the Germans for many products of southeastern Europe were completely offset by various factors. As time went by the terms of trade became increasingly unfavorable to southeastern European countries and they became more and more entangled in the German network of economic exploitation and political servitude.

When the governments of southeastern Europe, in their attempts to rescue clearing balances, decided to import on state account machinery from Germany for the development of their natural resources (in mining, metallurgy, transportation, and other industries), they increased their own military economic potential which, in case of war, might easily be used by Germany. After 1936 France and Great Britain increased their investments in southeastern Europe, especially in the field of nonferrous metals production, in order to counteract German economic penetration into this area, among other considerations. The fruits of such investments accrued largely to Germany both in the period of preparedness, since the bulk of production was exported to Germany, and after war began.

German combines and cartels increased their control of southeastern European economy as the position of Germany in the foreign trade of this area rose. On the basis of long term contracts with German firms, some of these countries started to develop certain lines of production primarily for export to Germany. The most important examples were contracts with Roumania and Bulgaria for oil-seed cultivation.

During this systematic economic drive, Germany did not engage in any considerable penetration of the corporate structure of this area. The explanation may be Germany's lack of capital and ability to obtain from this area practically all the surpluses she wanted. A more plausible explanation appears to be that corporate penetration was simply left for a later date. After the conquest and economic coordination of Austria, Czechoslovakia, France, and Belgium, important creditors of southeastern European countries, corporate penetration followed automatically and at the least cost to Germany.

Germany also embarked upon a systematic propaganda and organizational drive to make the German minorities in southeastern Europe tools of her economic penetration and exploitation of this area. German propaganda to nationals of the area concentrated on two points: That Germany had no political aspirations in this area, and that southeastern Europe would benefit economically from inclusion

in the German Grossraumwirtschaft.¹ The Nazis also stimulated the development of fifth columns within each state, and fostered Nazi ideologies. These factors affected the political development of Roumania and Bulgaria, and in Yugoslavia aided the Germans at the time of invasion.

EFFECT OF THE AUSTRIAN ANSCHLUSS

At the beginning of 1938, the German diplomatic and military position in Europe became so strong vis-à-vis the democratic bloc that Germany could embark on territorial expansion. In March 1938, after careful fifth-column preparation, Austria was annexed to Germany. On this occasion Germany could still contend that she was only following one of the basic principles of the Nazi Party, that of bringing all Germans into one state ("Ein Volk, ein Reich, ein Führer").

Immediately upon annexation of Austria, Germany proceeded to coordinate its political and economic life into the German scheme and to build up Austria as its tool for more thorough domination and fuller exploitation of southeastern Europe. Austria was ideally suited for this purpose because its banking, insurance, industry, and commercial organization had important and close contacts with the economies of southeastern Europe. These were partly the results of Vienna firms being the channels through which Western creditors invested in southeastern Europe, and Vienna trading firms having a large hand in the import and export trade of this area. By means of economic coordination measures and by management techniques considerable concentration in the Austrian economy was effected, which in turn contributed to its smoother working as a tool of economic warfare.

The economic coordination of Austria brought under Nazi control and influence a large number of banking, mining, industrial, and commercial firms in the Southeast. German penetration into corporate holdings became an actuality. Especially important was their taking over of the chief Austrian bank, the Creditanstalt-Bankverein,² which in spite of its reduced influence since the crash of 1931 was a participant in many credit and industrial enterprises of southeastern Europe or at least knew them well from earlier contacts. The Dresdner Bank took over the former Merkur Bank and, consolidating several other Austrian and international interests, created the Länderbank as its Austrian affiliate.³ Austrian heavy industry, especially the Alpine-Montan-Gesellschaft and its machinery industry, was taken over by the Hermann Göring Werke.

As a consequence of this penetration of the Austrian economy, German-controlled investments in the total foreign investments in Yugoslavia, Rumania, and Bulgaria greatly increased. And in the foreign trade of these countries the German position became commanding.

¹ By 1939 after the area had been fully secured economically. Economic Minister Funk stated that in southeastern Europe "economic policies cannot be dissociated from political policies." The logical conclusion was that political adjustments would be insisted upon sooner or later in the case of all states.

² In mid-1943, the Deutsche Bank owned 51 percent and the German state-owned holding company Vereinigte Industrienternehmen A. G. (Viaz) 25.1 percent of the stock of the Creditanstalt-Bankverein.

³ The Dresdner Bank in mid-1943 owned the whole stock of the Länderbank.

EFFECT OF THE DISMEMBERMENT OF CZECHOSLOVAKIA

The dismemberment of Czechoslovakia, following the Munich agreement and completed in March 1939 with the creation of the Protectorate of Bohemia-Moravia and the "independent" state of Slovakia, eliminated from the German flank the most efficient and best organized of the smaller armies of Europe. It increased Germany's military predominance over the democracies in Europe and showed clearly to the small states of southeastern Europe that they could not count on immediate and effective help from the west. By the incorporation of the Protectorate of Bohemia-Moravia into the Reich, it became clear that the scope of Nazi ambitions was not confined to bringing only the German folk into one state. The question for small nations within the scope of Hitler's Lebensraum was no longer whether, but rather when, they were to be totally coordinated.

After March 1938, but especially after the Munich agreement the countries of southeastern Europe acted both to appease the Germans and to increase their armaments. All of them, whether they were already in ideological subjugation to the Reich or not, tried to appease Germany by granting virtually all the economic concessions requested. These consisted chiefly of greater exports, devaluation of their respective currencies in terms of the reichsmark, and partial reorientation of their production to fit better into the German 4-year plan.

All these states started feverishly to strengthen their defenses. Despite such measures, these states with their predominantly agricultural structure and general poverty, had practically no chance of survival in modern mechanized warfare. Moreover, the financial burden of increased armament was an additional heavy drain on their economic life and, in connection with the mobilization of the increased clearing balances in Germany, introduced an inflationary trend long before the beginning of the war.

The coordination of Czechoslovakia into the German orbit was politically, militarily, and economically a much harder blow for southeastern Europe, especially for Yugoslavia and Rumania, than was the annexation of Austria. Politically, the dismemberment of Czechoslovakia ushered in a new phase of German expansion. The French political influence that still remained in the Danube Basin was waning. Militarily, the dismemberment of Czechoslovakia effected not only the elimination of the Czech army, but also made available to Germany a large increase in modern arms and arms-production facilities. The Czechoslovak armament concerns Skoda and Brun, in which the British and the French were interested up to 1938, had been the chief suppliers of arms and ammunitions to Yugoslavia and Rumania. These concerns now became part of the Hermann Göring Werke, and Yugoslavia and Rumania thus fell into a position of unparalleled dependence on Germany for their supply of arms.

The exploitation of the Czechoslovak economy was handed over chiefly to the Hermann Göring Werke (which took over the mining, armaments, machinery, coal, shipping, and other industries), I. G. Farben (which took over the control of the chemical industry), and the Deutsche Bank and the Dresdner Bank (which took over several Czechoslovak banks and a large portion of the international business of others).

The coordination of Czechoslovakia into the Nazi economy and the consequent absorption or at least control of Czech investments in southeastern Europe, made the Germans the leading foreign creditors in all states of southeastern Europe. The chief Czechoslovakian holdings were in banking, heavy industry, armaments, chemicals, glass, textiles, sugar, and shoe manufacturing.

The British and the French tried to counteract the increasing German domination of southeastern European states. They supported these states with credits, mostly for armaments and economic development. They expanded their investments in this area, especially in mining. Great Britain, and to a lesser extent France, increased their imports from southeastern Europe, although not sufficiently to offset the predominance of Germany. A large increase in exports from southeastern Europe to other countries, primarily those paying with free exchange, would have been, however, the only effective way of lessening their economic dependence on Germany.

EFFECT OF WORLD WAR II

At the outbreak of war between Germany and Poland in September 1939, Germany was already exercising a dominant influence over the economy and the political destinies of the countries of southeastern Europe. While all of them proclaimed a policy of neutrality, their need for armaments imports from Germany and German-dominated territories, their need of German coal and coke, of machinery, chemicals, pharmaceuticals, and textiles forced them to trade on German-imposed terms. This can best be seen in the case of Rumania's oil exports and Yugoslavia's exports of copper, zinc, and lead. The companies producing these materials were fully or predominantly owned by the British and French. When they refused to supply the Germans after the outbreak of hostilities, the respective domestic governments preempted a large percentage of their production, and themselves supplied the Germans. Later these companies, again under German pressure, were put under government management, and deliveries to Germany increased. As for foods (grains, fruits, meats, fats, etc.), fibers (hemp and flax), wood and the like, the countries of southeastern Europe were compelled to export to Germany and Italy even if this meant a reduction of supplies below the national requirements.

The painstaking political and economic penetration of southeastern Europe now paid the Nazis valuable dividends, although increased supplies from this region could not balance the loss of overseas imports which ceased due to blockade. Many of these losses were temporarily compensated for by the loot of stock piles of raw materials and foods following the rapid German conquests in western Europe.

The conquest of France, Belgium, Holland, and Luxemburg, and the entry of Italy into the war, which meant an effective blockade of the Mediterranean, eliminated all possibility of western support for the southeastern European states. Their economies were almost completely coordinated within the German war economy and it was only a question of months before the Germans were to demand formal political coordination as well. In Bulgaria and Rumania such coordination was achieved during 1939 and 1940, but the coordination of Yugoslavia and Greece required military intervention in April 1941.

However, between the conquest of western countries and the military intervention in the southeast (June 1940 to April 1941), Germany proceeded to bring under her control a large part of the corporate holdings of the French, Belgians, and the Dutch in the central, eastern, and southeastern European states. Although it is not clear that the Germans engaged in large corporate penetration in the occupied areas of the west, it is evident that they took title to, or obtained effective control of, public and important private industrial properties located in the annexed parts of these states (for example, in Alsace-Lorraine and Luxemburg), and that they took over from these countries title to the latter's important investments in eastern, central, and southeastern Europe. The best examples are the taking over of the Mines de Bor copper mines in Yugoslavia, of the properties of the Union Européenne (wholly owned holding company of the Schneider-Creusot combine), and of the properties of various French and Belgian banks. The Yugoslav Government seemingly protested against the change in ownership of the Bor Mines and of the General Yugoslav Banking Corporation, but without result. On the whole Germany was gradually moving toward ownership or managerial control of the most important mining, industrial, and banking enterprises of the southeastern European countries.

Germany had two basic aims. She sought the maximum, immediate contribution of these states to the German war machine, and lasting, legally unimpeachable control over their important resources. The political and legal techniques employed were adapted to the circumstances of each case.

METHODS AND TECHNIQUES OF GERMAN WARTIME EXPLOITATION OF SOUTHEASTERN EUROPE

GENERAL METHODS AND TECHNIQUES

The principle of race supremacy permeates all Nazi Germany's activities, domestic and international. In the sphere of international relations the application of this principle excludes the treatment of foreign nations as equals. Nazi Germany approaches every foreign country as an inferior which has to be subjugated, and whose resources and productive powers have to be exploited for the benefit of Germany.

The methods of German occupation and domination in southeastern Europe since the spring of 1941 vary with each country. There are no available texts of the terms of surrender of such countries as Yugoslavia and Greece, or of the basic terms governing German relations with the satellite countries of southeastern Europe. Such terms have usually been laid down at meetings of the puppet rulers of the various states with Hitler at his headquarters.

Part of Yugoslavia, namely the northern section of Slovenia, has been annexed outright by the Reich. After the collapse of Italy in the summer of 1943, the former Italian-annexed regions of Dalmatia and part of Slovenia (Provincia di Lubiana), and Istria were transformed into the "Adriatic Coastal Operational Zone" under German administration. Serbia, Greece, and Montenegro are under German military government, but a considerable part of the civil administration is carried on by Quisling regimes, under the supervision of the

German Army of occupation. Albania is also occupied by the Germans, but the domestic government seemingly has more authority than that of the other countries. In Croatia, an extremely weak puppet government is supported by the Gestapo and the German Army. In Rumania and Bulgaria there are Quisling governments which have been under actual German control since 1940. In Hungary a wholly collaborationist regime was introduced in March 1944. For the large German minorities in Rumania, Hungary, Serbia, and Croatia, Germany achieved a special new type of autonomy.

The degree of economic coordination and exploitation of these countries varies to a certain extent. The difference is more a matter of expediency than any indication of hesitancy on Germany's part to exact from her victims and whilom allies their maximum contribution to the German war machine. Some of these nations, such as Bulgaria and Hungary, received territorial bribes, while others lost territory.

Because of their wealth in certain essential war materials such as oil, copper, chrome, bauxite, timber, certain foods, and their industrial capacity, the two most important southeastern European countries for the German war machine are Rumania and Yugoslavia. Consequently German coordination of their economy has been most thorough. Bulgaria and Greece are much less important as sources of raw materials, although the former is important as a source of food and both are important as sources of tobacco. The Hungarian state and economy are now in a process of total coordination.

As the Nazi's chief economic aim in southeastern Europe was to secure from the area its maximum immediate contribution to the German war machine, direct or indirect control of all basic phases of its economic life was necessary. The following measures and techniques indicate the means whereby such control was achieved:

1. In the occupied countries, the Germans assumed ownership or control of all the available arms, most of the raw materials, and most of the food stores whether public or private. In satellite countries, control over these items was achieved indirectly through Quisling governments.

2. All gold, foreign exchange, and other foreign assets in the occupied countries were placed under the control of the Germans, while in satellite countries, these items were controlled by Quisling governments.

3. In both occupied and satellite countries, the Germans took either direct or indirect control of money, banking, and insurance. All new legislation in these fields is patterned after German examples.

4. The Germans have directly or through their satellites mobilized all the available manpower of this area, for fighting, for garrisoning of occupied territories, or for work in Germany or on German-sponsored programs in the area itself.

5. The Germans control directly or indirectly the production, distribution, allocation, and consumption of all basic products, with the aim of maintaining production of these goods and allocating them according to German needs. They are so distributed that only a minimum is left for local civilian consumption and the bulk is placed at the disposal of the German war machine.

6. The Germans are taking the bulk of all surplus products of the whole area. The small portion of the surpluses used for trade between this area and the neutrals or the other German-occupied parts of Europe is largely controlled by the Germans, who control the European transportation and trading facilities and also, to a large extent, European international payments.

7. The Germans have taken over all state property in the occupied countries, and, in the satellite countries, communications, military installations, and armament-producing facilities have been put at their disposal.

8. The Germans took over either all or a part of the property rights in most of the leading mining, industrial, transportation, banking, and insurance enterprises. In other important enterprises which were under direct or indirect control of the Allied Powers, and in which they could not acquire title to the property, the Germans appointed their own commissioners and attached these enterprises to important German combines. In the case of many state-owned mines and industrial enterprises in satellite countries, German combines appear as lessees of such enterprises and, of course, manage them.

9. In that part of Slovenia (Yugoslavia) which has been annexed by the Reich, the Germans expropriated or confiscated a considerable part of landed property from the local population and frequently drove out the population to make room for German colonists.

10. The Germans have imposed heavy costs of occupation on the occupied countries, while the satellite countries are obliged to support the German armies stationed in their territories and are required to contribute manpower, arms, and supplies to the German war machine. Such outlays are, in effect, identical with the costs of occupation.

These exploitation, penetration, and control techniques are closely interrelated. They placed under the control of the German war machine the bulk of all resources of southeastern European countries. While some of these techniques have been practiced by most armies of occupation, they had never, before the advent of the Nazis, been developed into an organized system of plunder and destruction of both subjugated and satellite peoples.

GERMAN PENETRATION OF CORPORATE HOLDINGS IN SERBIA

INTRODUCTION

German penetration of the corporate structure of southeastern European countries before the armed intervention in March and April of 1941, was closely related to the conquest and economic coordination of the foreign creditors of this area: Austria, Czechoslovakia, France, Belgium, and Holland. After the German military occupation of southeastern Europe, the remainder of the important but yet not penetrated enterprises were coordinated partly by obtaining title to property, partly on the basis of the military law of occupation taking them into custody and administration, partly through measures carried out by the local Quisling governments.

This Guide is concerned with the extent of the corporate structure in Serbia controlled by Germany, the methods of achieving this control, and the chief German combines and firms which benefited from the spoils.

One general statement regarding Yugoslavia is, however, necessary by way of introduction. Since Yugoslavia was a state created in 1918 by consolidation of half a dozen independent or autonomous territories, it took years to achieve a certain consolidation and unification in the institutional and economico-organizational life of the country. But at the time of the German invasion Yugoslavia was a country with unified economic legislation. Government banks and other governmental economic institutions operated throughout the territory, large commercial banks and insurance companies carried on their business on a country-wide basis, traffic in goods and services was free and operated on equal terms, taxes were the same, etc.

With the invasion in April 1941 and the dismemberment of the country, this unity was destroyed and a race began to remove all existing ties between the now separated parts. This meant the development of a separate Serbian and a separate Croatian institutional framework, and realignment in institutions of the parts annexed by Germany, Italy, Albania, Bulgaria, and Hungary to fit into the institutional framework of these respective countries. All this involved far-reaching adjustments in the whole economic life of the country and especially in the field of government enterprises and all those corporate enterprises that happened to work in more than one of the new units. Needless to say the Germans knew how to profit from this process of realignment and adjustment.

MILITARY GOVERNMENT AND ECONOMIC EXPLOITATION

THE MILITARY GOVERNMENT

From April 1941 until August 1941, the Germans maintained a purely military government in Serbia (for the borders of 1941 Serbia see map), with dependable domestic officials as commissioners in charge of various branches of public administration. In August

1941, they sponsored a Quisling government with General Nedich at the head. Although the power of this puppet government has been gradually increased as German policy toward Serbia has changed, it has remained wholly subject to the German army of occupation.

Until recently the Germans had special military commanders (Militärbefehlshaber) in Serbia and Greece. In matters of civil affairs they were subordinate to Hitler and the German High Command. In charge of economic affairs under the military commander in Serbia was the plenipotentiary general for economics in Serbia (Generalbewollmächtigter für Wirtschaft in Serbien). The Germans recently abolished the offices of the Serbian and the Greek military commanders and consolidated them into the office of the military commander southeast, whose chief appears to be responsible to the German tactical commander in the Balkans theater. The former plenipotentiary general for economics in Serbia was appointed as chief of military administration for the whole of the Balkans under the military commander southeast.¹

THE ECONOMIC DICTATOR

The legal and personal pivot of German economic administration, penetration, and exploitation of Serbia is the Plenipotentiary General for Economics in Serbia. He exercises his power directly, or by appointing deputies, by direction and supervision of the operation of the Serbian puppet government. The case of Franz Neuhausen, comparable in some respects to that of Otto Abetz in France, provides an extremely interesting example of Nazi economic and political penetration.

Franz Neuhausen came to Yugoslavia in 1930 or 1931 as chief of the Deutsches Verkehrsbüro, which was also performing the function of the headquarters for German economic intelligence in Yugoslavia.² Later he became the official representative of the Nazi Party for Yugoslavia, and still later German consul general in Belgrade. There is no doubt that he served as a spearhead for the German economic and corporate penetration and economic exploitation of Yugoslavia before the invasion and thus prepared for the position of economic dictator after the conquest.

The positions he holds at present are: Plenipotentiary General for Economics, Plenipotentiary in Serbia for the four-year plan, chairman of the board of directors of the Mines de Bor, chairman of the board of directors of the Bankverein für Serbien, etc. He is the man in whose name and under whose direction the commissioners in many Serbian enterprises operate (see appendix A); he appoints the governor and the vice governor of the Serbian National Bank and a German commissioner who supervises the operations of the bank. Indirectly, he controls all the leading economico-administrative and business positions in the country.

In his work as the economic dictator of Serbia he is helped by a score of German economic and technical experts (see appendix B), who, by

¹ OSS Doc. R. and A. No. 1564, February 8, 1944, p. 3. Inasmuch as all the powers and functions of the former plenipotentiary general for economics in Serbia must have been carried over into the new office of the military administration in the Balkans (Franz Neuhausen headed both offices) and as the data in this Guide refer to earlier periods, Neuhausen is here referred to as the plenipotentiary general for economics in Serbia.

² Neuhausen's chief economic advisor, Dr. Karl Gemünd, is also an old resident of Yugoslavia. He came here in 1931, was an associate editor of the Belgrade weekly economic magazine Narodno Blagostanje for about 3 years, and joined Neuhausen in the Verkehrsbüro in 1934.

filling several interlocking positions as commissioners, members of the boards of directors, etc., actually control all that is worth controlling in the Serbian economy. Managerial centralization of economic enterprises in Serbia has resulted in easier management, increasing efficiency, and greatly strengthened political control of the economy of Serbia.

Because the Serbian economic enterprises in which the Germans were most interested were state-owned and thus came under their control automatically, or prior to the war were under the influence of foreign investors (mining, metallurgy, chemicals, sugar, etc.), who were either bought out or whose properties were taken into custody, the Germans had little need of collaborationists in the field of economics as they did in France, Belgium, and even Czechoslovakia. Their chief quest for Quislings in Serbia was in the political, military, academic, and journalistic fields, in which they found enough of them. There are, of course, also domestic collaborationists in industry and trade, but for the above-mentioned reasons, their importance is secondary.

Germany obtained the control of a series of industrial enterprises through taking over financial organizations and state property. Even those establishments such as the State railways, arsenals, coal mines, and forests which are owned and managed by the various ministries are also under full German control. In addition to the state-owned enterprises, many others now owned or managed by the Germans were fully or partially owned by foreign investors before the war. Also, quite a number of corporations have been established by the Germans. The following chapters indicate the extent of German penetration into the financial and industrial fields in Serbia.

HEAVY INDUSTRY CONTRIBUTING TO THE GERMAN WAR ECONOMY

STEEL AND METAL WORKS

Serbische Berg- und Hüttenindustrie A. G. (Sartid), Belgrade, is a company operating a leased blast furnace at Majdan-Pek, and a steel furnace, machinery plant, and shipyard at Smederovo, near Belgrade. It was one of the most important metallurgical enterprises in Yugoslavia, and was partly engaged in armaments production. Up to 1931, the Austrian Creditanstalt had an important interest in the firm, but it sold to British and French interests. It had a capital of 45 million dinars with widely distributed ownership (Vickers, possibly Schneider-Creusot, and Skoda, and the domestic firms: Yugoslav Union Bank, Transportation Bank, and the Weifert concern among others). In 1936, it made arrangements for a 7-year bonded credit of 6 million dinars (repayment began in 1939) in machinery with a London firm for the extension of its rolling mills.

According to the German sources, about 35,000 out of the total of 45,000 shares are now in the hands of Cisatlantic Corporation, New York. This transfer apparently took place for precautionary reasons shortly before the war or before the French collapse. The remaining 10,000 shares were presumably owned by the domestic interests, who were not able to transfer their shares abroad.

Immediately after the invasion, a German commissioner was put in charge of the enterprise for the Economic Plenipotentiary. In

June 1942 the management was shifted to the Eisen-und Hüttenwerke A. G., Cologne, whose representative, Josef Kleff, runs the enterprise as commissioner.

It is probable that the Germans have bought all or part of the domestically owned shares of the company as it was under the influence of the enemy nationals and thus the shares had to be reported.

"Osvit" A. G., Industrie für Metallwaren, chemische und pyrotechnische Produkte, Belgrade, capital 2 million dinars, is under a commissioner for the Economic Plenipotentiary.

Belgrader Maschinenfabrik und Eisenkonstruktions A. G., Belgrade, is another factory belonging formerly to the Prague Credit Bank and now presumably to the Hermann Göring Werke.

AIRCRAFT

Motoren-Industrie A. G., Belgrade, with a capital of 60 million dinars since 1939, was established with French participation in 1928, but the French interests were sold to the Yugoslav state and some domestic groups. The company has a factory in Rakovica near Belgrade producing parts of airplane motors under foreign licenses, had an assembly plant for airplanes, and later also started to produce automobiles, or trucks but on small-scale and under foreign license. The Germans have continued to operate the plant and have seemingly acquired the property as it was largely state-owned.

Erste Serbische Flugzeugfabrik Z. S., Rogozarski A. G., Belgrade (capital, 6 million dinars), engaged in assembly and repair of airplanes and airplane motors. The majority of stock was owned by the General Trade Bank of Belgrade which in March 1942 merged into the Belgrade Commercial Bank (capital 30 million dinars). As an armament-producing company Rogozarski was under the control of the state. The capacity of the plant working now for the Germans has been, reportedly, considerably increased.

Flugzeugfabrik "Utva" A. G., Belgrade, was established in April 1940, with the help of the State Mortgage Bank, several other Belgrade banks, and under participation of the Belgrade branch of the Prague Credit Bank. The metallurgical interests of this bank in Yugoslavia have apparently been taken over by Hermann Göring Werke and other interests by the Deutsche Bank through the Bankverein. The capital of Utva is 12 million dinars. The plant was located in Pancevo and engaged not only in the assembly and repair of airplanes, but also in the production and repair of automobile motors, tractors, and various other machinery (including agricultural machinery), and tools.

ARMAMENTS

"Nestor" A. G., Fabrik für Präzisionsmechanik A. G., Belgrade, (capital 1,200,000 dinars), has a plant in Belgrade which produces precision instruments, including machine guns for airplanes. It is managed by a commissioner for the Economic Plenipotentiary.

"Vistad" Valjevoer Industrie Ing, Stankovich A. G., Belgrade, prior to 1942 had an armaments and ammunition factory at Visegrad on the border between Serbia and Bosnia. In 1942, the factory was shipped to Valjevo in Serbia. It is now, reportedly, engaged in the production of agricultural machinery as well as in the production of

armaments. It was established in 1935 under participation of Skoda with a capital of 5 million dinars increased in 1937 to 20 million dinars.

The majority of shares belongs now through the concern Waffen-Union Skoda-Brunn, Berlin, to the Hermann Göring Werke. Chairman of the board of directors is Dr. Wilhelm Voss, of the Hermann Göring Werke. Among the domestic interests represented in this company is also the Savcich concern.

Skoda A. G., Belgrade, was established by the Czech Skoda combine in 1932 as its sales agent with a capital of 1 million dinars. In 1939, it was taken over by the Hermann Göring Werke, and in 1942, its capital was increased to 10 million dinars. It serves now not only as a sales agency but perhaps primarily as a holding company, participations amounting to over 4 million dinars. Part of the trading operations are carried on by its special trading subsidiary, Omnipol A. G. The chairman of the board of directors is Dr. Wilhelm Voss of the Hermann Göring Werke and the general manager is Friedrich Ott.

RAILROAD ROLLING STOCK

Krusevac A. G., Belgrade, established in 1939 by the Savcich concern (Transportation Bank) with a capital of 5 million dinars, owns a railroad-car factory in Krusevac. The plan of the company was to develop a whole line of iron and steel products. It cooperates with the Germans, and they have a property interest in the company as the German commissioner in Jasenica A. G., is a member of the board of directors of this company. The German group interested in this company is presumably Hermann Göring Werke.

Jasenica A. G., Belgrade (capital 25 million dinars), owned a plant in Smederevo Palanka for the production and repair of railroad rolling stock, primarily cars. It was owned up to January 1940 by the French concern Société Lorraine des anciens Etablissements de Dietrich et Cie, Luneville. At that time it may have been taken over by the Yugoslav state or some domestic group. Since the occupation it has been in custody of the Economic Plenipotentiary and presumably operated as part of Hermann Göring Werke in Serbia.

SHIPBUILDING

Donau-Schiffswerft A. G., Belgrade, is a Danube shipbuilding company that was established in May 1940 by the State Mortgage Bank (owning about 30 percent of shares): Belgrade branch of the Prague Credit Bank; the Skoda A. G., of Belgrade; and the Omnipol A. G., (Skoda's trading corporation) of Belgrade. The company is now dominated by the Hermann Göring Werke. It has a capital of 25 million dinar, but until the end of 1941 only 7.5 million were paid up. The company has a 20-year monopoly of shipbuilding in the Yugoslav part of the Danube and its tributaries and a state guarantee for the following 25 years of a minimum 10 percent customs duty on imported ships.

This is one of the few companies in Serbia in which a German combine shares ownership with the Quisling state. (One of the other important examples is coownership in the state silk factories.)

The chairman of the board of directors of this company is Franz Neuhausen. The general manager of the State Mortgage Bank is

vice chairman, and the other members are Hermann Göring combine men. Friedrich Ott is the general manager.

The most important Serbian shipping company on the Danube was the *Serbische Dampfschiffahrtsgesellschaft* with a capital of 20 million dinars, the majority of which was in the hands of the state. Because of state ownership, it is assumed that its ships and its ship-building facilities at Cukarica, near Belgrade, were taken over by the Germans and integrated into the greatly extended Danube shipping business, which is largely under the control of the Hermann Göring Werke. A small private shipping company, *Labud A. G.*, is also apparently controlled by the German transportation concern, *Schenker & Co.*

PETROLEUM AND TAR INDUSTRY

Belgrader Asphalt-und Teerproduktenfabrik A. G., Belgrade, capital 1 million dinars, owns a factory for the production of asphalt and is engaged in road repair work: now under German management.

Panonija Petroleum A. G., Belgrade, was established in 1938 with a capital of 6 million dinars in which the Yugoslav state had a 25 percent participation. It had a general concession on oil prospecting and the working of wells. In 1939, the "Geverkschaft Elwerath"-*Erdölwerke*, Hanover, obtained from the "Panonija" the concession rights in the territory of Croatia, which, by the way, possesses the only known oil and gas fields in Yugoslavia (Mur Island and Golio District), so that this Serbian company must be of little importance.

Serbische Shell A. G., Belgrade, apparently maintains the Serbian facilities of the former Yugoslav Shell Oil Corporation. The new company, with a capital of 5 million dinars, was organized in March 1942.

All of the directors of the company are Germans, among them, Dr. Ekhart von Klass, one of the keymen in the German natural and synthetic-oil industry (*Benzin-Verband Ruhr*, Bochum; *Benzol Verband*, Bochum, etc.) and the deputy leader of the Reich Group "Oil Industry" (*Kraftstoffindustrie*).

Mineraloelraffinerie Smederevo A. G., Belgrade, was established in 1942 with a capital of 20 million dinars and took over the already existing oil refinery of the *Sumadia Credit Bank* in Smederevo, which was later enlarged. The bank received 25 percent of the shares. The remaining 75 percent is owned by *Petrol A. G.*, Belgrade (German controlled, see section on Trade), "Appollo" oil refinery, Bratislava, Slovakia, on which *A. G. Dynamit Nobel*, Bratislava, and thus the *I. G. Farben* is interested. That *I. G. Farben* is interested in the Smederevo oil refinery is shown also by the presence on its board of directors of Dragan Tomljenovich, for many years the chief *I. G. Farben* representative in Yugoslavia.

CHEMICALS

"Zorka" *chemische Industrie*, A. G., Belgrade, had a capital of 15 million dinars until 1939 when it was increased to 25 million. Zorka is the most important Yugoslav chemical enterprise, having an annual capacity of about 100,000 tons of superphosphate and 30,000 tons of copper sulphate, among other products. The company owned first a chemical factory in Subotica (taken over at the end of

1941 by the "Hungaria" A. G., Budapest). In 1937, it built a large chemical factory in Sabac, Serbia, where in 1938 the Trepca Mines began the construction of its zinc smelter (Topionica Cinka A. G.), so that the Zorka may utilize pyrites and other byproducts of this smelter.

The majority of Zorka shares is in the hands of the important Czech chemical combine, Verein für chemische und metallurgische Produktion (Aussiger Verein), Prague-Aussig, which for decades has been in close contact with the Belgian Solvay combine (in which reportedly Hermann Göring Werke now has an interest) and seems to have escaped ownership control by the Germans. Of course, it had for years a number of cartel agreements for various products with the I. G. Farben. From the composition of the board of directors since 1941 it would appear that Zorka is now in close contact with the Deutsche Solvay Werke A. G., the German potash producers, and the Belgrade Bankverein, although it is maintained that the large majority of the stock is still in the Czech hands.

Zorka was a leading member in almost all Yugoslav cartels for chemical products and was thus bound through cartel agreements to Czech, German, and Hungarian firms.

The chairman of the Board of Directors of the Zorka is Dr. Bernhard Adolf, now chairman of the Aussiger Verein, and vice chairman Dr. Adolf von Clemm, of the Deutsche Solvay Werke A. G., Bernburg, and of the German potash syndicate. Zorka had at the same time some other interests in Yugoslavia, e. g., in "Danica" A. G., for the production of artificial fertilizers in Koprivaica, Croatia, which was put out of work in 1937. The "Jugokolor" A. G., in Belgrade is a trading company for chemicals and metal products serving Zorka.³

Odol Compagnie A. G., Belgrade, producing tooth paste and mouth water, increased its capital from 1 million dinars to 3.5 million dinars at the beginning of March 1941 and to 5 million dinars at the end of the same month. It belongs to the concern: Lingner-Werke A. G., Dresden. It has probably changed over during the war to the production of war materials.

Reichhold, Flügger & Bocking A. G., Belgrade, a subsidiary of the Viennese firm of the same name, was established in 1930 and increased its capital in June 1942 from 1.2 to 3 million dinars. In its factory in the neighborhood of Belgrade it produces paints and varnishes.

³ The Aussiger Verein owns 48 percent of the share capital in the Croatian state-controlled company, Chemische Fabriken A. G., Zareb, which plans to build proper facilities and supply the same products to Croatia as Zorka supplies to Serbia.

GERMAN PENETRATION OF CORPORATE HOLDINGS IN CROATIA

CREATION OF PUPPET GOVERNMENT AND ECONOMIC EXPLOITATION

INTRODUCTION

German economic penetration and exploitation of Croatia is considerably less open than that of Serbia. This is due primarily to the fact that Croatia is considered one of the satellite states where German control and pressure is exercised indirectly. There is, officially, no German army of occupation in Croatia, and thus no German military government.

From the establishment of the "independent" state of Croatia (see map) to the time of the Italian collapse, Croatia was officially bound more to Italy than to Germany. Croatia is a member of the Axis and had several economic accords with Germany, but it was considered as being more within the Italian sphere of influence. Croatia had special political treaties with Italy guaranteeing her borders and Italian military support. In fact, in the southwestern parts of the official Croatian territory (excluding Italian annexed parts of Dalmatia), Italian troops were stationed "for reasons of military security," and in that region there was in operation some sort of Italian military government.

From the beginning there were two groups among the politicians in Croatia, those that leaned toward Italy and those that leaned toward Germany. As Italy's political and military powers waned, the former took more and more to the German camp, and when the Italian collapse came, the complete change-over of the former group was accomplished.

It should be stressed, however, that even if Germany was not officially in control of Croatia between April 1941 and September 1943, and even if it is not officially in control now, it was Germany and German military power and police that kept and are now keeping the Croatian Quisling regime in power. It was the German Minister in Croatia, Siegfried Kasche (a S. A. Leader), who has been and is now wielding the real power in Croatia.¹ In order to keep the Ustashi regime going and to protect its flank against the Partisans of Yugoslavia, Germany was forced to station a greater number of troops in Croatia.² Moreover, Germany had to supply arms for all the Croatian troops. (Ustashi Party militia and military.)

ECONOMIC EXPLOITATION

Italy had coordinated and exploited the industry and economy of those Yugoslav regions along the Adriatic (Dalmatia) and in the Provincia di Lubiana that were annexed, as well as the few enterprises

¹ Of course, Croatia is militarily under the authority of the German Military Command Southeast.

² The Ustashi Party is the Croatian Fascist group comprising the present puppet regime in Croatia under Dr. Ante Pavelich. As Fascist parties in other countries it has its own party army—the Ustashis. The nucleus of the party was established in 1932 by the Croatian extremists in exile in Italy and Hungary and financed by these states. In its ultranationalistic aspects, the Ustashi Party represents, however, the continuation of certain political groups of long standing in Croatia.

in Montenegro. The chief industrial contributions of Dalmatia were cement, chemical fertilizers, bauxite, aluminum, and canned fish; timber was obtained in Slovenia and Montenegro. Part of this industry, especially cement and canned fish, was Italian controlled even before the war. Under the Italian rule, most of these industries were, reportedly, managed by the state-owned Istituto Ricostruzione Industriale (IRI). It is not known what happened to the property rights in industry in the regions Italy had annexed and which reverted to Croatia upon the Italian collapse or became parts of the German-administered Adriatic Coastal Operational Zone.

In the formerly Italian annexed and occupied Croatian regions, the most important resources for the enemy war economy were bauxite and aluminum, which were chiefly exploited for the account of Germany. Most of the firms which owned the mines were registered in Zagreb and were, or became, German owned or operated.

The main economic resources of Croatia are located outside of the regions that were, up to September 1943, under Italian control. These included food production, timber, and industry. Because Germany, unlike Italy, was in a position during the past years to supply Croatia with such essential materials as machinery, fuel, chemicals, and other industrial goods, and because Germany had a strong advance start in the infiltration of the Croatian economy through taking over of Austrian and Czechoslovakian firms and through the acquisition of many Western European investments in Yugoslavia, Germany assumed a dominant position in Croatian economic life. Moreover, there is a strong and well-organized German minority in Croatia which largely controls the most productive agricultural regions in the north-eastern parts of the country, and serves the German cause economically and politically.

Compared with Serbia (including Banat), Croatia contributed relatively little in terms of raw materials and foods vital to the German war economy. With the exception of bauxite, Croatia does not produce any nonferrous metals worth mentioning. Production of oil, even if considerably increased, could hardly exceed domestic consumption. Coal production, especially since September 1943, was perhaps not capable of covering domestic requirements for either transportation or metallurgy. There may have been some contribution in iron and steel, but this was not of importance for the German war economy. However, there may have been a considerable surplus of iron ore available, as well as large surplus supplies of lumber. The industrial contribution of Croatia to Germany has been small. It included cement, boards for prefabricated houses, tanning extracts, soda ash, caustic soda, and some ferro-alloys.

As agricultural products, Croatia was able to contribute considerable amounts of fruits, oilseeds, and plant fibers, and some meat, lard, and hides. The production of oilseeds and fibers was increased under German stimulation, especially in regions inhabited by the German minority. German troops in Croatia, of course, endeavored to live as much off the country as possible; their maintenance is estimated to cost the Croat Government about 2 billion kunas a month. The burden of the protection costs on the Croat economy is reportedly crushing, especially since it is borne by only a part of the Croatian territory.

Croatia is not only considerably poorer than Serbia in militarily important natural resources, but guerrilla operations and sabotage of plants and communications in her territory have been of such proportions, intensity, and geographic spread, that the existing resources could be only partly utilized. The conclusion seems to be warranted that Croatia, apart from its contribution in labor and fighting manpower, has not been as much of an economic asset to Germany as other southeastern European countries.

CHANGES IN CORPORATE STRUCTURE OF CROATIA AND THE GERMAN PART THEREIN

The two basic tenets of the Ustashi Government with respect to the country's economic activity at the inception of the "independent" state of Croatia were, first, to remove non-Aryan, Serbian, and other non-Axis influence; and, second, to increase the industrial self-sufficiency of the country by developing new industrial enterprises in selected fields. In respect to the second task, a great deal of planning and propaganda has been carried on, but, because of lack of capital, engineering and labor skill, and raw materials, and political insecurity, little has been accomplished.

The achievement of the first task was easier inasmuch as a Fascist regime, disregarding all principles of decency and equity, can confiscate and transfer property with an appalling ease. Among the basic decrees with respect to nationalization of property of persons considered inimical to the new state, was that of May 2, 1941, establishing the Office for Economic Restoration. The decree, with retroactive force, on nationalization of Jewish property was published October 30, 1942, and the decree on nationalization of financial institutions under control of persons inimical to the new state was published on July 8, 1941 (appendix D).

Paragraph (b) of article 2 of the decree of May 2, 1941, gives to the Office of Economic Restoration, by implication, sweeping authority in the field of property relations:

The duties of the office shall be—

- (b) To take charge of all business enterprises if the owner or the responsible executive organ is of unknown domicile, or if he has departed from his place of residence for an indefinite period and has not given proper instructions for the continued operation of the business.

This paragraph gave the state the right to all property belonging to proscribed peoples, especially Jews and Serbs, who fled the reign of terror that ensued upon the establishment of the Ustashi Government in Croatia. In addition, the decrees empowered the state to take charge also of almost all property owned by Allied nationals. On the basis of Jewish decrees some neutral—that is, Swiss—property was also nationalized. Through this property nationalization, the Croat state became, through its administrative agencies, banks, and holding companies, the most important banker, mine owner, industrialist, and trader in the country. Some of the nationalized properties were later sold to individuals favored by the Ustashi Government.

Considering the absolute military, political, and economic dependence of the Ustashi Government on Germany, all the property of

the Croat state may be regarded as completely at the disposal of the Germans, although there are no known formal agreements to that effect. Actually, the economic legislation and administration of Croatia is geared to serve the needs of the German war machine.³

Germany may have acquired some of the property marked for nationalization in Croatia, but the important German holdings in Croatia are in several big banks and, through them, in a considerable number of selected industrial and mining enterprises. Germany also controls a sizeable part of the Croatian insurance business and the bulk of the Croatian foreign trade, through German companies or jointly with Croatian Government enterprises.

INDUSTRIES CONTRIBUTING TO THE GERMAN WAR ECONOMY

IRON AND STEEL

The Kroatische Berg- und Hüttenwerke A. G., Sarajevo, formerly known as the Yugoslav Steel Corporation, was organized in 1938 by combining several state-owned coal mines, iron ore mines, pig-iron plants, and steel mills (Vares and Zenica). The capital of this company in 1938 was 600 million dinars, of which the State Mortgage Bank owned 200 million. In 1941 the capital was increased to 700 million dinars. As the facilities of this company are located in Bosnia, the territory of the "independent" state of Croatia, the Croat state inherited the company. It is managed by a board of directors under the direction and supervision of the Ministry of Forests and Mines.

The modernization of the steel-producing facilities in Zenica was carried out by several German firms under the leadership of Krupp, and the plant started to operate August 1, 1937. Thus, although Krupp has no property interest in the above company, this German combine might indirectly control the production and the utilization of its facilities. Since there is no shortage of steel in Germany, the plant may not be of particular importance to the Germans. The small pig-iron- and cast-iron-producing facilities of the Vareser Eisenindustrie A. G. are leased to the above state-owned company.

The fact that the labor management is in the hands of the Organization Todt indicates that the Germans have a hand in Bosnian steel and coal production.

AIRCRAFT

Four of the pre-war Yugoslav airplane plants were located on Croat territory, all in Zemun across the Sava River from Belgrade. The Erste serbische Flugzeugfabrik Z. S. Rogozarski A. G., capital 6 million dinars, engaged in assembly and repair of airplanes. The "Ikarus" A. G., with a capital of 5 million kunas was, up to 1941, owned by various private interests in Serbia and may have been partly owned by the Yugoslav state. The company designed, produced, and assembled planes. The Flugzeugmotoren-Gesellschaft Hispano-Suiza A. G., capital 3.5 million kunas, was controlled by the

³ A special tool of German pressure in Croatia has been the well-organized and powerful German minority. This minority largely controls the most fertile agricultural regions of the Croatian state, namely Savonia and Srijem. Although it numbers only about 2.5 percent of the total population of Croatia, it has, reportedly, supplied the Croat Government food monopolies with 40 to 50 percent of all food delivered to them in 1942 and 1943. One of the minority leaders, Dr. Stefan Kraft, is the director of the Food Supply Agency in the Ministry of Economics. As food was the basic problem of the Croat State, the Germans thus had a powerful means of pressure in the control of the most important internal food supplies.

Societe Francaise Hispano-Suiza. The Flugzeugfabrik "Zmaj" A. G., capital 8 million kunas, was owned by Belgrade private interests.

According to reports, all these facilities have been pooled and put at the disposal of the Germans for the repair of Messerschmitt planes and possibly also for the production of parts. The plants are reportedly managed by the Wiener Neustädter Flugzeugfabrik A. G., but there is no definite information on the ownership relations.

In addition to these Zemun factories, a new airplane plant, the Kroatische Metallfabriks-A. G., was established in Zagreb in 1943, reportedly for the production of aircraft engines. It is, however, more probable that the factory engages in airframe assembly and repairs. No data are available on the ownership of this factory, but it is probable that the Croat State is at least a part owner.

MACHINERY

Waggon, Maschinen—und Bruckenbau A. G., Brod on Sava, is the most important rolling stock, steel construction, and now possibly armaments plant in Croatia. It is owned by the Sparkassa des Unabhängigen Staates Kroatien and thus its facilities are at the disposal of Germany. The capital of the company was increased at the beginning of 1944 from 55 to 100 million kunas. The Germans directly, or one of the German-controlled banks in Zagreb, may have acquired a part interest in the plant.

There are two Croatian machinery factories, controlled indirectly but through ownership rights by the Germans. The Osijeker Eisen-giesserei und Maschinenfabrik A. G., Osijek, capital 5 million kunas, is owned by the Kroatische Landesbank, Zagreb, and thus indirectly by the Dresdner Bank. The factory produces a number of types of simple machines, such as agricultural machinery, flour-mill machinery, radiators, ovens, and since 1935, producer-gas generators. "Titan" A. G., Krainische Eisen- und Schlosserwarenfabrik und Giesserei, Zagreb, capital 3 million kunas, has an iron products factory at Stein, Slovenia. It also belongs to the Kroatische Landesbank, and thus to the Dresdner Bank. This factory is located in territory annexed by Germany, and the ownership may have been transferred from the Kroatische Landesbank to the Länderbank or some other concern in Austria.

PETROLEUM

Prior to the war, Yugoslavia's oil production was negligible. On the average about 160,000 tons of petroleum products were imported annually, mostly by way of the Danube from Roumania, and about 70 percent was in the form of crude oil. Refining and distribution of oil was carried on by the Yugoslav Shell Oil Corporation (capital 100 million dinars, refinery at Caprag) and the Yugoslav Standard-Vacuum Oil Co. (capital 175 million dinars, refinery at Brod on Sava). Both companies maintained storage facilities in several cities and harbors. The marketing of petroleum products was regulated by a cartel agreement. The two companies had a special cartel arrangement with a third very small petroleum corporation, "Ipoil."

The Shell company is now managed by a German, and one of the members of its board of directors is Eckhardt von Klass, (a keyman

in the German oil industry), who is also in the Serbian Shell A. G. The Standard-Vacuum company is now managed by an all-Croat board of directors. Since the monopoly of import, export, and sale of petroleum products is in the hands of the "Paklina" Privilegierte Petroleum A. G., a Government-controlled corporation (60 percent of capital of 5 million kunas), it may be presumed that the chief function of the two former companies is to supply technical facilities. This is suggested also by the fact that the board of directors of the Paklina A. G. includes directors of both the above companies.

There has been considerable prospecting for oil and natural gas in Croatia in recent years. Some domestic groups, and especially the German Gewerkschaft "Elwerath"—Erdölwerke, Hanover, are also engaged in the oil industry. The production of crude oil in Croatia was estimated at about 50,000 metric tons in 1943.

Of the domestic companies, the most important is the "Uljanik" A. G., with a capital of 15 million kunas. It is completely controlled by the First Croat Savings Bank. The Gewerkschaft "Elwerath" (one of the participants in the Kontinentale Oel A. G.) through its subsidiary Petrolej A. G., capital 25 million kunas, has several concessions and has contributed most to the increase of production in the past three years.⁴ The Kroatische Öl und Gas A. G., established in 1942 with a capital of 1 million kunas, is partly owned by the oil-drilling firm of Rautenkranz of Celle, Hanover. The Rütgerswerke A. G., Berlin, has a part interest in the natural gas-producing company Methan A. G. (capital 3 million kunas), which works in close cooperation with the Uljanik and of which the majority of stock is also owned by the First Croat Savings Bank.

CHEMICALS

A. G. für Explosiv und chemische Erzeugnisse, Zagreb, capital 4 million kunas, produces explosives and other chemicals and is controlled by the A. G. Dynamit Nobel, Bratislava, a subsidiary of the I. G. Farben. Lack- und Ölindustrie A. G., Zagreb, capital 9 million kunas, produces varnish, lacquer, and dyes at its plant in Zagreb, and is owned by the First Croat Savings Bank and the I. G. Farben.

Bosnische Electricitäts-A. G., Jajce, Bosnia, owns a power plant in Jajce and produces chlorine, chlorine derivatives, fertilizers, and ferrosilicon. The company, whose capital was increased in 1943 from 13.5 million kunas to 35 million kunas, is owned by the A. G. Dynamit Nobel, Bratislava and the I. G. Farben. As its plant is located in the territory controlled until recently by the Yugoslav National Army of Liberation, it is improbable that it is still working.

The Solvay A. G., Lukavac, near Tuzla, is another heavy chemicals factory located in Bosnia. Prior to the war, its capital of 80 million dinars was in the hands of the Belgian Solvay, the Aussiger Verein, and the Yugoslav Union Bank. The company produces caustic soda, soda ash, calcium chloride, and other products. The Belgian Solvay is reported to be controlled by the Hermann Göring Werke. The Lukavac plant is also in a region where guerrilla warfare was intense and it is probable that its facilities have been damaged.

⁴ The existing concessions of the Gewerkschaft "Elwerath" in Croatia and several other countries were expressly recognized in the charter of the Kontinentale Oel A. G., which was set up to control petroleum resources in the conquered and satellite countries.

The "Behring" Institut A. G., Zagreb, has a plant in Zagreb for the production of sera, vaccines, and various pharmaceutical products. Capital of the company is three million kunas and a part interest is owned by I. G. Farben, whose patents the plant uses. "Chromos" A. G. Fabrik graphischer Farben, Zagreb, owns a plant near Zagreb and another in Zemun. It produces printing ink, varnish, and lacquer. The capital of the firm is 10 million kunas, and is partly owned by German firms. It serves also as a general trading agent for several German firms.

Georg Schicht A. G., Osijek, is the most important Yugoslav producer of soap, toilet articles, and glycerin. The capital of the company amounts to 50 million kunas. A portion of the stock of this company was formerly in the hands of the Serbian Bank in Zagreb which in 1941 came under Government control. Foreign groups interested in the firm included Schicht, Aussig, Czechoslovakia, and especially the British Lever interests. As Schicht, Aussig, was formerly connected with the Deutsche Jurgens Werke, Hamburg, it can be assumed that the Croat firm is now controlled by the Germans.

A small chemical plant "Danica" A. G. at Koprivnica, had facilities for the production of chemical fertilizers and sulphuric acid. Production was stopped in 1937 as a result of a cartel arrangement with Zorka A. G., but according to some reports work has been resumed since the creation of the Croat State.

Chemische Fabriken A. G., Zagreb, was established in 1942 with the backing of the Croat State, domestic private interests, and the Aussiger Verein, of which the reported participation amounts to 48 percent. The company's capital is 50 million kunas and its plan is to build sufficient capacity to cover the Croatian needs of copper sulphate, sulphuric acid, superphosphate and other fertilizers. There is no information as to how far the proposed work of the company has progressed. This company may have taken over the facilities of Danica A. G.

An important Croat contribution to Germany is in the form of tanning extracts of which there is a shortage in Germany. The amount supplied is perhaps 10,000 to 15,000 metric tons. Three chief companies⁵ are engaged in that work—the Nasicer Tanninfabrik und Dampfsage A. G.; the Gerbextraktwerke A. G., Sisak, capital 10 million kunas, and the S. H. Gutmann A. G. Prior to the war, these companies had a sales cartel agreement and maintained a special sales company Tannin A. G. in Zagreb. The majority of shares of all these companies is now in the hands of the Croat Government and thus only indirectly under German control.

The Croat State has set up a company for the production of cellulose, the Zellulose A. G., with a proposed share capital of 750 million kunas.

Before the war there was a cellulose plant in Yugoslavia situated in Drvar, Bosnia, and belonging to the Government lumber company, Sipad. Its annual production was about 8,000 metric tons. Shortly before the war, plans were drawn up for the establishment of two additional plants, one in Bosnia and the other in Gorski Kotar, Croatia, probably with French capital, but the war made execution

⁵ Another important Yugoslav producer of tanning extracts is Yugo-Tannin A. G., which owned a plant in Sevnica, now German-annexed part of Slovenia. It was French owned but is now Germanized. According to one report, this plant has been dismantled and the machinery shipped to Germany.

of these plans impossible. It may well be that the plans of Zellulose A. G., will also not be carried out for a long time. The most important lumber producing regions of Croatia are now under Partisan control.

APPENDIX F

Important German trading firms operating in Croatia

Name	Year of establishment	Share capital in kunas	Representing—	Product
"Asphalt-Beton" A. G.	1939	2,000,000	Viennese firms	Building material.
"Montan" Handels A. G.	1942	500,000	Haniel & Cie., Duisburg	Coal, fertilizers.
Montan Syndikat A. G.		750,000	Allpine-Montanbetriebe	Machinery, iron, and steel.
"Seona" Kohlenbergwerks A. G.	1940	2,000,000	Hermann Göring Works	Metals.
"Alat" Industrie A. G.		2,000,000	Various German firms	Coal, minerals.
Gebr. Böhler & Co. A. G.	1941	2,000,000	do.	Tools.
"Embeag" Handels-Industrie A. G.	1941	3,000,000	Gebr. Böhler & Co. A. G., Vienna.	Iron and steel, metals, coal.
Ferro Wolff A. G.	1941	500,000	Maschinenbau-und Bahnbedarf A. G., Berlin.	Metals, rolling stock.
"Obnova" A. G.	1941	30,000,000	Otto Wolff, Cologne	Metals, machinery.
Industrie-und Handels A. G.	1928		Kontropa A. G., Vienna	Scrap.
Kroatische Schoeller-Bleckmann A. G.		1,500,000	Alpine-Montanbetriebe-Hermann Göring Works.	Iron and steel.
Mannesmannröhren-und Eisen A. G.	1942	12,000,000	Schoeller Bleckmann Stahlwerke A. G., Vienna.	Do.
Kontinentale A. G. für Eisenhandel.	1937	1,000,000	Mannesmann Werke, Düsseldorf.	Tubes, iron and steel.
National Register Kassen A. G.	1939	1,000,000	Czech steel firms	Iron and steel.
Oberhütten Silesia Stahl A. G.	1943	750,000	National-Krupp Register Kassen G. m. b. H., Berlin.	Office machines.
"Olympia" Büromaschinen A. G.	1941	1,000,000	Oberhütten Silesia Stahl	Iron and steel machinery.
Kroatische Klöckner-Humboldt-Deutz.	1925	3,000,000	A. E. G., Berlin	Office machines.
Anilokemika A. G. für technischechemische Industrie.	1923	2,000,000	Klöckner-Humboldt-Deutz, Cologne.	Machinery, motors, armaments.
Odol A. G.	1941	2,000,000	I. G. Farben	Chemicals.
Pira A. G.	1923	1,200,000	Lingner-Werke, Dresden	Pharmaceuticals.
Julius Meinel A. G.	1920	10,000,000	I. G. Farben, Mauser Werke	Explosives, armaments.
"Transmar" Handels A. G.	1941	2,000,000	Julius Meinel A. G., Vienna	Coffee and food.
A. E. G. Kroatische Elektrizitäts A. G.	1922	1,000,000	Gesellschaft für Aussenhandel, Vienna.	General trading.
Kroatische Siemens A. G.	1921	1,500,000	A. E. G., Berlin	Electrical appliances.
"Elin" A. G. für elektrische Industrie.	1922	3,500,000	Siemens A. G., Berlin	Do.
Teleradio A. G.	1941	16,000,000	"Elin" A. G., Vienna	Do.
"Ufa" Kroatische Film A. G.	1942	2,000,000	German radio firms	Radio equipment.
Continental-Caoutchouc A. G.	1924	2,000,000	"Ufa" Film, Berlin	Moving pictures.
Semperit A. G.	1922	550,000	Continental Gummi Werke, Hannover.	Rubber products.
A. G. für Industrie, Anbau und Handel A. G. "Südostropa."	1942	500,000	Semperit Werke, Vienna	Do.
"Timex" A. G.	1940	1,000,000	Südostropa A. G., Berlin	Agricultural products.
Kroatische Schenker A. G.	1942	3,000,000	Hellmuth Carroux & Cie., Hamburg.	General trading.
"Intercontinentale" A. G.	1942	3,000,000	Schenker Co., A. G., Berlin	Transportation.
Internationale Transport A. G.	1938	500,000	German controlled	Do.
			do.	Do.

AXIS PENETRATION OF EUROPEAN INSURANCE

EFFECT AND TECHNIQUE OF AXIS INSURANCE PENETRATION

German and Italian companies now virtually monopolize the field of insurance in Europe. By replacing British and other companies in the reinsurance field and extending their own previously strong position, the Axis reinsurance companies have integrated the whole insurance structure of the continent into a powerful instrument of economic control.

Through dominance of reinsurance, Axis companies, closely allied with their Governments, are able to —

1. Take the cream of the insurance business in occupied countries leaving the inferior risks to the domestic companies.
2. Double and triple the profits of some Axis companies.
3. Control the investment and management policies of insurance companies in the occupied areas which, in turn, exercise a large measure of control upon financial affairs and industrial enterprises.

Resting as it does upon contract rather than property, this chain of control will be exceedingly difficult to untangle in the post-war period. In breaking the Axis hold upon the European insurance business, great foresight will be required if the positive results of integration are to be preserved: the greatly increased financial stability of the insurance structure and the elimination of its outstanding pre-war disadvantage—the narrow national basis of many companies.

The nature of insurance operations requires very different techniques of penetration or exploitation than those employed in other economic sectors. After the initial seizure of British interests and transfer to themselves of domestic companies, the German and Italian companies now in control do not depart radically from conservative insurance practices. It is fundamental that the capacity to absorb risks is dependent on the spread of the risks in space and in time. In this sense Europe as a whole is a more favorable field for insurance than the previous narrow national areas.

The process of penetration appears conservative and slow; it is guided by business principles and is hesitant to take undue risks. There is little overt interference by other official or military elements.

This very conservatism in method tends to disguise the enormous efficacy of an insurance monopoly as an instrument of economic power. The power exerted may be exercised through apparent inaction as easily as through positive acts—a refusal or agreement to reinsure equally condition a business situation. Fire and casualty rates are among the basic conditions of economic life; the power to control them carries the power to favor or penalize any business or area. The effects of this power are never conspicuous and, in fact, are seldom visible.

The technique of penetration is characterized by the following features, in addition to the conservatism already mentioned:

1. British insurance interests in the occupied areas are taken over completely by the Germans and, to a lesser extent, by the Italians.

In those cases where the Germans are not sure of the quality of a business, arrangements are made for a tentative and exploratory association. In a few countries, for example, British agencies continue to function under their own liability but have to reinsure with Axis companies, which, when they become acquainted with the nature of the portfolio and are satisfied with the claims experience, take possession of the British business. The dissolution of the remnants of the British company follows immediately.

2. Forced closing of local companies is usual only for racial and political reasons. Such cases have arisen in Luxembourg, Alsace, Poland. In all Axis controlled areas domestic businesses have been coordinated with Axis insurance interests.

3. Where risks are bad, and the claims ratios unfavorable, as in Norway, Denmark, and Greece, German agencies have been distinctly reluctant to penetrate.

4. Collaboration on the part of insurance factors, notably in France, has assisted the penetration of Axis insurance companies.

5. In general, penetration is confined to purely commercial arrangements except in cases where one or more of the following circumstances exist:

(a) There is a wide infiltration of German and Italian direct operating companies which then compete with local offices. There has been a marked influx of German agencies into France.

(b) Coverage of risks in war industries changes from domestic to German insurers as a result of the change of control of ownership.

(c) Wherever large, profitable, industrial enterprises remain in local hands, pressure is exerted by German companies to let them participate in the insurance coverage.

6. As a matter of basic policy the Axis allows only German and Italian companies to have a share in international business, restricting local companies to local activity.

7. As British facilities disappear, the movement of reinsurance to German and Italian groups is channeled through the "Munich"-controlled "Association for the Coverage of Major Risks," a cartel embracing all major European reinsurance companies, including the neutrals.

AXIS INSURANCE OPERATIONS PRIOR TO THE OCCUPATION OF EUROPEAN COUNTRIES

FOREIGN ACTIVITIES OF AXIS DIRECT INSURANCE COMPANIES THROUGH AGENCIES

Germany's direct insurance operations in Europe were on a small scale until 1940. Not more than a dozen of the more than 6,000 German licensed insurance carriers were actually functioning abroad; another dozen, while concessioned in foreign countries, maintained their offices for reasons of prestige or noncommercial expediency.

Further reflections of the vanishing influence of German insurance operations abroad are to be found in the decreasing number of insurance carriers and the decreasing volume of their transactions:

Premium income in direct insurance business

[In millions of reichsmarks]

	German companies abroad	German companies in Germany		German companies abroad	German companies in Germany
1913.....	113. 17	1, 153. 70	1935.....	33. 35	1, 870. 55
1933.....	42. 79	1, 579. 96	1936.....	29. 60	1, 839. 96
1934.....	39. 30	1, 705. 46	1937.....	28. 74	2, 074. 44

Developments in Italy were not similar to those in Germany; although Italy has gradually eliminated foreign companies from the direct home insurance business, in foreign countries widespread activities were not only maintained, but in the years of the Fascist regime were increased. The expansion was chiefly accomplished through old established and international organizations, the *Assicurazione Generali* and *Riunione, Adriatica*, both of Trieste, and their affiliates.¹ The premium income of these two companies reached a total of 1,400,000,000 lira in 1937, of which 450,000,000 lira came from direct home business and nearly 1,000,000,000 lira from indirect and foreign business. Losses encountered since the rise of Fascism, as a result of increasing resentment in France and England, were largely compensated for by expansions in the Balkans, Spain, and in South America.

FOREIGN ACTIVITIES OF AXIS INSURANCE COMPANIES THROUGH AFFILIATIONS

For many years the German insurance industry experienced some difficulty in its foreign business due to prejudices dating from the World War. Before the rise of Hitler, German insurance connections abroad, especially in former enemy countries, were often set up with non-German partners; after the establishment of the Nazi regime, the same practice was extended to neutral countries. (Examples are cited in ch. III of this report.)

The Munich Reinsurance Co. used the device of non-German partners in order to cloak its direct participation in operating offices, and turned over part of its own reinsurance business to Munich-controlled reinsurance subsidiaries of which the Union of Zurich, the *Societe Anonyme de Reassurances* of Paris, the *Patria* of Milan, and *El Fenix Sud Americano* of Buenos Aires are the more important. Those subsidiaries abroad, under a native name and appearance, serve the German home company in three ways:

- (a) They support the home company in the coverage of major risks (diversification).
- (b) They are an effective producing agency for the home company.
- (c) They acquire in their own name any business which for political or other reasons cannot be acquired in the name of the German enterprise.

¹ The constantly growing importance of the two leading Italian concerns on the world market furnishes a key for the understanding of the German-Italian collaboration in matters of insurance.

The experience which Germany had with these affiliates was not uniformly happy. Local competitors were eager to discover German origin, and the motives and methods applied by them in using such information were not always above criticism. Blackmail and libel actions were not infrequent, particularly in France and Belgium.

The Italian companies, particularly the leading Italian concerns, Assicurazioni Generali and Riunione Adriatica, used affiliations abroad more freely than the Germans. The well-organized Italian insurance network all over the world remained unhampered even when sanctions were declared against Italy in the Ethiopian conflict. In 1938, due to German pressure, Italian affiliations in Austria were restricted, but the losses were largely compensated by accrual of new business from countries occupied after September 1939.

REINSURANCE

The insignificance of the German direct foreign activities before 1940 is in sharp contrast to the magnitude of their indirect business. The financial strength of German reinsurance firms compared to foreign competitors is striking. The last peacetime figures (British source) show the following income:

Sterling value at end of 1938

(1) Munich Reinsurance Co.	£15, 557, 663
(2) Swiss Reinsurance Co. (Zurich)	10, 824, 267
(3) Koelnische Rueck (Cologne)	2, 821, 575
(4) European General (United States of America)	2, 176, 225
(5) Gerling Konzern Rueck (Cologne)	1, 846, 092
(6) Cie Generale Accidents (Paris)	1, 771, 792
(7) Frankona Rueck & Co. (Berlin)	1, 577, 337
(8) Employers Reinsurance (United States of America)	1, 471, 268
(9) Bayerische Rueck (Munich)	1, 274, 071
(10) Aachener Rueck (Berlin)	1, 239, 972
(11) General Reinsurance (United States of America)	1, 191, 053
(12) Gerling Konzern Rheinische (Cologne)	1, 189, 923
(13) Skandinavia (Copenhagen)	1, 183, 098
(14) Mercantile & General (London)	1, 034, 180
(15) Hamburg-Bremer Rueck (Hamburg)	1, 024, 706
(16) Christiania General (Oslo)	1, 000, 400
(17) Baltica (Copenhagen)	963, 840
(18) Reinsurance Corporation (London)	943, 924
(19) Francaise de Reassurances (Paris)	936, 043
(20) Victoria Rueck (Berlin)	920, 030
(21) Universale Rueck (Zurich) (1937)	916, 320
(22) Europaeische Allg. (Zurich)	761, 773
(23) Universeele Reassurantie (Amsterdam)	720, 049
(24) Victory (London)	718, 794
(25) Inter-Ocean (United States of America)	665, 041
(26) American Reserve (United States of America)	659, 136
(27) Rueckvers-Verein (Berlin)	642, 157
(28) American Reinsurance (United States of America)	637, 498
(29) Magdeburger Rueck (Magdeburg)	622, 262
(30) Prudential of G. B. (United States of America)	574, 654
(31) Union Rueck (Zurich)	539, 792
(32) Nordisk Reinsurance (Copenhagen)	537, 618
(33) North American Reassurance (United States of America)	522, 922
(34) General Fire, Paris (United States of America A/C)	505, 403

Sterling value at end of 1938—Continued

(35) Nationale Credit et Reassurances (Paris).....	£482, 110
(36) Salamandra (Copenhagen).....	482, 068
(37) G. K. Duit.-Nederlnd. (Amsterdam) (1937).....	456, 508
(38) Soc. An. de Reassurances (Paris).....	440, 527
(39) 1st Bohemian Reinsurance Bank, Prague.....	435, 477
(40) Fortuna Rueck (Erfurt).....	413, 615
(41) Farmers' Mutual Reinsurance (United States of America).....	411, 846
(42) Northeastern of Hartford (United States of America).....	402, 778
(43) North Star (United States of America).....	484, 086

In this tabulation, German companies lead with 45.9 percent of the total reinsurance income; followed by Swiss companies with 20.5 percent; while the remainder is shared by American, French, Danish, and English companies, etc.

These valuations, which Germany has been able to maintain and increase continuously for more than a decade, mean more than the maintenance of an outstanding commercial prestige over the whole world. Their significance for the German Treasury and war finance may best be judged by the fact that in the whole German economic system, reinsurance companies alone were since 1931, and still are,² exempt from the prohibition of export of funds and exchange control. This exemption is granted only because the balance of advantage lies with the Reich. In other words, due to reinsurance income, the balance of insurance payments with foreign countries is favorable, although the direct German business alone was then constantly unprofitable.³ The total yearly premium income of the professional reinsurance companies in Germany was more than 450,000,000 reichsmarks in 1939; leading German insurance executives have estimated that more than half of this amount was then collected from foreign sources, but exact figures have never been divulged.

The reasons for this unique position of Germany in professional reinsurance may be analyzed as follows.

BUSINESS PRACTICES OF GERMAN REINSURANCE FIRMS

Centralization.—The German insurance and reinsurance industry is highly concentrated and centralized, with the Munich Reinsurance

¹ The freedom of German reinsurance from exchange control barriers has been reconfirmed as late as July 1942 in the circulars of the German Exchange Control Office of July 3 and 14.

² Balances of Germany's foreign insurance business (in millions of reichsmarks):

	1913		1931		1932		1933		1934	
	Credit	Debit	Credit	Debit	Credit	Debit	Credit	Debit	Credit	Debit
Direct:										
Life.....	21.02		18.60		14.14		11.84		9.63	
Fire and general.....		3.16	11.67		6.06		8.03		5.50	
Marine.....			1.27		1.92		.45		1.41	
Reinsurance:										
Life.....	12.13		31.94		16.13		17.06		16.12	
Fire.....	68.52		18.20		18.23		23.60		31.02	
Marine.....			5.85		2.36		.29		.54	
Total.....	101.67	3.16	50.14	37.39	36.36	24.48	40.95	20.32	47.67	16.54
Net credit balance.....	98.51		12.75		11.88		20.63		31.13	

Co. holding indisputable leadership.⁴ Practically all German insurance and reinsurance concerns reinsure or retrocede part of their risks to the Munich.⁵ For all practical purposes German reinsurance can, therefore, be identified with the Munich, particularly since the Munich manages the insurance cartel for the coverage of major risks throughout Europe. (See ch. IV.)

It is upon the combined insurance power of these concerns that the Munich Reinsurance Co. rests. British professional reinsurance never acquired such wholehearted support from its domestic market, and there are in England no such intimate associations between direct insurance and reinsurance as exist between the Munich and the Allianz.

Attraction for foreign clients.—Upon this domestic foundation the foreign power of the Munich has been built up. Thanks to 60 years of experience, specialization, and unrivalled retrocession facilities, the Munich has been able to offer abroad a reinsurance mechanism which in its variety, adaptability, and attractiveness has met little competition.

Compared with Allied business practices, German treaty conditions are often not conservative, but flexible and daring. The pattern upon which German reinsurance has operated abroad for years is less concerned with immediate profits than with the building up of long-term ties between reinsurer and reinsured. Until they become profitable, newly created insurance offices are nourished and pulled through periods of difficulty by the reinsurer. The reinsurer pays the cost of acquisition, commissions, and management of the reinsuring office and provides for the deposits required under state legislation.

Information system.—The German reinsurance offices put at the disposal of their clients a unique information and card-indexing system covering the substantial risks of the whole world. This index is continuously enlarged and kept up to date by direct companies. It often permits the insurance of so-called uninsurable risks; it is paralleled by Lloyd's in the limited field of marine insurance. It has become an accepted practice for direct companies to seek information from Berlin or Munich on the insurability of certain risks, even those situated in the company's own country. Munich offices are also equipped for the partial or total administration of the operating machinery of their reinsured clients (interlocking enterprises).

⁴ Premium income of German reinsurance companies as shown in their 1940 balances (in millions of reichsmarks):

Aachener Rueck.....	17.78	Koelner Lloyd.....	2.70
Bayerische Rueck.....	31.71	Koelnische Rueck.....	45.56
Dtsch. Rueckvers. Ges.....	16.52	Lepziger Allgemeine.....	4.00
Dtsch. Vers. G., Brem.....	1.95	Magdeburger Rueck.....	8.47
Dresdner Rueck.....	.47	Muenchener Rueck (Munich Reinsur- ance Co.).....	210.14
Elsen und Stahl.....	8.70	Rueckvers. Colonia.....	3.31
Fortuna Rueck.....	6.60	Rueckvers. Vereinigg.....	10.29
Frankona Rueck.....	39.14	Silesia.....	1.98
Gerling-K., Rheln.....	12.34	Stettiner Rueck.....	1.64
Gerling-K. Rueck.....	22.43	Victoria.....	11.75
Gladbacher Rueck.....	1.44		
Hamburg-Brem. Rueck.....	13.33		

⁵ The Gerling concern, is a self-sufficient independent group and reinsures with other German companies only on a limited scale. It has its own reinsurance concerns in Germany and abroad.

Robert Gerling, who inaugurated the Gerling "Isolationist" system, and after his death the present Gerling leader, Walter Forstreuter, have always been considered stubborn outsiders. Because they have become successful they have been severely criticized and attacked. These hostilities continue to exist and are reflected in the German insurance press up to the present day. As the Gerling opponents have the upper hand in Nazi officialdom, the Gerling concern seems to have been discriminated against in the distribution of the business allotted to German companies from occupied areas.

Social approach.—To the clever initiative of the German companies must be added the personal activities of their managers and agents who mix a social and a business approach.^{6 7}

Instead of relying on indirect communication the Munich managers and their employees have never hesitated to visit distant countries for the purpose of establishing representatives and creating good will by trying to please and to adjust themselves to foreign customs and ideas.

"We have been able to become the biggest reinsurance enterprise in the world," said the chief executive of the Munich in 1937, "because the development of the individual insurance company does not, as in marketing goods, depend upon the peculiar nature and quality of the product, but on the solidarity of the management, the creation of the necessary sphere of confidence, and on organization, that is, on imponderables, which are dependent first and foremost on the tradition of the company and on the personality of its managers."

Research facilities.—It is common knowledge that the Axis reinsurance companies, supported by their governments, ably seconded their business interests by offering research facilities to clients and foreign insurance departments, thus supplying them with materials which they could not obtain elsewhere. They supply them with publications, statistics, organization of insurance congresses, and appoint delegates to anniversaries, give advice to foreign insurance officials in their own country, and finally give foreign insurance people in Ger-

⁶ Here is one example of the clever combination of Nazi propaganda, business advertisement, and social goodwill. On July 17, 1937, Hitler inaugurated the House of German Art in Munich. The Munich Reinsurance Co. took this opportunity to invite the leading insurance executives from all over the world to a good-will insurance conference held in the offices of the Munich. Dr. Kurt Schmitt, Reich Minister of Economics under Hitler and president of the Munich, addressed the audience. Over 300 insurance leaders from 27 countries accepted the invitation to the meeting, had seats of honor for the Hitler speech, and were the guests of the Munich for a full week. The international insurance press paid tribute to the Munich Insurance Co. for this "special contribution to international fellowship among insurers and reinsurers."

⁷ The personal background of the present Munich leaders is as follows:

Dr. Kurt Schmitt, president of the Munich is known as an outspoken capitalist; he worked closely with Schacht and it is commonly believed that Schmitt endorsed the same general attitude towards nazism as Schacht; namely, that though they were not entirely happy about its extremist features, they agreed with its antibolshevik course and were confident that by getting inside they could give direction to the Nazi movement and its ideology.

Dr. Schmitt is also the head of the mightiest direct operating insurance organization in Germany, the Allianz concern. As such he enjoys an unexcelled reputation in international insurance. His work in the Munich, which is a purely reinsurance concern, is mainly devoted to domestic business; in the international field, he gives full authority to Dr. Alzheimer.

Among the board members, Dr. Alois Alzheimer is the youngest, and has the shortest service record. Since 1933 he has traveled abroad extensively and is known for his cleverness in negotiations. He is the invisible wirepuller of the international devices used by the Munich. Alzheimer possesses not only an astonishing professional ability and adaptability to foreign conditions, but is also relatively secure from Gestapo supervision abroad because of his supposed party membership card No. 5. When abroad, Alzheimer never plays the fervent Nazi but tactfully overlooks "non-aryan," Socialist, and other "handicaps" of his foreign business partners whenever the latter are useful to the Munich. For example, against the protest of his French Fascist reinsurance partners, Alzheimer appointed in 1937 an outspoken Socialist and personal friend of Prime Minister Blum, Maître Emil Lamour, as general counsel for France after the French Socialists came into power.

Alzheimer is assisted in the field of life insurance by Dr. Gustav Mattfeld and, in the field of casualty and fire insurance, by Dr. Walter Meuschel. In various instances Alzheimer had to reprimand them for their "Germany over all" attitude abroad.

As a shield against discrimination the management of the foreign subsidiaries of the Munich has always been entrusted to nationals of those countries after they were trained in Munich.

The Union of Zürich is headed by Dr. Hans Grieshaber, assisted by Dr. Joseph Maier, both Swiss citizens. For years Grieshaber traveled to Tokio and Yokohama. He also worked successfully for the Munich in India before the outbreak of the war.

The managers of the French subsidiary, Les Réassurances, Mr. Dingler and Mr. Souza, are mere figure-heads for the Munich has never shown any confidence in the insurance qualities and reliability of Frenchmen.

The actual supervision of the French and western European business lies in the hands of Dr. Moosbrugger for the life branch, and Mr. Rudolph Audebert, a German citizen. Since the early thirties Audebert had his residence in Toulouse, France, as the supervisor of the Cité, a Munich subsidiary. He traveled extensively between Munich and western Europe and was known in insurance circles as acting captain for the G2 Bureau of the Reichswehr. Several times the French immigration authorities refused Audebert reentry; in 1938 he was arrested in Marseilles, under suspicion of espionage. The incidents were immediately settled through Dr. Alzheimer and his French connections and Audebert continued to operate.

Aside from the officials of the Munich, there are few German insurance executives with world-wide experience and reputation.

many the best possible reception. These efforts have proved most successful in the creation of foreign good will and business.⁸

CONTROL EXERCISED OVER CLIENTS BY REINSURANCE FIRMS

This highly developed system of service and security for the client company has, as its corollary, a control system on behalf of the reinsurance company, complete in every aspect—legally, financially, economically, and socially.

Administrative dependence.—Although on the surface the reinsured company seems to act independently and to possess all the characteristics of a national enterprise, it is de facto at the mercy of the reinsurer, less by the latter's possession of stock ownership than by the mechanism of the reinsurance treaty. In practice, the consent of the reinsurer has to be obtained not only for all business operations, but also in the selection of personnel, legal counsel, banks, actuaries, etc. Business policy and investments are dictated by the reinsurer. Young companies remain under this absolute tutelage for 10, 20, or 30 years, according to circumstances.

Dependence on personnel.—German reinsurance companies sometimes furnish the leading personnel, actuaries, and organization. For years the Munich hoarded experts in the field wherever they were found, not for its own use but to put them at the disposal of its insurance clients abroad. The Munich also acts as a kind of replacement and educational training center for future executives, training personnel in various countries through affiliated offices.

Financial dependence.—The German reinsurance companies have become the bankers of their clients. In some respects the reinsurer is a kind of silent financial partner in the business of the reinsured; he enables the latter to work with small capital, bolsters up annual statements, and in general makes such financial arrangements with the reinsured company as are necessary from the standpoint of competition, accountancy, state supervision, exchange situation, and financial security.

Long-term and shadow agreements.—The German reinsurance companies have always insisted upon long-term agreements. Cancellation clauses are regarded with suspicion. The outbreak of war between the parties stops all reinsurance business but modern treaties provide for so-called shadow arrangements. These provide for a change of contracts by substitution of third, neutral, parties if war prevents the original parties from continuing their relations.

Such shadow agreements are known to exist in practically all reinsurance contracts, i. e., the Union Insurance Co. of Zurich (controlled by the Munich) replaces the Munich in case Germany is involved in a war with the country of a partner. Similarly, the General Reinsurance Co. of Paris has inserted shadow clauses in their treaties with South American companies providing for transfer of the business to the Swiss-Reinsurance Co. of Zurich (controlling the French Reinsurance Co.) in case a state of war should exist between the company of the

⁸ As most recent examples, may be cited the following: An Insurance Research Institute was established in Vienna, later to be expanded to function as a full Academic Institute to study insurance relations with southeastern Europe (Frankfurter Zeitung, December 12, 1942). In May 1943, an important Inter-European Insurance Congress, attended by numerous executives from neutral countries, was held in Budapest and presided over by Dr. K. Schmitt, president of the Munich Reinsurance Co.

reinsured and France; shadow agreements in the second degree have been concluded between the Swiss Reinsurance Co. of Zurich and South American partners in case Switzerland should be involved in war, in which case the business would temporarily go to the North American Fire & Marine Reinsurance Co. of New York (controlled by the Swiss Reinsurance Co.).

Control by stock interest and treaty.—German control of reinsurance has been greatly facilitated in European countries by the lenient attitude which many state laws take with regard to reinsurance in contrast to American laws. Cash deposits are required only if the reinsurer writes direct business, but no deposit is needed for reinsurance. The German reinsurance concerns have well understood how to exploit this laxity.⁹

Control by reinsurance and control by stock are often applied simultaneously. Where no stock interest is held, restrictions are often placed upon the reinsuring office against transfer of its stock, thus preventing competitors from acquiring an interest in the reinsured company.

The German reinsurance concerns always relied more on control by treaty than on control by stock. They have never made a secret of the fact that their technique "achieves its aim through treaty, not through title."¹⁰ If the reinsurer holds stock of his client he may partly dispose of it after he had concluded the invariably long-term insurance treaties. In cases where he reinsures an existing company he need not even acquire a control of the stock because most of the shareholders will show little interest in the technical exploitation.

The few known stock interests which the Munich openly held in foreign countries were, for the most part, turned over when it became expedient, to firms in which the Munich had confidence. Thus, in September 1939, the vice president of the Munich immediately retired from the board of the Union Reinsurance Co. of Zurich, and the Berlin, Cologne, and Duesseldorf managers also retired from the Universale Insurance Co. of Zurich, although both companies continued to be fully controlled by the Munich and Gerling concerns, respectively. The resignation of the Magdeburg executives from the board of the Nord og Syd, Copenhagen, also promptly followed the outbreak of war but could not prevent its subsequent blacklisting by the British. Similarly, on April 21, 1939, the Munich disposed of most of the shares of the Pilot Reinsurance Co. (now vested) of New York to the Union Bank of Switzerland. Later 5,000 shares were transferred to the Atlas Reinsurance Co. of Stockholm; 1,000 shares to the Merwede of Dordrecht, Holland; 3,750 shares to the Svenske Veritas of Stockholm; and 3,750 shares to the Atlantica of Gotenburg. Still later, the Allianz transferred 3,600 shares of the Pilot to the Amsterdam von 1776.

⁹ There are various reasons why such treaties (reinsurance agreements) are concluded. Often the reinsurer has no government authorization to do business and there are many reasons why an application for such a license, which necessarily involves restrictions, should not be made. Such considerations are particularly important in connection with foreign companies. Often it is impossible to obtain a license Furthermore, it was always desirable to work abroad under the flag of a domestic company because one can procure the advantages of a domestic enterprise. Economically, such a procedure is nothing but the leasing of a foreign organization. . . . (Herrmansdorfer, *Technique and importance of reinsurance*, Munich, 1927, p. 365).

¹⁰ *Ibid.*, p. 365.

AXIS INSURANCE OPERATIONS AFTER THE OCCUPATION

INTERNAL DEVELOPMENTS IN GERMANY AND ITALY

Germany.—At the outbreak of the war the German insurance business was firmly entrenched and concentrated. Although more than 6,000 insurance carriers figured in official statistics, the majority had no more than local significance or were affiliated with one of the six important groups listed on chart 1.

The aggregate premium income of these concerns was more than 2.5 billion reichsmarks in 1939, while in the same year, foreign insurance companies, licensed in Germany, collected only 85 million reichsmarks in premiums; this discrepancy may be explained by the fact that foreign companies had for years been discouraged from operating in Germany and as a result their number was constantly decreasing.¹¹

CHART I.—*Important German insurance groups*

<i>Allianz</i>	<i>Agrippina</i>	<i>Aachen-Munich, Nordstern</i>
Allianz und Stuttgarter, Berlin. Allianz und Stuttgarter Leben, Berlin. Mercur, Bremen. Badische Pferde, Karlsruhe. Bayerische Vers., Munich. Globus, Hamburg. Hammonia, Hamburg. Kraft, Berlin. Neue Frankfurter, Frankfurt a. M. Union Hagel, Weimar. Wiener Allianz, Vienna.	Agrippina See—Cologne. Koelner Lloyd, Cologne. Mitteleuropäische, Cologne. Agrippina Allgem., Cologne. Patria, Cologne. Agrippina Lebens, Berlin. Bavaria, Nuernberg.	Aachener und Muenchener Feuer, Aix-la-Chappelle. Aachener und Muenchener Leben, Potsdam. Aachener Rueck, Aix-la-Chappelle. Fortuna Rueck, Erfurt. Hamburg-Bremer Feuer, Hamburg. Hamburg-Bremer Rueck, Hamburg. Motag, Berlin. Nordstern Allgemeine, Berlin. Nordstern Leben, Berlin. Oldenburger, Oldenburg. Schlesische Feuer, Breslau. Thuringia, Erfurt. Globus, Weim. Hamburger Allgemeine, Hamburg. Rueckvers-Vereinigung, Berlin. Wiener Rueck, Vienna.
<i>Deutscher Ring</i>	<i>Gerling</i>	<i>Magdeburg</i>
Deutscher Ring Lebens, A. G. Deutscher Ring Transport, A. G. Deutscher Ring Kranken Verein A. G. Deutscher Ring-Oesterreichische A. G., Vienna.	Friedrich Wilhelm Leben, Berlin. Gerling-Konzern Allgem., Cologne. Gerling-Konzern Leben, Cologne. Gerling-Konzern Rhein, Cologne. Gerling-Konzern Rueck, Cologne. Magdeburger Lebens, Magdeburg.	Magdeburg Allg. Leben, Magdeburg. Magdeburg Hagel, Magdeburg. Magdeburg Rueck, Magdeburg. Union and Rhein, Cologne. Aachen-Leipzig, Leipzig. Donau, Vienna. Concordia, Reichenberg.

According to their country origin, there were, in Germany, 19 foreign companies with head offices in London,¹² 15 in Switzerland,¹³ 6 in Holland,¹⁴ 6 in Sweden,¹⁵ 6 in United States,¹⁶ 5 in Denmark,¹⁷ 5 in Italy,¹⁸ and 2 in Japan,¹⁹ Norway,²⁰ and Hungary,²¹ respectively. The aggregate value of the German assets of these companies amounted to 295,000,000 reichsmarks in 1938. The premium reserves deposited in Germany amounted to 219,000,000 reichsmarks and the loss reserves to 14,000,000 reichsmarks. The investments in Germany of the foreign companies were distributed as follows:

	<i>Marks</i>
Mortgages.....	109, 000, 000
German securities.....	68, 000, 000
German public loans.....	38, 000, 000
German real estate.....	24, 000, 000

¹¹ In 1931 there were 73 foreign insurance companies licensed by the government, in 1937 the number had shrunk to 61, at the outbreak of the war in 1939 there were 51.

The lion's share of these investments was carried by the Swiss Life & Annuity Insurance Co. of Zurich. Of the 44 British companies operating in Germany at the outbreak of the war, 25 transacted only transport insurance, a branch not subject to state supervision so that returns are not available. In the field of fire insurance, British companies had a premium income of 19,000,000 reichsmarks with the North British & Mercantile and the Commercial Union leading all other British companies. Automobile business followed with a premium income of 12,000,000 reichsmarks and burglary with 1,000,000 reichsmarks.

The absorption of British business in Germany by German offices offered no problem. At the instance of the German State Insurance Supervision Board, the German representatives of all English companies transferred their business without compensation to the following companies:

Alliance Assurance Co. to the Erste Allgemeine, Vienna.
 Atlas Assurance Co. to the Erste Allgemeine, Vienna.
 Commercial Union to the Aachen-Leipziger, Aix-la-Chapelle.
 Eagle Star, London & Lancashire, Palatine Insurance to the Deutsche Sachversicherungs A. G., Hamburg.
 The Fine Art & General, North British & Mercantile to the Allgemeine Feuerassuranz, Berlin.
 Guardian Assurance, London Phoenix to the Albingia, Hamburg.
 Legal & General Assurance to the Oldenburg Versicherung, Oldenburg.
 Liverpool & London & Globe to the Aachen & Munich Fire, Aix-la-Chapelle.
 Norwich Union to the Agrippina Allgemeine, Cologne.
 Pearl Insurance Co. to the Securitas Bremer Allgemeine, Bremen.
 The Northern Assurance Co., Royal Insurance Co. to the National, Stettin.
 Prudential Insurance Co. to the Nordstern, Berlin.
 Sun Insurance to the Mannheimer Insurance Co., Mannheim.

Some of the German nationals insured in British companies protested against compulsory transfer of their policies to another company and requested either cancelation or free transfer to another underwriter of their choice. The German authorities seem to have opposed such individual solutions.

¹² England:

Alliance: Fire premium income, 492,118 reichsmarks (1938); profit, 53,075 reichsmarks.
 Atlas: Fire premium income, 521,343 reichsmarks (1938); profit, 48,746 reichsmarks.
 Commercial Union: Fire premium income, 1,404,256 reichsmarks (1938); profit, 5,523 reichsmarks.
 Eagle Star: Fire premium income, 145,062 reichsmarks (1938); loss, 4,078 reichsmarks.
 Guardian Assurance: Fire premium income, 419,689 reichsmarks (1938); profit, 29,781 reichsmarks.
 Phoenix: Fire premium income, 719,842 reichsmarks (1938); loss, 31,385 reichsmarks.
 London & Lancashire: Fire premium income, 17,411 reichsmarks (1938); loss, 2,837 reichsmarks.
 Palatine: Premium income, 112,720 reichsmarks (1938); profit, 159,960 reichsmarks.
 Fine Art & General: Fire premium income, 17,314 reichsmarks (1938); profit, 3,404 reichsmarks.
 North British & Mercantile: Fire premium income, 1,724,505 reichsmarks (1938); loss, 201,087 reichsmarks.
 Legal & General: Fire premium income, 313,215 reichsmarks (1938); loss, 717 reichsmarks.
 Liverpool & London & Globe: Fire premium income, 300,914 reichsmarks (1938).
 Norwich Union: Fire premium income, 37,116 reichsmarks (1938).
 Pearl: Fire premium income, 62,590 reichsmarks (1938).
 Northern Insurance Co.: Fire premium income, 98,650 reichsmarks (1938); loss 1,125 reichsmarks.
 Royal: Fire premium income, 358,630 reichsmarks (1938); profit, 905,038 reichsmarks.
 Prudential: Fire premium income, 614,980 reichsmarks (1938); profit, 27,497 reichsmarks.
 Sun: Fire premium income, 190,431 reichsmarks (1938); loss, 4,371 reichsmarks.
 London Assurance: Fire premium income, 20,078 reichsmarks (1938); loss, 4,531.
¹³ Switzerland: Helvetia, Alpina, Basle Life, Basle Transport, Federal, Neuchatel, Switzerland, Schweizerische Leben, Schweizerische National, Winterthur, Union Swiss, Vita, Winterthur Life, Winterthur Accident, Zurich.

¹⁴ Netherlands: Batavia, Brand of 1790, Netherlands of 1845, Gravenhaag, Netherlands Brand of 1842, Noord Zuid.

¹⁵ Sweden: Skane, Svea, Atlantica, Gouthlod, Oeresund, Sverige.

¹⁶ United States: Glens Falls Insurance Co., Great American Insurance Co., Hartford Fire Insurance Co., Northern Insurance Co. of Hartford, Home Insurance Co., Westchester Fire Insurance Co.

¹⁷ Denmark: Baltica, Denmark, Brand Asssekuranz, Nye Danske of 1864, Nordisk Brand Insurance Co.

¹⁸ Italy: Assicurazioni Generali, Europa, Fiume, Levant, Riunione Adriatica.

¹⁹ Japan: Imperial Marine & Fire Insurance Co., Tokio Marine & Fire Ins. Co.

²⁰ Norway: Vega, Aeolus.

²¹ Hungary: Fonclere, Union.

In addition to their direct interests, British companies were known to have had share holdings, estimated at 10,000,000 reichsmarks, in German companies. The Guardian of London had reorganized the Albingia of Hamburg, the Sea Insurance Co. of London had acquired an interest in the Deutsche Versicherungs Gesellschaft of Berlin, and the Securitas of London was an associate office of the London Insurance Co. The latter German companies are the principal insurance carriers for the leading shipping concerns, the North German Lloyd and the Hapag now merged into the German American Shipping Co. Interlocking directorates strengthen the reciprocal relations. The Victory of London was represented on the boards of the Anglo-Danubian Lloyd of Vienna and of the Providentia of Berlin. Willis Faber and Dumas, well-known Lloyd's underwriting firm, was represented on the board of the Deutscher Lloyd, an affiliate of the Italian Generali; and Henry I. Schroeder was represented on the board of the Allgemeine Feuer Assekuranz.²²

At the request of the German authorities, these affiliations were dissolved, the board memberships canceled, and the stock transferred to German companies without compensation. No retaliatory measures could be taken in Great Britain because German companies did not operate there directly.

American and German insurance has been noncompetitive ever since the last war. The fate of the insignificant American portfolios in Germany is unknown. On April 14, 1942, the United States was classified as an "enemy country."

Aside from the companies in Alsace-Lorraine (see country reports below), no problems have arisen with regard to French companies, for none was concessioned in Germany at the outbreak of the war. Since then French insurance interests have not sought admission to Germany, notwithstanding the unparalleled influx of German insurance in France since 1940.

Italy.—As in the case of Germany, Italy before the war was already on the way to "nationalization" of its direct home insurance business by the exclusion of foreign firms whose number decreased from 81 in 1912 to 65 in 1922, 49 in 1932 and to only 34 in 1938. Their share in the Italian business decreased even more rapidly, as shown by the following figures:

Premium income in Italian direct business

(Millions of lire)

	1903	1912	1922	1932	1937
Home companies:					
Life.....	16.12	29.48	244.35	676.18	965.17
Fire and general.....	44.23	86.29	514.16	685.32	941.94
Total.....	60.35	115.77	758.52	1,361.50	1,907.11
Percentage.....	53.3	59.8	88.6	92.2	95.4
Foreign companies:					
Life.....	26.57	41.53	2.56	17.87	6.65
Fire and general.....	25.85	42.83	95.30	96.09	81.14
Total.....	52.43	84.37	97.86	113.96	87.69
Percentage.....	46.7	40.2	11.4	7.8	4.6
Total business.....	112.79	200.14	856.39	1,475.46	1,994.80

²² According to Die Bank, June 24, 1942, the former Henry I. Schroeder interests' are now jointly owned by the Munich and the Assicurazioni

In the last 25 years, therefore, the share of foreign companies operating in Italy has fallen from 40.2 percent to 4.6 percent of the domestic direct business.

During and after the Ethiopian conflict British companies became subject to particular discrimination. At the outbreak of war in 1939, there were only seven British companies operating in direct business in Italy (Alliance, Commercial Union, Eagle Star, Liverpool & London, Globe, Norwich Union, Sea and Sun) with a total annual premium income of about 30,500,000 lire. The direct business of the Italian companies in Great Britain was even less; the Assicurazioni Generali of Trieste was the only company doing direct insurance (in marine business only). Considerable marine and other business, however, was placed with Lloyd's.

When war began, an immediate solution had to be found for the problems of marine insurance and the procurement of a substitute for the now unavailable British insurance market. On June 11, 1940, an emergency pool was created, the Centro Temporaneo di Compensazione Riassicurativa to which was transferred all shares formerly owned by, and all contracts concluded with, British and French companies. The Centro retroceded the risks thus accepted with German and Swiss reinsurers.²³

This expediency measure was followed on October 21, 1940, by the formation of a new Italian reinsurance enterprise, the Roma, with a capital of 200,000,000 lire of which 100,000,000 lire were immediately subscribed by the Assicurazioni Generali, 68,000,000 lire by the Istituto Nazionale, 20,000,000 lire by the Riunione Adriatica and 12,000,000 lire by the Unione di Riassicurazione. The rest was distributed among four other Italian groups. Together with the already existing Unione Italia d'Assicurazioni (founded by 56 Italian and 22 foreign companies working in Italy with the cooperation of the state-owned Istituto Nazionale which owned one-third of the share capital) the Roma with its enormous capital resources constitutes for all practical purposes a state reinsurance monopoly. The Roma is interlocked with the Government and leading Italian insurance concerns through the personnel of its directorate: Senator G. Bevione, is also president of the Istituto Nazionale; Volpi di Misurata is also chairman of the Generali; Ambassador Suvich is also president of the Riunione. Ambassador Giannini and Count Piombine are on the board. At the outset, German insurance interests opposed the Roma, describing it as a "miscarriage" and declaring that Italy is too small for the necessary acquisition and distribution of risks of so large an insurance concern. No further German criticism, however, has been forthcoming since Italian reinsurance interests have been invited to assume a major role in the Munich pool. (See ch. IV.)

As in reinsurance, the Italian direct insurance market is now highly concentrated. According to the latest figures, joint-stock companies had a total gross premium income of 1,920,000,000 lire; of this the Assicurazioni Generali group wrote 623,000,000 lire (32.5 percent), the Riunione Adriatic group 431,000,000 lire (22.4 percent); and the Istituto Nazionale group 295,000,000 lire (15.4 percent), a total of seven-tenths of all business written by the three groups. Some of the minor companies are also partly under the control of one or another

²³ The ban and seizure on French firms in Italy was lifted in 1942.

of the major groups. The third group, the Istituto Nazionale, includes, besides the Fiume and the Assicurazioni d'Italia, the Unione di Riassicurazione, which, although it has substantial home and foreign backing from private insurance companies, is closely allied to the Italian State Life Assurance Office, which holds one-third of the Unione's capital. In 1942, the Istituto Italiano announced premium returns of 80,300,000 lire, a 20-percent increase in business, and the establishment of branches in Spain, Croatia, Greece, Montenegro, Dalmatia, and Serbia. The premium returns are the highest in the history of the corporation.

All marine and aviation war-risk insurance must be ceded entirely to the Unione which maintains the business for the account and in the interest of the state.

Generally speaking, the Italian insurance industry is not and never was financially or economically dependent upon Germany. In particular the two leading concerns—Generali and Riunione—are self-sufficient and cannot be considered as affiliates or subsidiaries of the Munich,²⁴ although they have always maintained friendly relations with German companies.

The foreign facilities and experience which these two Italian concerns have acquired in the foreign field, represented by shareholdings in more than 100 companies in 25 countries, furnishes a key to the understanding of the German-Italian collaboration in matters of insurance. The Italian partner is more a liability than an asset in some fields of collaboration, but in insurance the participation of the leading Italian companies has from the very beginning been considered highly profitable and useful for the establishment of the new order. The Italians have much longer experience in certain foreign insurance fields, than the German offices. The Germans also are aware that Italians and Italian companies are more welcome than they in Spain and Spanish-speaking countries. Reiterated statements of friendship and insurance cooperation between Germany and Italy must not, therefore, be taken solely as the boasting of the Axis propaganda ministries, but as a sincere expression of a policy which actually works for the benefit of both partners.²⁵

Evidence of collaboration is obvious in the occupied countries where there are an increasing number of insurance companies jointly administered by Italian and German interests. Recent instances of this kind are Italo-German participation in the Dacia Romania of Bucharest and the Steaua Romaniei of Bucharest, the allocation by Germany,²⁶ of one-third of the British business in France to Italian companies, the large infiltration of Italian insurance companies into Holland where they had little business before, the management of German Nordstern agencies abroad through Italian agencies and brokers, and last but not least, the very friendly connections existing between the Munich, on the one hand, and the Riunione and Generali, on the other.

The Munich for example, is represented on the board of the Internationale Unfall of Vienna, a Riunione subsidiary, now acting as receiving company for German interests in the merger of the Allge-

²⁴ As erroneously done in the Economist, July 16, 1938.

²⁵ This development is the more remarkable after the humiliating blows which Italian insurance companies suffered in Austria in 1938.

²⁶ There has always been and still is a strong resentment against Italian insurance throughout France.

meine Feuer Assekuranz. Italian names have also been used in instances where it was opportune for the Germans to stay in the background. Thus, in 1939, Mr. A. Schaefer, vice chairman of the Erste Allgemeine, Vienna, retired from the board and was succeeded by Count J. Volpi di Misurata, chairman of Assicurazioni Generali. In recognition of the assistance rendered by the Italians, the Germans advised Dutch insurance representatives and brokers not to forget Italian companies operating in Holland, suggesting that part of the Dutch risks should be placed with them.

Partnership between German and Italian interests in occupied countries is also fostered by exchange of personnel, establishment of interstate committees, and promotion of research and technical facilities. Recently the issuance of a special German and Italian insurance dictionary has become necessary. It will be noted, however, that there is no counterpart for such fraternization within the respective mother countries. The important positions which the Generali and the Riunione had to give up in Austria, under German pressure, have not been restored to them nor has any new influx of Italian interests been permitted in Greater Germany. Obviously, the German companies are not anxious to accept Italian business because of the heavy losses particularly in fire insurance, which they sustained in Italy in 1940-41.

Since the incorporation of Austria, conversely, only one German company has direct agencies in Italy, the Donau-Concordia, which does a modest fire business. On November 27, 1940, the Allgemeine Wiener Elementar, applied for a transport insurance concession for Italy, but it was not until July 28, 1942, that this license was issued.²⁷ The only Italian company with strong German affiliations is La Pace of Milan, which is controlled by the Munich.

COUNTRY REPORTS

Austria.—Apart from agencies of British companies, the only important remaining British interest when the Germans moved into Austria in March 1938 was the Anglo-Danubian Lloyd. At that time Italy held the preeminent position in Austrian insurance which the Generali and Riunione had practically bought out.

The period between the annexation of Austria by Germany and the outbreak of the war was marked by regrouping, reduction, and Germanization of the Austrian insurance industry, clearly designed to shut out the Italian interests. The Generali and the Riunione had to abandon their important positions to German organizations; and the following Austrian and former Italian companies, owned by Generali and Riunione, respectively, were transferred to German interests:

Erste-Allegemeine Unfall to Wiener Allianz.
 Allianz Gisela to Ostmark.
 Internationale Unfall to Nordstern.
 Istituto to Deutscher Ring.
 Heimat to Leipziger Feuer.

²⁷ Nachr. f. d. Aussenhandel, October 15, 1942.

The Vienna interests of the Phoenix Co., hitherto held by the Italians, were concentrated and merged with German portfolios:

Erste Niederösterreichische, taken over by Ostmark.

Anglo Elementar, taken over by Colonia.

Vaterlaendische Budapest, taken over by Colonia.

Slavia Prag:

Life, taken over by Oevag.

Fire, casualty, taken over by Wechselseitige.

After 1939 the trend was reversed and Germany began to do business with Italy. As a result the Generali and the Riunione became active again in Austria. Ultimately the Generali interests were grouped around its Austrian subsidiary, the Erste-Allgemeine of Vienna, which took over the German business of Assicurazione Generali, and a part of the Sudeten business of the Securitas, the Moldavia Generali and the Insurance Office of the Fermentation Industry, all of Prague. Erste-Allgemeine has also opened numerous offices throughout the Balkans, particularly in places and countries where the Trieste companies of the former Austro-Hungarian monarchy had a foothold.

A considerable amount of rationalization of local offices occurred when the business of no less than 1,400 local insurance associations was transferred to seven private insurance companies, mostly Munich owned, namely, the Allianz, Deutscher Ring, Donau, Ostmark Versicherung, Ostmaerkische Volksfuersorge, and Wiener Staedtische und Wechselseitige. The Wiener Staedtische now controls the Danubia, Ostmaerkische, and Wiener Wechselseitige Kranken.

The remnants of foreign influence are now completely eradicated. The Vienna Reinsurance Co., which belonged to Svea of Gothenburg, was acquired by the Nordstern of Berlin, and the Anglo-Danubian Lloyd, which passed from British (Commercial Union) into German (Munich) hands as early as 1938, took the German name, Danubia, in 1940. Under German direction these companies are now doing business throughout the Balkans.

As in banking, Vienna is now the "brain center" for the Balkan insurance business. For psychological and historical reasons the German and Italian concerns prefer to control the southeastern markets through their affiliations in Vienna rather than from Munich, Berlin, Trieste, or Rome. The following is a survey of the present field of activity of the Vienna insurance companies, all German or Italian controlled:²⁸

The Allgemeine Elementar Versicherungs-Aktiengesellschaft works directly in Italy, Serbia, Croatia, Slovakia, and Hungary. It transacts all types of insurance such as fire, theft, interruption of work, glass, transport, luggage, motor, accident, liability, damage by acts of violence, hail, breakdown of machinery, and cattle. The Anker company works directly in the Protectorate, in Slovakia, and in Hungary. Although its chief business is life insurance, it transacts other types of insurance as well, especially in southeast Europe. The Danubia is licensed for all types of insurance in Hungary, with the exception of hail and transport, and for fire, accident, transport, and liability insurance in Rumania. The Deutsche Ring insures sickness in Slovakia; Donau-Concordia does all types of insurance in Hungary, the Protectorate, and Slovakia, and mainly life insurance in Turkey.

²⁸ Comp. Neues Wiener Tageblatt, December 17, 1942.

The Internationale Unfall and Schaden is active in Hungary, Croatia, and Serbia; the Ostmaerkische Volksfuersorge in Slovakia; and the Wiener Staedtische and Janus in Hungary, Croatia, and Serbia where it took over the portfolios of three French companies.²⁹

Moreover there are close contacts between Vienna and the south-east by means of large-scale participations in local companies. Among these contacts are: The participation of the Allegemeine Elementar in the Alemannia company in Rumania, of the Anker in the Turul in Hungary, of the Donau-Concordia in the Dunov in Serbia and in Agronomul in Rumania, the Erste Allgemeine Unfall und Agronomul in Rumania, the Erste Allgemeine Unfall und Schaden in the Sava in Serbia and the Wiener Staedtische and Janus in the Nationala in Rumania. Finally it is necessary to mention in this connection the Wiener Allianz, which has recently entered into contracts with companies in Rumania and Hungary.

Baltic States.—Information from these areas is scarce. It seems that in the territories occupied since the beginning of the drive against Russia the Nazis are making use of the branch offices of the Insurance Institute of the Soviet Union (Gosstrach). Life and fire insurance is underwritten by the Gosstrach office in Riga, which acts also as broker for a marine pool. New branch offices of German societies have been opened.

All business in Estonia, Lithuania, and Latvia is now reinsured with the German pool but the insurance coverage is as yet incomplete. Liability insurance, motor insurance, and burglary insurance were suspended until the beginning of 1942.³⁰ Accident insurance will be reinstated in 1943 but, as was the case in Poland, life insurance has completely broken down and there are no signs of its reestablishment. Compulsory insurance contracts concluded under the Soviets were canceled with the exception of the compulsory fire insurance of buildings.

A similar situation exists in Galicia where the Russian insurance monopoly Gosstrach is now taken over by a similar German monopoly. It seems that no private insurance carriers will be admitted.

Bulgaria.—The Bulgarian insurance business was dominated by mutual companies owned by Bulgarian capital, while foreign capital was predominant in the stock corporations. The Bulgaria General and the Bulgaria Reinsurance were owned by French interests, while the Riunione and the Generali were represented by agencies and by companies organized under the law of Bulgaria, the Bulgarian Phoenix and the Vitocha.

The Germans owned the Orel while Nordstern and Victoria were represented by agencies. There were, in addition, three French agencies, one Spanish, and one Swiss.

As Bulgaria is treated as an ally, the influx of German insurance interests is carried out on a "friendly" basis. Both local and foreign activities seem to be continuing operations, although in fact they have come under German domination through reinsurance. British and French influence is eliminated. The Bulgarian agencies of the British Alliance and London Phoenix were closed in 1941 and their portfolios taken over by the Bulgaria. New German agencies were opened by the Danubia and by Donau-Concordia, the former belong-

²⁹ Frankfurter Zeitung, March 10, 1943.

³⁰ Frankfurter Zeitung, December 31, 1942.

ing to the sphere of influence of the Munich, the latter to the Colonia. Donau-Concordia also took over the Macedonian interests of the Yugoslav Dunav. A newly opened office of the Nordstern gets the greater part of insurance on tobacco plants and shipments.³¹

In October 1942 an elaborate treaty-agreement between Bulgaria and Germany came into force providing social insurance against sickness, accident, and old age for Bulgarian workers, farmers, and others employed in the German war industries outside of their home country.

Czechoslovakia.—Czechoslovakia had very strong insurance connections with foreign countries in the period of the Republic. The direct business of foreign companies in the country was considerable although it decreased steadily. The 15 foreign companies operating in the country derived the following premiums:

[In millions of Czech kronen]

	1927	1930	1933	1934	1936	1937
Life.....	205.14	345.68	370.03	304.41	195.16	193.33
Fire and general.....	210.40	252.72	143.06	134.18	130.11	134.68

The direct foreign business of the Czech companies was insignificant; they had branch offices only in Austria. International reinsurance connections of the Czech companies were strong, on the other hand, as is illustrated by the following figures of reinsurance premiums paid to and received from foreign countries by Czech companies:

Reinsurance premiums

[In millions of Czech kronen]

	Paid abroad		Received from abroad	
	1929	1930	1929	1930
Life.....	98.39	103.14	10.53	21.88
Fire and general.....	269.16	266.62	146.38	167.59

When the Germans entered Czechoslovakia in March 1938, they applied the same methods which had been put into force in the Sudetenland some months before, namely:

(1) Existing German, Austrian, and Italian companies remained unaffected.

(2) Czechoslovakian and most of the foreign companies were forced out of business and their portfolios were taken over by German and Italian enterprises.

(3) The number of companies was reduced and a sharp concentration took place.

In the Sudetenland alone, 70 mutual companies were merged into one major undertaking and some 25 Czechoslovak companies were forced to dispose of their not unimportant Sudeten-German business. Two Czechoslovak companies moved their head offices to the Sudetenland. There are now in operation in the Sudetenland 18 major

³¹ Deutscher Volkswirt December 4, 1942.

companies of German, Austrian, Italian, and Swiss origin; six of these, including one Italian company, have a direct annual premium income of more than 3,000,000 reichsmarks. Two of the 11 life companies also have an annual premium income exceeding 3,000,000 reichsmarks. The total premium income in Sudetenland is estimated at from 12,000,000 to 14,000,000 reichsmarks in life, and about 30,000,000 reichsmarks in other branches.

In Slovakia a similar concentration took place. The number of companies was reduced from 63 to 44 and after the establishment of an independent Slovak state, a further drastic curtailment occurred. These 12 companies are now officially classified in four groups.

- (1) Slovakian group:
Karpattia, Pressburg.
Slovakische Versicherungs A. G., Bratislava.
Tatra Versicherungs A. G., Bratislava.
- (2) German group:
Donau-Concordia Allg., Vienna.
Donau-Concordia Life, Vienna.
Allg. Elementar, Victoria, Berlin.
Ostmaerkische Volksfuersorge, Vienna (which also took over the portfolios of the Swiss-owned Anker of Vienna).
- (3) Bohemian-Moravian:
Allg. Ver A. G. Bruenn, Prague.
Europaeische Gueter, Prague.
Landesversicherungsanstalt, Bruenn.
- (4) Italian group:
Moldavia-Generali Securitas Allg. Vers.
Anstalt, Prague-Trieste.
Riunione Adriatica, Trieste.

All other companies, including the powerful Slavia of Prague, with a premium income of 132,000,000 kroner in 1940, had to transfer their business to those selected 12 firms.

No genuine Czech company exists any longer in Bohemia proper. The Prager Staedtische, backed by German reinsurance, has absorbed no less than five important Czech companies, namely the Versicherungsanstalt, the Allgemeine Assekuranz, Linde, Patria, and Prager Lloyd. A new life insurance company, the Star Life of Prague, was organized in October 1942 by the Deutscher Ring of Hamburg and Vienna. It succeeded the Vienna Phoenix in the important position that company formerly held in Bohemia. High Nazi officials are represented on the board; the president is Mr. Strauch, the deputy leader of the German labor front, and the general manager is Mr. Kratochwill of Hamburg.

Notwithstanding this Germanisation, or perhaps because of it, business is very bad, as the Deutsche Volkswirt admits on December 4, 1942 in a special article on "The high costs of Protectorate-insurance."

Denmark.—On April 9, 1940, when Denmark was invaded, 53 British and 11 German companies were authorized to transact business in Denmark. According to the latest available report of the superintendent of Danish insurance, the British companies then had a premium income of 10,774,000 kroner more than three-fourths of the total premium income written by foreign companies. The largest company was the London Guarantee & Accident, which had a premium income of 3,509,000 kroner; the General Accident of Perth came next with 1,030,000 kroner. There was also considerable exchange of reinsurance business between Denmark and Great Britain; Den-

mark itself had three professional reinsurance companies of international reputation.

After England and Denmark became technical enemies, the Danish State Insurance Department prohibited free activity on the part of the British and French companies in the country. In expectation of an invasion and consequent severance of foreign relations, shadow agreements had been inserted into the treaties; all of the larger British agencies had made provisional agreements transferring their business to Danish companies in case of invasion. These agreements went into operation with the sanction of the Danish insurance authorities and without disturbance by the Germans. The Scandinavia of Copenhagen thus took over the Danish business of the Royal Exchange, the Norwich Union Fire, the North British & Mercantile, the Northern Assurance, the London & Provincial Marine & General, and also that of La Providence Fire of Paris.

It was intended that the portfolios of the other British companies should be pooled into a new company. The negotiations took so long, however, that those offices which could not transfer their portfolios to individual Danish companies, were finally liquidated.

Since then, the local supervisory authorities seem to have been allowed to carry on without much interference by the Germans. The Danish insurance companies apparently prefer to remain self-contained and to accumulate risks between themselves rather than to seek assistance from abroad.

There are good reasons for this lack of German interference in the case of Denmark. The biggest Danish insurance asset, the Danish fleet and its cargoes, was in Allied hands when Germany invaded Denmark, while practically the entire marine business was reinsured in or retroceded to London. Now the Danish companies have to pay not only their own claims but also those of their reinsurer, and consequently, they have to advance to their customers the full reinsurance sums for the Danish fleet, at least until the war is over. Provisions were made that part of the loss reserve, which relates to ships-hull business, will only be liquidated when the war is over and the ship owners in Denmark can recover their vessels now serving with the Allies. The Danish marine companies are practically in a state of bankruptcy. War-risk insurance is conducted through two state institutes with a capital of 80,000,000 kroner (hull) and 40,000,000 kroner (cargo). The guarantee capital of these institutions has been officially declared as lost.

The Germans found the Danish fire business in a somewhat better situation. Although the greater part was reinsured with English and French companies, these companies had deposited a premium reserve with reinsuring offices in Denmark. With German approval, the Danish direct companies formed a pool which accepted those treaties previously held by British and French reinsurers and the co-insurance placed with Danish agencies of British and French companies. The pool is reported to constitute a dangerous accumulation of target risks. As the Germans do not seem to have accepted retrocessions in any substantial amounts, the loss to Danish capital will be severe should a bombardment or conflagration take place.

The existing German facilities in other branches, such as the Magdeburg Fire Insurance Co. which also holds the controlling interest of the Nord og Syd and other German agencies admitted to transact business in Denmark before the war, absorbed a considerable portion

of profitable Danish business. The biggest Danish reinsurance company, the Scandinavia, which took over important British portfolios, is now reportedly dependent on the Munich Reinsurance Co.

According to the latest figures (*Neue Zuercher Zeitung*, December 19, 1942) all English companies have now been liquidated; 19 German, 15 Swedish, 10 Norwegian, 7 Swiss, and 5 Dutch companies are admitted to transact business in Denmark.

France.—Before the outbreak of the war, France was a favorite country for British business. According to a comprehensive survey which appeared in the *Frankfurter Zeitung* on February 17, 1943, English companies held nearly half of the French portfolios in 1939, amounting to 90 billion francs. It is estimated that accumulated British funds in France amounted to £20,000,000, though, of course, there were certain offsetting liabilities. Neither the British nor the French have ever published official figures on the premium income, but it is known that the French marine market was completely dependent on London and that London absorbed a considerable proportion of the French fire business. On the other hand, no shadow agreements were negotiated between London and Paris offices because a collapse of France was considered impossible.

When France fell, all British insurance offices were closed both in the occupied and unoccupied areas. The assets then frozen amounted to 600,000,000 francs according to German sources.³² The Vichy Government took the "low cash position" of the companies as a pretext for closing those in then unoccupied parts of France. An early decree entrusted the continuance of life, motorcar, and workmen's compensation policies to administrators and provided for the cancelation or suspension of all other insurances. A marine-insurance pool which, since 1941, functions on a corporate basis by establishing a marine-insurance exchange somewhat along Lloyd's principles, was hurriedly set up after the armistice, and backed by German reinsurance facilities. German and Italian offices were opened in all important ports, the Gerling Konzern has representatives at Bordeaux and Le Havre, Aachen-Munich at Bordeaux, Havre, and Nantes, and the Italian Vittoria all along the Mediterranean coast.

The replacement of former British business offered a suitable starting point for German penetration throughout France. An agreement was made with the French Insurance Department in Vichy and the German Central Organization of Insurance Carriers, whereupon a blanket concession was issued for the opening of new agencies of German companies in France. A dozen German offices were thus opened, among them Nordstern which acquired most of the former British business. In 1941, Nordstern sold in France over 21,000,000 francs in premiums compared with none in 1939.³³ The Germans also insisted that every insurance office in France or Algiers must represent at least one German insurance company. The British business seems to have been distributed between the German and Italian companies in the ratio of two-thirds to one-third.³⁴

³² *Frankfurter Zeitung*, February 17, 1943.

³³ Confidential information.

³⁴ Recent reports indicate that in some instances, wholesale transfers of British portfolios to newly admitted foreign branches of German companies have taken place. For example, Colonia administers the Dutch interests of the Gresham Life Assurance Society and the French interests of the Norwich Union Life Insurance Society in Paris (*Deutscher Volkswirt*, Dec. 4, 1942). *Volksfuersorge Lebensversicherungs A. G.*, Hamburg, is in charge of enemy portfolios in Alsace-Lorraine, Luxembourg, France, Holland, and Belgium (*Deutscher Volkswirt*, Nov. 20, 1942).

An agreement was then signed by the German Central Organization of Insurance and its French counterpart, whereby all British business was to be distributed between German and Italian companies to the exclusion of the French, in order "to avoid further interference by the authorities" as the Germans put it.

Since then the number of Axis and Axis-controlled companies which have entered France has increased to 80. The Germans also compelled the cancelation of all reinsurance agreements with companies not friendly to the Germans and the placing of the business with German companies.

The Comite d'Assureurs Francais, run by influential but reactionary, unreliable, and opportunistic French insurance executives who act on German advice, has become the instrument for the regimentation of all the multiple French insurance companies. The committee acts as the French counterpart of the official German insurance group; admission to membership is now a prerequisite for doing business in accordance with the law for the exercise of professional activities in France. Decrees of August and September 1942 provide that no insurance employee, agent, or salesman may be hired by any French insurance concern without prior consent of the committee.

Vichy French legislation has shown favoritism to Germany in other instances. A decree of September 15, 1941, provides for compulsory minimum premium rates, to which have to be added a surcharge of 25 percent. For companies which have operated in France less than 3 years, the increase is only 15 percent and for companies which took over portfolios of "withdrawn companies" (companies of enemy countries) the increase is only 10 percent. This method of rating gives a decided advantage to German companies in securing business, and by fixing minimum tariff rates the Germans moreover made sure that the business they are writing will not be unprofitable.

An outstanding feature of the German insurance penetration into France is that the German interests, having taken the cream of the French business by absorbing the former British accounts, are now reluctant to penetrate further. German companies leave the bulk of the remaining French business to French competitors. In general the German companies consider the French insurance market to be a highly competitive field lacking in energy and enterprise, and unable to create an insurance-minded public with its antiquated methods.

Taken as a whole, insurance business in France is described as "very good."³⁵ Part of the increase must be regarded as a reflection of inflation. Local companies also show drastic increases in share capital.³⁶

The method of increasing the capital is not stated but many French insurance companies and banks in pre-war days were known to have built up large hidden reserves by evaluating their properties at the pre-1914 gold value of the franc; probably the present increases are nothing more than revaluation of assets and liabilities.

³⁵ Frankfurter Zeitung, Feb. 17, 1943. Two Swiss life insurance companies increased their French income in 1941 from fifty-five to two hundred and sixty-three million francs. The total fire-premium income rose 40 percent in 1941 to 560,000,000 francs in 1943.

³⁶ The issued capital of the Soleil Capitalisation has been raised from 10,000,000 francs to 40,000,000 francs and the capital of three other Soleil companies has been raised from 12,000,000 francs to 48,000,000 francs. The capital of the Aigle Capitalisation has been raised from 10,000,000 francs to 40,000,000 francs; that of the Aigle Vie from 3,000,000 francs to 30,000,000; of the Aigle-Incendie from 7,200,000 francs to 28,200,000 francs; and of the Aigle-Accidents from 8,000,000 francs to 32,000,000 francs. The capital of Cie. Generale de Reassurances has been quadrupled to 60,000,000 francs and that of the Cie. Generale de Reassurances Vie doubled to 30,000,000 francs.

Alsace-Lorraine.—French and British insurance interests were very active in Alsace-Lorraine. For example, the Strassburg flour mills and port installations, the ore and steel mills around Metz, and the extended potash plants near Mulhouse were always regarded by the British as among the most profitable risks. Every French insurance carrier was automatically concessioned to operate in Alsace-Lorraine, and after 1918 no German company was allowed to operate there except in the inland marine field (Rhine shipping). When the Germans reentered Alsace in 1940, they fell heir to one of the most profitable enemy insurance agglomerations in occupied territory. The solution applied was simple and radical; all French and British insurance companies were treated in the same way, i. e., their concessions were automatically canceled as of June 15, 1940.

Policyholders were not permitted to cancel their contracts or select a company of their own choice. Supplementary insurance and covenants had to be concluded with the German enterprise to which the policy was transferred.

For a short period, premiums were collected by the Central Office for Foreign Insurance established in Strassburg, which then distributed the pending policies among purely German offices as follows:

1. The portfolios of Les Industriels Francais, Roubaix; L'Industrielle du Nord, Lille; L'Union-Incendie, Paris; Caledonian Insurance, Edinburgh; The Legal Insurance Co., Ltd., London; the Motor Union Insurance Co., Ltd., London; Northern Assurance Co., London; and Western Assurance Co., Toronto, were transferred to the Aachener, Aix-la-Chappelle.

2. The portfolios of the L'Abri, Paris; La Fonciere-Incendie, Paris; La Fonciere-Transport, Paris; La Providence-Accidents; La Providence-Incendie, Paris, and Prudential Insurance Co., Ltd., London, were transferred to Agrippina, Cologne.

3. The portfolios of Alliance Regionale, Paris; La Nationale-Incendie; La Nationale Risques Divers, Paris; L'Urbaine et La Seine, Paris; Alliance Assurance Co., Ltd., London; Commercial Union Assurance Co., Ltd., London, and Phoenix Assurance Co., Ltd., London, were transferred to Allianz, Berlin.

4. The portfolios of L'Abeille, Paris; Almelo, Paris; La Cite Accidents, Toulouse; Compagnie d'Assurances Generales, Paris; Le Nord, Paris; La Paix, Paris; La Participation, Paris; La Prevoyance, Paris; La Solidarite, Paris; Eagle Star Insurance, London; Guardian Assurance, London, were transferred to the Deutsche Sachversicherungs-Aktiengesellschaft, Hamburg.

5. The portfolio of La Concorde, Paris, was transferred to Erste-Allgemeine Unfall, Vienna.

6. The portfolios of Le Recours, Paris; Lloyds, London; Norwich Union, Norwich, were transferred to Gerling, Cologne.

7. The portfolios of Assurance Generale des Eaux, Lyon; Compagnie General d'Assurances, Paris; L'Europe, Paris; La France, Paris; Le Secours-Incendie; Le Secours-Accidents, Paris; and Royal Insurance Co., Ltd., Liverpool, were transferred to Gothaer, Gotha.

8. The portfolios of Compagnie d'Assurances Maritimes, Paris, and La Galmontoise, Paris, were transferred to Kraft, Berlin.

9. The portfolio of Rhein and Mosel, Strassburg, was transferred to Mannheimer, Mannheim.

10. The portfolio of La Protectrice, Paris, was transferred to Riunione Adriatica di Sicurtà, Trieste.

11. The portfolios of La Cordialite, Paris; Lloyd Continental Francais, Roubaix; Le Monde-Incendie, Paris; La Paternelle-Incendie, Paris; Le Patrimoine, Paris; La Sequanaise, Paris; British General Insurance Co., Ltd., London; Liverpool and London and Globe, Liverpool; London Guarantee and Accident, London; The National Insurance Co., Glasgow; Pearl Assurance Co., Ltd., London, were transferred to Victoria, Berlin.

12. The portfolios of La Confiance, Paris; La Flandre, Roubaix; La Metropole, Paris; La Preservatrice, Paris; Atlas Insurance, London; Employers Liability, London; Gresham Fire and Accident, London, and Law Union and Rock were transferred to Wuerttembergische, Stuttgart.

13. The portfolios of L'Aigle, Paris; Alsatia, Strassburg; Phenix, Paris; Soleil, Paris; Sun Insurance Office, London; Union Insurance, London, and Yorkshire Insurance Co., Ltd., New York, were transferred to Zentraleuropaeische, Berlin.

It will be noted that the Rhein & Mosel and the Alsacienne group, the leading local companies of more than 100 years' standing, were abolished or taken over. Alsace is one of the areas in which complete Germanization of insurance has taken place, for the obvious reason that the local companies could not be trusted to fall in line with the policy pursued by the new masters.

Hungary.—Foreign insurance influence was always strong in Hungary, where aside from 23 national companies, 34 foreign companies were admitted, writing 37.5 percent of the total business in 1940. Germany was then represented by only 14 companies which wrote only 10 percent of the total premium income. With the exception of the Donau-Concordia, none of the German companies attained a premium income of more than 2,000,000 pengoes. The best policies in Hungary were held by 11 active British companies which specialized in industrial risks. Practically the entire sugar and milling industry and the major part of the textile industry was insured with British companies which could operate more cheaply than their competitors and with higher profits because of the selective risks which they took.

Numerically and quantitatively the Italian influence was the strongest; Italian companies earned more than 20 percent of the total premium income. The Generali and the Riunione were represented both by agencies and by controlling stock ownership in local companies; namely, the Providencia and the Fonciere. The Italian Istituto Nazionale owned the controlling interest in the Astra.

The business advantages realized from the multiple annexations, "aryanization," and confiscations which were recently undertaken in Hungary have accrued chiefly to the Italians who, the Germans were aware, were more generally acceptable in Hungary. After the occupation of Czechoslovakia, the Generali took over the Moldavia of Prague; and the Fonciere, the portfolios of the Boehmische-Maehrische, the Merkur, and the Linde companies, all of Prague. The Transylvanian (formerly Roumanian) business was upon German request taken as a whole from Roumanian companies and given to

Italian firms, and to a lesser extent, to German agencies operating in Hungary.³⁷ After the completion of the Yugoslav campaign, the Fonciere increased its premium income to 20,400,000 pengoes in 1941 (1940: 16,700,000 pengoes) and absorbed the business, other than life, of the Rossija-Fonciere, Belgrade.

When relations with the British were severed, British agencies continued to operate, but they had to reinsure 100 percent with German and Italian agencies. Following these reinsurance commitments, a definite transfer of portfolios took place in 1942. The Erste-Allgemeine, an affiliate of the Generali, took over the portfolios of the Sun and Economic, while the Fonciere got the Royal Exchange. The Budapest agency of the Allgemeine-Elementar, Vienna, which formerly had belonged to the Commercial Union, was taken over by the Colonia concern. The portfolios of the Alliance, the Guardian, the Liverpool and Globe, and the Lancashire were transferred under global representation to the Generali. The policyholders were compelled to consent to these transfers which were, however, subject to the approval of the superintendent of insurance.

German agencies decreased in number rather than increased after Hungary became an Axis satellite, though there are a few instances of indirect expansion by acquisition of stocks. Thus, the Volksfuersorge of Hamburg secured the controlling interest in the Hungarian Life & Annuity Co. The First Hungarian General Insurance Co. of Budapest, in addition to the two British companies which it absorbed, took over the Klausenburger, the Zagreb, the Prager Boehmische, the Bruenn, the Domov, and the Slovak. The First Hungarian is now reported to be controlled by Nordstern interests.

It must be admitted that the Axis insurance expansion is also accompanied by organizational reforms which are an improvement over the highly competitive and uncontrolled practices of Hungarian insurance industry. The number of licensed insurance carriers has been reduced from 73 in 1926 to 33 at the end of 1942; foreign agencies shrank from 42 to 16.³⁸ Many unsound mushroom firms have been eliminated and the admittance of new carriers is temporarily closed (except for new German and Italian branches). Under German directives, the Decree No. 5900 of October 9, 1942, on State Insurance Supervision has been promulgated, requiring strong financial guaranties from the companies. A minimum capital of 500,000 pengoes is now necessary for all insurance enterprises and guaranty reserves must be kept in proportion to the premium income. No reduction of these reserves is permitted even if the premium income should subsequently decline.

Hungary seems to have become more insurance-minded. Fire and casualty premium income increased 22 percent in 1941 and now totals 92,400,000 pengoes, of which 32,600,000 were earned by foreign companies. Nevertheless, the sharp price inflation in the country considerably nullifies what appear to be gains in premium income.

Greece.—Insurance in Greece is hardly developed. Marine business comprises the largest part of what little business there is, and three-fourths of the total premium income went to foreign companies, practically all of them British agencies. Since the occupation, the Greek agents of British companies have made themselves independent and

³⁷ Nachrichten f. d. Aussenhandel, October 24, 1942.

³⁸ Frankfurter Zeitung, January 10, 1943.

have taken over individually the risks formerly written by their principals. As these risks exceeded by far the agents' economic resources, German and Italian reinsurance companies stepped in and covered a major percentage of the British risks by reinsurance. New licenses to transact insurance business were issued to the Agrippina of Cologne and the Victoria of Berlin. Generally, the Axis insurance companies have shown little interest in becoming further involved by taking over the former British business directly, for the claims ratio is obviously bad and the business unprofitable: "More than in any other country the insurance business in Greece is darkened by price inflation, which has completely overthrown traditional concepts of value."³⁰

For the same reasons the occupation authorities also suspended the State Reinsurance Institute which was established in 1940 as a reinsurance monopoly. The institute was liquidated in 1942 when German and Italian offices absorbed that portion of the reinsurance which they deemed profitable.

Low Countries: Holland and Belgium.—Prior to the invasion, the insurance situation in Belgium and Holland was alike in that the absence of state supervision made the Belgian and Dutch markets the least regulated in the world. Both countries were overrun with insurance offices, totaling over 700 in Holland and over 500 in Belgium in 1939; among this number were about twice as many foreign firms as domestic companies.

Germany had only a small share in these markets, although many German companies, particularly the Victoria, maintained large offices and staffs. As these concerns for years did little business, there is suspicion that they were only a front for espionage.

German reinsurance interests in the Low Countries, however, had firmer roots. One of the foremost Belgian fire-insurance companies reinsured with the Munich, and for many years before the invasion, German companies had successfully picked up the business in which British and American concerns were not interested. Three of the four professional reinsurance companies in Holland were in Axis hands. The Universeele was 100-percent owned by the Francona of Berlin, and the Deutsche-Nederland was an internal reinsurance office of the Gerling Konzern of Cologne. In 1939 Italian Generali interests formed another reinsurance company, the Algemeene Herverzekering, with a share capital of 1,000,000 guilders fully paid, of which 90 percent was subscribed by the Erste Allgemeine of Vienna, which in turn is a subsidiary of the Generali, while only the least important firm, the Netherland Herverzekering, was Dutch-owned. Soon after the foundation of this reinsurance company, the Erste Allgemeine disposed of its share holding and announced that three-fourths of the capital was held by Dutch interests and only one-fourth by the Generali. A Nazi on the board, Mr. A. Schaefer, was replaced by a Fascist, Count Volpi di Misurata, chairman of the Generali.

Notwithstanding these footholds, Axis interests held only a negligible share of the reinsurance business; all the profitable industrial and commercial risks were by and large placed in London, both directly or indirectly, with small parts going to Switzerland, Scandinavia, and France. British offices were also firmly entrenched in the

³⁰ Frankfurter Zeitung, May 23, 1942.

Belgian and Dutch colonial business which, before the invasion, was very profitable.

The severance of relations between the Low Countries and London resulted in a great loss to the British offices of income from direct and reinsurance business. Although neither Belgium nor Holland had required deposits except in life insurance, to be made with their governments, fairly substantial cash balances were built up and maintained. There were also losses in holdings since British insurance companies had substantial capital interests invested in local companies.

Apart from their own organizations, the Royal Exchange of London owned the Amsterdam-London Insurance Co., the London & Lancashire Insurance Co. operated the Noord Zuid, and the Sun Insurance Office, the Hollander Brand of 1808.

A heavy influx of German agencies followed immediately after the invasion. In 1942 there were 40 German agencies in Belgium and 54 in Holland, as compared with 16 and 27, respectively, in early 1940. At first, the Germans hoped for collaboration and permitted the local authorities to carry on without much interference, even letting them make their own arrangements for the liquidation or transfer of the rich portfolios of the 71 and 50 English companies, which had been active in Belgium and Holland, respectively. Obviously, the Germans expected that the business which had formerly gone to British companies, would find its way voluntarily to the newly established German agencies. The presidents of the Amsterdam and Rotterdam Chambers of Commerce, to whom the liquidation of the British and French companies was entrusted, and the Contact Commission, composed of executives of Dutch organizations and established to find replacements for the former British facilities, did not, however, work to the satisfaction of the Germans. Dutch commercial firms immediately founded new national companies to take over the business of British companies. Risks, which could not be written in the open market at Amsterdam and Rotterdam, were successfully absorbed by the newly established Vereenigde Assurantiebedrijven Nederland, set up with a capital of 5,000,000 guilders in which all the Dutch insurance companies participated but from which foreign companies were excluded.

"There are still plenty of people in Holland believing", complained the Nazi insurance press (Neumanns, November 27, 1940), "that the old days of unlimited competition will come back. In 1941 the majority of Dutch companies has taken reinsurance in Holland with other Dutch companies, hoping that, when the old times return, these treaties will return to their English friends."

The screws were considerably tightened after 1941 when a reorientation of the Dutch insurance market was ordered. This resulted not only in the transfer to the Germans of the business of English companies, but, in addition, 50 percent of the Dutch major and medium business was given to German companies. The Germans also issued an official "recommendation" to Dutch representatives and brokers to place part of their risks with Italian companies now operating in Holland.

At the same time, State supervision of insurance following the German pattern was introduced. All Dutch insurance companies dealing with insurance against fire, storm, burglary, and water damage on a mutual basis must now register with the Insurance Council

(Verzeckeringskammer); applications for the foundation, liquidation, and amalgamation of such companies have to be approved by this council, which, while it has been in existence for many years, has only now been given powers which enable it to exercise actual control.

In Belgium, local companies are likewise now subject to governmental regimentation under a new decree of June 19, 1942, issued by the Belgian Commissar of Economics, Victor Leemans. The newly established Groupement des Assurances is a counterpart of the German Reichs Versicherungsgruppe; membership is a prerequisite for transacting insurance business.

In Belgium, as in Holland, local companies were prevented from taking over valuable contracts. The Nordstern of Berlin obtained the greater part of the British and the better part of the Belgian business. The Victoria of Berlin and the Aachen & Munich Fire, which previously had offices but no business in Belgium, were rewarded by large contracts formerly held by the British, while the reinsurance business previously conducted by Lloyds is now handled by the Munich pool.

Luxembourg.—After the last war, German insurance companies neglected the Luxemburg insurance field where there were only three national companies, Le Foyer, La Luxembourgoise, and Terra, all other companies being Belgian, French, or British.

Effective as of May 10, 1940, all concessions for insurance business in Luxembourg were canceled, whereupon the portfolios of the Belgian agencies, whose aggregate value was more important than the total business of national companies, were compulsorily transferred to German concerns. The portfolio of the Belgian Assurance Liégoise was absorbed by Agrippina, the Proprietaries Reunis Belges, by the Gladbacher Fire, the Garantie Belge by the Koelnische Glas, while four French, two Swiss, and one Belgian company were merged with the Provincial Fire of Berlin.

On December 1, 1941, however, the whole insurance industry was concentrated in two new organizations, one for life insurance and the other for other than life. At the present time the Swiss, Belgian, and French influence in Luxembourg has been completely eliminated leaving only the two public companies and a few purely German companies.

Norway.—Before the German invasion, the Norwegian market was highly competitive. Of the 37 domestic companies, Christiania General (or "Storebrand" as it is known colloquially in Scandinavia) actually contributed 33 percent of the gross and 35 percent of the total net income. The greater part of its business was not Norwegian; it had wide international connections of which an important American account was one.

There were also about 70 foreign companies operating in Norway, among them 28 British, 16 Swedish, 10 Danish, 5 Swiss, and 4 German.

British influence was preeminent. Five of the leading eight companies were British: Cornhill, Hansa, Commercial Union, Royal Exchange, Arbejdsgivernes, Ulykkesforsikring, Liverpool & London & Globe, Motor Union & Car & General.

The Norwegian hull business was completely dependent upon London, and all marine facultative risks were placed in England; the Norwegian War Risk Institute also insured 67 percent of its pooled risks in London.

The Norwegian insurance industry has been ruined in the course of the prolonged struggle for Norway, that country's resistance after occupation and the raids by the British, together with the loss of 80 percent of the fleet to the Allies. It is, therefore, not astonishing that so far the Germans have shown little inclination to take over the few remnants of Norwegian insurance. War risk marine insurance was provided for by the Norwegian Cargo and Hull Institutes. The Cargo Institute on April 9, 1940, had a surplus, including that of reinsurance, of 15 million kroner whereas the risks of the institute are now estimated at 150 million kroner and it is not known how great its loss will ultimately be. The Norwegian Hull War Risks Insurance Institute, organized in 1935, is practically the only institute in the world organized on a mutual basis and without state support or guarantee. It had a premium income of 130 million kroner in the period September 1, 1939, to April 9, 1940. The sums insured on April 9 were 2,774 million kroner, divided over 1,563 risks.

Under German orders, a pool, the Norsk Krigsforsikrings For Skib/U, was created to take over the portfolios formerly held by the British in order to cover whatever was left of the Norwegian ships. The pool is now supported by German insurance companies.

Other war risks formerly covered in London were similarly pooled. In May 1940, a war-risk-insurance pool covering buildings and plants was established, the Norsk Krigsskadetrygden for Bygninger. It includes all fire-insured fixed objects in Norway and is open to voluntary insurance of such risks as are not insured against fire. In the same way, a scheme was set up for insuring movable objects formerly insured in London against war risks. These risks are now covered by the A/S Norsk Varekrigsforsikring Av 1938. Finally compulsory insurance exists for commodities, in excess of 2,000 kroner fire insurance value.

The claims ratio for war loss has been exceedingly high. German sources reveal damages to buildings in the amount of 140 million kroner for 1940 alone, although this sum does not include damages incurred at Narvik, Harstad, and Bergen. The claims experience in other branches is not better.

The Norwegian Insurance Institute reports that there has been an increase in burglary claims and that a further increase would have to be expected if the food situation showed no improvement. New business in personal accident insurance has ceased almost entirely. Glass insurance, too, has felt the effect of the invasion: transport of material and heavy tanks, especially through the streets of Oslo, has shaken buildings and probably caused many claims; losses from stone throwing have also become more frequent. The purchase tax has raised prices of glass by 11 percent, making losses even higher.

The hitherto strong international relations of the Norwegian insurance industry have now broken down. The Christiania General has transferred its American business to an American subsidiary, the Christiania General of New York.

As a result of the enforced concentration of the Norwegian reinsurance market on Scandinavia and the continent of Europe, foreign business has been unsatisfactory, particularly in view of the bad claims ratio in Sweden, Germany, and Italy.

The powerful Norwegian Association of Insurance Offices is now headed by Mr. H. Sommerfeldt, general manager of the Norden.

Mr. N. L. Bugge, general manager of the Idun Life has been elected vice chairman while the branch members now are: Mr. Reidar Brekke, general manager of the Trondhjem (fire), Mr. A. Loken, general manager Loken & Co. (life); Mr. Th. Wikbotg, general manager of the Vega (marine), and Mr. Per Hansson, general manager of the Christiania General (Storebrand), (accident).

In line with the German program of exploiting Norwegian resources for the German war economy, insurance companies were recently required to contribute 50 million kroner to finance industrial development in Northern Norway (Embassy Report, Stockholm, of March 18, 1943).

Poland 1. General government.—The two leading Polish insurance companies were the Warta and the Warschaw which together wrote nearly 70 percent of the total reinsurance business accepted by the Polish market. The Warta, as an associate office of the Powszechny Zakland, the Polish state fire-insurance office, regularly enjoyed a profitable fire business, largely retrocessions on premiums.

Few foreign-insurance companies were active in Poland. The Germans had one agency, the Aachen & Munich, and there were two Italian agencies, Assicurazione Generali and Riunione. British interests were represented by three agencies: Alliance, Royal Exchange, and Prudential. The agencies of the Austrian Anker and of the Bavarian Insurance Bank were identified as belonging to the sphere of influence of the Swiss Reinsurance Co.

The former British and Polish business is now completely in the hands of German and Italian companies. Under a concession system, 29 insurance licenses were issued, among them seven to German and two to Italian companies. Furthermore, emergency licenses for the coverage of specific risks, presumably war-industry risks, were issued to certain German companies. These licenses are not concessions to transact business in Poland but only to write a specific insurance contract under the limitations stated in the license.

The remaining Polish companies are economically and financially completely dependent upon Axis reinsurance because their banking accounts are frozen and their resources and guaranties are invested in now valueless Polish Government bonds. German commissioners who replaced the former trustees, complete the total enslavement and bankruptcy of the Polish insurance business. Even the concessioned German agencies do little business.

The Germans had to grant a moratorium to all insurance concerns for the payment of their contractual obligations. This moratorium is still in force; payments of loans and installments are permitted only to a maximum of 20 percent. Claims on policies concluded prior to September 1, 1939, are not paid. Until further order the conclusion of new life-insurance contracts is suspended.

Poland 2. Annexed territories.—In the incorporated western parts of Poland, now called Danzig, West Prussia, Wartheland, and East Silesia, there were formerly active 27 Polish insurance companies and seven foreign companies—two German, two Italian, and three French. In this area, even nominal Polish and foreign influence has been eliminated and the entire insurance business has been Germanized with the exception of a small share which went to the Italians. The companies authorized to operate are: Allianz und Stuttgarter Verein, Erste Allgemeine Unfall und Schaden, Magdeburg Feuer, Magde-

burg Hagel, and the Riunione Adriatica; these have been authorized for all nonlife classes, the two first-named German companies and the Riunione Adriatica also for accident and motor. The Hammonia has been authorized for glass insurance only and the Volksfuersorge for life. The Lebensversicherungsanstalt Westpreussen has been authorized to transact life, accident, and motor insurance; the Danziger Feuerozietat is allowed to handle all other classes in the said territories. Upon decision of the Trustee for Public and Private Insurance for Danzig (West Prussia), the portfolios of the following Polish and English companies were transferred.

1. Portfolio of Vesta, Posen to the Lebensversicherungsbank A. G., Danzig.
2. English Prudential in Warsaw to the Allianz, Berlin.
3. The Polish Przesoronz, Warsaw to the Gotha.
4. The Polish Vita-Kotivica, Warsaw to the Deutscher Ring, Hamburg.
5. The Polish Postal Savings Bank, Warsaw to the Volksfuersorge, Hamburg.
6. The Polish Europe, A. G., Warsaw to the Victoria, Berlin.
7. The portfolio of the Patria, Warsaw to the Allianz.
8. The portfolios of the Generali-Port-Polonia to the Erste-Allgemeine, Vienna.

It should be noted that the German companies which took over British and Polish life policies guarantee the payment only of such policies as are issued to certified Volksdeutsche (people of German stock). Policies of other insured persons are exchanged for paid-up policies only to the extent that funds are available from the companies taken over; these funds must be considered as lost, however, because they consist of Polish Government securities, which Germany refuses to recognize.

Similarly, with the incorporation into the German Reich of the territories of the former Polish corridor as well as Upper Silesia, the insurance business of Polish and English companies formerly operating in those portions of Poland have been placed under the trust and supervision of German and Austrian (Italian) companies. Mr. Goebel, formerly president of the Schlesische Provinzial Feuerversicherungssocietaet, is the new trustee of private insurance in East Upper Silesia. The following companies were allowed to continue operations: Silesia of Bielitz (associate of Anglo-Elementar), now Allgemeine Elementar Vienna which, in turn, is owned by Colonia,⁴⁰ and Aachener und Munchener, Bayerische Versicherungsbank, and Riunione Adriatica, all of Kattovice.

The German and Austrian companies are liable for the management of all fire, burglary, and hail insurance policies which they take over for Volksdeutsche. In other branches the liabilities of the German companies are limited to the assets of the countries taken over. The following portfolios have been transferred:

- Prudential to Aachener und Munchener.
- Przezornose to Aachener und Munchener.
- Generali-Port-Polonia to Allianz und Stuttgarter Verein and Erste Allgemeine Unfall Schaden, Vienna.

⁴⁰ Deutscher Volkswirt, December 4, 1942.

Patria to Allianz und Stuttgarter Verein and Erste Allgemeine Unfall Schaden, Vienna.

Warsaw to Allianz und Stuttgarter Verein and Erste Allgemeine Unfall Schaden, Vienna.

Europäische Gueter to Europäische Gueter, Berlin.

Orzel to Magdeburger Feuer and Magdeburger Hagel.

Piast to Riunione Adriatica.

Powszechny Zaklad (Cent. Mutual) to Schlesische Provinzial Feuersozietäet.

Vesta Fire to Schlesische Provinzial Feuersozietäet.

Poznansk-Warsawska to Schlesische Provinzial Feuersozietäet.

Florjanka to Schlesische Provinzial Feuersozietäet.

Apparently, the same German companies which took over the business of the Polish and English companies in Danzig and West Prussia have taken over the corresponding portfolios in East Upper Silesia. The only exception to this absorption is the business of the semiofficial Powszachny Zaklad and of the Vesta and the Poznanska-Warsawska, which in East Upper Silesia was transferred to the Schlesische-Provinzial Feuersozietäet; Danzig-West Prussia business was transferred to the Danziger Feuersozietäet, and/or the Lebensversicherungsanstalt Westpreussen.

The following companies seem to have come under Russian occupation: Bialostockie of Bialystok, Dnister of Lwow, and the Karpatia Life of Lwow. It must be assumed that, when the Germans retook the area from the Russians in June 1941, these companies suffered the same fate as the Polish companies in the General Government.

In the Ukraine, the "Versicherungsaustalt Ukraine" (VAU) has been set up under a recent decree of the Reich Commissioner. It is a public institution and for that area no private insurance carriers are admitted to operate in the territory. Intended to act as the successor of the Russian Monopoly Insurance "Gosstrach," VAU has met with considerable difficulties in starting operations as the reports and operational data on the evaluation of risks were destroyed by the Russians (Frankfurter Zeitung, April 23, 1943).

Portugal.—Seventy-five insurance companies operate in Portugal, of which 32 are national companies, 27 British, 6 French, 4 Spanish, 4 German, 1 Swiss, and 1 Danish. All but 1 of the British companies transact fire insurance, 9 carry life insurance, and a varying number are active in other insurance branches.

As in Spain, the present period is marked by three trends:

1. Increasing activities of Italian companies;
2. Influx of some German companies; and
3. Local efforts to create an internal reinsurance market which has a tendency to be independent of Munich and London.

Two new reinsurance companies were founded in 1941—the Equitate, an associate of the Ultra-Marine, and the Continental. The Continental was formed with a share capital of 1,000,000 escudos with 500,000 escudos paid up. It has a premium income of 2,600,110 escudos in 1941. Mr. A. Castello Branco is the chairman; Mr. C. Forcada, vice chairman; and Mr. J. M. Sunyer is a founder director. The latter is also general manager of the Nacional de Reaseguros, which was founded in 1939 with an issued capital of 3,000,000 pesetas

with 1,500,000 pesetas paid up, and a premium income of 5,982,941 pesetas. The chairman is Mr. S. Fuentes Pila.

The dangers facing these young and necessarily inexperienced insurance companies are evident. The last war taught that reinsurers of this type must seek protection from leading companies or perish, because they have to limit their activity to their home country, thus lacking that international spread of business which is essential to the establishment of sound reinsurance.

The fact remains, however, that the German reinsurance market, for all its technical efficiency, does not seem to have been willing or able to provide the cover required to prevent a few new reinsurance companies from coming into existence.

A new decree on the nationalization of foreign controlled Portuguese insurance firms is in preparation (Nachrichten fuer den Aussenhandel, April 16, 1943) which may disclose the existence of other insurance ties with Germany.

Rumania.—In 1939, 23 insurance companies operated in Rumania with an annual premium income of 1,369,146,000 lei.

The two biggest life companies were the Asigurarea Romanasca and the Generala with a premium income of 104,015,000 and 86,318,000 lei, respectively. The leading companies in fire insurance were the Dacia Romania and the Generala with a premium income of 61,171,000 and 58,850,000 lei, followed by the British Sun with 47,070,000.

Although only 4 companies were admittedly associates of foreign companies, more than half of the remaining 19 companies were known to have intimate business relations with foreign companies either by way of reinsurance or through foreign participation in their share capital. The chief shareholder in the Dorna Vatra was the Rumanian representative of the Sun Insurance office. The English Sun Insurance and Norwich Union Fire operated very active branch offices. English interests were behind the Brittana, the Metropola, and the Caledonian Romana, which was founded by the Caledonian of Edinburgh.

Italian interests are associated with the Generala, Agricola-Fonciera, Steaua Romaniei, while the Riunione Adriatica works directly in Rumania. There were French interests behind the Nationala, the Franco-Romana, and the Cie. Europeenne d'Assurances des Marchandises et des Bagages-S. A.

Constant infiltration of German interests has taken place since 1938. In addition to the existing Victoria and Allianz agencies, the Germans have acquired the Agronomul, a subsidiary of the Magdeburg. The Brittana, which was formerly owned by the Anglo-Elementar, Vienna-Commercial Union, London, was acquired by Colonia interests shortly before the outbreak of the war when the Commercial Union disposed of its shareholdings in the Austrian company on behalf of the Germans.

The Allianz owns the Transsylvania which was founded as early as 1801 and has been identified with German nationalistic movements in Transylvania. During 1939 the share capital in the Transsylvania was increased from 8,000,000 to 20,000,000 lei, with the help of the Munich Reinsurance Co.

When Rumania officially became an Axis ally, the pace of the regrouping accelerated. English and French interests were eliminated

to the benefit of German, rather than Rumanian, interests. The majority of the Franco-Romana shares changed from French ownership to the Nordstern, Berlin. The Nationala, which was owned by the L'Union of Paris, was bought out by the Wiener Staedtische (a member of the Munich group). There was a merger of the Transylvania and the Agronomul, the two insurance enterprises in that part of Rumania which is populated by Germans.

The Britтана which changed its name to "Allemaia" holds at the present time a particular position in the Rumanian insurance economy as it leads the Rumanian pool which provides coverage for major risks, formerly written in London. The Rumanian pool is reinsured in Germany and Scandinavia.

In 1941 a German brokerage firm, Jauch & Huebener of Hamburg,⁴¹ acquired the Dorna Vatra, organized by the Sun Insurance of London. It has taken over the business of the Sun and the portfolio of the Norwich Union. Furthermore, the Dorna Vatra now ranks at the top of the Rumanian companies, for its combined life premium income of 160,000,000 lei exceeds by far any corresponding figures for that part of Europe. In 1941 its income increased four times. The head of the Rumanian firm is said to be Dr. Zeisack, of Jauch & Huebener, allegedly a figurehead for Von Ribbentrop. According to the Frankfurter Zeitung of January 27, 1943, Dorna Vatra now has changed its name to Vatra Dorna. A branch will be opened in Galatz.

German capital has also founded two new insurance companies, the Danubia S. A. R. of Bucharest and the Wiener Allianz S. A. R., each with a capital of 12,000,000 lei. Reciprocal clearing treaties for insurance payments and a pool for the cartelisation of rates for inland and ocean marine transports, established by the Germans, materially facilitate the Axis expansion.

The two big Italian concerns are represented by their subsidiaries, Riunione and Generali. They have, furthermore, participations in the Dacia Romania (in which there is also German interest) and in the Agricola Fonciera. Although the activities of the Italians have considerably increased, it does not appear that they have opened additional offices.

The list of topranking companies for 1941 demonstrates abundantly the extent to which the Germans and Italians have in one year's work succeeded in sidetracking local interests. Dorna Vatra, now the leading company with a premium income of 220 million lei, is followed by the Generali with 208 millions, the Dacia with 164 millions, the Asigurea Romanei with 117 millions, the Nationala with 117 millions, and the Adriatica with 105 million lei premium receipts.

The total premium income of all companies in 1941 amounted to 1,512 millions lei, 1,018 millions lei derived from nonlife and 494 million lei from life premium receipts. The Axis has little reason to be proud of these figures since it is clear that the sharp decline in life insurance stems from a decline of public confidence in the value of the lei. The increase in casualty and fire premiums, on the other hand, is more than compensated for by the price inflation. "The

⁴¹ Jauch & Huebener play also an important role in other countries. They have now agencies in their own name in Vienna, Prague, Budapest, Bucharest, Paris, Brussels, Amsterdam, Madrid, Milan, Genoa, and Rome (Deutsche Volkswirt, Dec. 4, 1942).

total would be much higher," apologizes the official *Nachrichten fuer den Aussenhandel* (October 12, 1942), "if the Jewish property, estimated at over 4,000,000,000 lei by the Rumanian custodian, would be insurable."

The *Frankfurter Zeitung* (May 23, 1942) gives a more correct picture when it complains that "the insurance business in Rumania suffers in all branches from the strong price inflation which has taken place since the outbreak of the war, reducing the incentive for life insurance and resulting in heavy under insurance in fire and casualty insurance."

Again, as late as March 1943, the *Nachrichten fuer den Aussenhandel* (issue of March 26) lamented the lack of insurance understanding in rural districts and stressed the importance of more adequate insurance coverage for the national economy.

Recently the Rumanian Government has shown considerable activity in setting up public insurance institutes. Thus, a State health insurance system is under preparation. A Government fire-insurance monopoly is already established with which all buildings and farms must be insured. In view of the predominantly rural character of the country, this step constitutes a material restriction of the activities of private insurance companies in Rumania, and one wonders whether these measures are not planned as countermeasures to the establishment of German companies in Rumania, particularly the *Vatra Dorna*.

In this connection it is interesting to have the German magazine, *Die Bank*, of December 2, 1942, complain that such "Romanization" is hardly compatible with sound insurance principles.

Spain.—In 1941 the total fire premium income of all Spanish insurance companies increased 22.4 percent to 105,888,000 pesetas but its position is considered unsatisfactory. The increase in fire-insurance premiums since 1935, it is pointed out, has been only 14.55 percent, whereas prices in general have gone up by 250 percent. The underwriting position is considered unsatisfactory; furthermore, the claims ratio is about 50 percent in spite of the fact that the year included claims resulting from the Santander catastrophe.

The market consists of 40 home and 46 foreign companies (including 22 British companies). The share of the foreign companies in the business was 30,921,000 pesetas or about 30 percent, an amount similar to the total of 1940. French companies were first with approximately 12 percent of the business, followed by the Italians with 4.5 percent, the British with 3.5 percent, and the Germans with 3 percent, while other countries wrote the remaining 7 percent. The biggest business unit in Spanish insurance is the *Union & Fenix Espagnol*, a dual Franco-Spanish company with head offices in Madrid and Paris. Lately it has had a home premium income of 18,097,000 pesetas and with *La Catalana* (13,677,500 pesetas, premium income) has written over three-tenths of the entire Spanish business. The *Union & Fenix Espagnol* owns the controlling interest of *La Minerva*, Madrid, and in 1941 established a new reinsurance company, the *Compania Espagnola de Reasegueros*, which is particularly interested in the French business and directly accepts business in Paris if there is any reluctance to contact with Madrid.

Reinsurance companies were exempted from the prohibition to form new companies imposed by the decree of October 19, 1940, a

measure undertaken to free the Spanish market from foreign reinsurance ties. The decree was directly aimed at curbing London and Lloyds.⁴² Aside from Union & Fenix Espagnol promotion of the Cia Espagnola de Reaseguros, at least two more companies have been founded as a result of the decree: the Consorcio Espagnol de Reaseguradores, and the Nervion Reaseguros. The Nervion was founded by La Polar, of Bilbao, with an authorized capital of 5,000,000 pesetas with 2,000,000 pesetas subscribed and fully paid. It was registered in Bilbao on September 13, 1940, but its authorization dates from February 14, 1941. In view of the large capital required, there is some question whether these new companies were promoted solely by Spanish capitalists.

Italian insurance interests are very active and successful in Spain. Aside from the branch offices of the important Italian concerns, there are in Barcelona the Anonime de Accidentes (subsidiary of Anonime Fortuni of Milan) and the Caja de Prevision y Socorro (an associate of Assicurazione Generali of Trieste).⁴³ These companies have been on the proclaimed list and British War Trade List since July 1942. Recently the Compañía Hispano-Americana has been organized; unconfirmed reports that Generali is backing Hispano-Americana are currently under investigation. The executive staff of this company is made up of a group of Spanish officials from companies in Catalonia, Aragon, Mallorca, and the Banco Vitalicio (on proclaimed list). The Hispano opened branch offices in Lisbon under the name of Compagnia Europa de Seguros, and has under consideration plans for another branch in Switzerland. The main purpose of the Hispano is the penetration of Latin-American business through procuring reinsurance treaties and establishing subsidiary companies. To the latter end, a branch has been organized in Buenos Aires under the name of "Compagnia Hispano-Americana de Seguros." The Madrid executive, Señor Juan Millet Maristang, has in addition, successfully negotiated a deal in Chile under the name of "Consorcio Español de Seguros." It is made up of no less than five important Chilean companies, all of which have been merged into the Consorcio: La Espagnola, La Thorsia, La Vasconia Consolidada, La Catalana, and La Territorial. It is believed that representatives of the parent, Hispano, intend to enter the Mexican market.

Another group, the Aurora of Bilbao and Madrid, is equally busy in South America, where in addition to its existing affiliates in Mexico and Buenos Aires, it is about to obtain a concession for a new company with a national Argentine front, the Atlantide of Buenos Aires. There is evidence that these undertakings are backed by the Swiss Reinsurance Co. of Zurich. The reports that the Munich and Italian concerns are behind the scene need further verification.

So far the Germans have not been overanxious to open new agencies in Spain where the Italian insurance interests are well regarded and well entrenched. Only the Victoria reports a sharp increase in premium receipts, which rose from 4.4 million pesetas in 1940 to 8 million in 1941.

Sweden.—Although direct activities of Swedish companies in foreign countries and of foreign companies in Sweden have never been important, the Skandia and the Svea of Stockholm were leaders in

⁴² Frankfurter Zeitung, July 8, 1942.

⁴³ Review, London 1942—p. 283.

the considerable reinsurance business. Their share amounted to 45 and 60 percent, respectively, of the total reinsurance business.

At present, while Swedish reinsurance relations with Allied countries outside of Europe are constantly decreasing, there is no proportionate increase in favor of the Axis. Swedish companies, moreover, are rarely reported as making direct contracts in Germany or placing reinsurance, including marine insurance, in Germany. The only Swedish company which owned substantial holdings in German concerns, the Svea, is reported to have recently disposed of its 1,500,000-krona share in the Mannheim Life Insurance Co. of Hamburg, allegedly owing to a conviction that Germany is going to be defeated.⁴⁴ Svea's interests in Austrian companies has been sold to German companies before the outbreak of the war.

The degree to which Swedish companies participate in the Munich pool is unknown. Recent reports indicate that 1942 was the worst year which Swedish fire insurance ever experienced, because of the sharp increase of fires and claims. Charcoal driven cars alone caused damage to an amount of over 8,000,000 krona.⁴⁵

Switzerland.—Switzerland still holds one of the most prominent positions in the international insurance business, chiefly because of the Swiss Reinsurance Co. of Zurich, which ranks immediately after the Munich in the importance and volume of its business. Organized in 1867 by the Helvetia of St. Gall, Credit Suisse and the Banque Commerciale of Basel, the Swiss Reinsurance has, particularly since World War I, become the most dangerous competitor of the Munich.

At the latest stockholders' meeting, July 27, 1942, the Swiss Reinsurance Co. announced a premium income of 300,810,000 francs in 1941 compared with an income of 268,810,000 francs for 1940. The greater part of the losses were suffered in the Italian business and in South America but, on the whole, the 1941 results largely compensated for the bad years 1939-40.

These figures do not include the premium income of the numerous affiliates of the Swiss Reinsurance Co. abroad, including the Bayerische Rueckversicherungsbank of Munich, the Compagnie Française de Reassurances of Paris, the Mercantile & General of London, and the Anker of Vienna which are fully owned subsidiaries operating independently abroad. The United States branch of the Swiss Reinsurance Co. has organized the North American Fire & Marine Reinsurance Corporation of New York, which was inactive during 1940 and whose registration seems merely to reflect shadow arrangements against emergencies. The Swiss Reinsurance Co. has in addition intimate treaties with the Atlantida of Buenos Aires, with Anahuac and Aurora of Mexico,⁴⁶ with Peruvian, Argentine, and Brazilian companies, and as a result gets the lion's share from retrocessions with the state insurance monopolies in Uruguay, Brazil, Chile, and Turkey.

As yet there is no evidence of undue German pressure to take over Swiss reinsurance business. On the contrary, the absorption and equalization of risks accumulated by German companies from occupied countries requires such enormous capital resources that the Swiss companies have been called upon to participate in the German expansion. Swiss membership in the Munich pool (see the European

⁴⁴ American Legation, Stockholm, to State Dept., Aug. 21, 1942 (485224), Aug. 22, 1942 (286236).

⁴⁵ *Neue Zuercher Zeitung*, November 23, 1942.

⁴⁶ Confidential information.

Reinsurance Cartel, below) is also used by the Germans as a publicity factor to demonstrate German good will in distributing the fruits of conquest among all continental countries.

Neither are there signs that the Germans are seeking to exclude Swiss direct insurance, which appears to operate comparatively undisturbed except for evidence that Swiss offices have been barred from sending account statements outside and that political reasons have motivated the exclusion of Swiss companies, in the interest of German military security, from certain annexed territories such as Luxembourg, Alsace-Lorraine, and Poland. The business of the Swiss life insurance companies in Germany also goes on undisturbed, which is the more remarkable since these four Swiss concessionaries in Germany draw so largely from German policyholders that their German income exceeds the combined income of all Swiss life insurance companies in Switzerland.

Direct insurance in Switzerland is almost completely national and is partly monopolized by public offices. Direct foreign business is entirely insignificant, less than 1 percent of the total direct home business as compared with about 33 percent before World War I and compared with the activities of the Swiss companies abroad which derive 90 percent of their income from foreign sources.

Recently, *La Patenelle Vie* has transferred nearly all its portfolio to the *Vita* of Zurich. The Swiss portfolios of *Berlinische Life*, *La Confiance*, and *La Fonciere* have dwindled to less than 40 customers. All 3 have renounced their Swiss concessions. The *Norwich Assurance* of London still transacts accident insurance, but its life portfolio, consisting of only 2 policies, is in liquidation.⁴⁷

Four important Swiss concerns are on the British and American blacklists. The *National* of Basle was on the proclaimed list in World War I and recently *La Suisse* of Geneva has been added. The *Union Reinsurance Co.* of Zurich has been identified as a subsidiary of the Munich. The retirement of Dr. W. S. Kisskalt, vice president of the Munich, from the board of the Union in 1939 could not save the company from being blacklisted, nor has the retirement of Mr. W. Forstreuter of Berlin, Robert Gerling of Cologne, and Hans Harney of Duesseldorf prevented the blacklisting of the *Universale* of Zurich as a subsidiary of the Gerling concern.

On the other hand, in August 1939 the *New Insurance & Reinsurance Co.* of Zurich, invited the German shareholder company, the *Cologne Reinsurance*, to cede its shareholding to Swiss shareholders so that the Swiss character of the company could be preserved. The shares were acquired by the *Societe Suisse d'Assurance de Mobilier* of Berne and the *Helvetia Swiss Fire Insurance Co.* of St. Gall. With the retirement of the two German members of the board of directors, Dr. W. Bierlein and Herr W. Labes, the board of directors became entirely Swiss.

Turkey.—In 1941 the premium receipts of the Turkish insurance companies sharply increased to a total of Turk £8,367,660 as compared with Turk £5,484,310 in 1940.

Under the Turkish reinsurance regulations, all insurance companies, both national and foreign, operating in Turkey have to reinsure with the Turkish State Monopoly. The State Monopoly retrocedes 90

⁴⁷ Confidential information.

percent of its income abroad. For many years 50 percent went under a long-term treaty to the Swiss Reinsurance Co. of Zurich. For the remaining 40 percent, a similar treaty was originally concluded with the firm of Willis Faber & Partners, Leadenhall, London, a sister enterprise of Willis Faber & Huebner of Hamburg. Until 1939 the London office was the reinsurance representative in Great Britain for the Tokio Marine & Fire, Tokio; the Meiji Fire, Tokio; the Mitsubishi Marine & Fire, Tokio; the Taisho Marine & Fire, Tokio; and the Assicurazioni Generali, Trieste. It is understood that since the outbreak of the war, the whole Turkish business has been retroceded to the Swiss Reinsurance Co., which derives very satisfactory profits from its relations with the Turkish Monopoly Office: an underwriting profit of 55.8 percent was shown in 1940, in contrast with a deficit of 26.7 percent in 1939 and a profit of 50.1 percent in 1938.⁴⁸

Yugoslavia.—This market has always been in foreign or foreign-controlled hands, and the 20 local companies never acquired a significant business.

The portfolios of the French companies (Union Paris had a big Yugoslav account) were taken over by the Wiener Stadtische⁴⁹ and the Danubia, both belonging to the Munich group. German interests took over the former British portfolios, and furthermore set up a Central Association for Private Insurance with two branches, one for life and one for nonlife insurance.

Italian interests, which were always strong, are now predominant. Aside from the numerous agencies which the Generali and Riunione maintain in every city, Generali acquired the Beogradska Zadruga while the Riunione obtained the business of Sobija and the Rossija Fonciere. "Nova Horatska" of January 8, 1943, announces a new decree denying the right of operation in Croatia to insurance companies whose headquarters are in foreign countries. The affairs of these companies are to be turned over within 3 months to successors selected by the Government. Foreign companies with subsidiaries in Croatia must make application within 15 days for permission to continue operation. Italy holds the keys for further insurance developments under an agreement by which the Generali and Riunione hold an option for "essential changes, new establishments, and capital increase in the insurance industry."⁵⁰

THE EUROPEAN REINSURANCE CARTEL: INSURANCE AND THE NEW ORDER

The vast expansion of insurance operations in occupied countries would not have been possible if the German companies, unaided, had attempted to carry the load. Insurance penetration, because of the lack of diversification between the carriers, may prove costly. The danger that the invader would reap losses rather than profits increased in direct proportion to the decrease in the number of British facilities in the occupied and neutral countries. The absence of the British firms from the field was felt the more acutely because Lloyd's and certain London companies had constituted the chief market for excess loss coverage, conflagration, and catastrophe protections. Axis companies alone are not able to absorb these risks.

⁴⁸ Review, London, March 6, 1942.

⁴⁹ Frankfurter Zeitung, March 10, 1943.

⁵⁰ Suedost Economist, November 13, 1942.

The accumulation of insurable valuables in industrial plants had in peacetime become so large that one-third to one-half of the fire-insurance coverage was going to London firms because the continental companies were not able to cover the risks. Such risks have not diminished but have increased since the outbreak of war, for the war has created increased activity, rises in prices, and new businesses which have their origin in the German occupation. Burglary insurance, too, has increased in risk through this same concentration of valuables. Air hazard and war hazard have added to the risks involved in carrying third party, personal accident, and life insurance.

The increased risks brought about by the war constitute ample justification for the caution displayed by the German companies in expanding their business. They also explain the comparative lack of interference with the business of the neutral Swedish and Swiss companies. Neutrals in the insurance field have been invited to participate and are participating in an ingenious new organization, the Vereinigung zur Deckung von Grossrisiken (Association for the Coverage of Large Risks), established by the Munich and combining business organization with Nazi ideology.

The Vereinigung is a form of cartel which regulates all European reinsurance. It is administered by the Munich Reinsurance Co. with the support of Italian and Swiss reinsurers. The fact that neutral interests participate is advertised as "a constructive contribution to collaboration" and an indication that the neutrals recognize the new order.⁵¹ The Italians participate in the scheme as full-fledged partners.⁵²

The president of the association is Dr. Schmitt who is also president of the Munich board, and the board is made up of leading figures from European insurance companies including representatives from Sweden, Switzerland, and France. The association is something entirely new in the field of insurance. It does not cover any risks but rather functions as a central clearing office for the distribution of insurance risks which cannot be covered within individual countries. The extent to which each company shall participate as to the risk and the amount is fixed individually on either an individual-risk basis or a fixed-quota contract. The new cartel is designed to replace Lloyd's activities on the continent through an allocation of risks according to the ability of each country to absorb its own risks. Should a country not be able to assume its own risks, the cartel will arrange for their distribution among its members on a quota system. Such a reinsurance monopoly necessarily acquires considerable power through its control over requisitionable funds and taxable profits.

All European companies except those covering life insurance can participate in the pool and many of them do. By the inclusion within the pool of companies covering all classes of insurance, the required diversity of risk and carriers is obtained for the proper distribution of reinsurance, with the result that casualty companies can, for example, assist in carrying the burden of a fire risk and vice versa. Such an arrangement is more easily executed on the continent than in the United Kingdom or in the United States, where insurance carriers are rigidly classified into three groups: fire-marine, casualty, and life.

⁵¹ Dr. Noelting, *Deutscher Volkswirt*, March 28, 1941.

⁵² The Istituto Nazionale has been authorized to participate by Public Act No. 184, April 17, 1942 (*Gazzetta Ufficiale*, No. 67, March 23, 1942).

Any national pools which were formed to fill the gap left by the loss of British facilities will sooner or later be dissolved or merged with the association. The Germans have from the very beginning discouraged the formation of these local pools, pointing out that the various pools formed in Italy, France, and Norway violate the fundamental rules upon which the equalization of risks is based, i. e., the underwriting capacity of the local companies is not great enough to cover excess losses in addition to average business. Sound insurance policy in Europe rests upon the widest possible distribution of risks among companies operating over an extensive geographical area and handling different varieties of insurance. Neither increase of stock capital nor drawing on open or silent reserves is sufficient protection in the long run. Through the Munich pool, the European insurance market has been unified, concentrated, and coordinated; its existence might have been a change for the better if it were not dominated by Nazi aspirations.

Operational data on the actual working of the pool have so far not been available. It may be safely said, however, that given time the pool will be the instrument through which German insurance and reinsurance will endeavor to control the insurance business in both neutral and occupied Europe. Since the Germans prefer to use ostensibly legal means, widespread control cannot quickly be established. The Germans know well that profits rather than premiums are the vital factor in insurance, a truth which will cause them to scrutinize each new acquisition and make their selections with caution. The pace of penetration is and will be accordingly slow.

SIGNIFICANT DATA ON THE PRE-WAR GERMAN ECONOMY

I. INTRODUCTION

The statistical tables in this report, though subject to several reservations, provide a good basis for analysis of the pre-war German industrial economy.

The statistics must, however, be interpreted with great care for several reasons:

(a) Some of the most important tables, and the maps, have been taken directly from *Die Deutsche Industrie* (published 1939), which was prepared by the Reichsamt für Wehrwirtschaftsplanung (Reich Office for War Economics Planning). In the interests of military secrecy this agency organized the data in a manner designed to conceal information that might be useful to German military opponents. As will be noted, aircraft and explosives do not appear in the lists of industrial products, even though Germany was reporting exports of powder and airplane parts in the year covered by the report. Either the items were concealed by grouping certain industries and using misleading names to cover them, or figures were adjusted in a manner revealed only to the initiate.¹

(b) The data in *Die Deutsche Industrie*, the result of a census of manufactures similar to that made regularly in the United States, are for the year 1936. While this is one of 2 years in which German statistics covered the Saar but no forcibly annexed areas, it was not a "normal" year. In no year between the wars was the industrial production of Germany of a "normal" character. Increasingly, throughout the period, the German industrial capacity was being developed, concentrated, and expanded in accordance with a program whose sole objective was world domination by economic and military aggression.² Moreover, in March of 1936, Germany began the re-fortification of the Rhineland, and not long thereafter to try out its new military equipment in Spain.

As a result of the German objectives the national industrial productive capacity was lopsided in character. As early as 1928 the capacity for producing capital goods and certain consumption goods (such as chemicals) was well in excess of legitimate needs of the country for domestic use and the volume of exports reasonably to be expected; on the other hand, the capacity to produce goods that would have improved the low German standard of living remained disproportionately small. (It was adequate, however, to meet the

¹ Comparison with the classifications ordinarily used for German industry indicates that explosives may have been concealed in part under Zündwaren- und Glündstrumpfindustrie (fuses, matches, and other ignition devices, also gas-mantle industry). Part of the airplane production may be hidden in the figures on the automobile industry. See tables V and XXV.

² After the last war it was admitted—when it became advantageous to Germany to do so—that production figures had been rigged for several years. The rigging was done in a systematic manner so that published statistics could readily be interpreted by persons acquainted with the system. It seems probable that the method used in connection with critical items in *Die Deutsche Industrie* is relatively simple and that it does not distort the general picture as revealed by the statistics.

³ See sec. II.

demand, which was limited by the low buying power of the population.)

(c) The industrial activity that was at times impressive was largely the result of investment in production facilities and equipment; of subsidized exports; of reparations in kind and purchases made in Germany with reparations funds that the creditors were otherwise unable to transfer; and, particularly in the 1930's, of military constructions and orders for military supplies and equipment.

While the figures show Germany's productive capacity and the predominance of certain kinds of industrial activity in a period of preparation for war, they do not provide a blueprint for what a future Germany must manufacture to maintain itself. For example, a Germany that was not preparing for war need not concentrate its efforts on an industrial machine and machine-tool industry. A Germany determined to find exports market by collaboration in raising the European standard of living might instead export large quantities of heating and cannery equipment, plumbers' supplies, washing machines, and similar products.

(e) Likewise, the maps and also table VI, the only one in this compilation indicating the distribution of industry and the geographical importance of the various political subdivisions in providing manufactures for the export market, are more a measure of the past than of the future. They offer only limited assistance in estimating the results of cutting off this or that border region, since all but the extractive industries might well be developed in regions other than those where they were planted in the days of poor communications. For example, there would be ample economic justification for redevelopment of the German iron and steel industry along the Baltic, rather than in the Ruhr; coal could be carried to meet Swedish iron ore rather than the ore to the coal.³

(f) It is almost impossible to translate Reichsmark values into dollars, owing to the great variations in the value of the Reichsmark. The mark, officially offered at 40 cents in 1936, was sold at various discount rates—as much as 30 percent in some markets and occasionally more.

II. GERMAN INDUSTRIAL PLANNING AND SUBSIDIZATION OF INDUSTRY

The German industrial development and production cannot be properly evaluated without a knowledge of the manner in which they were planned and promoted, even before the war of 1914-18.

They were not the result of free market demand and unguided private investment. In the decades immediately preceding the war of 1914-18 the iron, steel, and chemical industries, as well as certain others useful to war, were built up by governmental aid of various kinds that was in effect a subsidy.

Yet in spite of this attention to cannon makers and war-chemical manufacturers, Germany paid singularly little attention to war economics before the war of 1914-18 was declared. This neglect has been ascribed to the expectation of early victory for Germany.⁴

³ See sec. III for further comments on table VI in connection with the extractive industries.

⁴ See *Economic History of Europe, 1760-1939*, E. L. Bogart.

After Germany was stopped in the first battle of the Marne a *Kriegsrohstoffamt* (War Raw Materials Office) was set up under Walter Rathenau, president of the *Allgemeine Elektrizitäts Gesellschaft*. Later, when the High Command became aware of the increasingly critical character of the supply situation, Rathenau was succeeded by a military officer who enlarged the scope of operations. In 1916 a *Waffen- und Munitionsbeschaffungs-Amt* (Arms and Munitions Procurement Office, called WUMBA) was established within the Ministry of War. This was the first step in the Hindenburg program for total war mobilization, in which the High Command was to direct the whole of the national economy, rather than compete with the civilian sector for supplies. Eventually the Ministry of War had a Labor Allocation Office (*Arbeitsersatzamt*), a War Food Office (*Kriegsernährungsamt*), and a *Fabrikationsamt* (Office of Manufactures).⁵ The program included measures for the consolidation of plants in order to save transportation and labor. No sector of the national economy was neglected. While the new system accomplished a great deal, it was initiated too late to influence the outcome of the war. But the High Command had been deeply impressed by the program.

The German General Staff was officially abolished by the Treaty of Versailles but actually continued in existence. Its chief center of operation was the *Reichsarchiv* (National Archives), where, it was announced, some former war leaders were engaged in writing a historical study of the recent war. They did publish some volumes on the military events, but their primary work was analysis of the cause of the defeat and planning for the next war. Few defects were found in German arms and military strategy; the main weakness discovered was in the field of war economics. At a very early period it was determined that part of the Officers' Corps must be trained in this subject. Under the treaty all military schools were to be abolished. They were closed but at the same time the underground General Staff opened a new academy in the *Technische Hochschule* (Institute of Technology) at Berlin-Charlottenburg. This old institution had not only some of the best engineering faculties of the country but also one of the best economics staffs.⁵

Carefully selected officers and officer-candidates were sent to the *Hochschule* for a course of studies that included the efficient use of industrial manpower, the economics of raw materials, production management, industrial standardization, and war financing. In time the course came to include 1 year of practical experience in plant management.

From the beginning the General Staff worked closely with the leaders of German industry. This collaboration was not new. The principle of industry as an instrument of the state was well established.⁶ The relationship was fortified by numerous intermarriages among the leading industrial families and the land-poor aristocracy (the Junkers).⁷ The latter had long had a near monopoly of positions in the Officers Corps and of the high positions in the civil adminis-

⁵ See BEW RR-1, *The War Economics and Armament Office of the German High Command*.

⁶ See Alien Property Custodian's Report (U. S. Government, 1919) for an account of the manner in which certain German corporations operating in the United States acted secretly in the military interest of their government before 1917.

⁷ The marriage of Bertha Krupp to Gustav von Bohlen und Halbach is an example of such alliances. An excellent discussion of the Junkers and their position in the government is contained in the *British Basic Handbook: Germany, Part I* (Ministry of Economic Warfare, 1944).

tration, both state and national, a situation not greatly changed under the Weimar Constitution.

The plans of the General Staff branch that on the eve of war emerged as the Wehrwirtschaft- und Rüstungsamt (War Economics and Armament Office) embraced these measures:

(a) The freeing of Germany from war debts and reparation payments.

(b) The reorganization of industry essential to war; the expansion of its capacity; the equipment of all plants with labor-saving machinery to lessen the vulnerability of industry to wartime shortage of manpower.

(c) The development of domestic resources to the maximum, and of synthetic substitutes for critical materials not to be found in Germany, or nearby.

(d) The stock-piling of critical materials that could not be developed in Germany.

(e) The rebuilding of the merchant marine and the building up of an air fleet;

(f) The construction of strategic highways and the unification and equipment of the railroads;

(g) The institution of controls well in advance of the outbreak of war to prevent confusion in the critical period of initial attack.

Too little information is available to judge precisely the extent to which the German General Staff and its industrial collaborators planned and promoted certain situations in the years immediately after the war and to what extent they merely took advantage of them in putting their program into effect.⁸ But the staff's operations were already so apparent at the end of 1923 that Brig. Gen. John H. Morgan of the disarmament commission⁹ was able to state:

Germany has now got, ingeniously camouflaged, that economic General Staff which was the dream of Rathenau * * * and the whole of the key industries of war—coal-tar products, sulfuric acid, nitric acid, aluminum, and all the rest—have been reorganized, subsidized, and controlled to this end. The whole of German industry and production have been reorganized by some astute and able brain with a view to making her independent of overseas supplies of material in the next war * * *. Even her rolling stock for ordinary commercial traffic has been altered to a new type capable of immediate conversion to troop trains.

Later Morgan said General von Seeckt was the director of the secret rearmament, that the Government of the Republic was collaborating fully with him, and that members of his economics staff were planted in key positions in Government agencies, including the Ministry of Finance.

⁸ The British Basic Handbook: Germany, Part I has a summary of the political events of the period, including the manner in which Ludendorff set up a republic to provide the "democratic government" that the Allies were demanding for Germany and that might obtain better peace terms than the Imperial Government could; and the manner in which the German oligarchy, in furtherance of its objectives, played on Allied sentimentality, cupidity, fears, jealousies, and ambitions. This source also relates the manner in which the inflation was used to build up vast industrial empires, to rid the country of its debts—at the price of ruination for the middle class that did not understand the techniques of managed bankruptcy, or was not in a position to take advantage of them. On the results of the inflation see also *The Recovery of Germany* (James W. Angell, 1932) and Bogart, op. cit.

For further details on the collaboration between German industrialists and the High Command, subsidies to industry, and other aspects of the secret rearmament, see *Germany Between Two Wars* (Lindley Fraser, 1945, Oxford University Press).

⁹ "Disarmament of Germany and After" (The Quarterly Review, London, October 1924), also *The Present State of Germany*, a lecture delivered at the University of London in December 1923 and published as a book a few months later. General Morgan was exceptionally well informed on the subject, having spent 4 years in Germany as Deputy Adjutant-General of the Inter-Allied Military Commission of Control and as Deputy-President of the Effectives Sub-Commission whose function it was to demobilize the old army and to limit the new. In the latter position he extensively studied army procurement in an attempt to learn how large the German Army really was.

Morgan also said:

Germany is in many respects far better prepared, industrially speaking, for a great war than she was in 1914. Profiting by the inflation of the mark, her great industrialists have renewed and enormously extended their plant; and instead of scrapping and dismantling war factories erected during the war for munitions * * * (Germany) has "converted them"; all these establishments are capable of reconversion, for the simple reason that the amount of plant used for war manufacture which we could condemn and destroy as utilizable for nothing else was an infinitesimal proportion of the whole—one of our experts put it as low as 5 percent.¹⁰

Late in 1923, after the Allies had been persuaded that review of the reparations question was to their advantage, the mark was abruptly stabilized. In addition to the gains listed by Morgan, inflation had furthered the long-range plans of the General Staff and their industrial collaborators in other ways. The Government, the great corporations, and the railways had emerged free of debt. Moreover, Germany had—used the proceeds of foreign speculation (in the mark) from 1919 to 1923 to meet the current deficit in her balance of trade, to make reparations transfers, and to build up a small volume of foreign holdings. At a rough estimate, from one-half to two-thirds of these operations eventually cost her literally nothing.¹¹

But the Dawes plan, which was adopted in August 1924, was even more useful in furthering the long-range plans of Germany. In addition to setting up a schedule of reparations payments that were to rise gradually (with about half the revenue to be derived from taxes on beer, alcohol, and other commodities that were state monopolies), the plan provided that Germany's obligations would end with payment in marks to the Allied representative in Germany; it was up to the creditors to find a way to transfer the moneys. As a result large sums were spent in Germany, thus stimulating German industrial production, especially in the machine and tool industry. Further, the Dawes plan arranged for the flotation of large governmental loans abroad.

With confidence in German economic stability thus confirmed, foreign agents of German big business had no difficulty in obtaining large loans in foreign markets. German states and municipalities also shared the inflow of investment funds. Certain foreign industrial corporations added to it by establishing branches in Germany. A large part of the foreign money, derived above all from the United States, was used in capital construction. For example, American money was used to expand the facilities of Vereinigte Stahlwerke as well as for a super-highway bridge over the Rhein.

While some of the construction was undoubtedly initiated without special guidance from the General Staff, nonetheless that body had a great deal to do with how foreign and domestic funds were spent.

As early as 1926 graduates of the new type of military academy were active in the industrially important army corps areas, where they became the technical advisers of the Kreis commanders and worked closely with the industrialists. Among their functions was the "rationalization" of industry; they brought the latest advances in tech-

¹⁰ For other details of the disarmament fiasco see *Une Experience de Disarmement* by the French General C. M. E. Nollet, head of the Inter-Allied Military Commission of Control, and *Confidential Report Re Some Difficulties of the Inter-Allied Military Control Commission* (Department of Justice, War Division, October 1944). A popular account of this and other phases of Germany's preparation for the current war is found in *Germany Will Try It Again* (Sigrid Schultz, 1944); this account is undocumented and its style is emotional but the facts as stated are fully confirmed by more scholarly studies. After the spectacular successes of 1937-40 had made secrecy seem no longer necessary, the German military journals related some of the activities of the underground General Staff, fully confirming and adding to the statements made in 1923 by General Morgan.

¹¹ Angell, *op. cit.*

nology and production methods to the attention of manufacturers and promoted research on such matters as the synthetics Germany must have safely to enter another war. They later took credit for having accelerated the development and production of synthetic petroleum, for increasing the production and improving the quality of rayon, rayon staple, aluminum, and magnesium, for improving the methods of working low-grade iron ore, and for greatly expanding the capacity of the machine-tool industry. In many cases Government funds were used to stimulate the desired activities. The corporations concerned often received freight rebates, tax exemptions, and similar favors in return for their collaboration.

The various stimulants caused great activity in the manufacturing industries; this was unfortunately misread as a sign of sound economic recovery.

By 1928 Germany had lulled the Allies to the point where they agreed again to review the reparations question. The Paris Conference, which began in May 1929, drew up the Young plan; although this specified that Allied economic "supervision" should be ended, the Germans refused to sign unless French troops were withdrawn from the Rhineland. Under Allied pressure, France reluctantly agreed.

Before Germany could take advantage of the new terms, the international economic collapse occurred.

While the negotiations were in progress in Paris the flow of foreign investments was checked; after October 1929 it practically stopped. There were large withdrawals of capital from Germany. The decline in foreign trade was accelerated as one country after the other pushed up tariff barriers to protect its own industries. This last was especially serious for Germany because of its dependence on other countries for raw materials and for part of its foodstuffs. For a time short-term loans were used to finance the German trade deficit. When German corporations found difficulty in meeting interest payments and foreign creditors seemed likely to obtain control of power plants and mills built with borrowed funds, the Government bought out the debtors and took title to the whole or to a majority of the stock.¹² Some Germans also became interested in converting their holdings in Germany into foreign assets. To prevent further flight of capital foreign exchange controls were initiated in July 1931. To all intents and purposes Germany had become a bankrupt.

Not long after exchange control was established some German concerns initiated barter arrangements, the exporters acting directly as importers or in cooperation with importing firms. The exchange control resulted in the blocking of foreign as well as domestic funds in Germany. Citizens of other countries could obtain funds owing to them only in the form of reichsmarks. As foreigners became doubtful about the length of time that would elapse before the funds could be turned into foreign money at their full value, they began to offer their claims at substantial discounts. The Government took advantage of this situation by allowing German exporters under certain conditions to accept the blocked marks as part of the proceeds of their foreign sales. Importers were also enabled to use the blocked accounts to advantage. The net result was that German exporters were able to

¹² This action was hailed as "socialist nationalization" by certain parts of the population. In most cases after the Allies had accepted the "moratorium" on German debt payments and had evidenced no disposition to take action to insure their resumption the properties passed back to private ownership.

sell their goods abroad profitably at lower foreign prices than they would have done under the regular foreign exchange procedure.¹²

The next development was the application of the principles of this system to all trade between Germany and such other countries as could be persuaded to make exchange-clearing agreements. Each agreement called for the establishment of a special account in the Reichsbank and one in the central bank of the contracting country. All trade between the partners was cleared through the two accounts. Other types of arrangement were worked out for trade with countries that were valued as customers but unwilling to set up central clearing houses to handle trade with Germany.

In 1934 the Germans extended control of foreign trade. The Government was to determine what should be exported and imported. In many cases where it was desired to use the exports to accumulate foreign exchange, the Government subsidized the exports to enable the underselling of trade competitors.

In carrying on trade under the new system the German control agency would, with some exceptions, authorize imports of goods in specified quantities and categories only on condition that the seller accept payment in the form of mark credits placed to his credit in a special account. The marks used in the special accounts of various types were called aski, a name derived from *Ausländer Sonderkonten für Inlandszahlungen* (foreigners' special accounts for inland payments). Such marks could be used only for the purchase of German goods for export to the country in which the holder of the account belonged. The aski had various values, differing even in sales to the countries concerned.

The new trade system was at first welcomed by countries unable to find export markets for their large food and raw material surpluses. Such countries also usually lacked foreign exchange with which to buy manufactures they needed. But after Germany had been established as a buyer it gradually dropped back in its shipments of the manufactures desired by these countries. The creditor countries were notified that the types of goods they desired were not available. Others, perhaps little desired by the creditors, were offered instead. Thus they were forced to take what Germany was willing to send or go without payment. This led to the widely publicized exchanges of military trumpets, harmonicas, and typewriters, for raw materials and agricultural products of southeastern Europe and South America. Ultimately, the governments concerned, unable to find retailers for the goods they had accepted, paid for the exports to Germany.

Such countries as England and France could afford to refuse sales when German payment was not forthcoming and German trade therefore tended to move to the more helpless regions.

The trade policy, especially in the 1930's based solely on preparation for war, involved the curtailment of production of civilian goods, the export of goods that did not handicap the rearmament program, the forcing of such goods on customers without regard for their desires, and the sale at any price of goods that would aid in the accumulation of dollars, pounds, and Swiss francs. These measures in turn created a wholly abnormal pattern of industrial production in addition to the distortions resulting from the accelerated pace of the rearmament pro-

¹² See *Foreign-Trade and Exchange Controls in Germany* (United States Tariff Commission Report No. 150, second series, 1942). This is one of the best studies that has been made on the subject.

gram. The policy also wrecked the very foundations of normal foreign trade for Germany by destroying the good faith on which international trade has been built. That the German oligarchy should so wholly disregard results seriously affecting the future was significant of the extent to which it believed that it would before long be able to determine the rules of the game.

While the international economic collapse that began in 1929 must have caused various changes in the operational program of the underground General Staff, it did not in any way block it. In 1926, on suggestion of the Heereswaffenamt (the Army Arms Office), which directed the field operations of the new military economics officers, leading industrialists had been invited to join a Statistische Gesellschaft (Statistical Association). The innocuous title hid the organization's objective, which was to bring the officers and industrialists together to work out details of the long-term program. Later, General Thomas, the head of the War Economics and Armament Office, wrote:

The cooperation necessary for preparation of an economic organization * * * was initiated under difficult circumstances, but later produced satisfactory results * * *. The great tasks and aims of economic organization were already recognized by men in important positions.¹⁴

Even with the country an international bankrupt, public funds were still used to support research and build up production facilities for the synthetics essential if Germany was to enter a war. For example, the General Staff was especially concerned with the problem of animal foodstuffs, the lack of which had been a principal cause of the food shortage in 1918. In 1931 a representative of the Ministry of War visited the pioneer plant making a protein foodstuff from wood; subsequently the national treasury granted a considerable sum for further research and development on these lines. At intervals officers checked progress of the work.¹⁵

In 1933 the economics section of the General Staff came above ground inconspicuously as the Wehrwirtschaftsstab (War Economics Staff) in the Ministry of War; in 1938 it became the Wehrwirtschaft-und Rüstungsamt im Oberkommando der Wehrmacht. But even in the first years of its public existence, representatives of the staff—graduates of Berlin-Charlottenburg—held key positions in the Government. The four-year plan, launched by the Hitler government as a National Socialist inspiration to make Germany self-sufficient, was actually the final phase of the General Staff's program of preparation for war.¹⁶ Colonel von Schell became coordinator of the motor-vehicles section of the Office of the Four-Year Plan. Colonel Fritz Loeb the head of the raw materials division, and Lieutenant General von Hanneken guided the iron and steel industry.¹⁷ General Thomas,

¹⁴ See RR-1, op. cit. For later work of the economics staff, especially its role in time of war, see *Military Affairs* (Fall, 1941), *Infantry Journal* (March 1942), and *Military Review* (March 1941).

¹⁵ See *German Synthetic Cattle Feed* (Department of Justice, War Division, 1943). See also *Wissen und Wehr Monatshefte*, 1932, and public statements by Erwin Schaefer, vice president of the American Wood-Sugar Co., who was managing director of the German plant from 1931 to 1934.

¹⁶ As early as 1923 some Army officers had picked the Nazis as the group that was to rid them of the Republic. But the Officers' Corps as a whole, as well as the industrialists, hoped to find a less motley group of leaders. In 1929, at the time the Young plan was being drawn up, Hitler was able to convince the leaders of the Ruhr that the socialist aspects of his platform were only rabble-rousing devices and that he could control the party. The Ruhr thereafter began to give large sums to the Nazis. I. G. Farben remained distrustful though not unfriendly until the purge of 1934, which rid the party of its leading swashbucklers and also of certain elements that had taken the socialist promises seriously. See I. G. Farbenindustrie as an Instrument of Nazi Militarism, a special confidential report by Sydney B. Redecker, an American service officer, who was stationed for 10 years at Frankfurt-am-Main; also see *The Nazi Dictatorship* (F. L. Schuman).

¹⁷ Von Hanneken's brother-in-law, Karl Lange, was the manager of the association of the machine industry and later became its official director.

who headed the economics staff in its later years, became director of the Herman Göring Works when Government corporation was set up to develop the low-grade iron ores of the Reich.

An illustration of the manner in which control of the industrial economy and of the population was tightened, in accordance with the long-term plans for preparation for war, is found in the textile field. During the last 2 years of the war of 1914-18 the shortage of textile fibers constituted a major problem. The final stage of the General Staff's plan called for a rapid expansion of the artificial fiber production capacity, above all that of rayon staple. At the same time the population had to be accustomed to the use of artificial fibers in goods for which natural fibers are more satisfactory. Shortly after the four-year plan was announced textile manufacturers were persuaded and bullied into pooling their funds for construction of fiber plants; public moneys were allotted for the same purpose; textile manufacturers were ordered to use specified quantities of rayon filament and staple with natural fibers in various kinds of goods; and an elaborate propaganda campaign was launched to convince the public that rayon materials were modish and that rayon staple was really a superior type of natural fiber, not merely ersatz. Thus by the time Germany was cut off from overseas sources of natural fiber the population had learned to use the substitutes and the best methods of caring for them.

Industrially, the results of this program are found in the 700-percent increase in rayon production by 1939.¹⁸ This in turn caused a great increase in the production of chemicals, and of the materials from which they are made. But rayon production greatly in excess of probable peacetime needs was only one of several activities that made the figures on German industrial activity of the 1930's even more abnormal than those of the 1920's. Thus, in the 20 years between the wars it is almost impossible to find any years for which the available figures give much guidance on the minimum rate of industrial activity necessary to maintain the German population.

III. COMMENTS ON THE TABLES AND CHARTS

The tables in this compilation are roughly divided into several groups but all are interrelated. The first group (I through VI, as well as table XXV¹⁹) is concerned with the rate of German production of manufactures, the comparative importance of the industrial groups, their roles in the national economy, the nature of some of the stimulants to industrial activity, and the geographical distribution of manufacturing in 1936. The last is illustrated by nine maps.

Tables VII through IX are concerned with the distribution of the labor force of the Altreich (the Germany of 1937, including the Saar but excluding Austria and other annexed areas) by industry, size of establishment, and, in the manufacturing industries, by compensation status.

Tables X through XII show official estimates of the German national income in selected years, the proportion of the national income coming from wages and salaries paid by the manufacturing industries, and the standard of living of the German wage earners.

¹⁸ United States production increased about a third in this period.

¹⁹ Placed at the end because of its bulk.

Tables XIII through XVIII concern foreign trade, both by value and volume.

Tables XIX through XXI show the reparations payments made by Germany after the last war, capital movements into and out of Germany between the wars, and German foreign indebtedness in the period of "economic recovery."

Table XXII gives figures on the size and capitalization of German corporations.

Tables XXIII and XXIV contain a few United States figures for purposes of comparison.

Table I is an index to the volume of German manufactures in the year of greatest economic depression between the wars and in the last year before general war began. As can be seen, all but one of the industries were much more active in 1938 than in 1929; and, as in other countries, in 1932 the consumption-goods industries were much more active than the capital-goods industries. While 1932 was a depressed year, Germany was nonetheless still carrying on a considerable volume of export trade, in part as a result of the new trade techniques it was developing.

The rate of output in the capital goods industries in 1932 is of special interest because, though production was still abnormally stimulated (see sec. II), the stimulation was much less than it had been in the 1920's and was to be in the following years. It will be noted (see table III) that in 1929 (the base year for the production index of table I) Germany produced 16 million tons of steel. This was only 2.2 million tons less than was made by the larger Germany of 1913, when it was building armament energetically in preparation for war. The Germany of 1937 had produced 19.4 million tons of steel and in 1938 was still increasing production not only to support current military operations but also to prepare for greater ones. Throughout a good part of 1938 German arms were engaged in Spain; in March German troops moved into Austria; and in October they entered Czechoslovakia.

TABLE I.—*German industrial production index, by industries, 1932, 1938*

(1929=100) ¹

	1932	1938 ²		1932	1938 ³
All industries, including food.....	58.2	123.6	Motorcycles.....	17.4	69.5
All industries, excluding food.....	53.3	126.2	Coal.....	63.7	112.8
Capital goods industries.....	44.3	131.7	Electric power.....	76.7	174.6
Consumption goods industries.....	79.3	109.4	Chemicals.....	55.4	138.3
Pig iron.....	29.3	138.2	Cotton.....	93.4	120.6
Steel ingots.....	35.5	142.7	Linen.....	74.5	157.9
Nonferrous metals.....	61.9	144.1	All textiles.....	85.7	116.3
Machines and machine tools.....	39.2	142.3	Shoes.....	82.2	114.2
Motor cars.....	31.4	220.3	Furniture.....	67.8	109.0
Trucks.....	23.8	208.6	Radios.....	(³)	(³)

¹ In the source the base used was 1928; figures have been converted to use 1929 as a base in order to enable comparison with other indexes in this compilation.

² It has not been discovered to what extent the figures were adjusted in accordance with changes in the national boundaries after the return of the Saar and the annexation of Austria and parts of Czechoslovakia.

³ No index figure given for 1929. The production index figures for 1932 and 1938, respectively, against the 1928 base, were given as 119.2 and 327.8.

Source: Statistik des In- und Auslands, XIV, 1939-40, which took them from the reports of the Institut für Konjunkturforschung.

Table II should be compared with tables I and III. It will be noted in several cases, notably in mining and textile production, that a greater volume of production was achieved in 1938 than in 1929 with fewer workers and fewer total hours of work. This would seem to indicate increased mechanization. Table II like table I provides guidance on the industries most active in times of economic depression.

TABLE II.—Indexes of (a) numbers of wage earners employed and (b) total number of hours worked, 1929, 1933, 1936, 1938

EMPLOYMENT, BY INDUSTRIES

Year	Grand total ¹		Mining		Iron and metal production		Iron and steel		Machinery		Electrical engineering		Building material	
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
1929.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1933.....	65.8	60.8	63.3	56.9	61.1	53.9	59.8	52.3	58.8	52.7	55.6	49.0	64.1	60.4
1936.....	98.2	96.5	73.0	73.2	111.0	112.0	89.4	88.6	118.5	122.2	92.7	94.8	105.2	105.0
1938.....	112.9	114.0	87.5	89.9	130.6	143.1	112.8	113.7	151.7	183.4	134.7	136.7	115.4	117.2

Year	Construction		Wood		Textiles		Clothing		Food		Drinks and tobacco	
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
1929.....	100.0	(?)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1933.....	39.9	(?)	59.2	55.2	81.3	76.8	71.6	66.6	92.3	85.3	88.9	85.4
1936.....	129.7	(?)	84.7	82.4	92.8	87.0	85.6	79.4	102.6	97.6	99.0	95.3
1938.....	145.7	(?)	96.8	94.7	98.3	97.1	93.2	89.5	107.3	104.0	99.6	97.4

¹ Includes certain industries not covered in the table.

² Not available.

Source: Year Book of Labor Statistics, 1941, International Labor Office.

Table III summarizes a good part of the figures officially and routinely released on German industrial production by volume. They show near-peak production for almost all mineral mining of importance except potassium salts and sodium chloride (ordinary salt). The figures also afford some information on the extent to which German manufacturing is dependent on foreign sources of raw materials. It will be noted that although Germany imported large quantities of iron ore to supply its mills in years of great industrial activity, the iron content of ores mined in Germany in 1937 was equal to 70 percent of the pig iron produced in 1932. (See table XVII for iron ore imports in various years.)

The figures on coal are of special significance. The output of 1913—190 millions ton of Steinkohle²⁰—represented the results of rapid development of the mines. The total output in 1900 had been only 109 million tons, a peak figure to that date. At the time the Versailles Treaty was signed the loss of the coal fields of Lorraine and of Polish Silesia was considered a heavy blow. But by 1929 a smaller Germany was mining more Steinkohle than the larger Reich had mined in 1911. In 1937 the output was still higher and, with the Saar mines back in German hands, the total production again approached that of the larger Germany of 1913. In each case the rapid rise to a new production peak was a prelude to war.

²⁰ Steinkohle consists primarily of bituminous coals but includes some semianthracite.

In addition, after 1919 there had been rapid development of the brown coal fields—largest in Central Germany near the upper Elbe but present in various parts of the country. The brown coal output of 1937 had a utilizable heat value equal to more than 40 million tons of Steinkohle.²¹

TABLE III.—Data on German production by volume, selected years

[Figures after 1934 include output of the Saar; in 000 metric tons unless otherwise noted]

Year	Steinkohle	Brown coal	Coke	Gas coke	Benzol	Coal tar	Petroleum	Gas produced in gas works (million cubic meters)	Electric power generation (million kilowatt-hours)
1913	190,109	87,233					121		
1929	163,441	174,456	39,421	4,888	386	623	103	3,385	30,651
1930	142,699	146,010	32,700	4,726	336		174	3,195	29,103
1931	118,640	133,311	23,025	4,335	245		229	2,990	25,788
1932	104,741	122,647	19,338	4,264	209		972	2,810	23,460
1933	109,962	126,794	20,945	4,253	232	1,024	239	2,740	25,654
1934	124,857	137,274	24,485	4,229	270	1,172	318	2,746	30,727
1935	143,015	147,381	29,556	4,409	350	1,447	429	2,822	36,697
1936	158,380	161,337	35,861	4,866	421	1,853	445	2,953	41,800
1937	184,513	184,709	40,921	5,345	529	2,228	451	3,192	48,969

Year	Pig iron	Iron content of ores mined in Germany ¹	Steel	Sulfur content of pyrites mined in Germany	Sulfuric acid	Total copper milled	Copper content of ores mined in Germany	Total lead milled	Lead content of ores mined in Germany	Total zinc milled	Zinc content of ores mined in Germany
1929	13,239	2,080	16,023	150.0	1,704	91.9	29.1	124.2	60.5	108.4	142.5
1932	3,932	443	5,624	75.3	935	167.9	30.9	106.6	51.0	45.0	75.3
1933	5,247	828	7,454	81.6	1,207	162.2	29.4	122.2	53.7	50.8	104.4
1934	8,717	1,372	11,696	96.9	1,307	168.6	26.0	124.0	58.9	71.4	131.7
1935	12,846	1,849	15,144	117.5	1,574	189.1	28.3	128.3	60.7	124.1	140.9
1936	15,302	2,259	18,756	122.2	1,765	208.3	28.1	153.4	68.6	136.4	156.5
1937	15,960	2,759	19,356	179.5	2,050	224.1	28.1	173.2	78.9	163.8	165.6

¹ The iron content of the ore dropped steadily from 33.1 percent in 1932 to 28.2 percent in 1937.

Source: Energiequellen der Welt, Schriften des Instituts für Konjunkturforschung, Berlin, 1937, and Statistisches Jahrbuch für das Deutsche Reich, 1938.

Table IV shows the relation of investment in construction and replacement in Germany to the total German national income. While not all funds so invested were accumulated in Germany, the total of German funds invested outside Germany after 1931 were on the whole greater than the foreign funds invested in Germany. (See table XX.) The figures provide some gauge of the extent to which general German industrial activity at various periods was stimulated by abnormal investments in construction.

As table IV shows, a considerable part of the investments in construction in 1936 went into public works, presumably from public funds. A good part of the public funds came from direct and indirect taxation. It has been estimated that the percentage of the private national income absorbed by direct taxes rose from 18 percent in 1929 to 25 percent in 1936.²²

²¹ Brown coal is an unconsolidated type of lignite with high water content. On a dry basis it runs about 4,200 to 5,000 BTU's to the pound. Part of this is lost, however, because of the need for ridding the coal of moisture. The usual conversion ratio is 2 tons of Steinkohle to 9 of brown coal, though under exceptional conditions the utilization can be improved.

²² German Financial Policies, 1932-1939 (K. E. Poole, 1940).

Comparison of this table with table X, shows that before 1933 the amount invested each year in capital construction and replacement was only a little less than the total paid out in wages and salaries in the manufacturing industries; and that after 1933 the total investments exceeded the total wages and salaries.

The third part of table IV is of special interest. It shows that in the years 1933-36 inclusive an increasingly large proportion of the investment in construction and replacement was in the capital goods industries, whose capacity was already much in excess of the country's ability to utilize their products.²³

TABLE IV.—*German investments in capital construction and German defense expenditures*

A. NATIONAL INCOME AND FUNDS USED FOR CAPITAL CONSTRUCTION, 1928-38¹

[In billion reichsmarks]

Year	Total national income	Total for new construction and replacement	Proportion of construction investment to total national income	Year	Total national income	Total for new construction and replacement	Proportion of construction investment to total national income
1928 ²	75.4	13.7	18.2	1935.....	58.6	11.6	19.8
1929 ²	75.9	12.8	16.9	1936.....	64.9	13.8	21.3
1933 ³	46.5	5.1	11.0	1937.....	71.0	16.0	22.5
1934 ²	52.7	8.1	15.4	1938 ⁴	77.0	19.0	24.7

B. DISTRIBUTION OF FUNDS INVESTED IN CONSTRUCTION IN 1936¹

	Percent
Public works (including railways, canals, highways).....	7.6
Dwellings (including worker housing at new plants).....	1.9
Power plants, gas and water works.....	.5
Construction for agricultural and silvicultural purposes.....	.85
Industrial construction and replacements.....	2.1
Small shops and plants (handcraft), commercial, and other facilities.....	.85
Total.....	13.8

C. DISTRIBUTION OF ANNUAL INVESTMENT IN GERMAN INDUSTRY, 1933-36¹

[Billion RM]

Year	1933	1934	1935	1936 ⁵
All industry.....	0.557	1.067	1.658	2.084
Capital goods industries.....	.309	.707	1.243	1.593
Consumption goods industries.....	.248	.360	.415	.491

¹ Economic conditions in Germany in the middle of the year 1939, issued by the Reichskreditgesellschaft, Berlin.

² Without the Saar.

³ With Austria.

⁴ Includes replacements; see pt. A of this table.

⁵ Die Deutsche Industrie.

⁶ Provisional.

²³ In 1940, when the United States was already preparing for war, the total expenditures for construction of all kinds were equal to about 14 percent of the national income (as against 21.3 percent in Germany in 1936). Slightly more than a quarter of the United States total was spent for public works. Such work included highway construction.

TABLE IV.—*German investments in capital construction and German defense expenditures—Continued*D. DEFENSE EXPENDITURES¹

[In millions of dollars]

Year	1932	1936	1939
Great Britain.....	426.1	846.9	1,817.1
France.....	509.2	834.4	1,800.2
Germany.....	253.5	3,600.0	4,500.1

¹ Economic History of Europe, 1760-1939, Ernest L. Bogart.

Table V summarizes the tables of Die Deutsche Industrie as they relate to the distribution of employment, of wages and salaries, of value added by manufacture, and of value of exports among the various branches of the manufacturing industries. It should be kept in mind that the German census of manufactures omitted small establishments in many branches. (See table IX, pt. B, for the distribution of workers by size of establishment and table XXV for categories of establishments not included in the census).

It should also be noted that the German census of manufactures includes several branches of industry not covered by the census of manufactures in the United States—namely, mining, construction, and electric power and gas production. (See table XXV for a breakdown of the categories summarized in table V).

In view of the character of German industrial activity in 1936, the figures showing the proportionate distribution of employment among the industries should be compared with those of table VIII, which shows the occupations of the German labor force as declared to census-takers in 1933 and 1939. Perhaps of most interest is the trend away from the lighter industries, which, however, is much less in extent than would be expected from the trend in investments in industrial construction and replacement. (See table IV, C.)

The figures in table V on the proportionate distribution of employment and of the value of exports by the various industries also provide points of interest. For example, the chemical industry, with only 2.2 percent of the total employment in the manufacturing industries accounted for 11.7 percent of the value of all exports in 1936. In the chemical industry as a whole, wages and salaries constituted only 27.9 percent of the value added by manufacture.

This table also indicates the industries in which wages were lowest, highest, and average. For example, the textile industry, employing 11.2 percent of the total in the manufacturing industries, accounted for only 9.2 percent of all wages and salaries—a sum equal to that paid to the 7.1 percent of the working force in the mining and related industries.

The industries covered by the census of manufactures provided 96.9 percent of the value of all German exports in 1936. Die Deutsche Industrie estimated that the exported products of all manufacturing industries accounted for only 11.4 percent of the total value added by manufacture.

Of the various branches of the manufacturing industries, the extractive, those based on the products of the extractive, and the chemical

industries were the most nearly independent of imported raw materials. This group accounted for 26.9 percent of the value of all manufactured exports; 18.3 percent of all value added by manufacture.

TABLE V.—Main branches of German industry: Value added by manufacture, value of exports, employment, wages, in percent, of Reich total, 1938¹

Manufacturing industries	Percent of total industrial employment	Percent of salaries and wages (grand total)	Percent of value added by manufacture (in all industries)	Percent of value of Reich industrial exports
Mineral, mining and related industries.....	7.1	9.2	6.5	9.8
Liquid fuel industry.....	.4	.6	.7	.8
Extraction and processing of stone, clay, etc., and related industries.....	7.1	6.1	5.1	3.6
Extraction and processing of stone, clay, etc.....	5.1	4.3	3.6	1.0
Ceramics industry.....	1.1	1.0	.8	1.2
Glass industry.....	.9	.8	.7	1.4
Metal and chemical industries.....	33.0	41.3	38.4	64.3
Iron and steel industry.....	2.5	3.7	3.4	5.5
Nonferrous metals industry.....	.9	1.3	1.6	3.0
Foundry industry.....	2.2	2.5	2.1	.9
Iron and steel products industry.....	5.5	5.8	5.2	8.4
Metal ware and allied industries.....	2.8	2.6	2.3	4.9
Machine and tool industry.....	7.0	9.0	7.6	14.6
Iron and steel constructions.....	1.8	2.4	1.6	2.2
Automobile and bicycle industry.....	2.1	2.8	2.4	2.5
Electrical equipment industry.....	3.7	5.0	4.4	5.8
Fine mechanical and optical goods industry.....	1.2	1.4	1.1	3.0
Chemical industry.....	2.2	3.4	4.5	11.7
Chemical-technical industry.....	1.1	1.4	2.2	1.8
Construction and minor industries.....	15.4	9.0	12.5	.9
Other industrial.....	37.0	33.8	36.8	20.6
Pulp, paper, and bookbinding industries.....	1.3	1.4	1.3	2.3
Printing and paper products industries.....	3.6	4.0	2.9	1.4
Leather industry.....	2.5	2.2	1.9	1.9
Rubber and asbestos industry.....	.7	.9	.8	.8
Saw milling and allied industries.....	1.4	1.0	.9	.1
Woodworking and allied industries.....	3.2	2.7	2.1	1.3
Textile industry.....	11.5	9.2	8.3	9.8
Clothing industry.....	2.9	2.2	2.2	1.3
Oils, fats, fodder, and animal byproducts industries.....	.5	.6	1.2	.3
Spirits industry.....	.4	.3	.7	0
Food processing and tobacco industries.....	6.9	6.1	8.7	1.3
Electric power and gas industries.....	2.1	3.2	5.8	.1
Total.....	100.0	100.0	100.0	100.0

¹ "Value added by manufacture" is the value of the finished product minus the cost of materials, fuel, purchased energy, containers, and contract services; elimination of these items overcomes the duplications resulting from the use of the products of one industry as the materials of another. The "value added by manufacture" includes the amount paid in wages and salaries, the rent on capital, profit (if any), and so on.

It is a highly useful index for certain purposes, such as evaluating the comparative importance of various types of industry to a country and of various industries to a region.

Source: Die Deutsche Industrie.

Table VI and the nine maps show the regional distribution of the German manufacturing and extractive industries as of 1936. As previously noted, the value of these is chiefly historical. The pattern has unquestionably been altered by the redistribution of industry during the war. Although the wartime transfers did not by any means reach the maximum possible, practically all industries except

the extractive could have been moved to other sites or rebuilt elsewhere. The inland waterway system and the character of much of the terrain make such transfers much more feasible in Germany than in many other countries. After the last war, for example, when a considerable part of the German textile industry was lost with Alsace-Lorraine, a capacity greater than that which had been lost was built up in the remaining German territory.

Map 3 shows the geographical distribution of the mineral mining industry (Bergbau) and its related branches,²⁴ as well as that of the iron and steel industry in 1936.

According to *Die Deutsche Industrie*, in 1936 the total value of the products of the German mineral mining industries (including briquettes but no coke) was 2,801 million reichsmarks. The "value added by manufacture in this industry was 2,042 million reichsmarks, or 6 percent of the total for all industries."²⁵ Coal accounted for 88 percent of the value of all minerals mined in 1936, and the value of the brown coal and brown coal briquettes alone for 28 percent of the total value of the products of the mineral industry.

Percentage of total value of minerals extracted in 1936, selected areas

Political subdivision:	Percent of total value of minerals mined and processed in <i>Altreich</i>
Westfalen ¹	27.75
Rheinprovinz ²	24.05
Provinz Sachsen ³	10.10
Oberschlesien	6.75
Saar	4.99
Land Sachsen	4.94
Niederschlesien	3.70

¹ Westfalen includes the upper part of the Ruhr Valley.

² Rheinprovinz, which is largely west of the Rhein, includes some territory east of the river north of Koblenz. (See unnumbered map in front of this publication). It will be noted that the lower part of the Ruhr Valley is in Rheinprovinz. The boundaries of Rheinprovinz are not coincident with those of "the Rhineland," which was a region set up in 1918 for purposes of the occupation. This Rhineland included some land east of the Rhein that was not part of Rheinprovinz.

³ Provinz Sachsen has recently been divided into Provinces Halle-Merseburg and Magdeburg. The use of the same name for a Land (state) and for a Prussian Province was formerly a source of much confusion.

Eleven percent of the grand total for minerals came from the brown coal and brown coal briquettes of Provinz Sachsen and Land Sachsen, where it was the foundation of the great chemical industry graphically indicated on map 5. Likewise, it provided much of the power for other important industries of the region (see particularly maps 2, 4, 6, and 8).

The relative importance of the brown coal regions has greatly increased since 1936, when the total output was 161 million tons. Although the Steinkohle tonnage has not exceeded its pre-war peak, 248.8 million tons of brown coal were mined in the *Altreich* region in the year ending in March 1943; nearly half the increase came from Central Germany west of the Elbe.

²⁴ See part I of table XXV for a complete list of the industries in this group.

²⁵ This is less by 0.5 percent than the figure shown in table V because the value of the products of the cokeries was subtracted.

TABLE VI.—*Value added by manufacture and value of foreign exports by Länder and provinces in which they were fabricated, 1936*

Länder provinces	Value added by manufacture, total production		Value of foreign exports	
	Value, million reichsmarks	Percent of Reich total	Value, million reichsmarks	Percent of Reich total
Rheinprovinz.....	5,184.7	15.2	967.4	20.9
Land Sachsen.....	3,489.2	10.2	522.4	11.3
Westfalen.....	3,312.8	9.7	520.4	11.2
Berlin.....	2,983.7	8.7	313.0	6.8
Provinz Sachsen.....	2,148.6	6.3	222.9	4.8
Württemberg und Hohenzollern.....	1,871.3	5.5	225.6	4.9
Hannover.....	1,542.1	4.5	168.5	3.6
Nordbayern.....	1,400.1	4.1	185.1	4.0
Baden.....	1,260.4	3.7	191.1	4.1
Südbayern.....	1,222.4	3.6	87.5	1.9
Brandenburg und Grenzmark Posen-Westpreussen.....	1,175.2	3.4	83.2	1.8
Hessen-Nassau.....	1,132.9	3.3	233.6	5.0
Thüringen.....	1,002.3	2.9	166.4	3.6
Niederschlesien.....	987.1	2.9	62.7	1.4
Schleswig-Holstein.....	680.1	2.0	58.2	1.3
Land Hessen.....	653.0	1.9	128.0	2.8
Hamburg.....	546.3	1.6	90.2	2.0
Pfalz (Westmark).....	545.9	1.6	117.5	2.5
Saarland.....	454.2	1.3	77.4	1.7
Oberschlesien.....	449.7	1.3	48.6	1.1
Pommern.....	391.7	1.1	13.6	0.3
Ostpreussen.....	350.2	1.0	16.9	0.4
Mecklenburg.....	241.2	0.7	5.4	0.1
Oldenburg.....	136.2	0.4	13.9	0.3
Other.....	1,024.7	3.0	99.4	2.2
Total.....	34,186.0	100.0	4,618.9	100.0

Source: Die Deutsche Industrie.

Tables VII and VIII provide summaries of the distribution of the labor force of the Reich. In one respect they are seriously defective: they do not show the distribution of non-German workers. In 1933, 683,000 non-Germans were in the Reich, a considerable part of them from Poland, Czechoslovakia, and Jugoslavia. In spite of the large-scale unemployment in the country, many of these foreigners were working in German mills and mines. In addition, there was immigration of laborers at the time of harvest.

Attention has already been called to the trend in reported occupations. The German system of training for the trades as a prerequisite for admission to them might make an extensive retraining program necessary if the character of the industrial production is changed after the war.

In view of Nazi patronage practices, as well as the character of the higher civil service even before the Nazis were placed in power, the 1939 figures on employment in government services offers food for thought. It will be noted that the numerous employees of the Nazi party who were not in government service are unaccounted for—unless they are included in the category "personal services."

TABLE VII.—*Labor force of Germany, censuses of 1933 and 1939*

[Altreich including the Saar]

Industry	1933		1939	
	Number	Percent	Number	Percent
Total population	66,029,000		69,316,000	
Total labor force, including unemployed	¹ 32,622,100	100.0	² 34,247,600	100.0
Agriculture, forestry, fishing	9,388,100	28.8	8,984,900	26.2
Manufacturing industries, including handcraft workers:	13,235,400	40.6	14,602,700	42.6
Mineral mining and related industries	757,700	2.3	733,600	2.1
Extraction and processing of stone, clay, etc.	615,400	1.9	654,400	1.9
Metal and chemical industries	3,486,600	10.7	5,041,500	14.7
Construction	2,022,500	6.2	2,375,200	6.9
Other industries	6,166,000	18.9	5,782,400	16.9
Without definite occupation	187,100	.6	15,600	
Trade, finance, transportation	5,993,600	18.4	6,071,500	17.7
Trade and finance	4,422,400	13.6	4,174,900	12.2
Transportation and shipping	1,571,200	4.8	1,896,600	5.5
Government and personal services	2,724,500	8.3	³ 3,230,000	9.5
Government	1,698,400	5.2	³ 2,220,900	6.5
Personal services	1,026,100	3.1	1,009,000	3.0
Domestic service	1,280,500	3.9	1,358,500	4.0

UNEMPLOYMENT IN GERMANY, BY INDUSTRY, 1933

Industry	Labor force	Unemployed	Percent
Total	32,622,110	5,899,258	18.1
Agriculture, forestry, fishing	9,388,139	309,968	3.3
Manufacturing industries and handcraft workers	13,235,357	⁴ 4,232,878	32.0
Trade, finance, transportation	5,993,580	927,253	15.5
Government and personal services	2,724,538	245,595	9.0
Domestic service	1,280,496	183,564	14.3

¹ Includes 5,899,258 unemployed.² Does not include 369,000 uniformed servicemen.³ No information available on distribution of unemployment among the branches of the manufacturing industries.

Source: Data for 1933 from Statistisches Jahrbuch für das Deutsche Reich, 1938, pp. 26, 28-29; data for 1939 from Wirtschaft und Statistik, Sonderbeilage, No. 19, 1941.

TABLE VIII.—*Labor force in German manufacturing industries, 1933 and 1939 censuses*¹

[Altreich including the Saar]

Manufacturing industries	1933	Percent	1939	Percent
Total, including unemployed.....	² 13, 235, 400	100. 0	14, 602, 700	100. 0
Mineral mining and related industries.....	757, 700	5. 7	733, 600	5. 0
Extraction and processing of stone, clay, etc.....	615, 400	4. 6	654, 400	4. 5
Metal and chemical industries.....	3, 486, 600	26. 4	5, 041, 500	34. 5
Iron, steel and nonferrous metals.....	493, 400	3. 7	683, 400	4. 7
Iron, steel and metal products.....	969, 000	7. 3	1, 051, 400	7. 2
Machines, machine tools, vehicles, etc.....	1, 110, 100	8. 4	1, 976, 300	13. 5
Electrical equipment (also installation).....	406, 400	3. 1	639, 500	4. 4
Fine mechanical and optical goods.....	143, 600	1. 1	192, 900	1. 3
Chemicals and chemical products.....	364, 100	2. 8	498, 000	3. 4
Construction.....	2, 022, 500	15. 3	2, 375, 200	16. 3
Other industries.....	6, 166, 000	46. 6	5, 782, 400	39. 6
Pulp, paper, paper boxes, bookbinding, etc.....	252, 100	1. 9	263, 100	1. 8
Printing and photography.....	286, 900	2. 2	249, 500	1. 7
Leather and linoleum ³	161, 400	1. 2	158, 500	1. 1
Rubber and asbestos industry.....	73, 500	. 6	77, 900	. 5
Sawmill products, furniture and other products of wood.....	873, 000	6. 6	834, 400	5. 7
Musical instruments and toys ⁴	70, 200	. 5	53, 700	. 4
Textiles.....	1, 119, 600	8. 5	1, 134, 900	7. 8
Clothing.....	1, 487, 900	11. 2	1, 334, 700	9. 1
Foodstuffs (human and animal), tobacco, liquor.....	1, 644, 300	12. 4	1, 462, 600	10. 0
Electric power and gas industries.....	197, 100	1. 5	213, 100	1. 5
Without definite occupation.....	187, 100	1. 4	15, 600	. 1

¹ Figures cover workers in home shops as well as those in factories, etc. "Labor force" includes owners active in industry, as well as salaried and wage-earning employees.

² Includes 4,232,900 unemployed.

³ In census of manufactures, linoleum is included as a product of the "Chemical-technical industry."

⁴ In census of manufactures, musical instruments and toys are included in the "Metalware industry."

Source: Data for 1933 from Statistisches Jahrbuch für das Deutsche Reich, 1938, pp. 26, 28-29; data for 1939 from Wirtschaft und Statistik, Sonderbeilage, No. 19, 1941.

Table IX contains three sets of statistics that to some extent overlap. It seems quite probable, for example, that at least some of the home-workers of section A who were engaged in the manufacture of clothing were attached to the clothing factories and also numbered among the employees of the plants covered by the census of manufactures (part C). It will be noted that part C shows the larger establishments had 155,334 working proprietors and family members aiding them.

Part B breaks down employment by the size of the working staff. In general, the census of manufactures did not cover establishments with less than ten workers.

Unfortunately, data on the size of the working staffs is not available for a year after 1933. By the time the war began the government had begun to force the smaller producers out of business in order to concentrate labor in the most productive establishments.

TABLE IX.—*Employment in industry by size of establishment and compensation status*A. HOME WORKERS IN THE ALTREICH, SEPT. 15, 1937¹

	Number
Employed in own home.....	448, 613
Employed by others in home work.....	108, 564
Family members regularly assisting.....	45, 272
Foreign helpers in home work.....	74, 562
Total.....	677, 011

B. NUMBER OF PERSONS EMPLOYED, BY SIZE OF ESTABLISHMENT, 1933²

[Includes Saar]

Size of staff	All establishments, total employed ³	Manufacturing establishments, total employed
1 to 5 persons.....	5, 837, 551	3, 074, 093
6 to 10 persons.....	1, 159, 627	681, 796
11 to 50 persons.....	2, 121, 438	1, 293, 342
51 to 200 persons.....	2, 130, 978	1, 436, 015
More than 200 persons.....	3, 541, 234	2, 666, 955
Total.....	14, 790, 823	9, 152, 201

C. DISTRIBUTION OF PERSONS ENGAGED IN MANUFACTURING, BY COMPENSATION STATUS, 1936⁴

	Working proprietors and family members aiding them	Sales staff ⁵	Technical professional employees	Wage earners	Total
Numbers.....	155, 334	592, 552	360, 540	6, 841, 767	7, 950, 193
Percent of total by class.....	1.9	7.5	4.5	86.1	100.0
Percent of males.....				78.8	79.0

¹ Source: Statistisches Jahrbuch für das Deutsche Reich, 1938.² Of the total, 26.5 percent were engaged in manufacture of textiles and 43.3 percent in the manufacture of clothing; thus a grand total of 69.8 percent were directly or indirectly dependent on a supply of textile fibers.³ Source: Statistisches Jahrbuch für das Deutsche Reich, 1938; after 1935 the German statistical agency adjusted the industrial census figures to include the results of a census made in the Saar in 1935.⁴ This category includes establishments doing nonagricultural gardening and care of animals, the fisheries, manufacturing establishments of all kinds, and trade, communications, financial, and tourist establishments.⁵ Includes 320,926 persons in cleaning establishments; this category is not included in the census of manufactures.⁶ Source: Die Deutsche Industrie.⁷ Figures applicable only to establishments covered by census of manufactures. (See last table for omitted categories in various branches of industry.) It will be noted that some home workshops are included in the census. (See sec. A of this table.)⁸ Compensation status of persons in sales services not specified.

Table X, part A, shows the relation of the value added by manufacture in Germany to the national income in various years. It will be noted that in the years of highest pre-war industrial activity the value added by manufactures was equal to about half the national income, but was equal to only about 35.1 percent in 1933.

No completely comparable sets of figures are available for the United States, because the census of manufactures of the United

States omits several categories covered by the German census—namely, the mineral, power, gas, and construction industries. If, however, these categories are subtracted from the 1936 German manufactures, the value added by manufacture for the remaining group in that year was equal to 40 percent of the German national income.

The only recent year for which salaries, wages, and numbers of workers in the United States are available for the group of industries covered by the German census is 1939. In the United States this year was not as industrially active as 1936 was in Germany. But in 1939 in the United States the portion of the national income paid in salaries and wages in the manufacturing industries was about the same (20.6 percent) as it had been in Germany (20.5 percent) in 1936. Moreover, this share of the German national income was distributed among 1.3 percent of the population, whereas in the United States it was shared by 8.3 percent of the population. This is one of the bits of evidence of the relatively poorer position of the employee in the German manufacturing industries that is not reflected in a comparison of the average compensation paid in each country.

The lower rate of compensation in Germany is also borne out by comparison of the figures on the proportion of the value added by manufacture going to employees of the manufacturing industries in the two countries. As table X shows, in the year of greatest industrial activity before the war became general, the German workers received only 42.4 percent of the value added by manufacture (as against 51 percent in the United States in the industrially active year of 1937, 46.1 percent in 1929, and 47.1 percent in 1939).

The disparity in the return to the worker is even greater if the higher degree of mechanization in the United States is taken into account. This can be measured by the consumption of electrical energy in the same group of industries in the two countries, which was:

Germany (1936), kilowatt-hours per worker.....	4, 410
United States (1937), kilowatt-hours per worker.....	7, 859

Since the greater consumption of electric power calls for a higher investment in mechanical devices, it would be expected that the relative compensation per worker would be lower in the United States than in Germany. As has been shown, this was not the case.

TABLE X.—*German national income, total wages and salaries paid in manufacturing industries, and value added by manufacture, specified years*^{1 2}

A. NATIONAL INCOME IN COMPARISON WITH VALUE ADDED BY MANUFACTURE, 1933-38²

[In billion reichsmarks]

Year	National income	Value added by manufacture	(2) as percentage of (1)
	(1)	(2)	
1933.....	46.5	16.3	35.1
1934.....	52.7	22.8	43.3
1935.....	58.6	27.0	46.1
1936.....	64.9	34.2	52.7
1937.....	71.0	35.9	50.6
1938.....	77.0	39.6	51.4

See footnotes at end of table.

TABLE X.—*German national income, total wages and salaries paid in manufacturing industries, and value added by manufacture, specified years—Continued*B. WAGES AND SALARIES PAID IN MANUFACTURING INDUSTRIES AS A PROPORTION OF THE NATIONAL INCOME¹

[In billion reichsmarks]

Year	National income (1)	Total industrial wages and salaries (2)	(2) as percentage of (1)
1929.....	75.9	16.4	21.6
1932.....	45.2	7.4	16.4
1936.....	64.9	13.3	20.5
1937.....	71.0	15.2	21.4
1938.....	77.0	16.8	21.8

C. WAGES AND SALARIES IN RELATION TO THE VALUE ADDED BY MANUFACTURE

[In billion reichsmarks]

Year	Total industrial wages and salaries (1)	Value added by manufacture (2)	(1) as percentage of (2)
1936.....	13.3	34.2	38.9
1937.....	16.2	35.9	42.3
1938.....	16.8	39.6	42.4

¹ Figures for manufacturing industries applicable only to the establishment covered by census of manufactures; in some categories it did not include shops having only a few workers or a very small volume of annual business. See table IX for number of workers in all manufacturing industries by size of establishment and last table for size of establishments not covered in the census of manufactures.

² Figures before 1935 are for the Reich without the Saar; figures for 1938 include Austria.

³ Source: Die Deutsche Industrie.

⁴ Source: Wirtschaft und Statistik, 1939.

Table XI provides additional data on the distribution of salaries and wages in various years and confirms the increasingly large part played by the capital goods industries.

It will be noted that in spite of the greatly increased volume of production in 1938 the total paid out in wages in the manufacturing industries was not much larger than it had been in 1929. German official statistical agencies provided figures (see pt. A, table XII) to show that under "National socialism" there was great improvement in the buying power of the mark in relation to the cost of living. The figures, however, are not convincing, for various reasons. (See comments on table XII.)

TABLE XI.—*Income of German wage and salary earners, percentage in industry and in capital goods industries, 1929, 1932, 1937, 1938*

[Million reichsmark]

WAGES

	1929	1932	1937	1938
Reich total wages.....	23,339	11,320	21,350	23,754
Industrial total wages.....	13,273	5,387	12,127	13,496
Percent industrial.....	57	48	57	57
Capital goods industries.....	9,450	3,178	9,004	10,088
Consumption goods industries.....	3,823	2,209	3,123	3,378
Percent of industrial total in capital goods industries.....	71	59	74	76

SALARIES

	1929	1932	1937	1938
Reich total salaries.....	7,649	5,766	8,983	9,864
Industrial total salaries.....	3,080	1,980	3,070	3,390
Percent of industrial.....	40	34	34	34
Capital goods industries.....	2,130	1,300	2,220	2,490
Consumption goods industries.....	950	680	850	900
Percent of industrial total in capital goods industries.....	69	66	72	74

Source: *Wirtschaft und Statistik*, Apr. 2, 1939.

Table XII is concerned with the standard of living of German wage earners in comparison with that in two other highly industrialized countries. Particularly noteworthy is the large proportion of the German family income spent for food that, as the last part of the table shows, was much inferior in quality to that of wage earners in the United States. The deficiency is evident above all in the lesser consumption of meat, fish, and dairy products and in the greater use of the cheaper breadstuffs. The lesser consumption of fruit and vegetables is also typical of the poorer diet.

The price of agricultural products rose 21.5 percent between 1933 and 1937. But according to the index the retail price of foodstuffs rose only 6.8 percent. Since governmental subsidies were not used to hold down retail prices to the extent indicated by the index, the validity of the index is open to question.

In connection with the rising cost of clothing it should be kept in mind that quality had considerably deteriorated between 1933 and 1938 because of the compulsory increase in the use of the less durable rayon fibers.

The smaller proportion of the family income spent for shelter in Germany should be examined from the standpoint of the character of the shelter. In December 1942 the *Frankfurter Zeitung* contained an article in which it was estimated that, at the beginning of the war, 10.4 percent of the dwellings of Germany had been unsanitary and overcrowded (that is, they had had two or more persons living in each room). In the United States it was estimated that only 9 percent of the occupied units had 1.51 or more persons per room in 1940. Comparable figures on sanitary facilities are not readily available but it is well established that a much larger proportion of the dwelling units in the United States have private bathtubs and showers.

Thus the lower buying power of the German wage earner not only seriously limited his ability to support a healthy consumer goods industry but also had its effect on certain branches of the capital goods industry.

TABLE XII.—German cost-of-living index, expenditures by wage earners, and quantities of foodstuffs consumed by wage earners in Germany, the United States, and Great Britain

A. GERMAN COST-OF-LIVING INDEX, 1929, 1933, 1935, AND 1938
[1929=100]

	Food	Fuel and light	Clothing	Rent	Combined
1933.....	73	90	62	96	77
1936.....	79	89	70	96	81
1937.....	79	89	73	96	81
1938.....	78	88	76	96	83

B. DISTRIBUTION OF EXPENDITURES BY WAGE EARNERS, GERMANY AND THE UNITED STATES

(Germany 1937, United States 1934-36 average)

	Germany ¹	United States ²
	Percent	Percent
Food.....	46.9	23.5
Rent.....	13.1	17.1
Furnishings.....	4.2	3.8
Fuel and lights.....	5.1	7.1
Clothing.....	9.3	10.6
Miscellaneous.....	21.3	27.9
	99.9	100.0

C. AVERAGE ANNUAL CONSUMPTION OF FOODSTUFFS BY WAGE EARNERS—GERMANY, THE UNITED STATES, AND GREAT BRITAIN³

[In kilograms]

	Germany	United States	Great Britain
Breadstuffs.....	134.9	126.7	141.0
Meat and fish.....	41.9	74.5	48.1
Fats and oils.....	14.1	13.5	9.5
Dairy products.....	129.5	158.8	147.7
Fruits and vegetables.....	212.5	270.3	136.8

¹ Average income 2,163.06 RM.

² Average income \$1,745.

³ Germany 1937, United States 1934-36 average, Great Britain 1937-38.

Source: Year Book of Labor Statistics, 1941, International Labor Office.

Table XIII is the first of five dealing with German foreign trade. This table gives the over-all picture through the years. Table XIX should be consulted for the value of reparations deliveries. It should be kept in mind that the changing value of the mark is not reflected in the statistics on value.

TABLE XIII.—Value of German foreign trade, selected years, 1910-37¹

(Million reichsmarks)

	General imports ²	General exports ²	Imports for consumption ³	Exports of German products	Net imports (+) and exports (-) of bullion and coin
1910.....	9,535	8,080	9,834	7,475	+206
1911.....	10,380	8,774	9,706	8,106	+183
1912.....	11,572	9,684	10,692	8,957	+183
1913.....	11,655	10,892	10,770	10,097	+335
1920.....	(⁴)	(⁴)	3,929	3,709	-----
1921.....	(⁴)	(⁴)	5,732	2,976	-----
1922.....	(⁴)	(⁴)	6,290	6,187	-----
1923.....	(⁴)	(⁴)	6,150	6,102	-3
1924.....	(⁴)	(⁴)	9,083	6,552	+148
1925.....	13,652	9,964	12,362	9,290	+679
1926.....	11,220	11,101	10,001	10,414	+579
1927.....	15,839	11,746	14,228	10,801	+216
1928.....	15,729	13,007	14,001	12,276	+935
1929.....	14,027	14,215	13,447	13,483	-422
1930.....	10,852	12,650	10,393	12,036	-52
1931.....	6,957	10,116	6,727	9,599	-1,007
1932.....	4,878	6,056	4,666	5,739	+65
1933.....	4,395	5,140	4,204	4,871	+427
1934.....	4,627	4,406	4,451	4,167	-218
1935.....	4,243	4,452	4,159	4,270	+101
1936.....	4,455	5,001	4,218	4,768	+9
1937.....	5,716	6,172	5,468	5,911	-9

¹ From 1925 on, the figures of exports are inclusive of deliveries on reparations accounts. Deliveries ceased in 1932.

² Includes goods in transit.

³ Includes industrial raw materials.

⁴ No statistics on transit trade were compiled in this period, possibly because of the large quantities of relief supplies moving through Germany.

Source: United States Foreign Commerce Yearbook, 1939.

Tables XIV and XV mirror the changing pattern of German trade and the results of the new trade techniques of the 1930's. But in view of the changing volume of foreign trade and the changes in the value of currencies on the international money market, the figures on value from year to year are less significant than the percentage figures of Table XVI.

TABLE XIV.—German merchandise imports, by principal countries, 1929-39¹

(Value in million reichsmarks)

Country	1929	1930	1931	1932	1933	1934	1935 ²	1936	1937	1938
France (and Alsace Lorraine).....	642	519	342	190	184	177	154	99	156	144
Saar.....	202	164	112	89	116	167	26	-----	-----	-----
United States.....	1,790	1,307	791	592	483	373	52	232	282	405
United Kingdom.....	865	639	453	258	238	206	256	264	309	283
Union of Soviet Socialist Republics.....	426	436	304	271	194	210	215	93	65	47
Switzerland.....	318	255	165	92	83	116	114	106	94	103
Spain.....	252	210	146	99	87	100	118	98	136	128
Northern Europe:										
Sweden.....	350	304	158	95	103	134	153	192	232	262
Denmark.....	371	296	183	122	104	101	119	154	165	172
Norway.....	143	106	61	52	73	69	94	88	91	99
Finland.....	116	85	43	26	37	42	41	46	70	89
Southeast Europe:										
Yugoslavia.....	61	75	40	29	34	36	61	75	132	108
Hungary.....	89	82	55	36	34	64	78	93	114	110
Rumania.....	211	237	102	74	46	59	80	92	180	140
Poland (excluding Danzig).....	339	237	111	59	56	54	59	58	68	95
Italy.....	443	365	208	181	166	185	188	209	221	247
South America:										
Argentina.....	745	403	209	192	149	152	143	119	295	216
Brazil.....	215	156	123	81	69	77	177	131	186	214
Chile.....	122	56	42	24	20	36	52	59	81	91
World total.....	13,447	10,393	6,727	4,667	4,204	4,451	4,159	4,218	5,468	5,440

¹ Excludes transit shipments.

² From Feb. 18, 1935, figures cover the Saar.

Source: International Trade Statistics, 1930-39, League of Nations.

TABLE XV.—*German merchandise exports, by principal countries, 1929-38*^{1 2}

[Value in million reichsmarks]

Country	1929	1930	1931	1932	1933	1934	1935 ³	1936	1937	1938
France (and Alsace Lorraine)	935	1,149	834	483	395	282	253	255	313	217
Saar	143	169	139	89	84	73	7	—	—	—
United States	991	685	488	281	246	158	32	172	209	149
United Kingdom	1,306	1,219	1,134	446	406	383	375	406	432	351
Union of Soviet Socialist Republics	354	431	762	626	282	63	89	126	117	32
Switzerland	627	628	542	412	352	295	257	226	231	207
Spain	218	188	140	91	86	88	106	69	67	96
Northern Europe:										
Sweden	476	494	425	228	191	198	207	230	277	267
Denmark	483	477	370	165	145	140	142	182	218	208
Norway	227	207	162	100	85	80	87	91	139	123
Finland	188	137	91	45	44	43	49	54	78	82
Southeast Europe:										
Yugoslavia	153	172	95	43	34	32	37	77	134	118
Hungary	147	118	84	47	38	40	63	83	111	110
Rumania	164	137	93	64	46	51	64	104	130	149
Poland (excluding Danzig)	343	250	141	71	56	39	48	53	73	103
Italy	602	484	341	223	227	246	278	241	317	306
South America:										
Argentina	371	287	174	90	100	87	97	98	147	147
Brazil	210	121	67	48	77	75	119	133	177	161
Chile	100	100	39	8	8	12	32	49	56	60
World total	13,483	12,036	9,599	5,739	4,871	4,167	4,270	4,768	5,911	5,257

¹ Not including transit shipments.² Include war reparations in kind.³ From Feb. 18, 1935, included the Saar.

Source: International Trade Statistics, 1930-39, League of Nations.

Table XVI indicates the extent to which various countries turned to Germany for their manufactures. Above all, however—the figures on the percentage of exports to Germany from each country are of significance because they are a very good measure of Germany's importance to other countries as a buyer of their products—above all, their surplus raw materials.

While it was nearly always possible for a buyer of manufactures to make a choice of foreign markets (except under the trade system Germany built up with certain countries in the 1930's), sellers met high competition abroad. Therefore, Germany's dependence on foreign sources of raw materials for its industries—cotton, wool, jute, iron ore, petroleum, hides, timber—became one of its best cards in preventing measures that would have made it militarily impotent. This situation was responsible, for example, for the anomalous recommendation made by the commission set up on instigation of the French Ministry of War to survey the domestic productive capacity after the German plans for military aggression were becoming clear. The commission reporting early in 1938 recommended that the French purchases of foreign coal be linked with the sale of French iron ore. Germany, a major supplier of coal to France, had also been a major consumer of French iron ore but was turning increasingly to Sweden for this commodity.

TABLE XVI.—Germany's share in the total trade of her trading partners

[By Value]

	Percent of imports from Germany	Percent of exports to Germany		Percent of imports from Germany	Percent of exports to Germany
France:			Greece:		
1929	12.0	9.5	1929	10.6	25.6
1932	12.7	8.6	1932	11.9	18.7
1937	8.3	6.5	1937	30.2	32.1
Belgium:			Hungary:		
1929	12.3	12.1	1929	33.2	42.1
1932	17.1	10.6	1932	38.0	45.3
1937	11.6	11.2	1937	44.2	36.4
Holland:			Bulgaria:		
1929	30.8	22.9	1929	29.8	42.4
1932	31.2	21.6	1932	31.9	41.0
1937	21.5	16.1	1937	58.0	47.1
Switzerland:			Argentina:		
1929	27.1	20.2	1929	11.5	10.0
1932	28.9	16.9	1932	9.7	8.8
1937	24.7	18.4	1937	10.4	6.3
Sweden:			Brazil:		
1929	30.8	15.2	1929	12.7	8.8
1932	29.3	9.5	1932	9.0	8.9
1937	23.1	16.0	1937	23.9	17.0
Denmark:			Venezuela:		
1929	32.9	19.9	1929	9.2	4.7
1932	25.9	13.2	1932	12.4	2.1
1937	24.5	18.8	1937	15.0	2.0
Norway:			Chile:		
1929	24.4	13.0	1929	15.5	8.6
1932	21.3	12.1	1932	14.7	13.7
1937	16.5	13.1	1937	26.1	9.5
Italy:			Colombia:		
1929	14.8	14.8	1929	14.4	2.1
1932	15.7	14.2	1932	15.4	4.1
1937	23.0	17.2	1937	13.5	12.4
Czechoslovakia:			Peru:		
1929	46.2	37.9	1929	10.0	6.1
1932	40.8	33.5	1932	10.7	7.2
1937	19.7	21.0	1937	19.7	13.7
Turkey:			Uruguay:		
1929	17.5	13.8	1929	10.0	15.6
1932	25.3	15.1	1932	10.5	15.3
1937	43.7	38.5	1937	11.3	13.4
Rumania:			United States:		
1929	36.6	37.0	1929	5.8	7.8
1932	28.6	18.7	1932	5.6	8.3
1937	40.1	27.1	1937	3.0	3.7
Yugoslavia:					
1929	33.0	24.1			
1932	31.0	23.4			
1937	53.6	35.2			

Source: Economist, Nov. 6, 1938, p. 264.

TABLE XVI.—Germany's share in the total trade of her trading partners—Continued
GERMANY'S SHARE OF THE TOTAL EXPORTS OF COUNTRIES OF THE BRITISH EMPIRE

Unit of Empire	Years	Percent of value of total exports going to Germany	Unit of Empire	Years	Percent of value of total exports going to Germany
United Kingdom ¹	1929	4.7	Malaya (continued).....	1936	2.0
	1932	4.0	Australia.....	1928-29	6.9
	1937	4.1		1931-32	4.1
Canada.....	1929	3.4		1936-37	2.9
	1932	1.5	New Zealand.....	1929	2.2
	1937	1.18		1932	.8
India.....	1929	9.3	Union of South Africa.....	1929	9.5
	1932	6.2		1932	8.0
	1937	5.7		1937	12.8
Malaya.....	1929	2.5			
	1932	2.2			

¹ These percentages are based on the value of products of the United Kingdom and do not cover the reexport trade, a good part of which consisted of colonial products.

Germany's share of the United Kingdom's reexport trade in selected years was:

	Percent
1930.....	19.9
1933.....	19.9
1937.....	9.7

Source: British Empire Unit, Bureau of Foreign and Domestic Commerce, Department of Commerce. Computed from figures in Foreign Commerce Yearbook.

Table XVII, which gives the value and quantity of certain commodities imported in selected years after 1928, emphasizes primarily the raw materials and semi manufactures needed at critical periods. It will be noted that in 1937 and 1938, Germany was bringing in greatly increased quantities of certain materials, such as rubber, jute, and wool, that had to come wholly or largely from extracontinental sources. The size of the imports of motor fuel and lubricating oil in 1937 and 1938, almost blueprinted Germany's military intentions. The table as a whole can be fully interpreted only in connection with the volume of German exports.

TABLE XVII.—Imports into Germany of certain important commodities, in specified years, 1929 to 1938

(Quantity in thousands of metric tons; ¹ value in millions of reichsmarks)

Commodity	1929	1933	1934	1937	1938
Imports from all countries—total value.....	13,446.8	4,203.6	4,451.0	5,468.4	5,449.3
Livestock; value.....	149.7	30.9	33.3	107.5	113.0
Percent of total value.....	1.1	.7	.7	2.0	2.1
Animal food products; value.....	1,544.5	432.5	385.7	479.7	479.1
Percent of total value.....	11.5	10.3	8.7	8.8	8.8
Vegetable food products; value.....	2,943.1	869.9	827.5	1,135.2	1,171.8
Percent of total value.....	21.9	20.7	18.6	20.8	21.5
Special semiluxury articles; value.....	743.3	296.4	296.7	322.7	346.9
Percent of total value.....	5.5	7.1	6.7	5.9	6.4
Raw materials and semimanufactures; value.....	6,301.4	2,069.0	2,332.2	2,976.5	2,890.8
Percent of total value.....	46.9	49.2	52.4	54.4	53.0
Wool and other animal hair:					
Quantity.....	204.6	197.9	180.1	128.2	166.1
Percent of total value.....	5.5	6.3	7.2	5.2	4.9
Cotton, raw, dyed, carded, combed, bleached, etc.:					
Quantity.....	476.8	473.3	399.5	349.6	352.8
Percent of total value.....	6.1	7.3	5.8	5.0	4.0

¹ Except livestock, for which the units is 1,000 head.

TABLE XVII.—Imports into Germany of certain important commodities, in specified years, 1929 to 1938—Continued

(Quantity in thousands of metric tons; value in millions of reichsmarks)

Commodity	1929	1933	1934	1937	1938
Raw materials and semimanufactures; value—Con.					
Jute, flax, hemp, etc., raw and semimanufactured:					
Quantity	250.4	213.4	225.6	265.7	261.2
Percent of total value	1.4	1.6	1.6	2.1	1.8
Hides and skins and furs, undressed:					
Quantity	138.8	151.9	168.9	157.7	135.2
Percent of total value	4.1	4.4	4.1	4.3	2.9
Logs for the manufacture of wood pulp:					
Quantity	2,533.9	2,472.3	3,018.3	1,663.2	1,674.6
Percent of total value	.7	1.1	1.4	.8	.9
India rubber, gutta-percha, and balata gum, raw or refined:					
Quantity	59.1	60.5	72.2	123.2	96.2
Percent of total value	.8	.6	1.0	2.1	1.4
Coal (anthracite):					
Quantity	7,925.1	4,234.6	4,971.4	4,696.6	5,078.8
Percent of total value	1.2	1.4	1.5	1.1	1.3
Iron ore:					
Quantity	16,952.8	4,571.6	8,264.6	20,620.9	21,927.5
Percent of total value	2.3	1.4	1.9	4.1	5.2
Manganese ore:					
Quantity	390.3	131.9	224.7	554.2	425.8
Percent of total value	.2	.1	.1	.4	.3
Copper ore:					
Quantity	438.1	240.9	324.9	555.6	653.9
Percent of total value	.2	.1	.1	.4	.4
Lead ore:					
Quantity	79.5	105.2	82.0	126.8	141.3
Percent of total value	.2	.3	.2	.4	.3
Zinc ore:					
Quantity	178.9	79.1	127.3	146.3	185.0
Percent of total value	.2	.1	.1	.1	.1
Chrome ore:					
Quantity	41.7	47.7	77.0	132.2	176.4
Percent of total value	.1	.1	.1	.1	.2
Nickel ore:					
Quantity	13.8	34.5	37.6	20.0	34.2
Percent of total value	.1	.2	.2	.2	.2
Bauxite:					
Quantity	387.0	239.1	326.5	1,313.2	1,184.6
Percent of total value	.1	.1	.2	.5	.5
Tin ore:					
Quantity	10.1	.4	.6	6.6	6.0
Percent of total value	.1			.1	
Silk and rayon, raw, and silk and rayon floss, etc.:					
Quantity	16.7	15.2	21.3	8.8	8.9
Percent of total value	1.7	1.5	1.8	.8	.8
Yarn of wool and other animal hair:					
Quantity	23.1	10.3	8.9	6.7	7.1
Percent of total value	1.4	.8	.8	.5	.5
Cotton yarn:					
Quantity	33.2	15.2	18.6	20.2	20.9
Percent of total value	1.4	1.0	1.0	.9	.8
Lumber and timber:					
Quantity	4,492.4	1,280.7	2,545.7	2,623.8	2,615.8
Percent of total value	2.9	1.7	3.0	3.5	3.7
Pig iron, scrap, and waste:					
Quantity	560.1	431.7	607.7	762.9	1,629.4
Percent of total value	.3	.4	.6	.8	1.4
Aluminum:					
Quantity	14.2	2.8	6.4	7.1	18.8
Percent of total value	.2		.1	.1	.3
Copper and copper scrap:					
Quantity	262.1	207.1	228.6	262.5	358.4
Percent of total value	3.0	2.4	2.2	3.2	3.3
Nickel and nickel scrap:					
Quantity	4.5	4.5	5.4	3.4	4.0
Percent of total value	.1	.3	.3	.1	.1
Lead and lead scrap:					
Quantity	136.8	48.7	48.6	73.3	75.3
Percent of total value	.5	.2	.2	.4	.3
Tin and tin scrap:					
Quantity	17.5	14.9	13.5	10.3	12.1
Percent of total value	.5	.8	.8	.5	.5
Zinc and zinc scrap:					
Quantity	137.2	100.6	107.4	70.7	74.9
Percent of total value	.5	.5	.5	.3	.3

TABLE XVII.—Imports into Germany of certain important commodities, in specified years, 1929 to 1938—Continued

(Quantity in thousands of metric tons; value in millions of reichsmarks)

Commodity	1929	1933	1934	1937	1938
Raw materials and semimanufactures; value—Con.					
Motor fuel and lubricating oils:					
Quantity.....	2,768.9	2,702.4	3,157.9	307.3	4,067.0
Percent of total value.....	2.7	3.1	3.1	4.2	4.9
Manufactures; total value.....	1,764.8	504.9	575.6	396.6	396.7
Percent of total value.....	13.1	12.0	12.9	7.3	7.3
Fabrics of wool and other animal hair:					
Quantity.....	4.6	1.6	1.7	1.7	1.9
Percent of total value.....	.8	.4	.4	.4	.4
Cotton fabrics:					
Quantity.....	9.9	4.4	4.9	5.2	5.3
Percent of total value.....	.8	.6	.5	.4	.4
Leather:					
Quantity.....	11.8	6.7	6.3	6.4	7.5
Percent of total value.....	.9	.7	.7	.6	.6
Bars and wrought iron:					
Quantity.....	674.0	395.2	653.9	255.2	269.3
Percent of total value.....	.8	1.1	1.7	.6	.8
Percent of total imports accounted for by the above commodities.....	72.0	69.0	69.0	73.0	74.0

Source: Monatliche Nachweise über den auswärtigen Handel Deutschlands, summarized as above in Foreign-Trade and Exchange Controls in Germany, Report No. 150, United States Tariff Commission. The Tariff Commission's report includes further details on agricultural imports.

TABLE XVIII.—Index of prices, German imports and exports, 1925-38

Year	Index of prices (1927=100)		Year	Index of prices (1927=100)	
	Of German imports	Of German exports		Of German imports	Of German exports
1925.....	111.6	104.2	1932.....	51.1	68.8
1926.....	101.7	100.7	1933.....	45.9	61.8
1927.....	100.0	100.0	1934.....	44.7	56.4
1928.....	101.8	100.0	1935.....	44.9	52.1
1929.....	101.3	98.7	1936.....	46.3	50.9
1930.....	87.3	92.3	1937.....	50.8	53.2
1931.....	67.3	80.4	1938.....	46.5	54.3

NOTE.—Interpretations of these index figures must take into account the overvaluation of the mark in the later years, and the change in the character of the exports, imports, and trading partners.

Source: League of Nations, Review of World Trade, 1939, p. 74.

TABLE XIX.—German reparations payments, 1925-33

(Value in million reichsmarks)

Year	Reparations in kind	Reparations not in kind	Total	Year	Reparations in kind	Reparations not in kind	Total
1925.....	491.9	1,057.0	1,548.9	1930.....	707.4	1,706.0	2,413.4
1926.....	631.3	1,191.0	1,822.3	1931.....	392.7	988.0	1,380.7
1927.....	578.7	1,584.0	2,162.7	1932.....	62.1	160.0	222.1
1928.....	662.8	1,990.0	2,652.8	1933.....	-----	149.0	149.0
1929.....	819.3	2,337.0	3,156.3				

The figures in this table should be compared with the figures on the value of German trade in tables XIII, XV, and XVII.

Source: Foreign-Trade and Exchange Controls in Germany, U. S. Tariff Commission Report No. 150, 1942, p. 53.

Table XX and XXI are of interest chiefly in connection with Table XIX, which gives the total value of the reparations paid after 1924. The extent to which Germany was the victor in the reparations field is clearly discernible.

TABLE XX.—*Capital movements into and out of Germany, 1925-35*

[In million reichsmarks]

Year	New foreign investments in Germany				New German investments abroad				Balance of investments: (+) excess of foreign investments in Germany; (-) excess of German investments abroad
	Stocks and long-term investments	Short-term investments	Other capital movements	Total	Stocks and long-term investments	Short-term investments	Other capital movements	Total	
1925.....	1,136	182	200	1,518	12	75	-----	87	+1,431
1926.....	1,463	178	-----	1,641	87	31	-----	118	+1,523
1927.....	1,920	2,401	15	4,336	155	622	77	854	+3,482
1928.....	3,644	2,170	161	5,975	1,946	835	71	2,852	+3,123
1929.....	1,886	1,376	282	3,544	1,472	611	36	2,119	+1,425
1930.....	2,110	1,191	377	3,678	1,305	1,074	63	2,442	+1,236
1931.....	870	2,682	265	3,817	955	2,205	-----	3,160	+657
1932.....	300	250	-----	550	286	1,013	-----	1,299	-749
1933.....	-----	503	100	603	50	1,250	110	1,410	-807
1934.....	-----	1,310	-----	1,310	200	800	120	1,120	+190
1935.....	67	770	-----	837	100	510	100	710	+127

Source: Statistisches Jahrbuch für das Deutsche Reich, 1932, p. 530; 1934, p. 506; and 1933, p. 562. Comparable data for years after 1935 have not been reported.

TABLE XXI.—*Estimated international capital position of Germany, in specified months, 1925-31*

[In million reichsmarks]

Year	Estimated foreign investments in Germany				Estimated German investments abroad			Net debtor position
	Short-term	Long-term	Other ¹	Total	Short-term	Long-term	Total	
December:								
1925.....	(¹)	2,500	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)
1926.....	4,100	4,100	3,500	11,700	3,600	4,500	8,100	6,600
1927.....	6,600	5,400	4,500	16,500	3,900	4,500	8,400	8,100
1928.....	9,000	7,000	5,500	21,500	4,500	4,500	9,000	12,500
1929.....	11,700	7,300	0,000	25,000	5,500	4,500	10,000	15,000
1930.....	10,300	9,200	6,000	25,500	5,300	4,400	9,700	15,800
July 1931.....	8,000	9,000	6,000	23,000	3,500	5,000	8,500	14,500

¹ Principally direct investments by foreigners in German property.

² Not available.

Source: Report of the Committee of Experts appointed on the recommendation of the London Conference (Wiggin Committee), published in The Economist, Special Supplement, Aug. 22, 1931.

TABLE XXII.—Number of aktiengesellschaften by size of capitalization, 1927, 1936

Capitalization (in reichsmarks)	1927	1936 ¹	Capitalization (in reichsmarks)	1927	1936
5,000 or less.....	604	93	1,000,000 to 50,000,000.....	2,378	1,738
5,000 to 50,000.....	1,635	501	5,000,000 to 20,000,000.....	540	470
50,000 to 100,000.....	1,367	851	20,000,000 to 50,000,000.....	98	119
100,000 to 500,000.....	3,802	2,418	50,000,000 and more.....	60	50
500,000 to 1,000,000.....	1,482	959			

¹ Total nominal capitalization in 1936 was 19,224.6 million reichsmarks. First in size was I. G. Farbenindustrie with a capitalization of 800 million reichsmarks; second was Vereinigte Stahlwerke with 544 million reichsmarks. In 1942 I. G. Farben's capital was stated as 1,165 million and its total assets as 2,332.8 million reichsmarks. At the beginning of 1939 the Handbuch der Deutschen Aktiengesellschaften stated that the capital of Vereinigte Stahlwerke was 460 million reichsmarks and total assets 2,278 million reichsmarks.

At the end of 1936 there were also 39,249 Gesellschaften mit beschränkter Haftung (limited liability companies). These included some of the largest personal holding companies as well as certain large businesses. Total working capital of these companies was 5,079.8 million, of which nearly 16 percent was in 18 companies.

Source: Wirtschaft und Statistik, February 2, 1937.

TABLE XXIII.—United States: National income, total wages and salaries paid in manufacturing industries, 1938

A. WAGES AND SALARIES PAID IN MANUFACTURING INDUSTRIES¹ AS A PROPORTION OF THE NATIONAL INCOME

(Millions of dollars)

Year	National income (1)	Total industrial wages and salaries (2)	(2) as percentage of (1)
1939.....	70,829	14,609	20.6

B. WAGES AND SALARIES PAID IN MANUFACTURING INDUSTRIES² IN RELATION TO THE VALUE ADDED BY MANUFACTURE

Year	National income (1)	Salaries and wages (2)	Value added by manufacture (3)	(2) as percentage of (3)
1929.....	83,326	14,649	31,783	46.1
1933.....	42,322	6,619	14,538	45.5
1935.....	55,719	9,564	18,553	51.5
1937.....	71,513	12,830	25,174	51.0
1939.....	70,829	11,630	24,683	47.1

¹ The only year with figures available for categories comparable with the German in 1939. The German manufacturing industry includes the mining, construction, and electric-power industries. Data are not available for all these industries in the same year, so far as the United States is concerned, except in 1939. Even in that year it was necessary to use the wage figure on the electric-power industry for 1937 (\$470,353,000) as no census was taken in 1939.

² Omits construction, power, and mineral industries. (See table II for comparable data on Germany.)

Source: Statistical Abstract of the United States, 1943.

TABLE XXIV.—United States production of coal tar and sulfuric acid in comparison with German production (German figures after 1934 include output of the Saar)

A. COAL-TAR PRODUCTION, GERMANY AND THE UNITED STATES

Year	United States, total production (000 cubic meters)	Germany		
		Total production (000 metric tons)	Steinkohle tar	Brown coal tar
1929.....	2,577	623	425	198
1932.....	1,150	972	765	207
1933.....	1,375	1,024	815	209
1934.....	1,547	1,172	951	221
1935.....	1,705	1,447	1,196	251
1936.....	2,121	1,853	1,427	426
1937.....	2,343	2,228	1,594	634

B. SULFURIC ACID PRODUCTION, SELECTED COUNTRIES

[000 metric tons]

Year	United States	Germany	France	Italy	United Kingdom	Total world production
1929.....	4,817	1,704	1,032	835	957	-----
1932.....	-----	935	500	562	755	-----
1933.....	3,127	1,207	563	678	765	10,100
1934.....	3,502	1,307	603	818	860	11,380
1935.....	4,022	1,574	600	823	951	12,500
1936.....	4,323	1,765	788	980	1,060	14,500
1937.....	5,400	2,050	-----	1,027	-----	16,100

Sources: Statistisches Jahrbuch für das Deutsche Reich, 1938, except for figures on world production, which were obtained from the Statistical Yearbook, 1940-41, of the League of Nations.

Table XXV is the detailed basic report of the results of the German census of manufactures made in 1936, presented, except for the translation of terms, largely as it was printed in *Die Deutsche Industrie*. This census, like that made in the United States, omits small establishments and workshops. Because of the much larger number of handcraft shops in Germany, comparisons in some categories may therefore be misleading.

It will be noted that certain items were not totaled. This was not done in the first column because the figures are for production units rather than for establishments. In the German census, if an establishment carried on more than one type of production having its own census classification, the units concerned were counted independently. For example, a plant making paper and also pulp was counted as two units.

The column containing the amounts paid for materials, fuel, power, containers, and contracted services was not totaled because of the overlapping of one branch of industry with others.

Some categories of table XXV require explanation. The iron and steel industry of Germany operates the blast furnaces and steel mills but not the foundries.

The iron and steel products industry produces, among other items, small arms, shells, and, probably guns.

Iron and steel constructions include ships, railroad cars, bridges, and building frames.

In Germany "metal" is used increasingly to denote the nonferrous metals. The group "metalware and allied industries" uses primarily nonferrous metals but, as will be noted, it must use others since all manufacture of toys is included.

Results of the official production survey of German industry for the year 1936

Industry groups (and) industrial branches	Number of production units	Number of persons employed	Salaries and wages	Value of material used (raw, auxiliary, and semifabricated), power, fuel, packing materials, and also charges for services performed by persons not belonging to the regular staff	Gross value of products	Value added by manufacture	Industry groups (and) industrial branches
			In 1,000 Reichsmarks	In 1,000 Reichsmarks	In 1,000 Reichsmarks	In 1,000 Reichsmarks	
I. Bergbau	565,664	1,219,042					Mining (and certain related operations):
Eisenerzbergbau.....	114	25,531	11,700	11,700	53,114	41,414	Iron-ore mining.
Kupfererzbergbau.....	12	8,689	3,143	3,143	11,784	8,641	Copper-ore mining.
Blei-Zinkerzbergbau.....	33	17,605	10,675	10,675	13,035	2,360	Lead-zinc ore mining.
Schwefelersbergbau.....	9	1,657	580	580	3,062	2,482	Pyrite mining.
Steinstiger Metallergbergbau.....	15	1,499	483	483	990	507	Other metal ore mining.
Stein- und Kalisalzbergbau.....	45	42,171	38,840	38,840	187,901	149,061	Rock salt and potash mining.
Salinen.....	46	3,196	11,734	11,734	24,926	13,192	Salt pits (brines).
Steinkohlenbergbau.....	238	857,700	377,460	377,460	1,649,080	1,271,620	Steinkohle mining.
Kokereien.....	110	54,099	553,392	553,392	745,864	192,472	Coking plants.
Pressteinkohlenfabriken.....	62	4,647	75,970	75,970	97,573	21,603	Briquetting plants (Steinkohle).
Braunkohlenbergbau.....	212	113,343	48,503	48,503	391,227	342,724	Brown-coal mining.
Braunkohlenbrikettfabriken.....	147	69,651	253,908	253,908	399,956	146,048	Brown-coal briquetting plants.
Erdölgewinnung.....	52	7,694	8,222	8,222	47,350	39,128	Crude natural petroleum extraction.
Graphitbergbau u. Graphitaufbereitung.....	11	556	451	451	1,700	1,249	Graphite mining and preparation.
Flussspatbergbau und Flussspataufbereitung.....	30	1,169	644	644	2,947	2,303	Fluorspar mining and preparation.
II. Kraftstoffindustrie	29,353	76,209					Liquid fuel industry:
Schwelereien.....	25	8,675	38,831	38,831	49,070	10,239	Low temperature distillation.
Steinkohlenteerdestillation.....	107	9,600	78,939	78,939	106,198	27,259	Steinkohle tar distillation.
Benzolreinigungsanlagen.....	121	3,111	112,008	112,008	146,105	34,097	Benzol refining plants.
Herstellung von Mineralölderivaten u. Montanwachs.....	350	64,823	273,347	273,347	446,720	173,373	Production of mineral oil derivatives and mineral wax.

	155	201, 614	483, 005	1, 198, 354	2, 371, 930	1, 173, 576
III. Eisenschaffende Industrie.		74, 763	175, 083			536, 331
IV. Nichteisenmetallindustrie.		4, 462	11, 441	100, 199	117, 360	17, 161
Kupferhütten.....	15	3, 810	7, 639	55, 774	67, 378	11, 604
Blei- und Silberhütten.....	14	1, 525	4, 048	135, 138	148, 777	13, 639
Kupferafinen und -elektrolysen (selbständige Betriebe).....	11	314	620	27, 338	28, 756	1, 418
Kupferafinen und -elektrolysen (Betriebsabteilungen der Kupfer- hüttenwerke).....	8					
Gold- und Silberscheidanstalten.....	23	702	1, 828	117, 544	129, 005	11, 461
Zinkhütten.....	12	4, 472	11, 064	21, 351	36, 301	14, 951
Zinnhütten und Entzinnungsanstal- ten.....	7	696	1, 955	11, 236	15, 291	4, 055
Tonerdefabriken und Aluminium- hütten.....	9	7, 287	17, 319	83, 164	161, 930	78, 706
Gewinnung von Nickel, Kobalt usw. Herstellung von Ferrolegierungen, Elektrokorund, Karborund.....	37 25	4, 201 3, 352	10, 486 7, 975	44, 486 48, 335	80, 225 87, 074	35, 248 38, 739
Walz-, Press- und Hammerwerke der Nichteisenmetallindustrie.....	160	39, 278	90, 740	474, 773	734, 347	279, 574
Herstellung von Warmpressteilen der Nichteisenmetallindustrie.....	31	3, 181	7, 076	31, 056	50, 169	19, 113
Metallschmelzereien.....	124	1, 483	2, 902	32, 915	43, 517	10, 602
V. Gießereindustrie		173, 573	337, 837			710, 381
Eisen-, Temper- und Stahlgießereien. Metallgießereien.....	319 1, 356	147, 441 26, 132	287, 014 50, 823	286, 870 108, 706	879, 762 226, 395	592, 892 117, 089
VI. Eisen- und Stahlwarenindustrie.		439, 980	769, 490			1, 790, 262
Drahtwarenindustrie.....	1, 259	66, 393	112, 267	196, 588	438, 813	242, 225
Werkzeugindustrie.....	1, 539	33, 463	53, 764	52, 561	175, 061	122, 499
Blechwarenindustrie.....	868	61, 596	96, 892	210, 021	422, 567	212, 546
Schloss- und Beschlagindustrie.....	417	20, 657	33, 631	42, 612	117, 087	75, 075
Felie Schneidwarenindustrie (einschl. Schlägereien).....	925	15, 934	26, 598	23, 144	96, 289	73, 144
Fahrzeugindustrie.....	413	49, 100	95, 352	138, 890	378, 935	240, 046
Hand- und Ofenindustrie.....	256	26, 290	46, 216	76, 703	176, 641	99, 938
Sonstige Zweige der Eisen- und Stahl- warenindustrie.....	2, 764	166, 637	394, 770	512, 500	1, 237, 289	724, 789

Iron and steel industry (includes operation of blast furnaces, rolling mills, steel mills).¹

Nonferrous metals industry:

Copper smelters.
Lead and silver smelters.
Copper refining and electrolysis (independent works).
Copper refining and electrolysis (plants attached to rolling mills).

Gold and silver refineries.

Zinc smelters.
Tin smelters and detinning plants.

Alumina and aluminum plants.

Production of nickel, cobalt, etc.
Production of ferro-alloys, electrocorundum, carborundum.

Rolling mills, forging and hammer mills of the nonferrous metals industry.

Production of hot forged parts made of the nonferrous metals.
Metal smelting.

Foundry industry:

Casting of iron, malleable iron, and steel.
Metal casting.

Iron and steel products industry:

Wire-rods industry.
Tool industry.
Sheet-metal industry.
Hardware industry (limited to manufacture of locks, handles, hinges, keys).
Fine-cutlery industry (including production of hammered goods).
Automotive and bicycle parts industry.
Stove and furnace industry.
Other branches of hardware industry.

¹ Not merely companies; count includes all operating units.
² Includes all classes of employees and workers, as well as owners and salesmen.
³ This category covers all manufacture of pig iron and of steel up through rolling of sheets and shapes. It also includes manufacture of all special iron and steel alloys.

Results of the official production survey of German industry for the year 1936—Continued

Industry groups (and) industrial branches	Number of production units	Number of persons employed	Salaries and wages	Value of material used (raw, auxiliary, and semifabricated), power, fuel, packing materials, and also charges for services performed by persons not belonging to the regular staff	Gross value of products	Value added by manufacture	Industry groups (and) industrial branches
			In 1,000 Reichsmarks	In 1,000 Reichsmarks	In 1,000 Reichsmarks	In 1,000 Reichsmarks	
VII. Maschinenbau.....							
Werkzeugmaschinenindustrie.....	727	89,968	196,143	209,849	656,878	447,029	Machine construction:
Textilmaschinenindustrie.....	306	29,430	59,923	65,156	180,732	115,577	Machine-tool industry (excluding shops with less than 5 employed persons).
Herstellung von Maschinen und Apparaten für die Papierherstellung, Papierverarbeitung und für das graphische Gewerbe.	212	24,505	51,915	46,109	145,776	99,667	Textile-machine industry.
Herstellung von Maschinen für das Bekleidungs-gewerbe.	173	23,023	44,325	39,681	132,872	93,192	Manufacture of machinery and equipment for paper, paper-working, and printing industries.
Landmaschinenindustrie.....	477	37,280	66,528	123,794	276,699	152,965	Manufacture of machines for garment industry.
Buromaschinenindustrie.....	84	25,543	56,842	24,514	147,812	123,297	Agricultural-machinery industry.
Herstellung von Maschinen und Apparaten für Mullerei, Nahrungsmittel- und Genussmittelindustrie u. a.	438	27,896	55,410	55,313	167,891	112,579	Business machine industry.
Armaturenindustrie.....	391	23,835	44,191	70,493	175,704	105,211	Manufacture of equipment for flour-milling and food-processing industries.
Sonstiger Maschinenbau.....	1,709	252,716	566,029	638,359	1,899,763	1,241,405	Industry producing valves and fittings.
Kessel- und Apparatebau.....	279	22,359	47,441	89,568	214,016	124,449	Other machine construction.
							Boiler making and apparatus construction.
VIII. Stahl- und Eisenbau.....							
Stahlbau.....	248	47,570	102,396	184,912	397,637	212,725	Iron and steel construction:
Wagonbau.....	35	18,129	34,726	50,281	107,845	57,663	Steel construction (excluding independent repair shops).
Feld- und Werkbahnwagenbau.....	29	4,352	7,348	20,856	35,281	14,425	Street and railroad car construction.
Schiffbau.....	326	76,324	167,456	230,095	503,562	273,466	Construction of mine cars and industrial rail cars.
							Boat and shipbuilding (excluding repair shops that do not build and have less than 50 workers).

IX. Fahrzeugindustrie.....	166, 554	368, 884	836, 362	Automobile and bicycle industry:
Kraftfahrzeugindustrie.....	110, 148	263, 903	636, 545	Automobile industry (excluding independent repair shops).
Herstellung von Kraftfahrzeugen hangern und Kraftfahrzeugaufbauten. Fahrradindustrie und Herstellung von Kinderwagen.....	37, 843 18, 543	73, 849 31, 052	140, 468 59, 349	Manufacture of automobile trailers and bodies. Bicycle and baby carriage industry.
X. Elektroind Strie.....	294, 201	664, 992	1, 502, 636	Electrical equipment industry.
Herstellung von elektrischen Maschinen, Apparaten und Zuber der Stark- und Schwachstromindustrie.....	1, 014	552, 580	1, 188, 599	Manufacture of electrical machines, apparatus, and accessories for electric power, telecommunication, and other purposes.
Kabelindustrie.....	29, 311	62, 515	182, 847	Cable industry.
Elektroblechindustrie.....	24	13, 174	34, 083	Carbon electrode and brush industry.
Batterie- und Elementenindustrie.....	55	2, 949	11, 654	Storage battery industry.
Akkumulatorenindustrie.....	32	4, 492	29, 589	Storage-battery industry.
Glühlampen- und Leuchtrohrindustrie.....	89	9, 644	55, 894	Incandescent lamps and light-tube industry.
XI. Feinmechanische und optische Industrie.....	97, 101	187, 413	367, 835	Fine mechanical and optical industry:
Optische, fein und medizinmechanische Industrie.....	1, 021	146, 064	291, 164	Optical, scientific, and medical instruments industry.
Herstellung von orthopädischen Erzeugnissen und hygienischen Bandagen. Grossuhrenindustrie.....	409 138	9, 214 19, 088	17, 530 35, 360	Manufacture of orthopedic goods and medical bandages. Clock industry (excluding repair shops, independent home shops, and retailers).
Taschen- und Armbanduhrenindustrie.....	137	13, 047	23, 751	Watch industry.
XII. Metallwarenindustrie und Verwandte Gewerbe.....	223, 107	339, 980	771, 056	Metal ware and allied industries:
Metallwarenindustrie.....	1, 989	236, 247	559, 521	Metal-ware industry.
Bronzefarbenindustrie.....	31	1, 878	5, 809	Bronze pigment industry.
Herstellung von metallischen Überzügen.....	594	11, 289	16, 329	Manufacture of metallic coatings.
Schrittgiesereien.....	24	5, 092	10, 133	Type foundries.
Herstellung von Stempelapparaten und Gummistempeln.....	130	2, 403	7, 626	Manufacture of stamping apparatus and rubber stamps.
Edelmetall- und Schmuckwarenindustrie.....	853	22, 691	62, 596	Precious metal and jewelry industry (excluding home work and repair shops).
Fullfederhalterindustrie.....	59	3, 451	8, 941	Fountain-pen industry.
Bearbeitung von Diamanten, Edel- Halbedel- und synthetischen Edelsteinen.....	959	8, 102	20, 600	Cutting of diamonds, precious, semiprecious, and synthetic stones (excluding shops with less than 10,000 Reichsmarks annual turnover).
Kleinkunstinstrumentenindustrie.....	165	8, 020	23, 466	Small musical instrument industry (excluding hand workshops, etc.).
Herstellung von Saiten aller Art.....	66	1, 400	3, 213	Manufacture of musical strings, all kinds.
Herstellung von Sprechmaschinen.....	18	370	2, 435	Manufacture of phonographs.
Herstellung von Schallplatten.....	8	1, 228	4, 689	Manufacture of phonograph records.
Spielwarenindustrie (einschliessl. Herstellung von Christbaumschmuck).....	595	3, 525 20, 799	5, 855 45, 059	Toy industry (including Christmas tree ornaments, and excluding repair shops, independent home workers, and retailers).

Results of the official production survey of German industry for the year 1936—Continued

Industry groups (and) industrial branches	Number of production units	Number of persons employed	Salaries and wages <i>In 1,000 Reichsmarks</i> 571, 102	Value of material used (raw, auxiliary, and semifabricated), power, fuel, packing materials and also charges for services performed by persons not belonging to the regular staff <i>In 1,000 Reichsmarks</i>	Gross value of products <i>In 1,000 Reichsmarks</i>	Value added by manufacture <i>In 1,000 Reichsmarks</i> 1, 231, 106	Industry groups (and) industrial branches
XIII. Industrie der Steine und Erden.....							
Steinbruchindustrie und Natursteinbearbeitung.....	3, 495	103, 739	139, 294	34, 156	290, 764	256, 697	Industries extracting and processing stone and earths: Quarrying and stone cutting and dressing.
Schieferindustrie.....	115	5, 083	6, 449	1, 366	12, 195	10, 830	Slate quarries
Gewinnung und Aufbereitung von Naturasphaltgestein.....	9	874	1, 353	2, 277	5, 675	3, 398	Extraction and preparation of natural asphalt
Mineraläther- und Aufbereitungsbetriebe.....	51	717	1, 300	5, 544	10, 044	4, 500	Mineral dressing mills.
Kies- und Sandgruben.....	1, 209	17, 736	25, 344	6, 438	76, 792	70, 354	Sand and gravel pits
Gewinnung sonstiger nutzbarer Mineralien.....	1, 116	1, 683	1, 787	498	4, 311	3, 813	Extraction of other useful minerals.
Torf- und Bernsteinengewinnung.....	106	8, 702	9, 202	3, 290	15, 160	11, 870	Peat and amber recovery (excluding peat recovery by enterprises doing less than 15,000 Reichsmarks of business annually).
Gewinnung und Aufbereitung von Kreide.....	50	845	1, 444	929	5, 111	4, 183	Extraction and preparation of chalk.
Schwerspatgruben.....	34	1, 673	2, 798	1, 267	6, 138	4, 871	Barite mines.
Ton-, Kaolin- und Feldspatgruben.....	414	1, 673	11, 933	2, 500	28, 918	26, 328	Extraction of kaolin and feldspar.
Kalkindustrie.....	779	24, 961	42, 397	36, 998	132, 314	92, 315	Lime industry.
Zementindustrie.....	113	19, 760	41, 504	112, 991	265, 872	152, 881	Cement industry.
Glasindustrie.....	111	2, 906	4, 455	4, 054	13, 475	9, 421	Gypsum industry.
Mörtelwerke.....	42	2, 720	1, 528	4, 129	9, 421	5, 610	Plaster works.
Erdölwerke.....	67	502	705	1, 768	3, 869	2, 101	Fine-plaster works.
Ziegelindustrie.....	4, 249	140, 999	167, 451	74, 745	401, 134	326, 389	Brick and tile making.
Kalksandziegelindustrie.....	4, 249	140, 999	167, 451	13, 646	37, 137	23, 491	Sand-lime-brick industry.
Bimsbaustoffindustrie.....	339	5, 395	7, 644	12, 190	31, 064	18, 874	Tufa building-material industry.
Schlackeindustrie.....	118	4, 466	8, 089	12, 535	28, 024	15, 488	Slag industry.
Betonwaren- und Betonwerksteinindustrie.....	1, 669	18, 259	25, 702	30, 881	78, 910	48, 029	Concrete products and blocks industry (excluding establishments of less than 5,000 Reichsmarks worth of business annually).

Asbestzement- und Leichtbauplatten-Industrie.....	98	4, 024	7, 069	12, 637	34, 340	21, 703	Asbestos cement and light building-slab industry.
Steinholzindustrie.....	223	1, 805	3, 260	4, 264	13, 070	8, 806	Zyolith industry (imitation stone).
Herstellung von Korkstein u. Kieselgurwaren und sonstigen Erzeugnissen für Temperatur- und Schallschutz.	58	2, 276	4, 255	8, 731	19, 638	11, 206	Production of insulating materials from diatomaceous earth and other materials, including cork.
Industrie feiner- und säurefester Erzeugnisse.....	196	18, 764	35, 422	47, 949	118, 952	71, 004	Manufacture of refractory and acidproof products.
Steinzeugindustrie.....	104	5, 659	10, 769	8, 399	35, 435	27, 055	Stoneware industry.
XIV. Keramische Industrie.....		87, 463	126, 034			255, 342	Ceramics industry: 4
Feinkeramische Industrie.....	806	81, 804	113, 264	64, 203	277, 119	212, 916	Fire-ceramics industry.
Schneifmittellndustrie.....	123	5, 659	12, 770	20, 276	62, 701	42, 426	Abreasive industry.
XV. Glasindustrie.....		73, 004	112, 656			237, 568	Glass industry:
Glashtüttenindustrie.....	210	59, 331	94, 628	78, 490	268, 386	189, 896	Glass works industry.
Hohglas veredeln- und Glas verarbeitende Industrie.	492	8, 240	9, 472	13, 369	41, 871	28, 202	Hollow glass finishing and glassworking industry (excluding establishments doing less than 3,000 reichmarks of business annually, and also excluding home workers).
Flachglas veredeln- und Glas verarbeitende Industrie.....	378	6, 033	8, 556	15, 342	34, 792	19, 450	Plate-glass finishing industry.
XVI. Sägeindustrie.....		107, 467	134, 400			316, 309	Sawmill industry and related operations:
Sägewerke (einschl. Schwellen- und Mastenfabriken).	4, 926	93, 123	109, 675	361, 175	613, 038	251, 864	Sawmills (including plants making railroad sleepers, poles, and masts, but excluding shops cutting less than 1,000 cubic meters annually).
Hobelwerks.....	100	6, 274	11, 012	51, 713	78, 595	26, 881	Planing mills.
Furnierwerke.....	69	4, 861	7, 687	20, 260	43, 514	23, 254	Veneer mills.
Holsimprägnieranstalten.....	129	3, 209	6, 026	23, 256	37, 566	14, 310	Wood-treating plants.
XVII. Holz Verarbeitende Industrie.....		256, 301	356, 744			720, 930	Woodworking and allied industries:
Sperholzindustrie.....	75	13, 138	19, 162	48, 370	95, 911	47, 541	Plywood industry.
Mabel- und Bauteilindustrie.....	3, 176	132, 827	199, 294	294, 524	680, 384	385, 860	Furniture industry and production of mill-frames, flooring, and other parts used in construction (excluding plants with less than 10 workers).
Clavier-, Harmonium- und Orgelbau.	180	4, 557	8, 259	6, 503	18, 985	12, 152	Piano and organ making.
Holzwarenindustrie.....	1, 498	40, 024	59, 557	68, 083	174, 950	106, 867	Woodwares industry (excluding shops whose annual sales are less than 5,000 reichmarks).
Holzmehlindustrie.....	33	285	409	939	2, 550	1, 611	Wood-flour industry.
Fassholzsägerei und Fassindustrie.....	241	6, 497	8, 716	15, 005	30, 202	16, 197	Stave and barrel industry.
Kisteneindustrie.....	728	11, 742	15, 350	38, 498	67, 331	30, 833	Box industry.
Holzweilindustrie.....	153	1, 393	1, 362	3, 599	6, 877	3, 308	Excelsior industry.
Stuhlrohrfabriken.....	7	1, 017	1, 795	1, 060	4, 909	3, 849	Chair-cane factories.

* Not including brown and painted ware and crockery made in shops with annual sales of less than 5,000 reichmarks.

Results of the official production survey of German industry for the year 1936—Continued

Industry groups (and) industrial branches	Number of production units	Number of persons employed	Salaries and wages	Value of material used (raw, auxiliary, and semifabricated), packing materials, and also charges for services performed by persons not belonging to the regular staff	Gross value of products	Value added by manufacture	Industry groups (and) industrial branches
			In 1,000 Reichsmarks	In 1,000 Reichsmarks	In 1,000 Reichsmarks	In 1,000 Reichsmarks	
XVII. Holz Verarbeitende Industrie—Con.							Woodworking and allied industries—Continued.
Korbwaren- und Korbinelindustrie	299	5,531	4,923	6,614	21,034	14,390	Basket and wicker-furniture industry.
Herstellung von Schilfrohr- und Strobgeweben, Flaschenhüllen und Trinkhalmen.	214	1,711	1,273	3,074	6,200	3,126	Production of ware woven of reeds and straw, including bottle wrappings and drinking straws.
Korkindustrie	104	2,318	2,859	3,750	10,407	6,028	Cork industry.
Borsten-, Faserstoff- und Haarzurichtereien.	33	1,640	1,691	4,173	7,933	3,760	Bristle, fibrous material, and hair-preparation plants.
Bürsten- und Pinselindustrie	400	12,445	14,274	29,185	61,796	32,611	Brush industry.
Herstellung von Waren aller Art aus chemischen Kunststoffen sowie aus natürlichen Schmelz- und Formierstoffen.	642	21,176	26,820	37,588	89,755	52,167	Production of all kinds of wares from chemical plastics also from cut and molded natural materials.
		180,992	455,361			1,533,909	Chemical industry:
XVIII. Chemische Industrie							
Industrie der anorganischen Schwermetallen.	394	28,970	76,006	185,772	424,043	238,271	Heavy inorganic chemicals industry.
Düngemittelindustrie, einschl. Erzeugung von Karbid, sowie technischer Stickstoff- u. Phosphorverbindungen.	124	31,154	87,149	308,423	567,375	238,952	Fertilizer industry, including production of calcium carbide, as well as nitrogen and phosphorous compounds.
Industrie der organischen Chemikalien und Teerfarben.	128	27,684	80,225	192,002	499,107	307,105	Manufacture of organic chemicals and coal-tar dyes.
Pharmazeutische Industrie u. Drogenerzeugung.	1,043	32,672	76,243	116,195	431,381	315,186	Pharmaceutical and drug industry.
Industrie der Kunststoffe.	109	14,867	35,438	110,241	229,541	119,300	Plastics industry.
Mineral- und Buntfarbenindustrie.	242	8,718	20,144	51,836	104,177	52,341	Mineral dye and stains industry.
Sonstige chemische Industrien.	365	36,927	80,156	191,862	434,616	242,754	Other chemical industries.

	107	90,358	180,044	742,094	Chemical technical industry:
Zündwaren- und Glühstrumpfindustrie.		6,774	9,410	49,464	Explosives, matches, and other ignition devices, also pyrotechnic industry.
Herstellung von Naturharzprodukten.	72	804	1,897	14,114	Manufacture of natural resin products.
Herstellung von Klebstoffen.	374	3,275	6,060	45,946	Adhesives industry (glue, etc.).
Lack- und Anstrichmittelindustrie.	653	13,240	29,519	226,626	Paint and varnish industry.
Herstellung von Druckfarben u. Druckwalzenmaschinen.	64	3,629	8,251	44,403	Production of printing inks and printing rollers.
Farbwarenindustrie.	123	4,301	7,116	34,308	Art colors and similar goods.
Bleistiftindustrie.	13	3,482	6,415	18,633	Lead-pencil industry.
Herstellung von Linoleum, Wachstuch, Klebstoffen und verwandten Erzeugnissen.	58	7,759	17,436	106,052	Manufacture of linoleum, oilcloth, artificial leather, and similar goods.
Druckpapierindustrie.	199	5,317	10,897	98,554	Printing-paper industry.
Wachspapierindustrie.	24	4,430	8,804	9,753	Wax-paper industry.
Herstellung von Kerzen und Wachskerzen.	878	10,915	17,995	111,293	Manufacture of candles and other wax products.
Seifenindustrie.	5	552	1,297	10,507	Soap, washing powder, and glycerin industry.
Schmiermittel- und Glycerinindustrie.	825	18,730	38,823	389,559	Stearin industry.
Kosmetische Industrie.	381	8,744	16,021	119,850	Cosmetic industry.
Herstellung von Hilfsmitteln für die Textil- und Lederindustrie.	153	3,066	8,013	63,782	Manufacture of chemical supplies for the textile and leather industries.
		57,120	118,342	270,392	Rubber and asbestos industry:
Herstellung von Kautschukwaren (ausgenommen Bereifungen und Gummischuhe).	185	31,733	64,671	221,224	Production of rubber goods (excluding tires and rubber shoes).
Bereifungsmaschinen.	24	14,636	34,833	184,463	Tire industry.
Gummischuhindustrie.	13	4,743	7,227	23,741	Rubber-shoe industry.
Herstellung von Kautschuk-Regenparan, Plastikarten und Präparaten.	55	4,976	2,080	9,480	Production of reworked rubber, rubber plastics, and rubber preparations.
Herstellung von Guttapercha- und Balsamwaren.	6	269	727	4,255	Production of gutta-percha and balata goods.
Asbestindustrie.	58	4,763	8,704	37,450	Asbestos industry.
		99,831	179,921	461,524	Pulp and paper industry:
Papier-, Pappen-, Zellstoff- und Holzstoffindustrie.	370	6,111	10,363	87,875	Mechanical pulp mills.
Holzschleifereien.	54	17,895	36,131	134,965	Chemical pulp industry.
Zellstoffindustrie.	665	75,925	133,427	249,307	Paper and board mills.
Papier- und Pappfabriken.				819,294	
		283,617	533,984	1,001,476	Printing and paper products:
Papierveredelungsindustrie.	146	9,502	16,852	122,000	Paper-finishing industry (excluding shops with less than 5 workers).
Druckgewerbe.	3,106	179,088	381,585	1,008,738	Printing industry (excluding shops with less than 10 workers).
Chemigrafisches Gewerbe.	181	4,030	9,755	20,798	Lithographic and electrotype works (excluding shops with less than 5 workers).

Results of the official production survey of German industry for the year 1936—Continued

Industry groups (and) industrial branches	Number of production units	Number of persons employed	Salaries and wages	Value of material used (raw, auxiliary, and semifabricated), packing materials, and also charges for services performed by persons not belonging to the regular staff	Gross value of products	Value added by manufacture	Industry groups (and) industrial branches
			In 1,000 Reichsmarks	In 1,000 Reichsmarks	In 1,000 Reichsmarks	In 1,000 Reichsmarks	
XXII. Druck und Papierverarbeitung—Con.							
Buchbindereien.....	409	15,989	27,752	31,672	86,736	55,064	Printing and paper products—Continued.
Papierwarenindustrie.....	682	34,187	46,048	135,018	252,412	117,394	Bookbinderies.
Pappen verarbeitende Industrie.....	971	38,068	46,419	103,303	205,741	102,438	Paper-products industry (excluding shops with less than 5 workers)
Tapetenindustrie.....	38	2,753	5,573	11,287	26,590	15,303	Cardboard-working industry.
		196,028	292,348			647,416	Wallpaper industry.
XXIII. Lederindustrie.							
Lederfabriken und Gerbereien.....	1,102	45,063	80,015	338,067	561,073	223,006	Leather industry:
							Tanning and leather factories (including directly attached dressing plants and excluding shops doing hand tanning if not accounted for in handicraft reports)
Lederzurichtereien.....	59	1,694	2,532	7,051	13,021	5,971	Leather dressing shops not included in above (excluding shops with less than 5 workers)
Schuhindustrie.....	1,450	103,818	146,080	365,607	647,338	281,732	Shoe industry (excluding makers of gaiters and boot tops and shops making shoe findings with less than 5 workers)
Lederbreitmenindustrie (Einschl. Herstellung technischer Lederartikel).	340	3,683	6,026	27,151	41,179	14,028	Leather machine-belt industry (including producers of other leather, used by industry)
Leder- und Sattlereiwarenindustrie.....	1,096	35,323	48,879	130,123	236,447	106,325	Leather goods industry and saddleries (omitting handwork shops with sales of less than 15,000 reichsmarks a year).
Lederhandschuhindustrie.....	215	6,447	8,207	17,922	34,276	16,354	Leather glove industry.
		911,716	1,220,744			2,839,746	Textile industry:
XXIV. Textilindustrie.							
Kunstseiden- und Zellwollindustrie.....	27	35,401	65,475	109,088	275,492	166,404	Rayon industry.
Wollwäscherei.....	15	347	406	1,263	1,263	914	Wool washeries
Wollwäscherei und Wollkämmerei.....	6	8,318	15,370	4,502	30,338	25,837	Wool-washing and combing mills
Kammgarn- und Ramiesspinnerei und -zwirnerei.	105	48,812	63,168	265,635	414,903	149,268	Combed yarn and ramie spinning and twisting.

Reisereisen	184	3,653	4,600	26,748	45,609	16,800	Rag-tearing plants.
Streichspannerel und -swirnerel.	524	31,696	38,362	242,320	308,718	66,307	Brushed-yarn spinning and twisting.
Baumwollspannerel und -swirnerel.	429	110,173	134,121	476,174	760,941	302,767	Cotton spinning and twisting.
Flechte- und Handfädelerei	84	4,706	6,255	9,890	17,961	8,121	Flax and hemp retting.
Flechtspannerel und -swirnerel.	45	11,863	13,105	24,107	38,169	24,002	Flax and hemp spinning and twisting.
Kauf- und Handverpackspannerel und -swirnerel.	182	10,077	13,154	46,679	81,701	32,121	Hemp and hard fiber spinning and twisting.
Jute-spannerel und -swirnerel.	44	11,806	13,404	87,364	66,781	29,666	Jute spinning and twisting (excluding less than 15,000 reichsmarks of business and also shops paying less than 5,000 reichsmarks in wages).
Selbstenweberei	261	45,663	70,726	197,438	342,667	146,134	Silk weaving (omitting plants having less than 15,000 reichsmarks in annual sales and also those with less than 10 looms).
Bekleidungsstweberei	792	86,303	134,479	497,854	768,333	266,979	Weaving mills making cloth for wearing apparel from wool and mixed wool (omitting small plants).
Weberei (ausgenommen die Weberei von wollenen und wollhaltigen Oberbekleidungsgeweben).	1,785	219,305	295,566	914,050	1,690,402	662,462	Weaving mills using all types of yarns except silk, wool, and wool mixtures (omitting Production of knitgoods.)
Herstellung von Wirk- u. Strickwaren.	2,607	152,833	170,801	385,341	614,074	428,783	Production of sewing thread, mending yarn, embroidery, and other threads.
Nähfüßen-, Stoff-, Stick- und Handarbeitsgarnherstellung.	82	13,480	18,781	56,898	106,668	49,670	Production of ribbon, braid, and other trimmings.
Herstellung von Band- und Flechtartikeln, Posamenten usw.	722	26,402	34,493	67,272	155,270	87,999	Production of tents, awnings, bags.
Herstellung von Zelten, Planen, Säcken.	300	7,003	9,525	58,016	86,496	26,480	Production of embroidery, lace, etc.
Herstellung von Stickerereien, Spitzten, usw.	716	12,334	12,471	26,336	71,473	43,137	Production of felt.
Filzherstellung	30	2,974	4,937	16,506	28,017	11,511	Production of industrial wadding.
Industriewattheherstellung	55	1,631	2,221	6,956	12,776	6,820	Production of surgical wadding.
Verbandwattheherstellung	19	1,120	1,446	4,626	7,690	3,065	Horsehair spinning and quilting.
Rosshaarpinnerel und Stepperel	38	1,160	1,669	7,255	12,325	5,070	Production of gauze, bandages, etc.
Herstellung von Verbandmitteln	134	3,024	3,606	16,349	26,091	9,742	Net industry.
Netzindustrie	29	1,517	1,652	3,411	7,368	3,957	Textile-finishing industry.
Textilhausstaunungs- und Veredelungsindustrie.	881	61,856	102,734	222,195	438,112	215,918	
XXV. Bekleidungsindustrie		229,723	297,500			753,968	Clothing industry:
Bekleidungsindustrie	6,698	229,762	284,946	804,650	1,529,850	725,200	Garment industry.
Felzveredlung	94	3,628	5,707	6,119	17,709	11,580	Fur finishing.
Felzverarbeitung	376	5,033	6,847	23,027	40,205	17,178	Fur working.

† Omits small establishments.

Results of the official production survey of German industry for the year 1936—Continued

Industry groups (and) industrial branches	Number of production units	Number of persons employed	Salaries and wages	Value of material used (raw, auxiliary, and semifabricated), packing materials, and also charges for services performed by persons not belonging to the regular staff	Gross value of products	Value added by manufacture	Industry groups (and) industrial branches
			In 1,000 Reichsmarks	In 1,000 Reichsmarks	In 1,000 Reichsmarks	In 1,000 Reichsmarks	
XXVI. Industrie der öle und Fette, Futtermittel und Tierischen Leime.	37,995		83,185			402,782	Industry of oils and fats, of fodder and animal byproducts:
Ölmählen.....	786	9,673	22,373	287,567	359,329	91,762	Oil mills.
Ölveredelungsindustrie.....	58	3,218	8,426	232,406	285,424	53,017	Oil-refining industry.
Talschmelzen.....	152	721	1,468	22,408	28,217	5,809	Tallow rendering.
Schmalzereien.....	42	504	974	24,561	28,172	3,611	Lard refineries.
Margarine- und Speisefabriken.....	147	10,040	25,187	180,698	346,637	165,939	Margarine and other factories processing edible fats.
Abeckerereien.....	492	1,541	1,529	1,377	7,364	5,966	Skimming yards.
Knochenverwertungsindustrie.....	120	1,432	2,314	10,790	17,714	6,924	Bone-utilization industry.
Fischmehl und Tranfabriken.....	44	755	1,752	8,576	14,887	6,311	Fishmeal and blubber factories.
Herstellung von Haut- und Lederleim, Gelatine und Kautschukwaren.....	62	4,239	7,672	18,881	43,478	24,596	Production of animal glue, gelatins, and sausage casings.
Futtermittelindustrie.....	569	5,872	11,490	180,575	219,402	38,827	Fodder industry.
XXVII. Spiritusindustrie.....		29,405	45,022			228,600	Spirits industry:
Landwirtschaftliche Kartoffelbrennereien.....	2,210	7,933	9,108	79,865	105,875	26,010	Rural potato-alcohol distilleries (omitting those producing less than 600 hectoliters a year).
Molassereineren.....	18	274	550	3,125	4,711	1,586	Molasses distilleries.
Hefeführungsbranchen.....	45	2,896	7,725	18,336	52,139	33,803	Fermentation industry.
Spiritusreinigungsanstalten und Spiritusverfälgung in Monopollagern.....	58	2,028	5,305	159,924	200,224	49,300	Spirits refining and state monopoly distilling storerooms.
Kornbrennereien.....	532	1,187	1,430	11,899	16,480	4,590	Grain distilleries.
Weinbrennereien.....	39	357	5,579	8,512	8,512	2,933	Wineries.
Herstellung von Trinkbranntweihen aller Art.....	2,618	14,730	20,167	257,194	367,572	110,378	Production of brandy, gin, and other spirits of all kinds (omitting establishments making less than 3,500 liters of alcohol a year).

XXVIII. Nahrungs- und Genussmittelindustrie.	549, 675	804, 213	2, 961, 512	Food processing (staples and luxuries) and tobacco industry:
Getreidemüllerei.....	3, 305	64, 201	1, 493, 568	Grain mills (omitting those grinding less than 5 tons a day).
Schölmöhlen.....	56	5, 110	73, 385	Grain-polishing mills.
Fleischwareindustrie.....	671	34, 554	565, 427	Meat-packing industry.
Brotindustrie und Bäckereien.....	581	34, 828	257, 041	Bakeries of all kinds (excluding unmechanized enterprises employing less than 10 people).
Fischindustrie.....	467	18, 856	134, 285	Fish-products industry.
Zuckerindustrie.....	233	75, 788	766, 175	Sugar industry.
Süßwarenindustrie.....	1, 097	96, 443	641, 636	Sweets industry.
Obst- und Gemüsekonservenindustrie.	841	24, 087	206, 698	Canned-fruits and vegetable industry.
Herstellung von Rheinschrankart.	153	614	6, 602	Sauerkraut production.
Obst- und Fruchtweineindustrie.....	583	4, 075	40, 081	Fruit-juice and fruit-wine industry.
Dauermilchindustrie.....	81	2, 644	54, 840	Dried and condensed milk industry.
Schmelzkäseindustrie.....	66	2, 111	39, 996	Processed-cheese industry.
Teigwarenindustrie.....	119	5, 561	88, 109	Manufacture of alimentary pastes.
Kartoffeltrocknerd.....	243	1, 794	17, 500	Potato-drying plants.
Stärke- und Stärkeveredelungsindustrie.	103	6, 838	99, 750	Starch and starch refining.
Nahrungsmittelindustrie.....	92	10, 908	167, 444	Prepared foodstuffs industry.
Kaffeersatzindustrie.....	347	5, 561	98, 696	Coffee-substitute industry.
Malz Industrie.....	281	9, 393	87, 100	Malt industry.
Brauindustrie (einschl. Braumälzerei)	1, 183	76, 376	1, 044, 780	Breweries and malteries.
Traubenschaumweineindustrie.....	36	3, 405	31, 415	Sparkling-grape-wine industry.
Essenindustrie.....	446	4, 028	32, 990	Vinegar industry.
Seifenindustrie.....	229	2, 032	12, 582	Mustard industry.
Gewürzindustrie.....	82	1, 086	14, 297	Spice industry.
Tabakindustrie.....	624	154, 417	1, 154, 389	Tobacco industry.
XXIX. Elektrizität ¹ und Gasversorgung.....	167, 788	425, 292	1, 972, 086	Electric power stations and gas works:
Elektrizitätswerke Erzeuger- und Verteilwerke.....	2, 811	109, 694	1, 652, 987	Electric power plants (both producing and distributing).
Gaswerke (Erzeugerwerke).....	879	43, 836	561, 891	Gas-manufacturing works.
Gaswerke (Verteilerwerke).....	311	10, 258	104, 632	Gas-distributing plants.
XXX. Bauminindustrie und sonstige Industriezweige.	5, 390	1, 192, 000	7, 151, 000	Building industry and miscellaneous industrial branches.
Gesamte Industrie.....	7, 950, 193	13, 261, 510	34, 185, 641	Grand industrial total.

¹ Omits small establishments.

Source: Die Deutsche Industrie, prepared by Des Reichsamt für Wehrwirtschaftliche Planung, Berlin, 1939.

EXHIBIT 2

HOW GERMAN ASSETS AND ECONOMIC ACTIVITIES OUTSIDE GERMANY AFFECTED GERMAN WAR POTENTIAL AND PROPAGANDA

A. GERMANY'S EVASION OF CONTROLS IMPOSED AFTER 1918

By the Treaty of Versailles the victorious Allies tried to prevent Germany from retaining or reviving her war-making capacity. To implement this objective, the Allied Military Control Commission was created in 1919. Its duties were to reduce Germany's armed forces, to destroy Germany's excess armaments, and to dismantle German war industry so as to destroy its potential power of rearmament. But owing to resistance by the Germans to the disarmament measures and to the lack of harmony within the Commission itself, the Allied Control of Germany proved a failure. The German Governments of the period 1919 to 1933 were never strong enough to command obedience from all groups, and none dared to support any program which would place Germany in a permanent position of military inferiority. Although prior to 1933 no official German "Master Plan" seems to have existed for the complete rearmament of Germany and perpetuation of her war industry, the Germans were able in and out of government circles to evade the restrictions of the Treaty of Versailles.

ALLIED MILITARY CONTROL COMMISSION

The Allied Military Control Commission operated in Germany from 1920 to 1927. During that time it was faced by every obstruction German ingenuity could devise. General Charles Nollet, head of the Commission, in commenting upon this noncooperative attitude, stated that "under the cover of this stubborn struggle, it * * * pursued the revival of its military power according to a previously determined plan." There can be no doubt that certain elements in Germany, including some former army officers, large industrialists, financiers, and the Reichswehr, planned to re-create German military power. The German Government did not interfere with their plans and the German War Departments at least were either actively or passively involved in them.

The methods used by the Germans to nullify the Allied control measures included such measures as refusal to supply official documents, inaccurate reporting, and appeals to other Allied authorities in order to confuse the issue. Inside Germany the disarmament provisions of the Treaty of Versailles were violated by various German groups secreting surplus arms, subsidizing commercial aviation, experimenting with new weapons, making possible the conversion of plants producing civilian goods to war production, retaining secret

processes, and creating a Black Reichswehr and other military bodies. To these violations of the treaty, the weak Reich administration acquiesced, and in some cases secretly fostered them. It could hardly be expected to do otherwise since the Reich Government was shot through with nationalists and reactionary militarists and was unable to control the activities of the provincial authorities.

FOREIGN BASES OF GERMAN REARMAMENT

Not only did the Germans evade the peace treaty through action within Germany, but they made foreign countries bases for their operations.

1. *Russians.*

Although the German Republic proclaimed itself as the bulwark against Bolshevism, close cooperation on military production was maintained with Soviet Russia. In May 1922 a German mission in Russia laid plans for German technical experiments in Russian factories. The agreements making Russian facilities available to the Germans were presumably unofficial since representatives of German industry did the negotiating, but undoubtedly the Reich Government was well aware of the plans.

By those Russian agreements the Krupp company was granted a concession of about 500,000 acres on the lower Don River to be used as an experimental farm for testing agricultural implements. Under this cloak, Krupp was able to maintain production and to manufacture modern machinery readily convertible to war purposes. The large electrical firm of Siemens-Halske was permitted to reopen its Russian plants that had been in operation prior to World War I under German management using Russian labor. Even more dangerous to world security was the large airplane plant built by Junkers in Moscow for the production of military aircraft by German technicians. Publicity on this affair in 1926 first disclosed to the general public the details of the Reichswehr's plans for rearmament. The Reichswehr Ministry set out early in the 1920's to give financial assistance to industry to set up armament industries abroad, especially in Russia. The Junkers plant in Russia was only one of the projects sanctioned by the Reichswehr. The production of this plant was given over entirely to war planes, the majority of which were for German use. The Russians permitted German officers to train with them. In this manner the Germans were able to maintain a number of skilled aviators who could become the nucleus of a new air force.

Russian assistance to German military ambitions went even further. The Manchester Guardian revealed many of the secrets of these Russo-German relations in a series of authenticated articles. The Hamburg firm of Dr. Hugo Stolzenberg built a poison-gas factory in Trotsk with the cooperation of the Reichswehr. In November 1926 Russian ships arrived in Stettin loaded with arms and ammunition for the German Army. The Krupps were reported to have leased no less than five arms plants from the Russians and to have secured large concessions in the Leningrad Steel Factory, the Perm factory, the Zlatoust plant in Kuibyshev and to have built a dockyard for submarine construction in Kherson which was managed by German naval officers. As a final concession, the Russians permitted Krupp to establish a subsidiary to consolidate its interests in Russia.

Other German industrial organizations were active in Russia during the 1920's. The huge Rheimetall-Borsig firm, the largest armament plant in Germany besides Krupp, erected a most modern munitions plant in Leningrad, the Pulitow works, for the Russian Government with the support of the German General Staff. I. G. Farben, the Hugo Stinnes firm, and other concerns directed or owned plants in Russia, while the Reichswehr ran experimental centers for artillery, aviation, tanks, motors, flame-throwers, and poison gas. In the field of poison gas Russia produced the gas and shipped samples to Germany to test for antidotes. Research in heavy artillery was carried on in collaboration with the Russians who were keenly interested in using German technical knowledge. In addition, large numbers of German engineers and technicians received Russian employment contracts. The agreements provided the Russians with skills needed for the development of their country, and at the same time gave surplus German experts a field to acquire valuable experience. All this was done at a time when Germany was supposed to be disarmed. By the middle 1930's, however, these close technical relations between Germany and Russia were severed.

2. West European.

Further evasions of the Treaty of Versailles were perpetrated in other countries. Shortly after the war, a German aircraft firm established a plant in Copenhagen to produce military planes. In 1920 Krupp bought a large interest in Bofors of Sweden in order to continue experimenting and producing heavy ordnance. This plant developed the famous anti-aircraft gun; about 1929 the Swedes purchased the Krupp holdings, although it is suspected that technical cooperation continued. German rifle experts were employed by the Fabrique Nationale in Liege (Belgium), while other German engineers found employment with Skoda armament works in Czechoslovakia and Oerlikon armament firms in Switzerland. A Major Utto owned and operated a bomb factory in Finland which was constructed according to German design. The Dornier airplane firm moved from Friedrichshafen across Lake Constance to Switzerland, and the Fokker plant was dismantled and shipped to Holland. Carl Zeiss of Jena set up an establishment in Holland for the manufacture of military optical goods.

Under the treaty, Germany was prohibited from building submarines. To overcome this handicap, the German Navy in 1924 secretly made arrangements for construction work in Spain. At Santander two model submarines were built and the German U-boat ace, Captain Manfred von Killinger, founded a company in Echevarria to experiment with submarines. Spain was the scene of other activities such as research work in torpedoes and the expansion of German penetration in heavy industry.

In addition to the above-described general-staff sponsored foreign investments, German industry was able to build up financial nest eggs in Switzerland when inflation threatened their bank deposits inside Germany. According to the *Neue Zurcher Zeitung*, the amount of capital fleeing from Germany to Switzerland reached \$2,000,000,000 by June 1919. About the same time and perhaps with some of this

flight capital, the Germans established and expanded a number of holding companies in Switzerland and Holland. Among the most important of these were Schweizerische Gesellschaft für Metallwerte and Montan-Union A. G., and a number of I. G. Farben affiliates. Indirectly, the Allied governments and nationals helped Germany rearm by loans to the Reich and to German industry. While Germany was complaining of impending bankruptcy, large sums were being spent on secret armament projects by the Reichswehr, and on the building of immense strategic auto highways. In addition to the various official loans numerous direct loans were made by foreigners to revitalize German industry. For example, in 1925 Krupp was on the verge of bankruptcy when a loan of about \$40,000,000, most of it raised abroad, staved off ruin. Since the Allied Military Control Commission made no effort to run Germany's foreign trade, large quantities of Swedish high grade iron ore, a vital war metal which Germany lacked, were imported to keep German heavy industry alive.

INTERNATIONAL CARTELS

An important instrument of German influence in foreign countries which was not crushed after World War I was the international cartel. Through cartel agreements and patent rights, the Germans were able to continue to control the production of strategic and critical products in a number of foreign countries and to spy on foreign industrial establishments. With the rise of Hitler to power, these cartels became significant agents of German economic penetration. Synthetic rubber and atabrine are but two of commodities German cartels were able to control to the detriment of the Allies in World War II.

The whole history of German activities after World War I proves conclusively that if Germany retains any important economic influence in foreign countries, the peace of the world is threatened. After the last war, Germany was assisted by her former enemies and the neutrals, alike and much of her ability to rearm rapidly was owing to this aid. In this war the Germans already had a large industrial and financial empire in the neutrals alone; as long as it exists, it is a threat to the security of the Allies.

B. THE SUPPORT OF GERMAN AGGRESSION AND PROPAGANDA

1. METHODS

In order to wage total war, the Nazis had to import such products as foodstuffs, iron ore, ferro-alloys, and timber and had to secure an uninterrupted flow of these and other essential products through economic control and penetration of the countries rich in the needed resources. But there were other important reasons for German interest in foreign countries. Economic penetration usually precedes political influence and, in the case of the neutrals, may become a powerful force in molding public opinion and creating a strong economic bloc. German investments in, and economic agreements with, the neutrals have tended to make them susceptible to other German pressures and to prejudice the competitive position of the United Nations.

Neutral aid to Germany.

When World War II broke out, the Germans were already strongly entrenched in Spain, Switzerland, Sweden, Turkey, Argentina, and Portugal—the important neutrals—as well as in Finland, Bulgaria, and Rumania. It must be remembered that in Germany, all economic relations, particularly in foreign countries, were carefully planned by the government and not left to chance. Old established investments, contractual rights, personnel, and other assets were made to serve immediate war objectives. During the period of German successes, the economic structure erected during the years of peace was strengthened by additional capital, personnel, and techniques which moved a steady flow of materials to Germany. There is no doubt that the German position in neutral countries impaired our bargaining position and rendered our blockade more difficult than it otherwise would have been.

With the defeat of Germany accomplished, German assets and personnel take on a new meaning. Trade between Germany and the neutrals is no longer of prime importance. Interest has now shifted to German assets as a means of perpetuating German war potential by evasion of Allied control. Various types of property have been acquired by the Germans in the neutrals and may very readily become the basis of future aggression unless liquidated. Among the more important are:

(1) Long-term investments in industrial plants, banks, mines, commercial enterprises, shipping, warehouses, public utilities, insurance companies, and other types of industrial, commercial, and financial undertakings, whether completely or partly owned. These are by far the most dangerous of German assets since most long-term investments are of pre-war origin and have become well integrated with the neutral economy.

(2) Stock piles of merchandise or raw materials built up in anticipation of continued trade between Germany and the neutrals. These consist of stock piles of German goods either accumulated in order to maintain a dominant position in the neutral markets or destined for shipment to Germany when the latter was cut off by the Allied invasion of France, or originally intended for safe haven.

(3) Art objects, jewelry, and privately owned precious metals which often may be looted property, but in many cases the legitimate property of Germans who either reside in the neutrals or have shipped their valuables abroad in order to escape contributing to reparations or other Allied penalties.

(4) Gold holdings, securities, and bank deposits which make up a large part of German assets in the neutrals. German Government-owned gold may be deposited with the central bank of the neutral country or held for safekeeping in the German Embassy or Legation; privately owned gold may be held in vaults or safe-deposit boxes of commercial banks. Securities include stocks, usually bearer shares, of foreign and domestic companies, bonds, and the like. Securities and bank deposits of German nationals and companies and their cloaks in the neutrals undoubtedly are considerable in amount.

(5) Contractual rights include cartel agreements, mortgages, patents, licenses, trade-marks and copyrights, reinsurance treaties, and options of various sorts.

2. PURPOSES

*a. Acquisition of economic resources for German war effort.**i. Loot.*

Axis looting of the occupied countries ranged from the crude seizure of property without semblance of legality to subtle transfers through changes in corporate structures and forced sales. Confiscation of state property and expropriation of private property without compensation were favorite devices of the Nazis in their economic penetration techniques as exercised in occupied countries, especially in eastern Europe. Confiscation by individual act of seizure or by property decree has been especially directed at the property of patriots and anti-Nazis who fled from Germany and the occupied countries and at the property of Jews. "Aryanization" of property in every occupied country has been the special name given to looting of the property of Jews. A legalistic form of seizure is the imposition by court decree of excessive fines for trivial offenses; such fines are often followed by an offer to accept property in place of the fine. Such loot was often transferred to neutral countries for sale.

Very often purchases were made at prices far below the real values, particularly when owners of enterprises in occupied areas were forced to accept payment in stock in the new controlling German enterprises. In France, Belgium, the Netherlands, and Norway, the Nazis purchased property with funds obtained from levies on the occupied country for occupation costs. Sometimes non-German owners were coerced into selling property at a low price by the Germans, but the fiction of a legal transaction was retained.

Exactly how large the amount of loot is can hardly be estimated. There have been numerous reports of German use of the diplomatic pouch in transferring loot to neutral countries. They probably consist of securities, foreign currencies, gold and other precious metals, jewelry, and other readily movable goods of high intrinsic value. While most of German loot has remained in the occupied country as a productive unit or has been transferred to Germany, certain types of loot have found their way to the neutrals for safekeeping or sale.

ii. German long-term investments.

By far the larger part of German holdings in the neutrals is in the form of long-term investments of many years' standing. At the outbreak of the war, these German investments were mobilized for war purposes; many had been created with such a purpose in mind. In Spain, Portugal, Turkey, Sweden, and South America, German commercial agents and merchants expedited the flow of essential commodities to Germany, often being instrumental in smuggling and blockade running. In several neutral countries, the Germans acquired interests which put them in a dominant position in a number of industries. For example, in Spain the chemical, pharmaceutical, and electrical goods industries are largely in the hands of German companies, whose plants are readily adaptable for use in experiments which could be the basis of a new war industry. In Portugal the Germans invested heavily in wolfram mines and thereby assured themselves a supply of this strategic mineral until the Portuguese finally declared an embargo on its export.

In Argentina large construction and electrical supply companies are German-controlled. Iron mines in central Sweden and Swedish shipping valued at about \$25,000,000 belong to German interests. In Turkey the Germans have numerous commercial agencies and control two large banks. Switzerland, however, has been an especially fertile field for the Germans because of the highly developed Swiss financial and banking system, and the prevalence of international holding companies. Thereby Switzerland has become in a sense a cloak for German activities in the other neutrals, as well as inside Switzerland.

German technique in neutrals.—In general German long-term foreign investments were built up in the period between the two World Wars. Often the simplest procedure was for a large German company such as I. G. Farben, Siemens-Schuckert, Bosch, or Schering to establish and incorporate a subsidiary in the neutral country. Several German banks have entered the neutrals where they have spearheaded German economic penetration by assisting German businessmen with liberal credits. This has been most true in Spain, Argentina, and Turkey. Through reinsurance treaties, mostly of recent origin, neutral insurance companies have been tied to German capital and forced to accept German dictation; in addition, German insurance companies operate directly in the neutrals thereby creating large fluid assets. In Spain alone there are ten registered German insurance companies receiving premiums of \$3,000,000 a year.

iii. Patents.

Krupp, A. G.—One of the most common and successful means of German penetration abroad has been through patents. On numerous occasions in the United States, German companies through patent agreements were able to obtain highly confidential technical data. For example, in 1928 the German armaments firm of Fried, Krupp, A. G. formed a patent-holding company, Krupp Nirosta, in the United States in the stainless steel field. This company controlled the most important patents in stainless steel and limited the number of licensees, thereby limiting production of a vital war material. In the fourteen years of its independent existence Krupp Nirosta issued only ten important licenses. As a further restriction measure, Krupp Nirosta refused to permit any licensee to export stainless steel except to Canada. After bringing the important American steel companies in as licensees, the company was able to supply Krupp and the German steel industry with valuable economic intelligence. Production reports were regularly transmitted to Germany. Thus the United States Steel Company continued to transmit to Krupp tonnage figures, including United States Government orders, until June 1941. In addition, Krupp representatives were permitted to visit American plants freely. Krupp Nirosta also kept the Essen home offices well informed as to the newest American developments in stainless steel and answered requests for information from Germany, often sending technical literature submitted by the licensee. On the other hand, Krupp, Essen, refused to make available to the American licensees certain processes to which they were entitled.

I. G. Farben.—The patent policy of I. G. Farben has been dominated by the idea of securing adequate protection for its interests in all countries. All manner of processes and products have been pat-

ented in order that it might be able to threaten infringement suits on weaker or less well-informed parties and so to stifle competition. In 1932 I. G. Farben, through its subsidiary in the United States, General Aniline and Dye, was able to force DuPont and Pharma Chemical Corporation to recognize its patent rights covering new fast dyes, which greatly strengthened its position in the foreign market. In the neutrals I. G. Farben also holds a prominent position owing to its patents. The Spanish chemical producer, Sociedad Electro-Quimica de Flix, is controlled by I. G. Farben and uses the latter's manufacturing processes. When transportation facilities between Germany and Spain were cut off by the occupation of France, I. G. Farben permitted its subsidiary in Spain, Unicolor S. A., to produce several patented products. In Portugal the firm of Sociedad de Anilinas, Ltda. manufactures Farben products. In Argentina the affiliated companies are Anilinas Alemanas, S. A. and GECCO Compania Industrial e Commercial, S. A.; in Sweden, Arto A/B and Anilia Kompaniet A/B; in Switzerland, Teerfarben A. G., and other firms; there the colossus I. G. Chemie, capitalized at \$42,500,000 reaches out to all ends of the world; and in Turkey, the firm of "Turkanil" Sabre Atayolu Ve Sirketi. By this wedding of capital and technical skill preserved through patents, I. G. Farben has become the most powerful chemical producer in the world and a tower of strength to the German war effort.

German patent safeguards in the neutrals.—The Germans are aware that the ownership of patents leads to power and they have been building for the future by registering increasing numbers of patents in the neutrals. Between 1938 and 1944 the number of German patents registered in Sweden doubled (from 1,618 to 3,377). German patents granted in Portugal have increased rapidly in the last few years, while there have been reports of large registrations in Switzerland. Many of the patents belong to the most powerful German industrial organizations, e. g., I. G. Farben, Zeiss-Ikon, Bosch, Daimler-Benz, A. E. G., and Siemens. Through these patents the Germans have acquired assets in the neutrals in the form of royalties which very often are retained as a balance with the licensee.

iv. Acquisition of foreign indebtedness by Germany.

Spain.—During the civil war in Spain, Nazi Germany actively aided the Franco party by lending technical assistance and the Condor Division, a German armed force. In this way Germany was able to test her new weapons in actual warfare. But Germany exacted payment from Facist Spain and the latter sent the Blue Division to fight against Russia. A balancing of accounts showed that Spain financially was heavily indebted to Germany for civil-war aid. In November 1943, an agreement was reached wherein Spain admitted a debt of about \$1,000,000,000. Several payments which were made outside the clearings made available to Germany at least \$60,000,000 in free credits in Spain. In July 1944, the Spaniards still owned a balance of about \$40,000,000. Exactly how the Germans disposed of the \$60,000,000 is not known, but it seems probable that they used it to purchase Spanish property, to finance propaganda activities, to pay for goods, and to sustain the diplomatic service.

German use of clearings.—German trade and payments with the neutrals were carried on mainly through clearing agreements. By

this means the technical difficulties inherent in the use of foreign exchange were eliminated and the lack of large foreign exchange holdings was no longer an obstacle to imports. Under the clearing system the importer pays the amount due for his imported goods to the central bank of clearing office of his own country in his own currency. The exporter receives payment from his central bank or clearing office in his national currency. In this way foreign trade is not burdened by international payment problems and, if trade were balanced, payments would be prompt and certain. With most countries the balance of trade was unfavorable for Germany. This difficulty was overcome by Germany's forcing the particular country to grant clearing credits (Switzerland, Spain, Portugal, Rumania, Hungary, etc.). However, Germany shipped more goods to some countries than she received with a resulting balance in the clearings in her favor. At present Germany is in a creditor position in the clearings vis-à-vis Sweden and Turkey. The Swedes owe about \$18,800,000 and the Turks about \$12,000,000. These assets can easily go into hiding since they are payable in Swedish kronor and Turkish lire.

The Germans have used a number of additional ingenious devices in order to create assets in the neutrals. In Spain and Sweden they used a two-price system for German goods. The lower price was paid through the clearings while the higher price was retained in the books of the neutral importer. The difference accumulated to the account of the German exporter and became flight capital. Another method was for the entire payment to be deferred until after the war. This practice has been observed in Sweden. Other methods were to allow interest charges and patent fees to accumulate and to stock-pile goods in a neutral which is in transit for another neutral.

v. Activities of German personnel abroad.

German personnel has been extremely active in the neutrals. Not only the diplomatic staff and the various propaganda and espionage agents, but also large numbers of German technicians, managers and administrators have been in key positions to observe and report any new developments in the neutral economies.

Germans in Spain.—None of the neutrals is so dependent on German personnel as Spain, since there are few Spanish technical engineers capable of directing the installation and operation of industrial machinery. Although these professional services in Spain may not be a direct attempt to evade Allied post-war controls, German technicians knew Spanish trade secrets and in many cases control the policies of various companies. Notwithstanding a Spanish law limiting the employment of foreigners, German personnel continues to be firmly entrenched in Spanish industry. Most of the equipment recently purchased by Spain has come from Germany. Naturally German technicians supervised its installation and often remained as technical managers. But technicians are not the only Germans in Spain; managerial and administrative personnel abound. One has only to glance at a list of the directors of Spanish companies to realize the influential position of Germans, a large portion of whom are fervent Nazis.

Germans in Turkey, Argentina, and Portugal.—No other neutral relies so strongly on German personnel as does Spain. Countries

like Sweden and Switzerland have their own skilled technician class and it is much more difficult for the Germans to penetrate industry through technical employment. A Swiss law forbids the employment of foreigners so long as a Swiss national is available for the work, while Swedish manpower controls make it very doubtful whether a considerable number of German technicians could find employment in that country. On the other hand, Turkey, Argentina, and Portugal are more fertile fields. In Turkey, since her declaration of war, all Germans have been interned or expatriated. Once the wartime regulations are relaxed, however, they may very well return to their former positions in German-controlled firms, such as those engaged in construction work, the manufacture of electrical equipment, machinery, and chemicals and pharmaceuticals, and the processing of food. The number of Germans employed in Argentina before the latter's declaration of war was fairly large and strategically located in vital industries; what controls the Argentine Government has since put into effect is not known.

There are no precise statistics available as to the number of German technicians, managers, and administrators employed in the neutrals. Spain undoubtedly has the largest number, perhaps a few thousand. There have been about two or three hundred in Portugal; at least as many in Argentina; and a smaller number in Turkey, Sweden, and Switzerland. But the smallness of the numbers should not lead one to overlook the threat to Allied post-war plans. The activities of these Germans during the war have been a thorn in the side of the Allied war effort. A German shipping agent in Bilboa, Spain, sent reports on the movements of British shipping to Berlin for use in submarine warfare and even sent supplies to Germans besieged in the French ports. German technicians and other personnel have acted as Gestapo or military intelligence agents, keeping Germans resident abroad in line with Nazi doctrines. Others sent reports to Germany on Allied activities in the neutrals and on neutral economic, political, and military developments. In a word, German personnel employed in neutral commerce, finance, and industry has served as a center of espionage and is a means of perpetuating German influence in the occupation and post-occupation periods.

b. Acquisition of economic control to diminish the war potential of other countries.

i. Activities affecting production.

The negative phase of the German war effort involved preventing or curtailing the production of strategic and critical materials in the United Nations and the flow of such commodities from the neutrals to the Allies. Unfortunately, time and space do not permit us to go into the subject.

The chief ways in which the Germans held back Allied war potential were—

- (a) Interests in business firms outside Germany.
- (b) Patents, e. g., in synthetic rubber, beryllium, diesel engines.
- (c) Restrictive cartel agreements, e. g., magnesium, aluminum, military optical instruments.
- (d) Activities of German personnel.

ii. German activities influencing political opinion abroad.

With economic penetration comes political penetration and the Nazis have not been slow in turning their business interests in the neutrals into propaganda agencies. The usual type of intelligence work was financed through the German Embassy or Legation, but business was frequently given a share in the work by appropriations. For example, a German-owned Lisbon firm periodically received sums of money to be used for intelligence operations. By entering the publications field the Germans tapped a fertile field for Nazi propaganda. The news agency, D. N. B., and the Trans-ocean Agency have offices in the neutrals and were engaged in anti-democratic activities and Nazi news distribution. Newspapers have been purchased by the Germans to spread seeds of hate; travel and shipping agencies such as the German-American Line and Lufthansa have done the same work in a more covert way. Suppliers of German goods are often Germans with Nazi views whose business premises have contained all the paraphernalia of Nazi propaganda and have had visual exhibits on the glories of the German system.

German business interests in the neutrals have also been the source of the funds used in molding public political opinion abroad. Since many German firms in the neutrals are subsidiaries or affiliates of companies in the homeland, it has been very easy to use their profits in the neutrals for espionage and propaganda by crediting the parent company in Germany with Reichmarks. By providing a cover for persons engaged in these activities, German businesses enable them to hide under a cloak of innocence. Moreover, powerful German companies in the neutrals have been and are in positions to apply economic sanctions against any neutral firm showing anti-Nazi views.

*c. German attempts to evade post-war controls.**i. German transfers of capital.*

For some time the Germans have been preparing a safe haven in neutral countries in case of defeat by laying plans for utilizing the territories of the neutral countries as bases for preserving Nazism and German economic strength in order to stage a come-back at some future date. In August 1944, a meeting of German industrialists was reported to have been held at Strassbourg for the purpose of maintaining the Nazi Party as an underground force. Among the points said to have been discussed were the exportation and investment of German capital abroad and the stimulation of closer working alliances between German and foreign industry. The industrialists were particularly urged to invest in foreign agricultural properties, and the names of several neutrals were cited who supposedly were ready to act in this matter on a five-percent commission basis. Such a meeting was only a logical outcome of the change in the war situation and probably many other similar meetings were held in Germany. Previous to August 1944, the German Government had opposed capital exports except for particular purposes, but after that date encouragement of such exports became an official policy of the Nazi state.

The cloaking device.—The simplest method of evading the Allied control of German property in the neutrals is by cloaking. By this technique the German owner transfers his holdings to the name of a neutral national who acts as the nominal owner. These transfers can go on ad infinitum until the line of true ownership is completely

obscured. In addition, neutral laws which limit or prohibit foreign ownership of certain industries are circumvented by the process. A large portion of the German property in the neutrals is cloaked, necessitating involved investigations to prove German ownership. Examples abound. An investigation has revealed that persons interested in cloaking German assets in order to evade Turkish controls have been active. It was also discovered that an official of the International Red Cross had been using his pouch to transfer German assets from Turkey to Switzerland.

The general practice in Europe is to use bearer shares as a token of ownership. This makes it very easy to cloak interests. It is well known that the Spanish chemical manufacturer, Union Quimica del Norte de Espana, S. A., has a large German capital interest, but the president of the company denies this. Since the shares are issued to the bearer, there is no way of checking his statement. Recent German flight capital to Sweden has been concealed by cloaks, by means of increased capitalizations of Swedish firms, by expansion of credit by German manufacturers to the extent of postponing payment until after the war, by the two-price system of imports, and by stock-piling to a limited extent. It is not possible to make an estimate of the total of concealed German capital in Sweden, although there is substantial evidence of its existence. Swiss cloaks for Germans are extremely active. Among the intervening banks are the leading commercial banks and such smaller banks as Bank Wadenswil and Johann Wehrli and Co., H. Sturzenegger and Cie. is wholly German owned. A large number of Swiss holding companies are known to be German cloaks.

German loans to neutrals.—Another method of hiding German interests is through loans extended to neutral companies which are really masked investments. In the case of the Swedish shipping firm of Rederi A/B Skeppsbron, a German-guaranteed loan of some \$3,000,000 was made from German supplies of free Swedish kronor whereby the vessels were mortgaged to the lender. In this way, although the Swedish company remained officially the owner of the vessels involved, the German Hamburg-American Line was the real owner.

German-neutral dealings in looted gold—Switzerland.—The export of gold has been another device used by the Germans to create assets in the neutrals. Since the outbreak of the war, Switzerland has played the role of international banker for Germany and her satellites. Swiss banks, the leading commercial and private banks as well as the Swiss National Bank, purchased gold from Germany to a value of several hundred million dollars. The proceeds obtained from the sale of the gold provided Germany with the necessary Swiss francs (the only currency that is freely transferrable in the world today) to finance her purchases of critical war materials from the neutral countries outside the clearings and barter agreements; to pay for espionage and propaganda activities abroad; and to invest in neutral industries. The German Reichsbank and Swiss commercial banks did not hesitate to take part in transactions involving looted gold which was smuggled back and forth from other neutral countries in order to create an extra profit for the Nazi officials who handled the deals.

Turkey.—In Turkey prior to the declaration of war, members of the German and satellite embassies constantly engaged in gold trafficking. Germans and their associates in Turkey bought Swiss francs on the

black market with Turkish lira. The Swiss francs were converted by the Reichsbank through the Deutsche Bank, Istanbul, into gold coins. These gold coins were then sold on the Turkish black market for about twenty percent more Turkish lira than the trafficker had started with. This was a continuous process. Between July 1943 and July 1944, German banks in Istanbul sold gold, most of it looted, to the value of about \$5,500,000. Undoubtedly many transactions were not included in this total.

Sweden, Spain, Portugal.—Sweden, Spain, and Portugal were also the recipients of looted gold. The usual German procedure in the case of Sweden was to smuggle gold in through the diplomatic pouch and afterward sell it on the black market.

The proceeds from these sales were invested for prominent German businessmen and leaders in Swedish securities. It is known that gold ingots in large quantities with seals showing that they come from Germany were sold to gold and silversmiths in Portugal. If a Nazi desired to deposit his loot in Portugal, he shipped the gold from Germany to Switzerland, where it was sold to a Swiss bank against a check or draft in Swiss francs. The check or draft was sent to a Portuguese agent who deposited it in his own name with a Portuguese bank, while the real owner remained in Germany. These cases can be multiplied indefinitely.

The Americas.—Another device was for the Germans to exchange looted gold for gold already located in the Western Hemisphere through the medium of a free currency such as Swiss francs. Gold was shipped to Switzerland and sold for free Swiss francs. With the Swiss francs, gold already in Argentina was purchased where it remained as a German asset.

German acquisition of foreign exchange.—Through the sale of gold and other loot as well as through other devices as described above, the Germans accumulated foreign exchange and foreign banknotes in the neutrals. Further acquisitions of foreign exchange were made possible through the clearings by the export of goods with the assistance of the foreign authorities. Under the clearings system, a German paid Reichsmarks into the German Verrechnungskasse, and some neutral agency, for example the Spanish Foreign Exchange Institute, then paid out pesetas on the Spanish end. In this way a German asset was created in a neutral country. Often goods were exported or smuggled from Germany for American, English, or French currencies. Swiss francs were especially desired by the Germans because they were readily exchangeable for other currencies and demanded a premium. The Germans frequently insisted on that unit of exchange in return for the delivery of high priority war materials.

Assets in neutral currencies were also acquired by the delivery of German goods to neutral countries for which the entire or part payment was to be deferred until after the war, particularly goods of a high specific value such as diamonds and other jewels. During 1944 a junior official of the German Foreign Office is known to have visited Stockholm twice monthly in his capacity of German courier. He is stated to be the principal figure in the German Government's sale of Dutch diamonds in Sweden and brought the stones with him in the diplomatic pouch on direct orders of the Nazi Government.

Once a deposit was made in a Swiss bank in Swiss francs, the Germans found it rather easy to make transfers to the Western

Hemisphere by transferring a Swiss franc balance to the account of an Argentine bank, or by acquiring a peso balance with an Argentine bank through the sale of Swiss francs. Then transfers could be made to banks in other Latin-American countries and in the U. S. from the Argentine Bank. Since these accounts were usually cloaked, the protection afforded the real German owner was indeed great.

In addition, the neutrals have offered the Germans another opportunity for obtaining foreign exchange. Subsidiaries of German firms that are located in the neutrals by the use of cloaks have been able to ship goods, mainly chemicals and pharmaceuticals, to business associates in the Western Hemisphere, thereby acquiring an asset in a Latin American country at war with Germany. Cases have been observed of goods of German origin being shipped to neutral countries where they are disguised as neutral goods and reshipped to the Western Hemisphere.

Looted art in the neutral countries as a special problem.—The salvage of European art treasures is an urgent problem, with two main aspects. The first deals with the actual preservation of such treasures for their intrinsic cultural and artistic value. The second deals with their recovery and restitution to their legitimate owners, since they constitute a financial asset in the hands of the enemy.

Allied committees were set up for the protection and sheltering of monuments and objects of art in liberated areas. They worked in close cooperation with the armed and air forces to spare and salvage art treasures in battle areas, or near military objectives in occupied territories. They are said to have accomplished an excellent first-aid task. We are concerned with the other phase of the problem: recovery and restitution of looted art treasures which are of economic value to the enemy, who may attempt to dispose of them in neutral countries, and thus accumulate foreign funds and securities which might escape Allied control.

The financial value to the enemy of looted property, including objects of art, was recognized by the 44 nations assembled at the United Nations Monetary and Financial Conference at Bretton Woods, July 1, 1944, when they especially included looted art objects in Resolution VI. The task which the United Nations have taken upon themselves involves:

- (1) Listing and identification of art treasures looted by the Nazis;
- (2) Establishing of claims by the rightful owners, with positive proofs or affidavits of previous ownership; and
- (3) Settlement of litigation arising from the fact that intermediary owners may have purchased looted property from cloaks, unaware that such dealers were fences for the Nazis.

Art treasures in national collections are on record, and it will be comparatively easy to establish a descriptive list of masterpieces missing from famous museums and art galleries. These cannot readily be put on the market and the nations' rights to claim back the works stolen from them is unquestionable. This difficulty of disposal is also true of some of the more renowned private collections, often as important and valuable as the national ones. The Rothschild collections in France, for instance, were estimated, before the war, at several tens of millions of dollars.

Works of art from small private collections, and works by less famous artists, or less well-known creations by great masters may

find a more ready market. Even more difficult to trace will be single but relatively valuable objects of art, privately owned and not part of a catalogued collection; small statutory, tapestries, rare pieces of furniture, modern paintings, and innumerable other objects of interest to art dealers and collectors.

To trace stolen art, and to stop Nazi flight of capital in the form of art treasures, the most imperative need seems to be the compiling of an official list of objects of art already known to have been looted. Without such a list no concerted action can be taken to prevent suspicious deals in works of art, and to instigate an investigation of the principals involved.

The Nazi policy in regard to the looting of art pieces was a long-range one and part of the plan envisaged in case of defeat. They realized the importance of securing for themselves stable foreign currency and the greatest possible financial power abroad. But alarmed by economic crises throughout the world, they must have felt that works of art are negotiable assets, that they represent stable international value, and are a safe investment. This long-range planning will increase the task of identification and eventual recovery of looted art.

The best documented case of looted art is that of Alois Miedel, a German national said to be a close friend of Herman Goering and to be acting as his personal representative. Miedel's activities in the art field apparently centered in occupied Holland. After the occupation of Holland by the Nazis in 1940, he became owner of the Goudstikker Galleries in Amsterdam, and is reported to have bought other Dutch collections, with the first choice of paintings always going to Goering. His acquisitions included primitives as well as paintings by later artists. He paid for his purchases with German marks "pumped" into Dutch, Belgium, and French circulation or with "occupation guilders." Other works of art were seized outright as Jewish property. There is good reason to believe that any Dutch collector who sold to Miedel did so under duress, and is entitled to claim the restitution of valuable objects thus extorted from him. Following the advance of the Allies into enemy-occupied territory, Miedel sought a market for his art loot in neutral countries, presumably for his own account and Goering's.

Miedel took part of his loot to Spain and deposited a number of valuable pictures in the free port at Bilbao, among them works of Rembrandt, Van Dyck, Rubens, Jan Steen, and Cranach. The Prado Museum in Madrid was said to have offered two million pesetas for one of these paintings. These paintings may be only a small part of the looted art brought into Spain from occupied territory by Miedel, acting as Goering's representative, as there is reportedly in existence a catalogue of some two hundred paintings imported into Spain from France. Most of these paintings were valued at sums ranging from 100,000 to 400,000 pesetas, and five or six were of even greater value.

Other instances of looted art objects are on record. In September 1944 the American Embassy in Stockholm reported that stolen art objects belonging to the Italian Government were finding their way to Sweden. In Switzerland an art gallery was selling works of art looted from France by the Nazis. The gallery continued to be a convenient depository for stolen art pieces. There has been a great volume of correspondence exchanged between art dealers or their agents in the United States and their representatives in Latin America.

However, there is no conclusive proof that looted art is involved. On the other hand, there is ample ground for believing that many of the art objects appearing in the South American market are tainted.

3. THE VOLUME OF GERMAN ASSETS ABROAD

General estimates.

Germany's foreign investments prior to World War I were estimated at about \$12,500,000,000. Two-thirds of this total was distributed over Europe. About two-thirds comprised holdings of foreign securities, and one-third direct investments in private enterprises. After the war, most of Germany's foreign investments were liquidated or transferred in compliance with the terms of the Treaty of Versailles. By 1927 only \$1,500,000,000 of the pre-war investments remained. But between 1919 and 1928 new capital investments were made abroad so that the total may have reached about \$2,500,000,000. The old investments consisted mainly of farm lands in South America and real estate and commercial enterprises in Central and Southeast Europe. The new investments consisted mainly of bank balances, accumulated profits, industrial plants, and interests in financial institutions.

No totals are available for the individual countries before the war except for Argentina. In 1938 German fixed capital investments in Argentina were said to amount to \$38,000,000, but this figure does not include short-term assets. Since that date large amounts of capital are known to have been transferred to Argentina. Efforts made by the Department of Commerce before the war to obtain official figures from Germany on foreign investments were unsuccessful.

A preliminary detailed study of German assets outside Germany proper, excluding U. S., U. K., Canada, and Italy, indicates, as of April 30, 1945, an estimated minimum value of \$1.5 billion. This includes approximately \$850 million for the countries in Section I below (Sweden, Switzerland, Spain, Portugal, and Argentina), \$50 million for Section II (Turkey), and \$600 million for Section III (other countries). Little definite information is available for the countries in Section III, which covers other countries having possible German assets and includes all Latin-American republics except Argentina, liberated countries or countries about to be liberated, the Balkans, and the countries of the Middle East. The estimate for Section III comprises only a minor part of German penetration in these countries.

Assumptions and method of calculation.

All figures given in the report are estimated at a minimum, and, as investigations proceed, estimates will be greatly increased, possibly doubled; for obvious reasons the increase will occur mainly in Sections I and II, and in Italy, which in the future will be included in Section III. In this Section, additional figures may become available for the Western and Northern European liberated countries. The possibility of obtaining extensive and precise information regarding the Eastern European liberated countries seems slight. In any case, the liberated areas would have first claim for their own reparations on German assets in their territory. Moreover, the political status of Italy and Austria and of the satellite countries of Bulgaria, Hungary, and Rumania is subject to considerable change. It is possible that a future report will include their assets abroad as well as German assets in those countries.

Operating enterprises make up a large part of the assets listed in this report, and, should a part of these enterprises be liquidated or their activities reduced, their estimated value would be decreased. Any increase from newly found assets would probably be partially or totally offset by this reduction.

Estimates of German assets in the U. S. and U. K. will probably remain unchanged. The amount of German assets frozen in the U. S. is \$340 million. German assets in the liberated areas will rapidly become nationalized.

In the clearing accounts Sweden and Turkey owe Germany \$16.7 million and \$15.7 million, respectively; the latter figure is contested by the Turks. Germany is indebted to Switzerland to the amount of \$232.1 million; to Spain, \$25.4 million; and to Portugal, \$2.4 million. Estimated investments in Germany by Sweden, Switzerland, and Spain approximate \$625 million.

The above-mentioned statement on German assets in other countries comes from the following table which not only includes German assets but also the investments and clearing positions of these other countries with Germany. After the table, the data of this preliminary estimate of German assets outside Germany proper are given in more detail.

Table of German assets in certain countries, and the investments and clearing positions of these countries with Germany

Section I. Neutral countries:

	German assets	Investments in Germany	German clearing debt
	Million dollars	Million dollars	Million dollars
Total minimum estimate	1,500.0		
A. Sweden	76.1		
German investments in Sweden	57.7		
(This figure does not include German-owned bank balances or assets concealed by Swedish cloaks and other devices.)			
Sweden's clearing debt to Germany	16.7		
German reichsbank account in Sweden	1.7		
Swedish investments in Germany		178.5	
B. Switzerland:			
Bank deposits (cash and securities)	250.0		
Direct investments (commercial and industrial)	50.0	300	
Germany's clearing debt to Switzerland			232.1
Swiss investments in Germany and pre-war loans to Germany		445.0	
Liechtenstein. (It is suspected that large amounts of German capital are invested in Liechtenstein. These operations, however, were secret until the decree of February 1945, and no information on which to base an estimate of German penetration is available.)			
C. Spain	222.0		
(Estimated assets)	200.0		
Spanish civil war debt to Germany ¹	22.0		
Spanish bank loans to Germany		² 1.8	
Germany's clearing debt to Spain			³ 25.4
D. Portugal:			
(This is the mean figure for estimates between \$17.5 and \$35 million)	27.0		
German bank credits in Portugal ¹	3.2		
Germany's clearing debt to Portugal			² 2.4
E. Argentina	200.0		
(This estimate includes both hidden and open German assets in Argentina.)			

¹ This figure is based on a Spanish offer to pay on a reduced scale. Some Spanish officials contest this remaining obligation on legal grounds.

² Current official rate—1 reichsmark = U. S. \$0.399. Since the establishment of the AMG (Allied Military Government) in Germany, the rate has been fixed at 1 reichsmark = U. S. \$0.10. If this conversion rate were to be used, it would decrease considerably the above figures.

³ A fairly reliable source has, in 1945, roughly estimated German assets in Portugal to be about \$45 million. They state, however, that a more accurate estimate will be submitted later.

		<i>German assets</i>	<i>Million dollars</i>
Section II:			
	Turkey (approximately)-----		30.0
	(This estimate covers assets on which data are available. There are many assets on which no estimate has been made because of lack of data.)		
	Estimated assets-----		33.0
	Turkey's clearing debt to Germany-----		15.7
Section III. All other countries:			
	A. Latin-American Republics (excluding Argentina)-----		250.0
	(This is a conservative estimate and does not include holdings controlled by naturalized Germans or cloaks which have made possible a continuity of operations for German interests.)		
	B. Liberated countries:		
	Western European:		
	1. Holland and Belgium: (It is impossible to estimate in terms of dollars the influx of capital from Germany into these countries because, with the invasion of the continental countries, the Nazis assumed complete control over all properties. What amount of German capital will remain after the evacuation of the Germans is not determinable at present.)		
	2. France: (After the extension of German occupation to all of France in November 1942 Germany came very close to absolute control over French economy, but it is impossible to give an estimate of direct or indirect penetration in terms of dollars.)		
	Alsace-Lorraine: (No estimate given. German economic and financial penetration into Alsace-Lorraine does not parallel Nazi infiltration into the rest of France, as these two Provinces were completely incorporated in the German monetary and banking organization.)		
	3. Luxemburg: (No estimate given. Incorporation of the Grand Duchy of Luxemburg into the German Reich on August 30, 1942, completed the process of Nazi economic and financial penetration.)		
	4. Norway-----		10.0
	(This figure is an estimate of known German investments in Norway. If investments for which figures are not available could be included, the amount would undoubtedly be considerably higher.)		
	Eastern European:		
	1. Hungary: (Germany controlled \$229,509,340 of the assets of the most important commercial banks in 1941. This was prior to the period of greatest German participation.)		
	2. Bulgaria: (Germany controlled \$22,524,000 assets in the commercial banks in 1940 before the period of greatest German participation.)		
	3. Rumania: (German penetration of industry and banking amounted to about 1/4 of its total. Because of the inflation of the Rumanian currency, it is difficult to make a dollar estimate of German assets there, which at any rate surpass \$23 million.)		
	4. Serbia: (German participation in enterprises was \$45 million of the total capacity. There was a complete penetration of the State by Germany. This does not cover the period of greatest infiltration.)		
	5. Croatia: (German participation in enterprises was \$35 million of the total capital. State-owned property and other enterprises were controlled but not owned by the Germans. This does not cover the period of greatest German participation.)		

German assets—Continued

Section III. All other countries—Continued.

C. Other countries:

1. Egypt: (No estimate given. Principal German penetration in the Middle East has been in commercial trading and espionage. A number of French-held shares in the Suez Canal Company have changed hands during the war. The Germans acquired some during their occupation of France, and the USSR purchased some.)
2. Levant States:
 Syria and Lebanon: (No estimate given. All known enemy assets have been sequestered. German funds for intelligence operations have been transferred to Syria.)

*Section I. Tentative break-down of German assets in certain countries and the investments and clearing positions of these countries with Germany.**German assets in Sweden.*

(Official exchange rate: 1 krona = U. S. \$0.238)

German capital invested in Sweden is estimated at a minimum of 242,422,000 kronor (\$57.7 million), which does not include German-owned bank balances or assets concealed by Swedish cloaking and other methods. Sweden's clearing debt to Germany, as of February 1945, was about 70 million kronor (\$16.7 million). The German Reichsbank has an account in Sweden amounting to 7 million kronor (\$1.7 million). Swedish investments in Germany, however, are reported to be 750 million kronor (\$178.5 million).

The estimate of German assets in Sweden is based on five considerations: (1) The payments made by Sweden into the clearing and itemized as interest on German assets in Sweden; (2) commissions, license fees, and patent rights paid by Sweden to Germany; (3) a preliminary study of the known German subsidiaries and direct investments in Sweden; (4) an estimated value of ships built and being built in Swedish shipyards on the order of firms wholly or in part controlled by German interests; and (5) accumulations of capital by schemes evolved to conceal German ownership and evade Swedish regulations.

1. *Interest on German assets in Sweden.*—Payment made by Sweden into the Swedish-German clearing and itemized as interest on German assets, which consist mainly of corporate shares, amounted to 1.7 million kronor (\$404,600) and represents a capital investment of probably 34 million kronor (\$8.1 million).

2. *Commissions and patent rights.*—Sweden paid 13 million kronor (\$3.1 million) into the Swedish-German clearing in 1942 for commissions, license fees, and patent rights.

3. *German subsidiaries—Commercial and mercantile enterprises.*—Between 150 and 200 Swedish firms operate on capital wholly or in part supplied by Germans or German firms. Their total capitalization approximates 80 million kronor (\$19 million).

Mining.—There are 11 German-owned mines in Central Sweden with a capitalization of about 20.48 million kronor (\$4.9 million). All these mining companies are owned directly, or indirectly through Swedish companies, by large German steel firms such as *Rochlingsche Eisen and Stahlwerke G.m.b.H.*, Vöcklingen, Saar; *Hosch*, Dortmund; *Fried. Krupp*, Essen; *Gutehoffnungshütte A. G.*, Oberhausen; and *Vereinigte Stahlwerke*, Düsseldorf. Their annual production of more

than one million metric tons, worth about 18 million kronor (\$4.3 million), was exported to Germany.

A portion of Swedish opinion has objected for some time to foreign ownership of Swedish mines. Iron ore mining in Central Sweden is, however, relatively unimportant as compared with that in Northern Sweden, and agitation for Swedish ownership has not progressed.

Steel.—Members of the German Steel Cartel, such as Vereinigte Stahlwerke, Mannesmann, Krupp, Gutehoffnungshutte, and Stahlunion, own related enterprises incorporated in Sweden with combined capital of 6,690,000 kronor (\$1.6 million).

Coal and coke.—The importation, handling, and transportation of coal and coke are almost a projection of Germany's coal industry. Capitalization of the firms having open connections with Germany is 1,252,000 kronor (\$297,976) while ramifications of the Appelquist concerns add 7 million kronor (\$1.7 million) of which there is a large but undetermined amount of capital originating from Hugo Stinnes and his Dutch and Danish companies.

4. *Shipbuilding.*—Swedish companies controlled wholly or in part by German interests have a total capitalization amounting to approximately 37.8 million kronor (\$9 million).

Twelve vessels totaling 20,614 G. R. T. had been delivered to these companies in June 1944. Twenty-six vessels totaling 84,820 G. R. T. were being built for delivery at a future date to those and other German-controlled firms. The estimated value of these ships is between 80 and 90 million kronor (\$19 to \$21 million). This does not include the 80,000 D. W. T. for which Sweden was under contract with Germany in 1941 and which, in the main, was not delivered.

5. *Evasion of regulations.*—German economic penetration of Sweden has proceeded despite the body of Swedish corporation law which was enacted to limit foreign investments. The law was made applicable to those industries connected with the social welfare of the country, such as mining, waterpower, timberlands, and shipping. Foreign capital, however, has invaded the mining and shipping industries, but, since the law does not apply to general mercantile and commercial ventures, German capital has penetrated Sweden to a larger extent in that type of enterprise.

Recent flight of capital has been concealed by Swedish cloaks, by means of increased recapitalizations of Swedish firms, by expansion of credit by German manufacturers even to postponing payment until after the war, by the two-price system of imports, and to a limited extent by stock-piling. It has been estimated that 60 percent of Germany's 1944 exports of consumer goods were made to acquire credit in Swedish currency for investment. It is at present impossible to estimate the value of concealed capital. Important Swedish banks have been pressing the Swedish Government for a comprehensive census to determine the amount of camouflaged enemy assets and concealed bank balances. Sweden recently promised the United States and United Kingdom to make such a census.

Looted art.—(See Looted Art, Sweden.)

Status of German assets.—According to Foreign Exchange Regulations published by the Riksbank on October 30, 1944, imports as well as exports of currency cannot take place without the special permission of the Riksbank. Foreigners' accounts are to be "frozen," with various exceptions and special regulations for citizens of various countries.

German assets in Switzerland.

(Official exchange rate: 1 Swiss franc=U. S. \$0.232)

Switzerland, because of her highly developed financial and banking system and because of her proximity to and dependence on Germany, has been a major field for German finance manipulation and industrial development. German investments in Switzerland calculated according to nominal capital are estimated at \$100 million. Total assets cannot be accurately estimated at present, but they represent a substantial increase over this figure, totalling approximately \$300 million, of which bank deposits (cash and securities) would amount to about \$250 million, and direct investments (commercial and industrial) would be about \$50 million. In the German-Swiss clearing, Germany's debt is about 1,000 million Swiss francs (\$232.1 million). Swiss investments in Germany and pre-war loans to Germany are estimated at \$445 million.

Banking.—Only two German banks, Roehling & Co. and Sturzenegger & Cie., are in operation. The Swiss banks, however, have served as international bankers for German financial and industrial firms. Since the war Swiss banks purchased several hundred million dollars of German gold, thus providing Germany with free Swiss francs. The banks have also actively assisted German trade and espionage by making foreign exchange of other countries available to the Reich. Johann Wehrli and Company, a private bank in Zurich, Switzerland, maintains in Argentina secret numbered accounts owned by Germans. The possibility of large deposits in Swiss banks for enemy leaders could not be investigated because of the Swiss banking secrecy act effective until February 17, 1945.

Industry.—German penetration into Swiss industry for cartel, evasion, or "safe haven" purposes has been accomplished principally through the establishment in Switzerland of subsidiary companies of powerful German firms. Over half of the total German capital in Switzerland is invested in holding companies for the I. G. Farben, Merck, Siemens, Osram, and Henkel companies. The largest investments are in chemicals and drugs and in electric power and equipment.

Capitalization of chemical and drug firms under German control is approximately \$45 million. I. G. Farben, through its holding companies, I. G. Chemie, Industrie Bank, and Igepha, and through its major subsidiaries I. G. der Stickstoff Industrie and I. G. fuer Chemische Unternehmungen, controls approximately \$42 million in capitalization. The Merck and Henkel drug and pharmaceutical companies have Swiss subsidiaries and holding companies capitalized at \$1.8 million.

The capital holdings in electric power and equipment aggregating \$12 million are controlled by such prominent German firms as Siemens, Osram, Lorenz, Bosch, and Preussische Elektrizitaets, A. G.

Looted art.—(See Looted art, Switzerland.)

Domestic regulations on German holdings in Switzerland.—By decree of the Swiss Federal Council on February 17, 1945, all German holdings in Switzerland and the principality of Liechtenstein were blocked. It requires that all financial transactions between Swiss and German persons and institutions be handled through the Swiss National Bank and thereby supersedes the Swiss Bankers Association Regulations Act of September 17, 1944, which sought to restrict legitimate

banking activities of all Swiss banks with the enemy. The 1945 decree virtually rescinds the Swiss Banking Act of November 8, 1934, which allowed secret accounts to be maintained, thus preventing the examination of banks records to ascertain German holdings.

Liechtenstein.

Very little information is available concerning German penetration in Liechtenstein. It was incorporated into the Swiss customs territory in 1923, and its foreign interests are represented by Switzerland.

It is estimated that there have been large German investments in Liechtenstein. This country has practically no taxes, and large international corporations can establish headquarters there and pay nominal taxes for this privilege, thereby escaping the taxes in their own countries. The largest German penetration has probably occurred through holding companies.

The Swiss Federal Council on February 17, 1945, enacted a decree which blocked all German holdings in Switzerland and Liechtenstein. This should facilitate the determination of German penetration in Liechtenstein.

German assets in Spain.

(Official exchange rate: 1 peseta = U. S. \$0.091; 1941 exchange rate: 1 free reichsmark = \$0.399)¹

An estimate of total German holdings in Spain, both open and cloaked, based on a preliminary survey, places the figure at between 1 and 2 billion pesetas (\$100 million and \$200 million). The official German procurement and development organization in Spain, Soc. Financiera Industrial Ltda. (SOFINDUS), controls assets of about \$50 million.

As of April 1945, Spain owed Germany on its civil war debt a remainder of \$22 million. This figure is the result after payments had been made on a reduced principal of the German claim and after offsetting Spain's claim for her expenditure for the Blue Division on the Russian front. Some Spanish officials contest the remaining obligation on legal grounds.

Under the German-Spanish clearing about \$25.4 million is owed to Spain. Spanish bank bans to Germany are estimated at 20 million pesetas (\$1.8 million).

German economic penetration in Spain has increased since the Nazis came into power in 1933. In order to wage total war, the Nazis must import products like foodstuffs, iron ore, ferro-alloys, etc., and, to assure a continuing supply, the Germans in Spain have obtained an economic interest in the production and marketing of these products. German infiltration has been strongest in industries which require high technical skills.

Banking.—There are two German-owned banks in Spain. The Banco Aleman Transatlantico, the Spanish branch of the Deutsche Uberseeische Banks, is one of the most important banks in Spain and has a large clientele among German businessmen. The Banco Germanico de la America del Sur, S. A., formed by the Deutsche-Sudamerikanische Bank A. G. of Berlin in 1941, ranked 49th among Spanish banks in total paid-in capital and reserves and had total assets of considerably more than 88 million pesetas (\$8 million).

¹ Since the establishment of the AMG (Allied Military Government) in Germany, the rate has been fixed at 1 reichsmark = U. S. \$0.10. If this conversion rate were to be used, it would decrease considerably the above figures.

Insurance.—Ten German insurance companies are registered with the Spanish Director General of Insurance with total assets amounting to about \$7 million and total premiums in 1943 amounting to 33 million pesetas (\$3 million).

Chemicals and pharmaceuticals.—In almost all sections of the Spanish chemical and pharmaceutical industry there is some evidence of control by I. G. Farbenindustrie, the most powerful foreign influence in this field. It controls a number of Spanish firms directly or through Unicolor S. A. I. G. Farben owns 51% of the stock in Sociedad Electro-Quimica de Flix which is capitalized at 6.6 million pesetas (\$600,000). The manufacturing processes of this company are held under license from I. G. Farben, and a number of Germans are employed in the firm although the management is mainly in the hands of Spaniards. Quimica Commercial y Farmaceutica, S. A., a subsidiary of I. G. Farben, capitalized at 3.3 million pesetas (\$300,000) distributes Bayer medical products in Spain. Unicolor S. A., which is practically owned by I. G. Farben, is capitalized at 4 million pesetas (\$360,000). It represents 16 German firms and has interlocking directorates with several large Spanish chemical companies. Through stock participation, Unicolor has large interests in other companies. Another firm Union Quimica del Norte de Espana, with a subscribed capital of 6.6 million pesetas (\$600,000) operates under patents licensed by I. G. Farben.

Mining and minerals.—The most influential German firm in Spain dealing with minerals and metals is Lipperheide and Guzman S. A. (now known as Industrias Reunidas Minero Metalurgicas S. A.) whose widespread holdings include mines, smelters, and transportation facilities. In 1942 the capital of this firm was increased from 2.2 million pesetas (\$200,000) to 22.2 million pesetas (\$2 million). Lipperheide and Guzman own an interest in or is closely allied with ten mineral and chemical companies in Spain and control assets of about \$20 million.

Machinery and electrical equipment.—The Germans are deeply entrenched in the machinery and electrical equipment business in Spain. The capital of 14 Spanish subsidiaries of German companies in this field amount to \$4.6 million.

Trade and industry.—The official German trading company in Spain, Soc. Financiera Industrial Ltda. (SOFINDUS), which is controlled by Rowak G.m.b.H., has strong interests in agriculture. Through Agro S. A. and Productas Agricolas S. A., the latter capitalized at 2.5 million pesetas (\$225,000), SOFINDUS maintains an active interest in Spanish agricultural products. In October 1944 the Seville branch of Productas Agricolas S. A. was planning to stockpile essential oils in Spain for future German use.

The Spanish photographic industry relies heavily on German supplies. The nominally Spanish firm of Negra y Tort, for example, produces photographic paper by "Agfa" processes which is sold only through "Agfa" itself. There are German photographic and optical firms represented in Barcelona, Bilbao, and Madrid by Carlos Baum Lucas, an active Nazi.

The printing house of Blass S. A. has acted as printer to the German Embassy and as a propaganda agent in Spain. Its capital is 600,000 pesetas (\$54,000). Recently the German flour and soup-paste manufacturer, Mawick & Cia. Ltda. of Tetuan, purchased for about 2 million

pesetas (\$180,000) the printing establishment of Francisco Erola. Apparently it was intended to initiate a large-scale propaganda campaign, for Max Wiedemann, Chief of the Propaganda Section of the German Consulate at Tangier, seems to have been chosen to head the project. The ejection of the Germans by the Spaniards, however, probably ended this venture, although the property still belongs to Mawick.

Neumaticos-Continental S. A., German tire importers, was capitalized at 3 million pesetas (\$271,000).

General and commission merchants.—There are numerous German general and commission merchants who maintain extremely close ties with the fatherland. Tricontinenta, S. A., is a branch of Amerex of Prague, Vienna, and Berlin and deals in tin, wire, resin, turpentine, and olive oil. It has a paid-in capital of 1 million pesetas (\$90,000).

The most important German firm in Spanish Guinea is W. A. Moritz & Co., importers and exporters, capitalized at 1 million pesetas (\$90,000). August Dobler, a German national, has amassed a fortune estimated at 1 million pesetas (\$90,000) through engaging in the fruit trade. Ernesto H. Bracker, who imports motorcar accessories and acts as a general agent, has done a fairly substantial business with a turn-over of 1.5 million pesetas (\$135,000) in 1941. Other German organizations of some size are Empresa S. A., Dekage Colonial Cia., and Einhart & Co.

Shipping.—Forwarding and shipping agents concerned with trade between Germany and Spain are usually concerns with German interests. Baquera, Kusche y Martin S.A. (Bakumar) is entirely German-owned and in reality a subsidiary of Robert Sloman, Jr., of Hamburg. Its capital is estimated to be between 500,000 and 1 million pesetas (\$45,000 and \$90,000). This company also holds 40 percent of the stock of Deposito Espanol de Carbones, S. A., another coal depot for ships. A. Paukner is a shipping agent in Tenerife and also Gestapo chief there, an example of the union of business and Nazi pressures.

Looted art.—(See Looted art, p. —.)

Status of control of German assets.—Until recently the Spanish Government took no action to block German funds in Spain. (See p. 63 for the United States-Spain agreement on safe haven.)

German assets in Portugal.

(Official exchange rate: 1 escudo = U. S. \$0.04)

The American Embassy in Lisbon, on April 27, 1945, roughly estimated German assets in Portugal to be about \$45 million. They state, however, that a more accurate estimate will be submitted later. German assets in Portugal, based on data available in Washington, total between \$17.5 million and \$35 million. Germany's clearing debt to Portugal is approximately 6 million RM (\$600,000). Germany has bank credits in Portugal of 81 million escudos (\$3.2 million). Recently there has been a noticeable shift from investment in the mining industry to real property in the cities, cloaked ownership in Portuguese firms, and even large-scale purchases of cinemas.

Banks.—There are no German or German-controlled banks in Portugal.

Insurance.—Seguradora Internacional Ltda., a branch of Mannheimer Versicherungsgesellschaft of Mannheim, Germany, and capi-

talized at 200,000 escudos (\$8,000) is the only German-owned insurance company in Portugal.

Chemicals and pharmaceuticals.—I. G. Farbenindustrie has fairly large interests in Portugal. Its pharmaceutical specialties have been sold through Bayer Ltda., which maintains offices in Lisbon and Oporto, and its other products through Anilinas Ltda. Schering, S. A., and Cuimico Farmaceutica Ltda., the latter owned by E. Merck, of Darmstadt, both have distributed in Portugal the products of their German parent companies.

Mining and metals.—Most German mining interests center about the Minerio Silvicola, Ltda., which has been financially backed by SOFINDUS, the official German purchasing agent in Portugal, which also has done a great deal of business in Spain. The Minerio Silvicola group includes five other mining companies under direct German control and four other affiliates. The total German investment in the mining industry is estimated at \$4 million.

Machinery and electrical equipment.—The most important German electrical manufacturer in Portugal is Siemens Companhia de Electricidade S. A. R. L., a branch of the Siemens group, capitalized at 5.2 million escudos (\$208,000). Siemens Reiniger S. A. R. L. was formed in 1934 with a capital of 100,000 escudos (\$4,000). A. E. G. Lusitana de Electricidade, a subsidiary of the German firm, has a capital of 2 million escudos (\$80,000).

General traders and commission merchants.—The official German purchasing agency in Portugal has been Soc. Financiera Industrial Ltda. (SOFINDUS) whose capital is listed at 3 million escudos (\$120,000). Of this amount, Rowak G. m. b. H. of Berlin holds 2.99 million escudos (\$119,204). This organization has purchased Portuguese products for the Germans and has coordinated the operations of various German firms in Portugal. The rice milling firm of Cia. Arroqueira Mercantil is controlled by Germans who hold \$66,400 of the capital. The Germans have a number of important companies engaged in general trade. There are many German merchants established in Portugal who carry on substantial businesses in specialized lines. Although figures on the capital of all these companies are not available, existing statistics on a few of them give a capitalization of \$186,000.

Miscellaneous.—There are several German firms active in the cork business. Available figures on German capital in this field amount to \$80,000. The largest German cork dealer in Portugal is Greiner Ltda., a branch of C. A. Greiner & Sohne, located near Stuttgart. A partial listing of other investments reaches \$305,100.

Looted art.—(See Looted art, p. —.)

Status of control of German assets.—The Portuguese Government finally interfered with German financial activities in Portugal this spring.

German assets in Argentina.

(Official exchange rate: 1 peso=U. S. \$0.297.)

The estimated value of all German funds and investments in Argentina is \$200 million. Total capital, reserves, and cumulative profit for the seventy-one important German firms in Argentina amount to approximately \$46 million. Nineteen of the largest firms within this group have total assets of 47 million dollars. It may,

therefore, be assumed that total assets of the German corporate structure in Argentina considerable exceed \$100 million.

Exact estimates of personal assets are by their very nature most difficult to make. There are indications that bank accounts, securities, holding companies, and miscellaneous personal property represent a minimum of \$50 million.

Banking.—German financial activities in Argentina have centered around two large banks, Banco Aleman Transatlantico and Banco Germanico de la America del Sud, whose total capital, reserves, and cumulative profits approximate \$4.5 million. Deposits reach \$17 million.

Holding companies.—Holding companies were organized in 1939 by Johann Wehrli & Company of Zurich, Switzerland. These companies maintain secret numbered accounts that are owned by Germans. The evidence shows that other accounts ostensibly held for citizens of neutral countries actually cloak German interests.

Insurance.—German insurance firms in Argentina are spearheaded by El Fenix Sudamericano Cia. de Reaseguros, S. A., which is an affiliate of the Munich Reinsurance Company through its subsidiary, Union, Cia. de Reaseguros de Zurich. El Fenix is one of the principal reinsurers of all South American business. Tightly drawn contractual agreements link German insurance companies with their Argentine affiliates.

Metallurgy.—German capital, technicians, and financiers have been heavily involved in the Argentine government program to expand the armaments industry. Investments of Fritz Mandl, dangerous pro-Nazi, in the armaments industry are estimated at \$15 million. Total assets of the two largest German firms, Thyssen-Lametal S. A., Industrial y Mercantil, and La Sociedad Tubos Mannesmann, are \$14 million.

Electrical goods.—Total assets in electrical goods subsidiaries in Argentina are approximately \$14 million. These firms represent leading German electrical organizations such as Siemens, A. E. G., Robert Bosch, and Osram.

Construction.—Total assets of the six large German construction companies are approximately \$6 million. These companies have received large government contracts. Their officials include many ardent Nazis who wield both government and press influence.

Other.—Other important fields of German economic penetration are chemical and pharmaceutical, export and import, and real estate. Leading German firms are well represented.

Looted art.—(See Looted art, Latin America.)

Status of control over German Economic interests in Argentina.—Innumerable decrees have been issued in Argentina regarding the intervention of non-United Nations firms and control over the ingress of foreign capital. Until interventors show signs of more positive and aggressive action, however, these decrees must be looked upon as mere "window dressing."

Section 11.

German assets in Turkey.

(Official exchange rate: 1 lira = approximately U. S. \$0.77)

It is estimated that German assets in Turkey total about \$30 million. Other German assets representing an important part of the

Turkish economy exist, but no pertinent data are available upon which to base an over-all estimate. The Turkish-German clearing account, as of December 20, 1944, was £T20.4 million (\$15.7 million) in favor of the German Government.

Banking.—There are two branches of German banks in Turkey, the Deutsche Bank and the Deutsche Orient Bank. These are capitalized at £T1 million and £T1.5 million (\$770,000 and \$1.2 million), respectively. Total assets of the Deutsche Bank, Istanbul, on December 31, 1942, were £T12.9 million (\$9.9 million) and of the Deutsche Orient Bank £T15.9 million (\$12.2 million). The known holdings, in the form of bonds, cash, gold, bank deposits, foreign exchange, etc., of various German firms and individuals total \$4.4 million.

Insurance.—Six German insurance companies have branches in Turkey. Their investments and real property are unknown, but their estimated liquid assets, consisting of balances from premiums for the expired portion of all risks, cash on hand, cash in banks and elsewhere, and income from interests and investments, are approximately \$289,000 (between \$192,000 and \$385,000). This figure is in addition to their total original deposit with the Turkish Government of \$423,000, which has been included in the \$4.4 million given above.

Trade and industry.—More than sixty German-controlled firms in Turkey are engaged in the following enterprises: Building and public works contracting; building materials; tobacco merchandising; importing and exporting; chemicals and pharmaceuticals; shipping, forwarding, and transportation; machinery and electrical equipment; and commission agents. No data are available on the assets of these firms on which to make an estimate. Other than those mentioned above, there are possible German interests in more than fifty firms in Turkey, including organizations representing such German firms as I. G. Farben, Krupp, and Bayer.

Miscellaneous.—Real estate, machines, stocks of tobacco and other products, mortgages, furniture, silver, carpets, etc., belonging to various German firms and individuals total \$6.1 million.

Status of the German assets in Turkey.—Upon the severance of diplomatic relations between Turkey and Germany, Germans in Turkey were returned to the Reich or interned. They made and, it is believed, are still making arrangements with Turks for the continuity of their firms and the cloaking of their assets.

Upon instructions of the Turkish Government, the German banks and insurance companies in Turkey are reported to be in the process of liquidation. No steps have been taken, however, to block the proceeds of these liquidations or to accomplish the freezing or vesting of any other enemy assets in Turkey.

Section III.

German assets in Latin-American Republics (excluding Argentina).

The value of German assets in the Latin-American Republics other than Argentina has been estimated at \$250 million. Total direct and portfolio investments in the Latin-American Republics, other than Argentina, are estimated to be \$125 million. This figure, however, does not include holdings controlled by naturalized Germans or cloaks which have made possible a continuity of operations for German

interests. Even less specific is information concerning smuggling and capital flight to these countries. Hence, it seems conservative to estimate that the total assets subject to German control in Latin America excluding Argentina must be at least \$250 million.

A brief summary on German direct investments, leading fields of penetration, and general status of government controls is given below for each country.

Bolivia.—The value of direct and portfolio investments in Bolivia is estimated to be \$8 million. Leading fields of German penetration are merchandising, mining, and land ownership. Decrees have been issued freezing Axis funds in blocked accounts and providing for expropriation of Axis companies. (Official exchange rate: 46.46 Bolivianos=U. S. \$1.)

Brazil.—Direct and portfolio investments in Brazil are estimated to be \$40 million. German penetration has been most extensive in export-import activities, particularly of pharmaceutical products and coffee. Decrees providing for the freezing of assets and liquidation of German firms are being enforced. (Official exchange rate: 16.5 cruzeiros=U. S. \$1.)

Chile.—Direct and portfolio investments in Chile are estimated to be \$20 million. Leading fields of German penetration are pharmaceutical, machinery, tanning, and distillery industries. German banks and firms have been or are in the process of liquidation; funds are controlled in blocked accounts. (Official exchange rate: 19.7 pesos=U. S. \$1.)

Colombia.—Direct and portfolio investments in Colombia are estimated to be \$11.5 million. German penetration has been most extensive in commerce, banking, and insurance. Decrees have been issued providing for the expropriation and sale of German property. (Official exchange rate: 1.75 pesos=U. S. \$1.)

Costa Rica.—Direct and portfolio investments in Costa Rica are estimated to be \$5 million. German interests have been concerned primarily with coffee and sugar. Decrees were issued providing for the freezing of Axis funds. (Official exchange rate: 5.62 colones=U. S. \$1.)

Cuba.—Direct and portfolio investments in Cuba are estimated to be \$650,000. German penetration has been chiefly in commerce and industry. Some German properties have been nominally seized, but holdings in many cases have not been separated from their Axis owners. (Official exchange rate: 1 peso=U. S. \$1.)

Dominican Republic.—No data are available.

Ecuador.—German interests in Ecuador are primarily concerned with various agricultural commodities such as cocoa, coffee, rice, and sugarcane. Implementation of decrees empowering the government, if it so desires, to force liquidation of listed enterprises has been effected in some cases.

Guatemala.—Total value of all German assets is estimated to be \$6 million, which is invested primarily in coffee production and public utilities. German interests have been intervened by the Central Bank and expropriation decrees passed. (Official exchange rate: 1 quetzal=U. S. \$1.)

Haiti.—Direct and portfolio investments are estimated to be \$1.5 million. German interests are concentrated in commercial activities, particularly the import and export of coffee, drugs and cotton. The

bulk of German property has been liquidated. (Official exchange rate: 5 gourdes=U. S. \$1.)

Honduras.—Direct and portfolio investments are estimated to be \$1.5 million. German interests particularly involve merchandising of various goods and coffee growing. Decrees have been passed for the control of the German assets. (Official exchange rate: 2.04 lempiras=U. S. \$1.)

Mexico.—Direct and portfolio investments are estimated to be \$4.3 million. There are many small German companies engaged in miscellaneous manufacturing activities. Decrees providing for the control of German property and funds have been put into operation. (Official exchange rate: 4.86 pesos=U. S. \$1.)

Nicaragua.—German investments total approximately \$600,000 and comprise primarily coffee estates. Some German property has been expropriated. (Official exchange rate 5 cordobas=U. S. \$1.)

Panama.—Investments and funds held by the Alien Property Custodian of Panama total \$1.6 million. German interests are centered in shipping, pharmaceuticals, and commercial activity. The APC in Panama has liquidated all Axis firms and placed the resulting assets in blocked accounts. (Official exchange rate: 1 balboa=U. S. \$1.)

Paraguay.—German interests are represented by utility and agricultural companies. Adherence to liquidation decrees has not been particularly satisfactory. (Official exchange rate: 333.0 paper pesos=U. S. \$1.)

Peru.—Total German assets are estimated to be \$3.5 million. Fields of greatest importance are mining, pharmaceutical, hardware, and electrical appliances. Decrees have been passed providing full authority for the expropriation of listed firms and individuals. (Official exchange rate: 6.50 soles=U. S. \$1.)

El Salvador.—Direct and portfolio investments are estimated to be \$1.2 million and are concentrated in the coffee industry. German assets have been frozen, and a general control of German property has been instituted. (Official exchange rate: 2.5 colones=U. S. \$1.)

Uruguay.—German investments are estimated to be \$12 million and represent primarily banking and commercial interests. Decrees have been passed for the freezing of bank accounts and sequestration of Axis property in Uruguay. (Official exchange rate: 1.899 pesos=U. S. \$1.)

Venezuela.—Direct and portfolio investments are estimated to be \$6.9 million. Leading fields of investment are public utilities, transportation, banking, and plantations. The most important German asset, the Venezuelan railway, was expropriated and nationalized in November 1943. Other German firms have been liquidated and assets frozen. (Official exchange rate: 3.35 bolivares=U. S. \$1.)

German assets in Holland and Belgium.

(Current exchange rate: 1 Belgian franc=approximately U. S. \$0.337, current exchange rate: 1 French franc=approximately U. S. \$0.02)

It is impossible to estimate in terms of dollars the influx of capital from Germany into the occupied territories because, with the invasion of the Continental countries, the Nazis assumed complete control over all properties of the dominated peoples. The amount of German capital in these countries which will remain there after the evacuation

of the Germans is not at present determinable. Germany's clearing debt to Belgium is estimated at 50 billion francs (\$1.7 billion).

In the occupied countries the manipulation of clearings had been a far bigger weapon of economic penetration than banking and capital activity itself. The Netherlands was unique in that customs and financial barriers between the Netherlands and Germany had been abolished, leaving the country wide open to German economic and financial penetration.

Banking.—In Belgium practically the whole German banking penetration had been accomplished by establishing new subsidiaries. Important "representations" of the big banks, so established, were: Dresdner Bank, Banque Continentale (Brussels and Antwerp); Bank der Deutschen Arbeit, Banque de l'Ouest (Brussels); Commerz Bank, Banque Hanseatique (Brussels); Deutsche Bank, maintained an agency in Brussels.

In Holland, on the other hand, German exploitation had been achieved through—

A. Maintenance and expansion of existing interests:

The Deutsche Bank, which long had an interest in the Handelsmaatschappij increased its holdings in the H. Albert de Bary & Co. to a controlling interest.

Berliner Handelsgesellschaft increased its holdings in the Hollandsche Koopmansbank.

B. Participation in existing Netherlands banks:

Bank der Deutschen Luftfahrt (aviation bank in Germany) acquired all shares in N. V. Hollandsche Buitenland Bank.

The Germans have secured holdings in Rodius Koenigs Handel Maatschappij.

C. Creation of new establishments:

German banks have established new subsidiaries in Holland Commerz Bank—Rijnsche Handelsbank.

Dresdner Bank—Handelstrust West N. V.

Bank der Deutschen Arbeit—Bank voor Nederlandsche Arbeid N. V.

In Holland the Germans have made little attempt to penetrate the old established "big banks." This has been true because the situation in Holland differed radically from that in central and eastern Europe, where the commercial banks controlled industry.

Insurance.—In Belgium, the Germans have penetrated the life, industrial, and reinsurance business formerly controlled by the British.

There is no information available yet as to action taken by the domestic government with regard to German assets.

Industry.—In both Holland and Belgium the inflow of German capital has been indicated by the active purchasing by the Germans of interests in strategic industries. Majority control of these vital industries has been obtained by (a) buying their shares (Dutch shares) on the stock exchange, (b) by a special issue of the company, and (c) the most frequently used method, acquiring new shares which have been floated through the Deutsche Bank in Germany. In the last-named manner, the N. V. Koninklijke Nederlandsche Hoogovens en Staatfabrieken of IJmuiden came under control of the German Vereinigte Stahlwerke, A. K. U.; the leading artificial silk company of

Holland came even more under control of the Deutsche Bank and the Dutch engineering concern, Werkspoor, came under the Rheinmetall-Borsig Co.

In Belgium, among the industries encroached upon by the Germans were the electrical, chemical, pharmaceutical, coal, steel, agricultural and mining machinery, optical apparatus, and building industries. Several German firms recently increased their capital. Persil (belonging to the Henkel Co. of Düsseldorf) increased its capital from 10 million to 20 million Belgian francs (\$337-674 thousand) and Siemens from 1 million to 6 million francs (\$34-202 thousand). A subsidiary of Krupp (Essen) has been established at Brussels with a capital of 125 million francs (\$4.2 million).

Looted art.—(See Looted art, Belgium and Holland.)

Status of German assets.—There is no information available yet as to action taken by the domestic governments with regard to German assets.

German assets in France.

(Current exchange rate: 1 French franc=approximately \$0.02.)

After the extension of German occupation to all of France in November 1942, Germany came very close to absolute control over French economy, but we cannot give an estimate of direct or indirect penetration in terms of dollars. It should also be noted that certain French Fascist-minded industrialists and bankers had been serving as collaborators and cloaks for German interests prior to the war, so that present estimates of financial and economic penetration might fall short of the mark. More intricate still is the interlocking of French-German interests in vast international cartels and local trusts.

Banking.—After the Armistice there was a complete reorganization of the French banking system by the Vichy Government, either directly under German pressure or indirectly by copying German methods. This led eventually to complete German control over French banking although we have no figures on direct German penetration. One German bank, the Aéro Banque S. A., was set up in Paris with a capital of 200 million francs (\$4 million), an affiliate of the Bank der Deutschen Luftfahrt. On June 30, 1942, the deposits of this bank exceeded 1 billion francs, presumably representing funds of German enterprises having connections with French industry.

The Bank der Deutschen Arbeit established a branch at Paris, reportedly to handle matters arising in connection with the recruiting of French workers for Germany. Other large German banks apparently did not complete their plans, and merely opened "information centers." Jewish banks were forced immediately after the occupation to accept German administration boards, or were sold to Aryans acceptable to the Nazis. These included firms of the "haute Banque" such as Banque Transatlantique, Lazard Freres, Rothschild Freres, and smaller Jewish firms, engaged in securities business or international operations. French banks were prevailed upon by German interests to sell a large part of their holdings in industrial and banking enterprises in Central and Southeastern Europe. German domination of French banks in other countries, such as Mexico and Brazil, was hampered by measures taken locally against such institutions. A German banker was appointed commissioner for the Banque de France, which simply became a tool of the State for pouring out funds

to meet German demands for occupation costs of 500 million francs daily.

All banks dominated by enemy interests were put under German administration by an order of May 23, 1940, and after December 7, 1941, this included American banks. The Chase Bank and Morgan et Cie., however, the only two American banks which continued operations, received special treatment. Direct penetration was presumably accomplished through the collaborating French banks like the notorious Worms et Cie., the Banque de Paris et des Pays-Bas, Banque Nationale pour le Commerce et l'Industries, and Banque de l'Indo-Chine. Some of these banks had branches in the colonies and every opportunity to safeguard the interests of their German collaborators through such men as Lemaigre-Dubreuil, who even financed French newspapers in the United States, according to reliable sources.

Mention should also be made of the fact that Germans bought shares on the Paris Bourse, reportedly using part of the occupation costs paid to them by the French Government, which were highly in excess of the actual German expenditures.

Insurance.—Before the outbreak of the war, France was a favorite country for British business. In 1939 English companies held nearly half of the French portfolios amounting to 90 billion francs (\$1,800 million). When France fell, all British insurance offices were closed both in the occupied and unoccupied areas. The assets then frozen amounted to 600 million francs (\$12 million) according to German sources.

An agreement was then made with the French Insurance Department in Vichy, and the German Central Organization of Insurance Carriers, whereupon a blanket concession was issued for the opening of new agencies of German companies in France. "Nordstern" acquired most of the former British business. In 1941 this company sold in France over 21 million francs (\$420,000) in premiums. The Germans also insisted that every insurance office in France or Algiers must represent at least one German insurance company.

The Munich Reinsurance Company had already penetrated into France prior to the war through the Societe Anonyme de Reassurances of Paris.

After absorbing the former British accounts, German interests seemed reluctant to penetrate further and left the bulk of the remaining French business to French competitors. Local companies showed drastic increases in share capital, but part of this may be regarded as a reflection of inflation and a revaluation of assets and liabilities.

Commerce and industry.—Most of the heavy industries of France, or industries essential to the war effort, were put to work for the Germans. There were some cases of collaboration with the Nazis, which are being investigated by the French Purge Commission, but we have no figures to show the extent of direct penetration through the acquisition of holdings.

Following are examples of outright collaboration with the Nazis. France-Rayonne S. A., a new company, was founded in Roanne with the aid of German capital. It had a capital of 500 million francs (\$10 million), and the Germans held 30 percent of the shares. Four French companies joined with I. G. Farbenindustrie to found a new company, Francolor S. A., with a capital of 800 million francs (\$16 million), and a German holding of 51 percent. The petroleum indus-

try of Pechelbronne was compelled to sell a number of its shares to the German Kontinentale od A. G. Cuttat Paris-Rueil S. A. concluded an arrangement with a Leipzig company to establish a new machine-tool factory in France. Societe Franco-Continentale d'Importation et d'Exportation was formed under German auspices for commercial purposes, and to direct trading between France and her colonies.

There have been increases in the capital of many companies which were believed to be significant, but no satisfactory explanations were furnished. These were in the following industries: Coal mining, locomotive and rolling stock construction, shipbuilding, automobile manufacturing, and aircraft industry.

The Germans also took over the French Aluminum industry by placing administrative and managerial responsibility in the hands of men responsive to Nazi wishes. It should be noted, too, that the French Aluminum Trust had favored the Germans prior to the war to such an extent that Germany received the lion's share of Europe's bauxite production.

Looted art.—(See Looted art, France.)

Status of German assets.—Some measures have been taken by the French Government to freeze all known German assets in France and the colonies, to sequester enemy property pending investigation, to restore Jewish property to the legitimate owners, and to punish men known to have served as cloaks for the Germans or to have collaborated outright. The French Government is, moreover, assisting Allied governments in similar tasks, as was shown in the case of the Banque Charles of Monaco.

German assets in Alsace-Lorraine.

German economic and financial penetration into Alsace-Lorraine does not parallel Nazi infiltration into the rest of France, as these two provinces were completely incorporated in the German monetary and banking organization. Lorraine was officially annexed to the German Reich by Proclamation on November 30, 1940, but such formality was omitted in the case of Alsace. Provision, no doubt, was made, however, for the final disposition of these provinces in the terms of the Peace Treaty submitted to the Vichy Government by Germany, which has not been made public.

Banking.—On May 1, 1941, French currency was definitely excluded from this region. Most of the business of French banks was taken over by German banks, local banking institutions were "reorganized," and new banks were established to replace about 130 banks which were forced to close on December 31, 1941.

- (a) The Badische Bank, affiliate of the Berliner Handels Gesellschaft took over the Societe Generale Alsacienne de Banque, which prior to the war had some 50 branches in Alsace, 4 in the German Rhineland, 3 in Luxemburg, and 1 in Zurich.
- (b) The Deutsche Bank took over the branches of the Credit Industriel d'Alsace et de Lorraine, second largest bank in the area with 20 million francs share capital.
- (c) The Dresdner Bank took over the branches of the Banque Nationale pour le Commerce, et l'Industrie, and the Kommerzbank took over the branches of the Credit Commercial.

- (d) The Credit Foncier et Communal d'Alsace et de Lorraine was merged with the Rheinische Hypothekenbank of Mannheim.

Insurance.—The insurance business in Alsace-Lorraine had been largely underwritten by British and French companies prior to the war, as all German insurers, except inland marine, were excluded by law after the last war. The Germans automatically canceled all British and French concessions as of June 15, 1940; policies were transferred to German companies without allowing holders the option of canceling their policies or choosing their own carriers. One Italian company at Trieste took over a French company.

Commerce and industry.—Special mention should be made of the iron and steel industry in Lorraine, part of the vast International Steel Cartel. In most cases the claims of the privately owned German steel companies to their pre-1919 holdings were recognized. The acquisitions of the Hermann Goering Works consisted primarily of the smelting works belonging to the De Wendel interests. This property and that of the Union des Consummateurs de Produits Metallurgique et Industriels were taken over in trusteeship. By March 1, 1941, all Lorraine works and mines had been allotted to the so-called trusteeship of German concerns.

The Germans followed the same pattern of penetration in other major industries of Alsace-Lorraine. They "aryanized" Jewish concerns, which meant outright expropriation. In the textile industry alone, the Nazis thus gained control of a capital totaling over 26 million francs. There is much detailed information concerning the compulsory transfer of Alsatian firms to German owners or their representatives, which amounted to confiscation.

Mention should be made, too, of the German Chemical Trust, I. G. Farbenindustrie, which took over the Societe Alsacienne des Produits Chimiques, and of the big State concern of Prussia which assumed control of potassium mines in Alsace.

After the liberation of the two Provinces, the French Government issued the ordinance of September 15, 1944, which restored the Laws of the Republic in Alsace-Lorraine. Thus, to some extent, measures taken to trace German and "collaborationist" assets in this territory will parallel those taken in the rest of France. But first must come a complete readjustment of Alsace-Lorraine banking and industries, a task which cannot be easily accomplished while the Provinces are still in the Army Zone.

German assets in Luxemburg.

Incorporation of the Grand Duchy of Luxemburg into the German Reich on August 30, 1942, completed the process of Nazi economic and financial penetration. The Reichsmark was made exclusive legal tender on January 29, 1941, and after March 1, 1941, Luxemburg and Belgian francs were considered as foreign exchange in the Grand Duchy.

Banking.—Control of the banking houses also passed into German hands. The Deutsche Bank secured control of the Banque Generale de Luxemburg by adding to its existing holdings one-half of the shares held by the Societe Generale de Belgique, thus controlling 73 percent of the stock. The Dresdner Bank increased its previous holdings in the Banque Internationale de Luxemburg through acquisition of

foreign shares. Two other German banks established branches: the *Kommerzbank* and *der Deutschen Arbeit*.

Insurance.—The whole insurance business of Luxemburg was taken over by German enterprises which replaced Belgian, British, French, and Swiss companies, and the few national ones. On December 1, 1941, a new reorganization amalgamated the whole insurance business of Luxemburg into two public companies, one for life insurance, the other for real estate insurance. There were in addition a few purely German companies.

Commerce and industry.—Germany assumed complete control of the iron ore mines of Luxemburg, which had reserves estimated at 270 million tons and an annual pre-war output of between 3 and 8 million tons. The 38 existing mining companies were combined into a single company, the *Gewerkschaft Lutzelburg*, incorporated under German law in April 1943.

Luxemburg ranks sixth in Europe as a steel-producing country. This production was concentrated in three large combines, which the Germans took over. *ARBED*, most important of the trusts, also owned mines in Belgium, Germany, and France, had 5 plants in Belgium, and branch sales offices throughout the world. *ARBED* was placed under control of W. Gustav Koenig, foreign holdings were squeezed out, and German shareholders, owning only 20% of the stock, were given a majority vote. On April 18, 1943, *ARBED* was capitalized at RM300 million (\$120 million), and became the third largest iron and steel combine in Europe. The *Societe Hadir*, representing Franco-Belgian interests, came under the trusteeship of *Vereinigte Stahlwerke*, and of Gustav Koenig. The *Rodange Ougree* group, a subsidiary of a Belgian steel combine, *Societe Commerciale d'Ougree, S. A.*, came under the control of the *Otto Wolff* enterprises.

The holdings of the two systems of railways, many of which were owned by the *Societe Generale de Belgique*, were acquired by the Germans through compulsory sales.

In September 1942, a German resettlement and trustee company was organized to deal with the property of deported Luxemburg nationals. In January 1943 German confiscation rights were further extended.

Status of German assets.—Luxemburg at the present time is still an Army Zone and under strict martial law. Thus no figures are available from banking firms or industrial concerns, nor has the government been able to formulate any major policy in regard to enemy assets.

Enemy funds and occupation holdings have been frozen, however, and the Belgian and Luxemburg francs are once more legal tender. Prewar economic ties with Belgium are also being renewed. The Customs Union with Belgium has been restored, and reverse lend-lease is being financed with Belgian francs. It is believed that the two governments will cooperate in the tracing and seizing of Nazi investments since their business interests interlock.

German assets in Norway.

(Official exchange rate: 1 krone=U. S. \$0.227)

It is estimated that known German investments in Norway amount to a minimum of \$10 million. If investments for which figures are not available were included, the amount would undoubtedly be considerably higher.

German capital has been placed for the most part in the following fields: chemical industry, aluminum industry, mining, textiles, and fish processing. By far the greater portion of German investments have been placed in Norway since the occupation; prewar interests were relatively insignificant. German capital has infiltrated into Norwegian industrial concerns primarily for purposes of expansion and consequent increased production for German account.

Mining.—The capital stock of the iron ore mines A/S Sydvaranger, already controlled by the Germans before the war, was increased after the occupation from 10 million kroner to 16 million kroner (\$2.2 million to \$3.6 million): German steel producers shared in the new stock issue through the Norddeutsche Bank, Hamburg. The Hermann Goering Werke was reported to have financial control of the Fosdalen Company and was known to control the Dunderland Iron Mines through a trusteeship.

Chemical industry.—The Norsk Hydro-Elektrisk Kvelstofsaktieselskap, the largest industrial organization in Norway, is at present almost completely controlled by I. G. Farbenindustrie. The issue capital before the war amounted to 104 million kroner (\$23.7 million). Two percent was held by Norwegian investors, 60 percent by the Banque de Paris et de Pays Bas, 25 percent by I. G. Chemie, Basle (controlled by I. G. Farben), and the remainder by Stockholm's Enskilda Bank. In 1941 Norsk Hydro announced a 50-percent increase in its capital stock to 156 million kroner (\$35.5 million), 43 percent of the increase being taken by a group controlled by I. G. Farbenindustrie. The French interests also sold out to German interests controlled by I. G. Farben.

Aluminum industry.—The Bank der Deutschen Luftfahrt established in 1940 the Nordische Aluminum A. G., Berlin, for the purpose of constructing new aluminum plants as well as expanding power facilities. The existing aluminum works in Norway were put under the administration of a German organization, Norsk Aluminum Kontor, with offices in Oslo. Nordische Aluminum AG gradually took over the work on the most important six aluminum plants in Norway. The various new aluminum projects were later concentrated under A/S Nordag, a joint stock company which had been set up in Oslo in 1941, with a share capital of 70 million kroner (\$15.9 million). Nordag was administered by representatives of both the Bank der Deutschen Luftfahrt and the I. G. Farbenindustrie. Another concern, A/S Nordisk Lettmetall, was also set up in 1941, with a share capital of 45 million kroner (\$10.2 million). Norsk Hydro, I. G. Farbenindustrie, and Nordische Aluminum A/G each hold one-third of the capital.

Textiles.—The large German firm Phrix G. m. g. H., Hamburg together with the Norwegian A/S Berregaard, established a Norwegian company, Norsk Cellul Fabrik A/S, with headquarters at Sarpsborg, for the manufacture of cellulose wool and rayon. Norsk Cellul was capitalized at 10 million (\$2.2 million) with Berregaard holding 60 percent of the shares, Phrix holding 24 percent, and the Norwegian textile industry 15 percent. The Norwegian companies were brought under the control of Phrix through the licensing by the latter of patents and research. Phrix also supplied technicians.

Fish processing.—As early as 1939 Nordsee Deutsche Hochofischerie G. m. b. H. had set up a Norwegian concern A/S Frostfilet

for the purpose of expanding existing fish-processing plants and building new ones. The extent of the capitalization is not known, but the investment is said to be heavy.

Status of German assets.—It is reported that the Norwegian Government-in-Exile in London is making a study of German infiltration into Norway and is formulating a program whereby German interests will be eliminated upon the liberation of the country.

German penetration in the Balkans.

German penetration in the Balkans was first achieved in banking, in foreign trade agreements, and in the provision of foreign capital to support Balkan industry, agriculture, and trade. The methods of penetration in banking were principally through acquisition or participation in established banks, mainly in commercial banks, through German directors of nationally owned banks, or through "friendly" agreements. The Germans also gained control or ownership, especially in the occupied countries, of part or all of many leading mining, industrial, transportation, and insurance enterprises. Data are not available upon which a precise estimate of penetration can be made. Following is more detailed information; it does not, however, cover the period of greatest German participation.

Hungary.—The Economic Committee of the Imredy Party in February 1944 estimated that German investments in Hungary, based on official data were 3½ billion pengo (\$692 million). Unofficially the estimate was 8 billion pengo (\$1,581.6 million).

Germany participated in Hungary in several of the most important commercial banks, which had extensive interest in industry (textiles, machinery and engineering, electrical, and leather) as well as interests in foreign banks. The 1941 balance sheet of the seven big banks under German and Italian influence totalled 3,011 million pengo (\$579.3 million). Germany controlled 1,193 million pengo (\$229.5 million). (1939 Rate: 1 pengo=U. S. \$0.19238).

The Germans, moreover have made direct investments in existing firms and have created new firms. The timber industry, for example, was being developed by joint Axis and Hungarian firms. The bauxite and aluminum industry is largely German-controlled. There are also some German interests in the oil, coal, and power industries.

Bulgaria.—Of the five big commercial banks in Bulgaria, the second and third largest were in the German sphere of influence. Their 1940 balance sheet totalled 5,190 million leva (\$62.3 million) of which 1.77 million leva (\$22.5 million) was German. (1940 Rate: 1 lev=U. S. \$0.012.)

Rumania.—In Rumania the Germans were interested in the commercial banks for financing foreign trade and for their interests in iron and oil concerns and wireless stations. The 1940 combined balance sheets of the eighteen largest Rumanian banks, before the most important German participation, totalled 13,607 million lei (\$93.8 million) of which 6,073 million lei (\$41.9 million) or 45% was German and Italian controlled. Axis participations in all banks were 1,105 million lei (\$7.6 million) and in German-Italian controlled banks 210 million lei (\$1.5 million). (1940 Rate: 1 leu=U. S. \$0.6896).

More recent information indicated that in February 1944 an estimated one-sixth of the capital invested in Rumanian banks and industries was German-owned or controlled by German banks. German

participation in the Rumanian economy has been estimated at 3 trillion lei, but inflation was rapid and uncontrolled. No dollar estimate, therefore, can be given for such a fictitious value. An estimated 13 percent of Rumanian trade was directly controlled by Germany. Of total 1941 Rumanian exports, 45 percent were sent to Germany; in early 1944 those exports had increased to more than 60 percent. Rumanian petroleum products sold to Germany were about 33 percent of the total. (Approximate rate: 1 leu=U. S. \$0.005).

German participation in the Rumanian economy by industry was as follows:

	<i>Million gold lei</i>	
Petroleum.....	110.35	\$21,297,550
Chemical.....	1.2	231,600
Electrical.....	6.9	1,331,700
Food.....	2.4	463,200
Total.....	120.85	23,324,050

(Rate: 1 gold leu=U. S. \$0.193.)

German banks and concerns exercised control over industries (metallurgical, textile, food), transportation, and insurance.

The principal German acquisitions in banking economy during the war were the Banca Comercissa Romana, Banca de Credit Roman, Banca Chrissoveloni, and Creditul Ipot car Agricol al Romaniei. Societetas Bancara Romana was a prewar acquisition.

In 1943 there were founded in Rumania 107 joint stock companies with a total capital of 1.4 billion lei (\$7 million). Of these, 89 companies were organized in the nine-month period from January 1 to September 30 with a capital of 1,018.8 million lei (\$5.1 million), of which 56 with capital of 225 million lei (\$1.1 million) were commercial and 33 with 791.8 million lei (\$3.9 million) were industrial. In the three-month period of July to September, 28 of these companies were established with capital of 335 million lei (\$1.7 million), of which 21 with 71 million lei (\$355,000) were commercial and 10 with 264 million lei (\$1.3 million) were industrial. Six of the companies founded in 1943 were German with capital of 386 million lei (\$1.9 million), but there was no doubt German control in others, so great was German penetration in Rumania. (Approximate rate: 1 leu=U. S. \$0.005.)

In the oil industry German capital increased from 0.5 percent of the total investments in 1939 to about 38 percent in 1942. In the heavy industry the Hermann Goering Werke achieved control and interests in the key engineering firms of Resita and Malaxa, as well as in the aircraft industries and the shipbuilding yards at Galatj. The motor vehicle assembly industry was almost entirely in the hands of the German companies. German capital was also to be found in the timber and textile industrials, in some transport and trading companies, and behind the attempted expansion of the mineral resources.

Serbia.—German economic penetration of Serbia was complete. By obtaining title to state- and foreign-owned property, by putting enterprises under the custody and administration of the military law of occupation, and by measures used by local Quisling governments, that penetration was coordinated in the process of realignment and adjustment in separating the institutions of Serbia and of Croatia after the dismemberment of Yugoslavia.

The share capital of the enterprises infiltrated by the Germans was the only information available; this amounted to approximately 45 million. The value of their assets is not known.

No data are available on some of the enterprises, nor has an inventory of State-owned properties been taken. The above value, therefore, is only a small part of the total German penetration; the greatest item would be the complete penetration of the State. Penetration had not reached its peak when our source reports were compiled. One great German prize was the noted BOR copper mines.

Croatia.—In contrast with penetration in Serbia, Croatia enjoyed a greater degree of autonomy. State-owned property and other enterprises were controlled but not owned by the Germans. Of the Croatian enterprises on which data are available the capital value of penetration was about \$35 million. Those data, too, cover German penetration before the most important German participation had been effected.

The important German holdings in Croatia were in several big banks and, through them, in a considerable number of related industrial and mining enterprises. Germany also controlled a sizable part of the Croatian insurance business and most of the Croatian foreign trade, either through German companies or jointly with Croatian Government enterprises.

German penetration in the Middle East.

German economic penetration in the Middle East countries has been principally in the commercial-trading and espionage fields. Available information indicates little, if any, German capital investment or holdings in this area. It is believed, however, that German funds have been made available to enemy agents in the Middle East and might have been obtained by the sale of goods or property of enemy nationals domiciled in the area and/or of German sympathizers.

German funds and holdings are blocked in all Middle East countries, except Afghanistan, which still maintains a policy of neutrality.

Egypt.—There is evidence that shares in the Suez Canal Company have changed hands during the war. The Germans held shares (number and value unknown) prior to the war, but are reported to have acquired "A number of" shares from French holders during the occupation of France. In the same connection, it is reported that the USSR has purchased some French shares in the Suez Canal Company. The voting structure of the company entitles a holder of 25 shares to vote, with 10 votes as the maximum allowed to each shareholder. A meeting of the Suez Canal Company's Supervisory Council is scheduled to meet shortly in Paris.

The Levant States (Syria and Lebanon).—All known enemy assets have been sequestered and are administered by the Sequestrator-General. Enemy assets which possibly have escaped the Sequestrator's control might be in the form of (a) unpaid goods and services imported from enemy territory prior to British occupation of States, (b) remittances from desequestered French firms in Syria, and (c) enemy remittances of new funds to Syria and Lebanon through neutral banks, private compensation agreements, and through contraband exportation of goods from Turkey over the border.

EXHIBIT 3

SAMPLE CASES OF CURRENT OR RECENT GERMAN ECONOMIC PENETRATION ABROAD

CASE 1. BANKING

A prime weapon of economic penetration is banking and the Nazis were not slow to realize this. In one neutral country there are two large German banks which spearheaded German industry there and have most of their clientele among German businessmen. Indeed, there is good reason to believe that a large number of the Germans in this country owe their prosperity to the staunch support given them by these banking institutions. The assets of these two banks are some 20 million dollars and German penetration in mining, heavy industry, agriculture, commerce, and other financial projects have been greatly accelerated by their support. These banks have been given the protection of neutral law and have functioned without governmental hindrance. In this way the efforts of the United Nations to seize control of strategic commodities in this neutral country were made more difficult. In fact it can be said that these German banks were the greatest obstacle to American and British wartime preemptive purchasing by financing German operations.

CASE 2. STRATEGIC IMPORTS

In order to wage total war, the Nazis knew that they must import into Germany products such as foodstuffs, iron ore, ferro-alloys, and timber. The import and development policies of Germany during World War II were, therefore, largely dictated first by the immediate necessity of war production and later by the objective of retaining a post-war potential abroad. To assure the flow of strategic materials to Germany, the Germans created a huge trading and commercial organization in one of the neutral countries of Europe. Controlling assets of some hundred million dollars, this organization, created and controlled by the Nazi State, was able to supply Germany with war-essential commodities. By dominating the neutral country's mining industry, strategic minerals were obtained; by setting up large agricultural purchasing agencies, the Germans were able to have a more varied diet and ward off one of the disasters of the last war; and through the control of a number of transportation agencies, expedite the flow of these materials to Germany.

Hardly any sector of the economy of this neutral was untouched by the tentacles of this Nazi octopus. At present the Germans are making strenuous efforts to liquidate the known holdings of this organization and to secrete the funds received in the hands of neutral collaborators.

CASE 3. REICHSBANK

The German Reichsbank, an important instrument of Nazi economic penetration, has attempted to create a subsidiary bank in Western Europe. This new bank, made up of German, French, and American interests, was to be used to protect the capital of certain important German industrialists. Many millions of dollars are involved and the Germans hoped that by bringing in United Nations capital they would be able to protect their own holdings.

CASE 4. INSURANCE

German insurance and reinsurance companies have dominated the insurance business in Europe. This was done by forcing British and French companies out of the field and by taking over their contracts and assets. The net result was to throw European insurance companies into the hands of the Germans, who with their large capital resources were able to expand into other fields. Very often German penetration into insurance preceded other forms of penetration. In one European country, over ten German insurance companies are operating, and each year they obtain millions of dollars in premiums, not to speak of the stranglehold they gained over their competitors through active support by the Nazi Government.

CASE 5. TWO-PRICE SYSTEM

Recently the Germans hit upon an ingenious scheme by which to develop assets in neutral countries. This device calls for a two-price system in payment for German goods. The neutral purchaser pays the lower of the two prices to the German exporter through the regular clearing arrangements, but retains in his books a German credit for a higher price. The difference between the higher and lower prices becomes a German asset abroad. Large sums of fluid capital can thus be created outside of Germany and once the need for secrecy disappears, they can be readily utilized for the expansion of German war-making interests.

CASE 6. CLOAKS FOR GERMAN OWNERSHIP

Early in 1945, with the impending defeat of Germany apparent, German industrialists and other businessmen in an important neutral country turned to the task of hiding millions of dollars of assets from the United Nations. The usual technique was to dissolve the German company and to reestablish one with neutral directors and partners; in each case the neutrals acted as cloaks for the real German owners. Whatever transfer of property took place was purely nominal and in this way the Germans believe they have an adequate protection against sequestration of their property.

As an example, the largest German transportation firm in this neutral country attempted to sell all its property, valued at at least \$500,000, to an agency of the neutral government concerned. The money received in payment was to have been secreted by neutral friends.

CASE 7. HIDING GERMAN INTERESTS

After a certain European country declared war on Germany and German interests presumably were taken over, the nationals of a neutral country attempted to dissipate these assets so that the United Nations would lose control of them. The technique was simple but direct. A bureau was established in the Consulate of the neutral country involved for the protection of German interests, and here these neutral nationals schemed to take over German property for some compensation. Once the property was transferred from German ownership to neutral or belligerent ownership, it became almost impossible to trace it. Transfers of property could go on in an endless succession until such a bewildering maze of property rights was created that all hope of ever relieving the Nazis of their ill-gotten loot was almost lost.

CASE 8. CHEMICAL TRUST

One of the largest German chemical and pharmaceutical trusts has gained almost a monopoly on a very essential war industry in one of the countries of Southern Europe. Through the direct control of two large chemical companies engaged in the production of chlorine, caustic soda, calcium chloride, and other essential chemicals, this German organization has been able to stifle competition and learn the trade secrets of other companies.

Pharmaceuticals, so necessary to the waging of modern war, are also dominated by this German trust, a subsidiary of which is one of the largest factors in the drug industry. Even photographic equipment and supplies fall under the control of this German company so that hardly any sector of the chemical field is immune from its direct influence. Recently, in anticipation of German defeat, this trust has made arrangements to manufacture in foreign countries products which can no longer be produced in Germany; and this is to be done under license, with the royalty fees accruing to the German trust and not to be paid until after the Allied occupation of Germany has ended.

CASE 9. GERMAN HOLDING COMPANIES

The laws of one neutral country protect German capital to such an extent that secrecy of ownership is a legal protection. In this country the Germans have established a large number of heavily capitalized holding companies which, although controlled by Germans, maintain neutral nationality. These holding companies dominate many important industrial establishments in South America. By an involved system of corporate structure in this neutral country, the Germans are able to control the policies of chemical, metallurgical, construction, and financial establishments in South America and even in the United States without evidence of their ownership being apparent.

CASE 10. ELECTRICAL EQUIPMENT

Nazi penetration into the foreign electrical equipment field has always been one of the important German economic weapons. Through the Siemens group, A. E. G., Bosch, and Osram—large

German manufacturers—the electrical equipment industries in several foreign countries, vital adjuncts of all war machines, have been stifled. In Latin America these companies have subsidiaries which dominate the market and destroy competitors. In other European countries, by the use of patent agreements, cartel arrangements, and German-owned manufacturing organizations, a similar state of affairs has existed. In this way the Germans were able to get a jump on the United Nations in the production of war equipment such as heavy motors, tanks, jet propulsion planes and electrical signalling devices.

CASE 11. MERCHANT MARINE

In order to retain the nucleus of a merchant marine, the Germans have found it useful to obtain vessels from one European neutral. These ships fly neutral flags, and, therefore, are not subject to control by the Allied military authorities in Germany. It is well known that a merchant marine is a necessary adjunct to a powerful navy and in this way the Germans can retain and develop maritime skills, prepare for post-occupation expansion of the merchant marine, and actively compete with Allied shipping during the occupation period.

CASE 12. RESEARCH ABROAD

German ingenuity, realizing that research and development facilities were necessary to maintain war potential, turned to one of the European countries as a field of exploitation. By penetrating the educational system of this country, the Nazis were able to maintain a highly skilled staff and experiment in the latest industrial techniques.

The Ministry of Education of this country was offered a most elaborate and carefully coordinated scheme for industrial education, all of which was to be supplied by the Germans and run under their direction. During the latter stages of World War II, when German industrial capacity was being taxed to the limit by Allied air raids and other devastation of war, it is almost incredible that so much material could be spared, until one realizes that this is a long-range plan to perpetuate German industrial techniques and part of a plot to prepare for another war.

CASE 13. TECHNICIANS OUTSIDE GERMANY

The Germans always prided themselves on their ability to maintain their export trade, but there was sinister purpose behind this. Some European countries were large importers of heavy machinery—the very life of their industry depended on receiving replacements and spare parts—but the United Nations were unable to supply any more than the most limited quantities. The Germans stepped in. Through Nazi industrial engineering representatives and commercial intelligence agents, large contracts were arranged between German suppliers and foreign importers; German technicians supervised the installation of the machinery and very often remained as technical advisors to the user. In this way the Nazis were able to export large numbers of highly skilled technicians who would not be under the control of the Allied military authorities in Germany. These men are today retaining and expanding their skills, they are

experimenting with and planning new methods of technological warfare, and they are the possessors of intimate knowledge of the German and European industrial set-up. To permit these technicians to remain beyond Allied controls is to threaten the security of Allied peace plans.

CASE 14. GERMANS ABROAD

In one Latin-American country the Germans have purchased large quantities of excellent farm land. Large numbers of German farmers were brought in to develop the resources of this project. Although this Latin-American country has declared war on the Axis, these Germans remain a solidly entrenched pro-Nazi group. They are all concentrated in one small area, they maintain their own schools where classes are conducted in German, and are believed to have received direct assistance from the German Government. These Germans are prosperous, their holdings being valued at millions of dollars. They are loyal to the Nazi State and their community is an excellent possible refuge for Germans who wish to be out of Germany during the occupation period.

CASE 15. PROPAGANDA

Hand in hand with economic penetration goes political propaganda. Nowhere is this more apparent than in the publishing industry. In one neutral country the printer for the German Embassy is also one of the leading German propaganda agents. This printer has a large capital and is actively engaged in printing and distributing German propaganda slogans, pamphlets extolling the Reich, and pictures to be displayed by German businessmen. In another neutral country, one German printer made up little German paper airplanes containing propaganda slogans; this was before the eclipse of the Luftwaffe. Many German businessmen in neutral countries have made their offices and business premises veritable show places for German propaganda. Walls are lined with pictures of Hitler, German generals and industrialists, and pictures glorifying Germany. In this way neutral customers were brought within the range of German ideas. Often German businessmen would refuse to trade with persons of pro-Allied leanings and so became merely an extension of German economic warfare.

EXHIBIT 4

A COLLECTION OF INTERVIEWS HELD IN THE UNITED STATES BY U. S. GOVERNMENT OFFICIALS WITH GERMAN INDUSTRIALISTS, SCIENTISTS, ATTORNEYS, JOURNALISTS, AND FORMER GERMAN GOVERNMENT OFFICIALS

CASE 1. INTERVIEWS HELD ON JULY 5, 7, 31, 1944

A former executive of a prominent steel concern in Western Germany stated that "secret post-war rearmament was a plan of the German General Staff long before the Armistice of November 11, 1918." This became apparent to him early in 1918 when he learned that "as a result of instructions issued by General von Ludendorf, the German Army had orders not to entrust its secret plans for rearmament to Jewish officers for fear of the latter's rather international outlook."

CASE 2. INTERVIEW HELD ON JULY 11, 1944

A former German industrialist stated that the chief liaison man during the 1920's between the General Staff of the German Army and the major industrialists was Colonel Loeb. Until 1927, Colonel Loeb operated from a camouflaged office; from 1927 on, he had his office, in the German War Ministry, and openly was referred to as the chief of Germany's rearmament.

CASE 3. INTERVIEW HELD ON JULY 28, 1944

A former executive of several German firms has testified to the fact that the organization known as the Reichsverband der Deutschen Industrie (Government Association for German Industry), formed in the middle twenties, under the leadership of Director Zangen of the Mannesmann Roehrenwerke, included industrialists and leading Army officers and was subdivided into various groups dealing with chemical concerns, steel plants, manufacturers of electrical equipment, etc. The informant further stated that it was the function of this organization "to coordinate the plans of the Army and of German industry for (1) rearmament, (2) war, (3) post-war activities in either victory or defeat." This organization is said to have been taken over in toto by the Nazis when they came into power.

CASE 4. INTERVIEWS HELD ON JULY 14, AND 15, 1944

One informant reported that a retired Navy captain was given the job in the early 1920's of maintaining up-to-date files of all factories that were potentially capable of producing Navy materials "against the day of attack."

CASE 5. INTERVIEWS HELD ON JULY 14 AND 15, 1944

A former German Government official stated that shipyards which had been active up to the end of World War I in construction of Navy vessels were converted in the 1920's to the construction of large luxury liners such as the *Europa* and *Bremen*, thereby, maintaining the shipyard equipment at a thoroughly up-to-date level.

CASE 6. INTERVIEW HELD ON JULY 10, 1944

A German aeronautical engineer, previously connected with leading German firms, stated:

Shortly after World War I, the Reichsverband der Deutschen Luftfahrt Industrie was founded. Allegedly it was the trade association and central research organization of the German aircraft industry founded by the manufacturing firms for purely scientific and commercial purposes. Actually it carried on the functions of an "Air Ministry" and, by persons in the know, always was referred to as such. Government influence was very strong and for some strange reason Admiral Lass of the German Navy was reelected every year as president.

The Reichsverband der Deutschen Luftfahrt Industrie operated, from 1925 on, three research centers called Erprobungsstellen. They were located at Rechlin and Staaken, near Berlin, and in Travemunde. The latter station was used primarily for the testing of seaplanes; in Rechlin mainly instrument and parachute work was carried out, while Staaken was the center for experiments with large land planes. Liaison officers were stationed in the German War and Navy Ministries coordinating the work of the Reichsverband der Deutschen Luftfahrt Industrie.

CASE 7. INTERVIEW HELD ON JULY 20, 1944

A German aeronautical engineer reported that the Adlershof plant, which had been the German army testing ground for planes during World War I, was turned over at the end of the war to a private concern to carry on experiments in connection with commercial flying. Actually it perpetuated its former functions, under the leadership of civilian-clothed Army officers.

CASE 8. INTERVIEWS HELD ON JULY 14 AND 15, 1944

A former German Government official gave the following information: There were developed in the 1920's three large commercial pilot schools with headquarters in Braunschweig. These schools were financed by a syndicate headed by the Deutsche Bank which was also the foremost financier of two commercial air lines. A Government official, formerly an air captain, was the liaison between the commercial air lines and the leading aircraft manufacturers on the one hand and the Minister of Communications on the other. Many research activities carried on in the interest of commercial aviation were financed by the Reichsbudget. Beside the pilot schools and commercial aviation interests, in 1925, glider schools sprouted up under the impetus of young students who had heard of such organizations abroad. These young students were encouraged in this by competitions for prizes and by drumming up the idea of Trans-Eurasian glider trains.

In 1930 and 1931 annual meetings were held by the Ministry of Communications and Transportation with Army and Navy liaison men on air-force matters. The principal discussion in these meetings

related to the developments of foreign air forces, both military and commercial, and what could be done in Germany along similar lines. The following suggestions were discussed at these meetings:

1. The obtaining and development of better aircraft engines.
In this connection, it was suggested that Diesel research by Junkers be subsidized;
2. The training of pursuit pilots;
3. An increase in the number of German pilots flying for foreign commercial air lines, in order to gain experience in long-range flying and to promote the sale of German aeronautical equipment abroad.

CASE 9. INTERVIEW HELD ON JULY 10, 1944

A former German industrialist described one means which service ministries of the Government used to increase their revenues. The War Ministry created an institution which consisted of 32 commercial enterprises including producers of moving pictures, owners of moving picture theaters, a shipping company, a dredging company, a wool importing firm, and a bacon importing firm, under the supervision of Lieutenant Captain Lohmann, and which was jokingly referred to as the Lohmann Trust.

CASE 10. INTERVIEW HELD ON JULY 10, 1944

A former German economic and political journalist, editor, and publisher advanced the following reasons for the failure of the Allied Control Commission in its effort to disarm Germany after World War I:

1. Opposition to the Commission by the united will of the German population;
2. Lack of adequate and competent staffing to exert real control or supervision;
3. Lack of executive power to enforce its orders.

This informant reported the following:

One of the principal German manufacturers of munitions during World War I took up the production of agricultural machinery after the war. In spite of satisfactory business conditions, it failed to show a profit. In 1921 one of the members of the board of directors of the firm conducted an investigation and discovered that the losses were caused by one plant in the firm. He was unable to discover what this plant was manufacturing and why there were losses, and requested the board of directors to instigate a thorough investigation. More powerful members of the board united to oppose this suggestion. In 1922 the superintendent of the firm's warehouse informed the Allied Control Commission of a secret arms cache in the firm. The Control Commission located and seized the weapons. Shortly after, the informant was indicted by the German Government for treason, and, based on a testimony conducted privately between the State's witness and the judges, the defendant was condemned to a long prison term on the grounds of having aided the Allies in enforcing the disarmament of Germany. The German Government itself aided substantially in sabotaging the work of the Allied Control Commission. For example, it forbade junior army officers or junior executives and minor employees from giving any information to the Allied Control Commission.

Only the senior officers and the actual heads of firms were allowed to negotiate with the Commission. In this way it was possible to withhold vital information from the Control Commission, particularly since the heads of firms and senior officers themselves were eager to encourage resistance to the disarmament program.

Since the Control Commission lacked executive power, the Government established a special liaison agency to aid the Commission. The liaison officers of this agency contributed to the sabotage of the disarmament program by striking frequently for as long as two or three months, on the grounds of having been offended by an Allied control officer. During such strikes imported machinery and stocks were removed to safer locations. If the liaison officer was unable to convince the Allied control officer that machinery could be used for peaceful purposes, machinery was then shipped out of that place all around in Germany. The Allied Control Commission invariably lost track of it and then it would be unobtrusively installed at a different location.

CASE 11. INTERVIEW HELD ON JUNE 29, 1944

A former resident of Nicaragua stated that in 1923 and 1924 the Germans sent missions to Nicaragua for the purpose of finding markets for German goods. They would offer German merchandise desired by Nicaragua at a lower price than any other country. They would then offer to buy native products at a higher price than any other country offered. For instance, coffee would be sold to Germany against the credit of blocked marks held in German banks, and the German merchandise would then be paid for out of these accounts held in Germany. This same procedure was repeatedly followed in other countries throughout the world. When the balance in the German banks became so great that it was not possible to reduce it by taking German merchandise, the Germans would invite the foreign depositors to make a trip to Germany to spend the money, which they frequently did.

Negotiations of this sort were carried even further to the advantage of Germany. Another country would offer to pay, for example, 7¢ per lb. for Nicaraguan coffee and the Germans would outbid them and offer 8¢ per lb. After they had purchased the coffee, they would sell it to another country at 6¢ per lb. This they were able to do because the coffee actually cost them merely the price of printing the paper marks.

CASE 12. INTERVIEW HELD ON JULY 13, 1944

A former attorney and member of the board of several industrial firms related that in the 1920's several foreign holding companies were formed for German patents. In certain instances German technicians, often the inventors of such patents, and formerly connected with important German industrial concerns, bonded together to utilize such patents abroad. Benefits from such arrangements subsequently accrued to Germany.

CASE 13. INTERVIEWS HELD ON JULY 14 AND 15, 1944

A former German Government official reported that in the middle 1920's the Germans were helped by Spain in the development and construction of torpedoes, though this was on a very small scale and

limited for the most part to research work. Products manufactured by such means in Spain were shown on the books to have been sold to Argentina, but in actuality, were never delivered.

CASE 14. INTERVIEW HELD ON JULY 14, 1944

A former executive of German industrial firms stated that Germany's rearmament during the first years after World War I was devoted largely to research work in laboratories and drafting rooms. For example, experiments with poison gases were being carried out during that period in the Schering laboratories in Berlin-Wedding.

CASE 15. INTERVIEWS HELD ON JULY 5, 7, 31, 1944

A former executive of a prominent steel concern in Western Germany revealed that "small factories in out-of-the-way places, while ostensibly manufacturing inoffensive articles, in reality made forbidden armaments." For example, a railroad coupling manufacturing firm of Bavaria in the early 1920's was making shell casings for the Reichswehr on orders from its controlling companies.

CASE 16. INTERVIEW HELD ON JULY 18, 1944

An executive of a steel construction firm in western Germany stated that his firm processed heavy armor plates prior to their installation in fortifications. This work was not interrupted at all after Germany's defeat of 1918. Heavy armor plates, provided by two of the largest German producers, continued to be received at the plant. There the plates were processed (bent and cut into the proper shapes) and shipped in accordance with orders received from the German Government to contracting firms in Western Germany. This armor plate processing was carried out only in one building of the plant to which persons not directly connected with this work had no access.

CASE 17. INTERVIEW HELD ON JULY 28, 1944

A scientist and former owner of several factories in Germany and elsewhere throughout Europe stated that late in 1922 or early in 1923 complaints started to reach him that the labor turn-over in a certain German plant, located in Harz region, was such that it hampered operations. Investigations showed that all young strong men of the region were being hired by a mysterious contractor for excavation work carried out in a mountain in that vicinity. The location of this project was fenced in and outsiders were not permitted to enter. Large quantities of soil were carted away from this project and waters of the nearby region were extremely muddy indicating that soil was disposed of by dumping it into the river. Later in the summer of 1923, further investigation showed that this construction project was still fenced in. Soil was not carted away indicating completion of the work, but the only visible structure was a small stack belching large quantities of smoke, an obvious sign that something was being manufactured there. Frequent talks with the inhabitants of the village always brought the same reply: "The mysterious factory produces wooden tubes, and nobody knows who the owner of the plant is". Outsiders were never able to see any of the production there.

CASE 18. INTERVIEW HELD ON JULY 20, 1944

A German aeronautical engineer stated that the Government of the Weimar Republic, which, like most Germans, looked upon secret rearmament as a patriotic duty, frequently charged ordinary War Ministry expenses to other branches of the Government. For example, the Deutsche Versuchsanstalt für Luftfahrt (the German Institute for Aeronautical Experiments), which was able to encourage the growth of numerous glider clubs all over Germany for the purpose of training military pilots, was organized and sponsored by the Ministry of Commerce.

EXHIBIT 6

UNOFFICIAL GOVERNMENT¹

Nothing has been the subject of more misinterpretation than the system of power in Germany. The Nazi Party took over the government with the aid of the leading industrialists of the country and a good part of the officers' corps. Much as the Nazi politicians would have liked to rule the country alone, until the last days of their desperate stand, they had to share power with the forces that had put them in control of the governmental machinery. Without their aid and support they would have been helpless. The best the Nazi politicians could do was gradually to build up their own army and police and spy system against the day when the industrialists and the old-line officers would no longer find them useful and would seek to oust them.

The outlines of the true situation have been obscured by propaganda and struggles within the oligarchy; but a careful study of the German laws, decrees, and orders of the last fifteen years make the facts crystal clear.

The first impression resulting from such a study is of terrific confusion of centers of authority, with much overlapping in fields of jurisdiction. The second impression is of inexplicable gaps in the structure of economic control at the most important points. For example, orders and decrees are numerous on textile production and the distribution of textile fibers. On the other hand, there are almost none for the many branches of the chemicals industry. Such as may be are mainly concerned with the distribution of common chemicals to minor industrial users, and similar unimportant business. Again, there is nearly a complete blank in the laws on iron and steel production but a multitude to govern the manufacture of iron wares of the kinds that were in general made by relatively small firms.

A further fact becomes apparent in connection with the network of industrial and trade organizations (Gruppen) into which both rank and file were herded. In the branches of industry dominated by combines and controlled through well-established cartels, the Gruppen and similar bodies were of a perfunctory character, maintained to lend color to the fiction that all businesses were controlled by the state and subject to the same basic laws. In the branches of industry where combines were few and the producers small and numerous, the trade organizations served as control instruments operated by the bureaucracy. Decrees and orders placed onerous responsibilities on the members but gave them very little independent power. Since even the Nazis had to keep the lesser businessmen as a whole from becoming restless, official propaganda played up the importance of such organizations and flattered their leaders by imputing greater power to them than they actually possessed. German newspaper

¹ Chart, Appraisal of the Effective System of German Economic Control, filed with the committee.

propaganda on this subject has been accepted at face value by some writers who have not studied the laws.

Until the war came into the open the German economy was supervised through national ministries that had been set up under the republic. As government was centralized, these were expanded and reorganized to take over functions formerly performed by governments of the various states. In the first years of the war the National Ministry of Economic Affairs had responsibility for war production except in certain special military fields. Later a Ministry of Armament and Munitions was set up to expedite production of war supplies. It was soon clear, however, that the division of authority between the two ministries was unrealistic in total war and that the unwieldy network of trade and other semiofficial organizations was adding to the confusion. Production was further handicapped by the interference of political "economic advisers."

Attempts to rationalize the administrative and control structure snagged on the question of lessening the real or apparent authority of party faithfuls, such as Dr. Funk, and of businessmen at the head of this and that office, agency, or organization. After the invasion of North Africa and the defeat at Stalingrad such considerations had to be dropped, though gradually. By the beginning of 1944 much of the authority over the whole economy had been shifted to a reorganized war economies agency—the National Ministry of Armament and War Production. The Ministry of Economic Affairs eventually had little to do except in the fields of foreign trade and of distribution of goods to civilians. All bureaus of this ministry that had been concerned with production and with the distribution of materials to industry were transferred to the jurisdiction of the Minister of Armament and War Production, Dr. Albert Speer. In fields where Speer's authority overrode that of other ministers, he issued his orders not as a minister but as a ranking member of the Board of the Four Year Plan charged with the tasks of production for war. In this position his titular chief was the Reichmarshal Hermann Göring. But since 1942 the latter's authority over economic affairs had been slight, though he remained technically the deputy for the Führer in this field.

The chart attached hereto shows the broad outlines of the bureaucratic structure as finally evolved for control of the economy, and also the unofficial though legal system through which the bureaucratic structure itself was controlled by an oligarchy consisting of the chief stockholders of the great combines, the political hierarchy, and the military High Command.

With a few exceptions, each block on the chart represents a governmental agency. The blocks have been grouped in a manner designed to indicate the lines and levels of authority. The ministries have been handled in accordance with the peculiarities of the German system—i. e., except in the Speer agency, the ministry is merely the equivalent of the Office of the Secretary in an American executive department, its bureaus and field offices, though less independent than those of an American department, are outside the ministry itself. Thus the National Offices (Reichsstellen), though they are bureaus of the Ministries of Economic Affairs and Agriculture, are charted as independent though subordinate agencies.

As will be noted, the Speer Ministry does not have the usual section consisting of superexperts for each field under the jurisdiction of the

minister, and the Speer operational bureaus are within the ministry itself.

The lines outside the blocks show the channels of authority. Thus the major stockholders of the great combines, whose de facto authority in the government was equal to that of the military and political High Commands, utilized the official bureaucratic structure, whose legal head was Hitler, for the control of the smaller sectors of industry and for the coordination of the war effort, which they helped to plan. At the same time these men utilized the positions of their corporations as dominant members of the cartels to run the economy in its most critical sectors. There they would brook no governmental interference. Agents of the Speer ministry were stationed near their centers of production to facilitate the delivery of fuel and materials and to aid them in any other way they desired. A telephone call was sufficient to obtain what was needed.

In some cases combine officials accepted authority as government officials. For example, Dr. Hermann Schmitz, the head of I. G. Farben, held the position of National Deputy for Chemicals. The chairman of the coordinating organization of the coal cartels was likewise a National Deputy, though the industry continued to be run from the offices of the Ruhr coal syndicate. As National Deputy in charge of the National Coal Office, the chairman of the National Coal Association had authority to handle the allocation of coal to the sectors of the economy not represented in the coal cartels. As a cartel member his combine determined the quantities of coal to be sent to its own plants and those of its subsidiaries and affiliates.

Since the heads of the combines are also directors of the banks and credit institutions, they had further control of the economy through these institutions. The main official channels through which this power was exercised are also shown on the chart.

Apologists for the position of German business in relation to the Government have pointed out that business and finance have influence with government in nearly all parts of the world. This argument, however, ignores the legal position German big business has attained as the ruler of all lesser business and the manner in which this position has been used to concentrate the power in a few great combines, which are in turn coalescing to form a single supercombine. The number of seemingly independent corporations somewhat obscures this fact; but a study of the Handbook of German Stock Companies, which frequently lists major stockholders and in some cases the cartel quotas of the combines makes the situation quite clear. Concentration was greatly accelerated after the Nazis were placed in control of the Government and was especially stimulated by the war. The predominant combines grew more powerful as they were rewarded with war loot; various wartime measures, such as the pooling of technical and management services, in every case promoted their positions.

The two largest and most powerful combines were I. G. Farben and Vereinigte Stahlwerke. While the Nazi politicians attempted to set up a combine that was to be their private preserve and eventually to absorb the others, their combine, which included publicly owned companies and those confiscated from persons who were dispossessed on racial and national grounds, eventually came under control of the older groups. The war has greatly enhanced the dominant positions of Farben and Vereinigte Stahlwerke in many fields, and has also drawn

them increasingly together. The position they had reached before the war can be seen by the proportion of their output in the Reich total. These figures, which are approximate, have been arrived at in part from published figures on production and cartel sales quotas.

Vereinigte Stahlwerke products	Percent of German total in 1938	I. G. Farbenindustrie products	Percent of German total in 1937
Pig iron.....	50.8	Chemical nitrogen ¹	² 70.0
Semifinished products.....	35.3	Lithopone (for paints).....	85.7
Bar steel.....	27.1	Synthetic camphor.....	60.0
Hoops and strips.....	32.8	Synthetic methanol.....	100.0
Universal plate.....	41.4	Aspirin.....	60.0
Heavy plate.....	26.0	Ether.....	50.0
Medium plate.....	11.6	Brown coal ¹	20.0
Sheets.....	26.2	Explosives ¹	60.0
Fine sheet.....	31.1	Magnesium.....	100.0
Galvanized sheet.....	38.5	Rayon filament.....	20.0
Wire rods.....	27.7	Rayon staple ¹	³ 30.0
Wire.....	22.1	Coal-tar dyes ¹	100.0
Pipes and tubes.....	45.5		
Coal tar.....	33.3		
Coal (bituminous).....	15.4		
Explosives ¹	³ 35.0		

¹ Including output of subsidiaries.

² Plus.

³ Estimated.

The two major combines are not wholly dependent on quotas in a given field to assure dominance through the cartel system. If they have a voting majority in cartels for two or three basic products, they are in a position to enforce their will in other lines.

Since I. G. Farben is the main producer of chemicals that must be used by the other three combines making artificial fibers, its power position in the rayon cartel cannot be measured by its proportionate capacity to produce rayon. Likewise, Vereinigte Stahlwerke, with a pig-iron capacity greater than that of all other producers together, is able to exercise far more influence in the semifinished products cartel than its capacity for such products merits. The great steel corporation's capacity for coal and coke production is also of major importance in its relations with other corporations and other fields of industry.

Among the products that have brought I. G. Farben and Vereinigte Stahlwerke into close collaboration are coal tar and chemical nitrogen, both of prime importance for the manufacture of explosives (see Chapter I). I. G. Farben, with a cartel position that assures complete dominance of the manufacture and sale of chemical nitrogen, has only about 1.0 percent of the coking capacity of the country. Hence its explosives subsidiaries must obtain benzol, toluol, and other primary tar products on terms dictated by Vereinigte Stahlwerke, and Vereinigte Stahlwerke's explosives subsidiary is dependent for its nitrates on terms set by Farben.

Vereinigte Stahlwerke controls the price of steel for automobile frames, I. G. Farben, the plastics and light metals used in automobile bodies and the rubber used for the tires. The automobile industry therefore is their dependent.

The chart ¹ attached hereto shows only the position of the combines

¹ Not printed.

and their lines of control within Germany. But the combine tentacles reach far beyond that country. Through the international cartels, patent, production, and sales agreements, and similar devices proliferated after the last war, the rulers of Germany rapidly gained control of critical sectors of industry beyond their borders. Offering cooperation of an apparently innocent kind, they were soon entrenched and they used their position to weaken future military opponents and to undermine their governments. Foreign corporations have been much too sure that they could take what was useful from the Germans but avoid domination by them.

Military defeat has not substantially weakened the German position, for during their occupation of most other European countries the Germans were able to gain adherents for the Fascist system in powerful circles. Their arrangements with corporations in the United Nations have been suspended, but they are seeking and will continue to seek to revive and extend them.

EXHIBIT 7

SELECTED PORTIONS OF AN INTERIM REPORT ON STUDY PROJECTS RELATING TO GERMAN ECONOMIC AND INDUSTRIAL DISARMAMENT

JANUARY 10, 1945.

Memorandum:

To: Mr. Leo T. Crowley, Administrator.

From: Henry H. Fowler, Acting Director, German and Austrian Branch.

Subject: Interim Report on Study Project Relating to German Economic and Industrial Disarmament.

I am attaching herewith a report on this subject to outline the approach and progress of FEA in the conduct of the study project which was the subject of an executive direction by the President to you in his letter of September 29, 1944.

I. BACKGROUND OF STUDY PROJECT FOR GERMAN ECONOMIC AND INDUSTRIAL DISARMAMENT

1. The study project envisaged by the President's letter of September 29 is based upon one primary assumption. The assumption is that it will be a major objective of the United States after surrender to assure the undertaking by the Allies of measures designed to limit the power and capacity of Germany to make war in the future.

2. This objective may be achieved by various means. A wise occupation policy, including affirmative economic and industrial controls, is a first step. Suitable terms that condition the return of sovereignty to a government selected by the German people is a second measure. Appropriate international arrangements providing specific machinery for maintaining security from German aggression are likely to be necessary to attain this objective. All of these require preparation and negotiations on the general policy and specific program level.

3. There is substantial current discussion and consideration here and abroad of economic and industrial disarmament devices. It is thought that they might be utilized as a buffer against the redevelopment of an effective German war-making power, if backed up by an international security organization of the type contemplated at Dumbarton Oaks. It is the opinion of many persons, both lay and expert, that peace from new German aggression cannot be maintained without these economic and industrial disarmament measures. In any event, it is clear that such measures are an important aid in maintaining the peace for the maximum period of time, with a minimum of bloodshed, with a proportionately small military police force, and with a greatly reduced risk of grave threat and damage from some explosion of German war power uninhibited by mighty forces potentially arrayed against her.

4. This interest in the possibilities of conditioning to peace the economic and industrial pattern in Germany after surrender is based on realistic considerations. It is derived primarily from a recognition of the direct relationship of certain types of industrial potentials and economic weapons to a national war-making power. It is prompted also by the feeling of many that the plan and practice of a completely uncontrolled or self-sufficient German industrial economy, coupled with the temperament of its people, constitutes a constant menace to the peace of Europe and the world.

5. This concern with the appropriate treatment of German industrial war potential is to be distinguished from any desire for a "soft" or "hard" peace; it is held by the advocates of both types of peace. Nor is it derived from feelings of vengeance. Indeed, it has its origin in an unemotional and scientific point of view. It is responsive to a simple common sense purpose. A first protection against lawlessness is to disarm the lawless persons. A second and equally essential protection is to prevent those who are lawless from reacquiring the power and capacity to forage any new weapons with which they can again menace society.

6. Indeed, it may be that the development of a scientific internationally administered system of economic and industrial disarmament is the only acceptable alternative to a thoroughgoing political, cultural or industrial dismemberment of Germany. Excesses in other fields may follow victory unless some formula for providing protection against German aggression is devised. History has not yet provided a check against a congenitally aggressive industrial power. A new method must be developed.

7. The study project now under way in the Foreign Economic Administration under the guidance of the State Department in response to the President's letter is not in duplication of, or competitive with, certain other answers to the question, "What shall we do about Germany?" For example, it must be distinguished from the orthodox and strictly military problem of regulating Germany's armed forces or initially confiscating her finished munitions and aircraft. Nor is it a substitute for or to be considered in lieu of the punishment of German war criminals. It should not preclude the utilization of certain political or educational measures designed to change the political disposition or will of Germany to make war. It is premised upon a period of full and complete occupation and the development of some international security organization of the type projected at Dumbarton Oaks.

8. The development of long-term economic and industrial disarmament measures is a relatively novel and unexplored field. It inevitably leads into very complicated and technical considerations for which all of the powers are lacking to some extent in an organized corps of trained experts. Changing technology, the passage of time, the danger of disagreement of the allies on specific measures to be used, and the cooling-off of world opinion are some of the hazards to be overcome.

9. To master this new technique is likely to be a continuously challenging problem, changing somewhat with advancing technology and forms of industrial and economic activity. As a nation we have watched with increasing interest and concern the emergence of full-fledged economic warfare, the competition of varying types of industrial

mobilization, and the rise of new and fearful technologies. To perfect and mass produce deadly weapons, such as a more powerful explosive, a faster plane, a robot bomb, an atom-smashing device, or a better tank, may condition a victory or defeat. The ability to do so may prompt an aggression as much as the ability to assemble and train an army. The perfection of processes for the manufacture of synthetic oil and rubber in Germany in 1926 and the unfettered trend of her heavy industry toward over-expansive development in the nineteen twenties and thirties were sure harbingers of war.

10. A league that offered only protection against an actual German aggression once begun and backed up by huge industrial war potential became outmoded. It was an idealistic symbol rather than a practical force. Some were influenced by a resurgent German power to attempt to play it off against targets other than themselves rather than resist it.

11. The most lasting form of economic and industrial disarmament of Germany would be one with a minimum of damage to the economic fabric of Europe and with a maximum of administrative feasibility. The search for and reshaping of measures meeting these criteria, yet achieving the desired paralysis of an industrial war potential, requires careful study and trained judgment.

12. Other interests conflicting with long-term security may intervene and be skillfully played upon by the German economic and industrial spokesmen. Such interests as reparation, trade, and relief and rehabilitation needs may cut across the interest of long-term security and must be appropriately reconciled. This is particularly important to the U. S. to whom long-term security is the basic stake. But, policies, procedures, and arrangements insuring appropriate measures of German economic and industrial disarmament, which represent a lasting but flexible agreement of the nations vitally concerned, require difficult and complicated negotiations.

13. It is highly desirable that the culmination of these international negotiations should result in conclusions that are simple, direct and understandable for the common people of the world. If these conclusions could be summarized on a single sheet of paper and become the household property of all people, a base for a powerful and vigilant public opinion might be created.

14. However, behind simply stated conclusions there must be a detailed specification of what is intended. Recent events have proved again how desirable it is to have agreement not only to the general conclusions but on a bill of particulars as to what is intended. General conclusions must be translated into operative orders, decrees, or instruments of understanding if they are to be lasting and enforceable. These in turn must be subject to change to meet new conditions if they are to be flexible and administrable. This is the only method of avoiding a break-down in a system of economic and industrial disarmament over differences as to whether or not a particular German action or failure to act should be treated as a breach of the international security regulations.

15. These plans and programs for German economic and industrial disarmament, it should be emphasized, do not pertain solely to occupation policies and procedures. They should be designed to outlast the period of actual military occupations. They should be designed to continue on an indefinite basis until the nations of the world feel

that the pacification of the German mind and people is so assured that special protective devices need no longer be maintained.

16. In the light of this background, it would seem that the study project contemplated by the President's letter should result in the following:

(a) A speedily organized consideration by experts, drawn from various backgrounds, of the more important subjects which can be singled out in this field for intense scrutiny.

(b) The creation of a series of adequately prepared written analyses of the various subjects selected for detailed examination. These reports should include a description of the German industries or economic problems under consideration. They should note the various detailed questions that should be raised and answered in connection with any international consideration to undertake or not to undertake an economic disarmament program. The pros and cons on these questions should be included. Recommendations, however tentative, should be specifically and definitively stated, with appropriate reservations as to their force as accepted policy.

(c) Through these written reports on the organized study, U. S. policy officials should be able to develop the boundaries of the U. S. position in conference with the representatives of other powers and ultimately determine what practical and feasible stand the U. S. can take.

17. A byproduct of this study project should be the creation of a reservoir both of trained minds and carefully assembled factual and technical data dealing with this subject. This pool would be available when technical conferences are necessary or if revisions of points of view or conclusions are required because of conflict with points of view held elsewhere. Members of this pool might be available for utilization in any established mechanism that later is charged with responsibility for seeing to it that these economic and industrial measures are enforced or adapted to meet a changing situation.

18. The Foreign Economic Administration, under the guidance of the Department of State, is undertaking to execute the request in the President's letter of September 29, with this background in mind. It hopes to realize the benefits and potentialities inherent in such a study project by utilizing methods and procedures designed accordingly.

* * * * *

V. SOME SUBJECTS FOR SPECIFIC STUDY AND REPORT

1. As indicated above, specific subjects for studies and reports, initially undertaken, have been carefully selected. The selection has been designed to develop, on a case basis, the basic policy assumptions described. But it is not unlikely that the broad coverage plus intensive examination will give rise to additional policy approaches or modifications. Certainly, the topics presently selected do not exhaust the subject matter. Consequently, it is anticipated that new subjects for the study project will be formulated from time to time.

2. There is no stereotyped formula for the prosecution of these studies and the writing of reports. Behind each subject there are many detailed questions which must be raised and answered. In the

description that follows only a few illustrative ones will be mentioned in connection with each subject to indicate some of the directions the work might take. These questions also illustrate the type of consideration that must accompany every positive decision of the Allies in this field. Some of these studies and reports undoubtedly will traverse or duplicate ground covered by others. That, to a certain extent, is unavoidable and, indeed, may be desirable.

3. The President's letter referred to the fact that these studies must be "accelerated." Therefore, the objective is to complete by April 1, tentative or preliminary reports on many of the most important subjects. These tentative or preliminary reports can be revised from time to time as new information or points of view emerge.

4. Each report will contain—

(a) a general factual description of the industry or economic question being considered as it relates to Germany's war-making power;

(b) various alternative methods of limiting this aspect of Germany's war-making power;

(c) an appraisal of the consequences and feasibility of various courses of action considered;

(d) specific conclusions and recommendations;

(e) in some cases illustrative executory instruments will be included to indicate in specific terms the concrete nature of the proposed recommendations.

5. The following are the subjects initially selected for these studies and reports with brief illustrative comment concerning the nature of some of the topics to be considered:

PROJECT 1. THE POST-SURRENDER TREATMENT OF GERMAN INDUSTRY INVOLVED IN THE PRODUCTION OF ARMAMENT, MUNITIONS, AND IMPLEMENTS OF WAR

This study and report would be prosecuted on the working assumption that it is a U. S. objective to limit the availability of munitions, armament, and implements of war to Germany in the indefinite future.

The study would involve the many detailed technical and procedural questions which lay behind the generalization just recited. It should result in a detailed program for accomplishing the desired result. This program should be specific enough, when agreed to by the various powers, to be executed and enforced without any substantial difference of opinion concerning what had been agreed to or what would be a violation of the general policy.

Such a study and report should answer many questions concerning the items included and the various types of technological and legal controls which should be applied.

For example, what military end products are to be included within the definition of the terms "munitions, armament, and implements of war" for the purpose of applying this policy? Many thousands of types of items are procured by a modern army, navy, or air force. Which of these are to be included—only those which have exclusive military use—or are certain so-called dual use items (used by civilians and military personnel alike) of such military importance that they should be included? What about trucks weighing above 2 tons, to cite just one example out of hundreds?

The appropriate restriction must be devised for each item selected as within the purview of the policy. These restrictions may include prohibition of processing, limitation on quantities of dual-use items to prevent excessive stock piling for military use, limitations on specifications or types, removal of certain facilities, prohibition of new construction of certain types of facilities, restriction on excess productive capacity beyond civilian needs in certain fields, regulation of imports of certain military end products, etc.

The choice of the appropriate restrictions for each selected military end product leads to further questions.

For example, in what terms shall manufacture be prohibited? Shall the prohibition be limited to the act of final assembly or include the processing of certain specialized and necessary components? If the latter, what components? How are the facilities which are to be removed because of their proximate relationship to the manufacture of selected military end products to be selected or designated? Is the test to be a historical one, namely, that, according to the records of primary and subcontractors of the German Government, they were devoted to some specified phase of processing? Or shall such removal be confined only to those certain specialized facilities which cannot be readily converted to useful peacetime manufacture? Or shall removal include both the historically used category and those readily adapted to that use? In what terms shall future construction of facilities related importantly and substantially to the production of the specified military end products be prohibited or controlled?

These illustrative questions suggest the complicated and technical issues which must be answered in converting the policy assumption into readily enforceable terms and appraising their consequences.

Incidentally, this study and report must be distinguished from one which presumably is already being carried forward by the military forces as normal military disarmament routine. That study concerns the confiscation of finished military end products, as distinct from the one projected here which is devoted to their further manufacture.

As indicated later (see VI), it is felt that the best method of carrying on this study is for the FEA to secure an undertaking, on specific terms of reference, from the appropriate officials in the War Department and Navy Department to prosecute it in their respective spheres with the quantity of expert and technical personnel available to them. FEA would assign one or two liaison personnel to coordinate the prosecution of this study with related ones and minimize the duplication inherent in the policy premise.

PROJECT 2. THE POST-SURRENDER TREATMENT OF THE GERMAN AIRCRAFT INDUSTRY

This study and report would be prosecuted on the working assumption that it was a U. S. objective to prevent Germany from maintaining any substantial war potential in the aircraft industry in the indefinite future.

Many of the questions cited in connection with the first study are pertinent here.

In particular the questions relating to components are important. A prohibition of assembly and an elimination of assembly plants might be only a superficial measure. Therefore, the selection of aircraft

components and their treatment becomes a vital issue. Propellers, airframes, certain flying instruments and other specialized components and facilities therefor must be considered. Aircraft motors and certain other components which are similar in design, materials, tooling, plant, and production to items going into many products other than aircraft present more difficult problems.

A primary aspect of this study involves the definition of the term "aircraft" for this purpose. Does it include gliders, lighter-than-air flying craft, robot bombs, and other items not generally known?

One phase of this study and report, not apparent from the stated subject, which must be covered, is an appraisal of the consequences in terms of civil aviation in Germany. How is civil aviation service to be provided between points within Germany and from and to points outside? Is an international corporation to be established for that purpose? How shall it be owned and managed? Shall the building and operation of civil airports and repair facilities be included within any international control?

It is thought that the work on this subject should be carried on by the War and Navy Departments with appropriate terms of reference and with liaison to be provided by the FEA German Branch.

In the portion of the study dealing with civil aviation, it might be desirable to include the Civil Aeronautics Administration and the Communications Division of the State Department in the initial consideration.

PROJECT 3. THE POST-SURRENDER TREATMENT OF GERMAN ENGINEERING AND RESEARCH RELATED TO ARMAMENT, MUNITIONS, AND IMPLEMENTS OF WAR (INCLUDING AIRCRAFT)

The time, effort, facilities, and personnel devoted to the development of new weapons may influence the readiness or ability for war more than the application of the same factors for actual mass production of armament.

For example, after the last war, Allied disarmament measures relating to aircraft resulted only in the cleaning out of the German arsenals and flying fields of obsolete models. A most valuable basis for rearmament, the continuation of engineering experience and development, was preserved. Despite the absence of legitimate commercial work, numerous private engineering departments and Government scientific research in the aircraft field were maintained. Production of prototypes by foreign subsidiaries and clever licensing policies were important auxiliary devices.

Preventative measures can be suggested which seem harsh and unconventional; others may appear unfeasible. But all these and any alternative measures should be carefully appraised.

For example, these are a few random topics which should be canvassed, accepted, or rejected:

- (a) Seizure of prototypes of weapons and auxiliary laboratory installations, research equipment, reports, and notes.
- (b) Suppression of future research on military equipment.
- (c) Supervision of engineering cooperation between Germany and foreign licensees and subsidiaries.

(d) Development of a roster of Scientific personnel who had a leading part in the development of German weapons and a surveillance of their activities.

(e) Regulation of issuance of patents on weapons to German nationals.

(f) Regulation of employment of German armament experts as instructors in foreign countries.

(g) Control over capital accumulated or compensations paid for developing or manufacturing weapons in Germany or with German cooperation abroad.

(h) Supervision of budgets of German government agencies and research and industrial foundations to prevent violation of the measures envisaged in (b) above.

PROJECT 4. THE POST-SURRENDER TREATMENT OF GERMAN ENGINEERING AND RESEARCH IN THE SECRET-WEAPON FIELD

This study and report, similar in character and prospective to the one just described (No. 3), is set up separately. This is done because of the unusually secret and serious character of its subject matter. By segregating it, the subject can be explored, pursuant to terms of reference from the FEA German Branch, by the Army personnel already familiar with the background material.

PROJECT 5. THE POST-SURRENDER TREATMENT OF THE GERMAN LIGHT METALS INDUSTRY

Aluminum and magnesium are considered as highly essential war metals. Although utilized in many products, their best known and, perhaps, most important war function is in the manufacture of aircraft and incendiary bombs.

The tremendous expansion, many times over, of aluminum and magnesium production in the United States during the last 4 years and in Germany during the Hitler regime attest the importance of light metals for modern war.

Accordingly, the elimination of ready access for Germany to these materials has been a favorite suggestion in the industrial disarmament field. This step is oftentimes included as a part of the proposal to exterminate German war potentials in the aircraft industry.

In addition to appraising the arguments for and against this general decision regarding the German light metals industry, it seems desirable to determine the best procedure for accomplishing the objective, should it be accepted as U. S. policy.

The case of aluminum provides an illustrative example. Its production involves three steps:

(a) The production of alumina from bauxite or other soil substances.

(b) The production of aluminum ingots by electrolysis.

(c) The fabrication of ingots into sheets, tubes, powder, extrusions, cables, etc., which are the semifinished or finished product forms.

To accomplish the desired industrial disarmament objective, is it necessary to regulate all three steps in production?

Since Germany relies upon imports of bauxite, is an import control desirable or necessary?

Is limitation of import and domestic stock-piling of bauxite feasible?

What substances other than bauxite are available inside Germany which might be used as a substitute according to modern technology?

Is it desirable or necessary to control the processing of alumina by the various chemical processes which will be used to produce it?

Is the suppression of aluminum ingot production essential?

In view of the character of production, its relationship to the use of large blocks of power, and its customary concentration in large producing units, what specific program of suppression is desirable, if it becomes U. S. policy to press such a policy?

What would be the impact upon normal employment of the suppression of aluminum ingot production?

Is control of aluminum fabrication necessary or desirable if either one or both of the other stages of production are controlled?

In addition to canvassing these questions relating to aluminum there should be a similar canvass in the magnesium field.

Furthermore, the examination of new processes for the development of substitute or superior light metals must be included in this study.

Finally, the practical procedures and specific instruments of control should be developed to give firm content to and illustrate any conclusion or recommendation that Germany be made dependent upon the outside world for these materials.

PROJECT 6. THE POST-SURRENDER TREATMENT OF THE GERMAN OIL AND PETROLEUM INDUSTRY

Petroleum and oil products are essential for modern mechanized war. They play an indispensable role in the operation of aircraft, tanks, naval vessels, and other vehicles, and serve a very important role in industrial and domestic life. Oil presents a slightly different problem from light metals in that it plays a much more important part in peacetime civilian activities.

Various suggestions, quite general in nature, concerning the post-war treatment of the German oil and petroleum industry are now commonplace. These suggestions usually center upon German synthetic oil production since it is the source of a major proportion of Germany's oil supply and is produced in a relatively few large producing units, easy to check.

Many questions bearing on this subject of study require more intensive examination. In addition, the exact method of applying any specific program to diminish German war potential in this field remains to be worked out.

For example, would the elimination of synthetic oil production and the removal of plants previously utilized for that purpose be an adequate measure of disarmament? Or, should the prohibition extend to the crude production from natural sources within Germany which accounts for some proportion of its supply?

If crude production is to be either continued or prohibited, what disposition should be made of oil-refining plants and the oil-refining industry in Germany?

What synthetic processes are so closely related to oil production that they should be curbed or maintained under a constant review in

order to prevent the establishment of alternative capacity readily convertible to oil production?

Depending somewhat upon the conclusions to the foregoing questions, the problem of supplying Germany's normal peacetime requirements for oil and petroleum products is presented. What machinery should be employed to estimate and determine legitimate civilian requirements and what procedures should be employed to supply them?

Should the capacity of oil storage tanks and oil transport within Germany be limited in order to correspond to estimates of civilian requirements?

What commercial machinery for supplying these requirements to assure their satisfaction on fair price and quality terms should be provided? How should this machinery be set up so as to minimize any international competition for Germany's oil and petroleum market which might threaten to break down restrictions against excessive stock piling?

Should there be international arrangements to accelerate the exploitation and exhaustion of crude resources in the countries immediately adjacent to Germany so as to provide controls of maximum efficacy?

What additional information is necessary to the formulation of an airtight disarmament program in this field? What oil and petroleum products, other than those used for mobile units, such as planes, tanks, and automotive equipment, should be the subject of import and other related controls?

PROJECT 7. THE POST-SURRENDER TREATMENT OF THE GERMAN RUBBER AND RUBBER PRODUCTS INDUSTRIES

The nature of the study and report needed in this field is quite similar to the one previously described for the oil and petroleum industry. Rubber, in both its natural and synthetic forms, is an indispensable element to the German war machine. Depending upon natural rubber from the outside world, German industry has developed intensively the manufacture of a synthetic product. The same general range of questions recited for oil and petroleum should be included for treatment in the study and report on this project.

PROJECT 8. THE POST-SURRENDER TREATMENT OF THE GERMAN RADIO AND RADAR (ELECTRONICS) INDUSTRY

This somewhat mysterious field has undergone revolutionary technological advances during the war. The relationship of radar to aircraft operations, offensive and defensive, is but one outstanding example of the important relationship of radar to a war potential.

The question of whether or not industrial disarmament measures are feasible and necessary in this field is one of the highest importance. In view of its very technical nature, these questions are best known to the specialized experts who are familiar with the technological advances and their relationship to the mass-production process. Control of certain key components, raw materials vital to this industrial field, and research engineering illustrates some of the topics that should be examined.

PROJECT 9. THE POST-SURRENDER TREATMENT OF THE GERMAN BEARINGS INDUSTRY

In war and peace, ball bearings constitute a primary necessity for the functioning of planes, tanks, guns, machine tools, various transportation facilities, and industrial operations. Both modern warfare and modern economy demand a continuous and adequate supply of this key product. Germany's ball-bearing industry has been a target for our air operations from time to time. It is typical of the "common component" problem and requires special attention.

The examination of this German industry involves not only technical questions, of the sort previously described for other "key bottleneck industries" but also economic questions rising out of ownership and corporate relationships. However, the latter category of questions is not to be included in this project but in another one to be discussed later. (See project 26.)

PROJECT 10. THE POST-SURRENDER TREATMENT OF THE GERMAN "COMMON COMPONENTS" INDUSTRIES (EXCLUSIVE OF BEARINGS)

In addition to bearings there are many other "common components" such as pumps, electrical and fractional horse-power motors, compressors, etc., which are vitally related either to the retooling of armament industries or the operation of military end-products such as planes, ships, tanks. This field, not popularly included in examinations of industrial disarmament, needs careful examination. It was in this industrial area that American war production found one of its historical bottlenecks. This fact alone suggests that some outside international control of some one or a group of these common components should be examined for feasibility. It is importantly related to projects 1 and 2.

In view of the complicated nature of the field, all of the various questions which should be raised and considered are omitted here.

PROJECT 11. THE POST-SURRENDER TREATMENT OF THE GERMAN MACHINE TOOLS INDUSTRIES

The delays which the U. S. was forced to undergo in its war-production program, pending the development of essential machine tools, made this country conscious of the importance of this industry to war potential. The German Machine Tool Industry, one of the most powerful in the world, is an obvious subject for detailed examination in this industrial disarmament study. It was greatly expanded in Germany before and during the war and is rigidly controlled as highly important to the German war effort.

The diversity and decentralization of the industry in plants, large and small, and in subdivisions of other industries make the problem of industrial disarmament a challenging one in this field. The relationship of the German Machine Tools to an economic domination of Europe must also be taken into account in any appraisal.

The problem is one not only of treatment of machine-tool producing plants but of the end products themselves, which will be surpluses in great numbers in Germany as well as in the U. S. and U. K. after the war.

Certain segments of the machine-tools industry which have been devoted to specialized production of tools for aircraft or armament processes may require a special scrutiny.

These are illustrative technical questions which must be appraised in this field:

1. Could the manufacture of airplanes, guns, tanks, and other armaments be rendered impossible by the destruction of the machine tools, jigs, and fixtures in the German plants still existing at the end of the war?
2. Do particular departments exist within the German machine tool plants exclusively devoted to the manufacture of machine tools for the armament industries?
3. Which measures would prevent permanently the manufacture of machine tools for any German rearmament program?
4. How important is Germany's higher educational system for training mechanical engineers in connection with machine tools?

The answers to these questions may effect not only long-term security considerations but the rehabilitation of European industry, new industrial development in Europe, the disposition of surplus machine tools in the U. S. and U. K., and the important trade interest of some of the allied powers.

PROJECT 12. THE POST-SURRENDER TREATMENT OF THE GERMAN AUTOMOTIVE INDUSTRY

The German vehicle industry was the third largest in the world. The relationship of our own automotive industry to the great expansion in war production achieved through the conversion in itself provides reason for close examination of the German counterpart. In addition to examining the great changes which took place in the European vehicle industry in general as a result of German activities during occupation, this industry should be examined on strategic security grounds. It was converted to war production in substantial measure. It is alleged that, in anticipation of its wartime use, the industry had been equipped with excess capacity, particularly insofar as forgings, stampings, and jigs and fixtures are concerned. It provides an accumulation of a large number of general purpose machine tools, the introduction of mass-production methods, and the training of skilled labor, all of which serve to increase war potential.

The existence of the vehicle industry encouraged German research on combustion engines applicable in wartime to injection-type engines, fuel substitutes, rocket propulsion, etc.

The vehicle industry facilitated and encouraged development of other strategic industries such as the aircraft industry, instruments, accessories, rubber, and fuel substitutes.

By supplying their needs in peacetime, the German vehicle industry is said to have increased the dependence of surrounding allied countries in wartime. This dependence is said to have been considerably increased under German control during the present war.

In view of the dynamic stage of the vehicle industry in European countries and German interference with potential production in other countries during occupation, a quick growth of the automobile industry in Germany could be anticipated in the years after the war, if this industry were left uncontrolled.

This situation presents a reason for careful and especial study.

PROJECT 13. THE POST-SURRENDER TREATMENT OF THE GERMAN SHIPBUILDING INDUSTRY

The position and importance of this industry in its relationship to war potential is a subject for specialized examination, preferably by our maritime and naval authorities who have a special background in the field.

PROJECT 14. A POST-SURRENDER TREATMENT OF THE AGGREGATE OF THE GERMAN MACHINERY INDUSTRIES

Wholly apart from the special segments of German Machinery Industries (such as the Machine Tool Industry and the Automotive Industry), the aggregate of the German machinery industry, including a large number of additional segments, deserves separate examination.

It is now fully recognized that the machinery or metal-working industries are important to a nation's industrial war potential. The vast majority of plants or facilities falling into the general category of machinery industries are standard peacetime industries. The convertibility of the machinery industries to the production of armament, munitions, or implements of war is a factor acknowledged in our own experience. This relationship will undoubtedly be pointed up in the results of project 1. It calls for an appraisal of the feasibility or desirability of a quantitative or aggregate control of the capacity and the operation of these industries in Germany during the occupation period and, probably, afterwards.

The machinery industries were used in Germany as an expandible base for a huge armament production. A significant fact is that during the pre-war period, the German production of machines more than doubled from 1933 through 1937. The great size of the German industry and its rapid growth in the pre-war years is demonstrated by available official statistics.

The number of employees reported in the German engineering industries at the middle of 1936 and the value added by manufacture (total sales less cost of materials, supplies, and fuel) during the year were as follows:

	Number of persons employed	Value added by manufacture (1,000 RM)
Construction of machines and apparatus including rail vehicles	579,000	2,687,000
Electrical machinery and apparatus	204,000	1,507,000
Vehicles industry including manufacture of vehicle equipment	216,000	1,076,000
Shipbuilding	76,000	273,000
Total	1,165,000	5,543,000
Total German manufacturing industries	7,950,000	34,185,000
Percent of total	14.7	16

From 1936 to 1939 these industries experienced a rapid development which is well indicated by the League of Nations production index.

1928	100.0	1937	119.6
1933	46.8	1938	142.3
1936	98.7	1939 (first month)	148.0

In spite of the German arming, exports were increasing as shown by the following:

	Export of machinery (1,000 RM)	
	1934	1937
Machinery and apparatus.....	460, 100	765, 200
Vehicles.....	94, 500	267, 700
Electrical machinery.....	218, 600	312, 300
Total.....	773, 200	1, 345, 200

The export of machinery in 1937 was three times that for all steel ingots, billets, shapes, sheet, wire, forgings, and pipe. By 1938 the machinery exports increased to 1,521,000,000 rm.

The consequences of this development were twofold:

(a) Germany's industrial war potential in the machinery field were substantially broadened.

(b) Germany was able to establish a substantial economic domination of these industries in other European countries, which accomplished a weakening of their defensive potential.

The control of these machinery industries during the occupation period coupled with development measures outside Germany in these industrial fields may be a means of breaking this economic domination which strengthened Germany's aggressive potential and weakened the defensive abilities of her neighbors. The nature of the control after the occupation period presents an even more difficult problem because of the wide variety of products and the dependency of the economy on them.

What are the consequences for Germany and the rest of the world of various courses of treatment? These must be appraised on a factual basis. Conclusions with reference to the course of action must be integrated not only with long-term security regulations but also with the nature of world commercial policy.

PROJECT 15. THE POST-SURRENDER TREATMENT OF THE GERMAN STEEL AND FERRO-ALLOYS INDUSTRIES

Iron and steel still provide the principal basis of modern war. This industry is the second side of the triangle of German heavy industry (the others being the Chemical and Machinery Industries) which provides the base of Germany's industrial war potential. Iron and steel capacity in Germany in the beginning of the war, amounting to more than 25,000,000 ingot metric tons, equaled the combined output of Great Britain, France, Belgium, Poland, Czechoslovakia, and Hungary. The substantial exports of iron and steel products provide one of the important instruments of Germany's economic domination of Europe.

Germany's output of finished iron and steel in 1933 was approximately 7,778,000 metric tons of which nearly 1,910,000 went into export. At that time no large share of Germany's steel production had

been diverted to production of armaments and she was able to send substantial quantities of steel and steel products abroad.¹ By 1937 the production increased to 19,187,000 metric tons. Exports also increased to 2,847,000 metric tons in spite of armament expansion. This expansion is the more remarkable because of Germany's lack of economic sources of ores within her borders. Most of the ores were imported from Sweden, France, and other neighboring countries.

The fact that Germany's steel capacity exceeds by far her normal requirements renders its continuance at the present level both a constant menace to disarmament, a source of aggression, and a threat to balanced industrial development in other European countries. Therefore, the same type of industrial disarmament problem presented by the German machinery and chemicals industries is presented by the iron and steel industry.

Should German output be curtailed and facilities be removed or limited? If so, to what extent? How should any proposed curtailment of output or removal of facilities be effected? How are the allowable levels of capacity and output to be determined? Are such types of facilities as heavy forges, presses, hammers, etc., which are especially related to certain types of armament production to be singled out for specific treatment?

How is the use of Germany's iron and steel capacity during periods of occupation and reparations to be modified so as to prevent the continuance of German economic domination of Europe in this field? Assuming a conclusion favorable to control for industrial disarmament objectives, what will be the techniques best designed to effectuate the objectives, i. e., quantitative controls of output, removal of plants, limitations on new plant construction, regulation of importation of iron ore and other ores, etc.

A problem which should be included in this study but treated as a separate phase concerns the so-called alloy steels. These special steel of various kinds are required particularly in the production of military end-products such as armor plates, tanks, warships, rifles, etc.

Alloy steels require, in addition to normal materials for steel production, such items as chromium, tungsten, molybdenum, nickel, vanadium and cobalt. Manganese, a metal used in quantity in ordinary steel production is also used in alloys. The control or treatment of alloy steel production should be given special consideration, not only because of the practical relationship of the availability of alloys to an industrial war potential, but also because the paucity of sources of these materials in Germany offers unusual possibilities for control.

Although Germany produces some domestic supplies of manganese, nickel, tungsten, vanadium, and cobalt and, for that matter, iron ore, the quantities represent but a small portion of total war requirements. Several alternatives for controlling this vital element of the steel economy should be developed and appraised if control of German production import and stock-piling of raw materials and of the processing of the alloy steels is found desirable.

¹ Because of poor living standards in Germany, prevailing opinion has not recognized that the per capita total of her national income in 1932 and 1933 was superior to most European nations.

PROJECT 16. POST-SURRENDER TREATMENT OF THE GERMAN CHEMICAL INDUSTRY

The German chemical industries occupied a key position in the development of the Reich's war potentials. The resourcefulness and thoroughness with which the war potentials were built up are not better demonstrated in any part of the German economy than in the chemical industry. Here were developed and produced the substitutes for the war materials which were lacking in Germany. The chemical industry not only was an important contributor in the technological aspects of war-making but it also led a prominent and successful front in the economic warfare which was waged by Germany through cartel agreements and other means long before armed hostilities started. The chemical industries represent an element in the German economy at least as important in her war-making ability as that occupied by the heavy machinery industries.

The German chemical industry actually is a collection of many industries which are part of a large technical and financial fabric. The chemical industry includes relatively heavy types of operations which involve handling of large volumes of material and it includes the fine chemicals which may be produced on a very small scale. Chemical industries usually are considered to include also the industries which depend almost entirely on chemical processes although the products themselves may not be considered to be chemicals. The manufacture of paper and soap are examples of this type.

In addition to the tremendous heavy chemicals industry, Germany has advanced far in the development of coal-tar derivatives and dyes and in the relatively new field of heavy synthetic chemicals. The heavy synthetics are based primarily on Germany's only abundant natural resource—coal. They include the manufacture of synthetic fixed nitrogen, calcium carbide, and synthetic petroleum.

The fixed nitrogen industry provides ammonia, nitric acid, and nitrates which are used to make explosives out of a wide variety of other materials. These explosives are designed for many special purposes, the newest of which are rocket propellents. But fixed nitrogen is also a highly essential commodity in a peacetime economy; large amounts will be required to keep Germany's agricultural production at its maximum level. Yet, the needs of German agriculture probably will not exceed a third of Germany's present capacity for nitrogen fixation. This sector of Germany's chemical industry will require special study but the need of other chemical industries for the products of the nitrogen fixation industry will also require coordination of the special study with the study of the aggregate chemical industry.

Calcium carbide is the raw material for a wide variety of synthetic and "ersatz" materials. It is manufactured from coke and lime in high temperature electric furnaces. It is used as a starting point for the manufacture of synthetic rubber, some fixed nitrogen, many solvents, some plastics, some textile fibers, and probably many new materials about which we know little. The importance of calcium carbide and its derivatives can be gauged by the fact that Germany's capacity is now estimated to be about seven times the prewar capacity in the United States. The study of calcium carbide production and

the industries dependent upon it, particularly the synthetic rubber industry (see project 6), should be a special subject of investigation. But again the interdependency of the various products with other sectors of the chemical industry as a whole requires integration of the special study with the aggregate study.

The synthetic petroleum industry is the most extensive wartime development in Germany, devoted almost entirely to the frustration of the Allied blockade. Faced with the problem of fighting a mechanized war with normally but one-tenth of the military requirements for petroleum products available within her own borders, Germany has turned her technological and industrial resources toward making her abundant coal supplies fill the serious gap in her own endowments. Part of this has been done by converting synthetic fixed nitrogen plants, but most of it has been accomplished by the building of entirely new plants near the coal fields. This again is a sphere of a separate special study (see project 5), but unquestionably many of the byproducts of the processes have become tied in with other chemical production.

The German dye industry is usually the chemical industry which comes first to mind in speaking of German chemical achievements. The production of dyes and other fine chemicals is not in itself an important contribution to war potential. However, the ready convertibility of the production plants to a wide variety of other materials makes these facilities worthy of close scrutiny.

One of the most important chemical process industries associated with the German war effort is the synthetic fiber industry. This industry was developed in order to allow the use of more readily available pulpwood instead of natural textile fibers which had to be brought from farther corners of the world. The strategic importance of this industry is heightened by its ready convertibility to the manufacture of explosives.

All of these chemical industries are more or less dependent upon the large heavy chemical industries such as sulfuric acid. Of all the more important heavy chemicals, sulfuric acid is the most dependent upon imports, but Germany appears to have adapted herself to getting along largely on local, though probably uneconomical, resources.

The study of the aggregate chemical industry in relation to Germany's war potential will open other subjects of special investigation in addition to those covered by projects 5 and 6. These are not now apparent because of lack of knowledge about the industry as it has developed in the war. However, the interdependence of the many constituents of the industry requires study in the aggregate as well as individually in order to test the feasibility and desirability of various measures of industrial disarmament, i. e., limitations on industrial capacity, limitations on industrial operations, limitations on imports, limitations on exports, control of German ownership and operations outside Germany, elimination of idle capacity beyond reasonable operating reserves in the light of peacetime demands, restrictions on research, removal of selected facilities, and prohibition of construction of defined types.

PROJECT 17. THE POST-SURRENDER TREATMENT OF THE GERMAN COAL INDUSTRY

Coal and related fuels are the basic requirements for the operation of most industries. Germany has very large quantities of coal within its borders. The nation has developed a considerable industry to produce this material and make it available for home consumption and export.

The consumption of coal by German industries falls into two categories:

(a) A direct use of coal (for example, iron and steel industries).

(b) An indirect use (for example, the production of electric power which is then used in metallurgical industries).

The study of the reasons for or against various types of Allied regulation of coal output and allocation during and after occupation, and the nature of such controls is an important facet of any over-all appraisal of the industrial disarmament problem.

It is contemplated that this study would not extend to methods and processes involved in coal mining from a standpoint of security. If, however, these methods of producing coal become an important Allied concern because of global shortages of this material, that study may be undertaken separately. The principal focus of the study contemplated here is how various types of control of coal output and allocation can be used as an auxiliary to the effectuation of industrial disarmament measures in other German industries which are based on coal.

For example, the direct use of coal in the production of iron and steel products, refining and manufacture of ferro-alloys, the refining and manufacture of nonferrous metals, makes it a key to any measures which might be taken during or after occupation with reference to those industries. An estimated increase in the use of coal for these purposes between 1934 and 1943 of approximately 275 percent is significant of the place of coal control in any reconversion of these industries with related disarmament measures.

Similarly, the use of coal in the chemical industries, including the manufacture of synthetic fuels and rubber makes this subject an important auxiliary topic to projects 5 and 6 dealing with those industries. It is estimated that in 1943 the manufacture of synthetic fuels alone accounted for approximately 23 million tons of the total German coal output.

Other vital examples of the relationship of coal to industrial disarmament are the toluenes, certain poison and combat gases, and motor fuels such as benzenes and benzols.

The relationship of coal control to other industrial disarmament measures involved in the use of coal for electric power will be manifest in the discussion of Project 18, dealing with the electric power industries. However, control of coal allocated to power production would be a secondary measure insofar as these indirect uses are concerned.

The over-all efficiency of some control, supervision of surveillance of coal output and distribution as an auxiliary to industrial disarmament measures, requires considerable examination since it has both advantages and drawbacks and some serious loopholes.

The efficiency of a partial check on the German industrial war potential, through breaking off certain territorial areas from Germany proper, or establishing some international device to own, manage, or participate in the management of certain coal-producing and distributing operations is also a topic to be appraised.

PROJECT 18. THE POST-SURRENDER TREATMENT OF THE GERMAN ELECTRIC POWER INDUSTRY

The relationship of the German electric power industry to its industrial war potential needs little elaboration. For example, nearly one-half of Germany's war-time consumption of power is absorbed by the vast electro-chemical, and electro-metallurgical industries which are devoted in large part to war production. Electrical energy in large blocks is indispensable in Germany in the manufacture of such items as nitrogen for explosives, synthetic oil, rubber substitutes, light metals, alloy steels, and other key metals for the German war effort.

It is said that since the advent of the Hitler regime, the power potential in Germany has been greatly expanded; generating capacity having been about doubled and output of electrical energy nearly quadrupled. This power is based largely on steam generation which, in turn, utilizes coal.

There are factors of the German power system which have some especial significance from the standpoint of a study of industrial disarmament. Some of these factors are the location of recently installed power facilities; the extensive use of brown coal for power and its integration with production of synthetic petroleum; the ownership of a considerable portion of power capacity by other than public utility companies; and the great increase in the integration of all power facilities, including tie lines with neighboring countries.

A study project of the post-surrender treatment of this industry is an important auxiliary to the other industrial disarmament studies outlined. It has been asserted by some that one of the key instruments for enforcing the effectuating measures of economic disarmament directly applicable to other industries (such as synthetic petroleum and rubber) exists in the power field.

In addition, certain other questions which relate directly to the place of the power industry in an industrial war potential deserve study.

The treatment of any exhaustive excess capacity in generating equipment after German industry has been reconverted from its distended position in the armament field may be related to the needs of certain liberated areas whose power supply has been damaged or destroyed.

Another question which should be examined is the possibility of a long-term program of international control of the German industrial war potential by supplying a maximum complement of power capacity or supply from outside rather than within. With increasing advances in the field of power transmission, interconnection and relays, and the physical power potentialities in neighboring countries, such a measure of control is considered by some experts as worthy of examination.

Another topic, somewhat related, is the feasibility and desirability of controlling a certain portion of Germany's power supply by some form of international ownership, management, or partial supervision in certain key industrial areas.

Finally, the development of some method of technique for recording and checking power deliveries may provide a useful instrument of inspection and surveillance of the scale of various industrial activities.

PROJECT 19. POST-SURRENDER TREATMENT OF STRATEGIC MINERALS FOR GERMAN INDUSTRIES

An important point of origin of a theory of enforcing peace by economic disarmament measures concerned the control of strategic raw materials, particularly metals. Such a proposal has been repeatedly examined and there is a substantial interest in it because of the nature of modern warfare. Study projects, discussed above, will have covered the question of the control of bauxite, iron ore, petroleum, sulphur and pyrites, and the so-called ordnance materials (nickel, chromium, molybdenum, tungsten, vanadium, and cobalt).

This study project is directed toward those strategic minerals not so covered in specific and direct terms: Copper, lead, manganese, mercury, mica, tin, zinc, antimony, and the other more obscure items falling into this category. The study will concern the relationship of the mining, processing, and importation in raw or processed form of these minerals to the German industrial war potential.

A tight international control on the flow of these items to Germany and their stock-piling might serve as a very useful deterrent to aggression. The principal problem to be studied here is the feasibility of various procedures to achieve this result and the methods, if any, whereby the various known and unknown difficulties can be overcome. For example, an outstanding critic of the feasibility of this type of control points out these difficulties: Mineral production is widely distributed in countries outside of Germany, smuggling, the possible use of substitutes by technological advances, and the difficulties of determining normal peace-time requirements in such a way as to prevent excessive stock-piling through domestic production or importation. This judgment should be weighed and analyzed by others in the light of more detailed facts and the experience of the various public agencies in this war in regulating similar operations.

PROJECT 20. APPRAISAL OF ALTERNATIVE DEVICES FOR THE INTERNATIONAL IMPORT CONTROL INTO GERMANY OF SUPPLIES FOR WHICH, FOR SECURITY REASONS, THAT COUNTRY MAY BE MADE DEPENDENT UPON EXTERNAL SOURCES

Many of the study projects outlined call for a consideration of the relative merits and demerits of making Germany dependent upon external sources for certain items. One of the serious questions of feasibility in connection with such study projects as those dealing with the oil and petroleum industry (project 6), the light metals industry (project 4), the rubber and rubber products industry (project 7), the strategic mineral industries (project 19), is the question of international import control. If Germany is to be made dependent upon external sources for all of or a selected combination of these items,

imports must be related to that quantity or amount of the item which is necessary for essential civilian requirements. Only by this method can Germany's legitimate requirements for these items be supplied and yet the dangers of excessive stock-piling be minimized.

To some extent each of the study projects mentioned will appraise the various techniques of import control and their feasibility with reference to the particular item which is the subject of the study.

This study is a functional one; it cuts across these other studies and approaches the problem squarely and solely in terms of international import control and the various types of devices which might be utilized and their consequences.

This involves a number of technical questions dealing with transportation, trade, importation, customs, inspection, smuggling, appraisal of requirements, regulation of shipping, and many other aspects that are implicit in testing the merits or demerits of any working assumption of international import control of certain selected items going into Germany.

The relationship of such of the various devices to the United Nations Security Council, contemplated by the Dumbarton Oaks proposal, or other institutions for enforcement of economic and industrial disarmament measures upon Germany are to be taken into account in this study.

Likewise, the relationship of the various devices selected to the different principles of world commercial policy and trade must be considered if the conflict between U. S. interests in long-term security from German aggression and U. S. concern for free trade are to be reconciled in any program.

PROJECT 21. TECHNICAL REQUIREMENTS FOR A PERMANENT ALLIED COMMISSION TO ENFORCE INTERNATIONAL ARRANGEMENTS RELATING TO GERMAN INDUSTRIAL DISARMAMENT

The enforcement of measures of economic and industrial disarmament by an Allied Control Commission exercising the full prerogative of military occupation can be clearly envisaged within the framework of the proposed Allied Control Commission; what happens to these measures after the period of military occupation presents a much more difficult and complicated topic. Yet, unless the allied countries contemplate occupation for an indefinite period, this second contingency must be faced. Indeed, it may be observed that the initiation and execution of industrial and economic measures during occupation should be premised upon the creation by the interested powers of a mechanism to maintain and enforce this peace auxiliary. Perhaps this mechanism would be a subsidiary of the United Nations Security Council or the subject of agreement between the interested powers.

The structure, nature, and powers of such a permanent enforcement body and its relationship to the United Nations Security Council present a problem almost as vital insofar as Europe is concerned as the Council itself or the Allied Control Commission for Germany.

The return of sovereignty to the German people may have to be conditioned in such a way as to permit the effective operation of such an institution without repeated international incidents and misunderstanding concerning its power and authority. This is both a technological and legal problem.

What must be done after military occupation and a period of direct allied control to insure the living up to measures of German industrial disarmament?

What right of access to files, records, and personnel of German economic and industrial units, public and private, is necessary?

What arrangements for right of free passage into and within Germany for duly accredited agents for such an institution would have to be provided as a qualification to the normal incidents of sovereignty?

What police power would agents of the institution or the institution itself enjoy as necessary aids to enforcement?

What would be the relationship and obligations of local or national police authorities to this institution and its agents?

What special technical controls, such as those in the power, coal, and transportation fields, might be established as an auxiliary to this system of surveillance and enforcement?

What penalties would attach to individuals, private or public, found to be violating the measures prohibited?

What type of administrative or judicial process for apprehension, trial, and punishment should be provided?

What technical industrial or economic sanction applicable to offending concerns, regions, or other entire countries could be devised which would minimize the necessity for calling upon international military force?

What responsibility should this agency have for regularly reporting to the United Nations Security Council, the various national governments, and the public generally?

PROJECT 22. THE ECONOMIC CONSEQUENCES OF A SEPARATION FROM GERMANY OF THE RHINELAND, AND/OR THE RUHR, AND/OR AREAS EAST OF THE ODER RIVER

One of the more frequently discussed proposals for post-surrender treatment of Germany is the political separation from Germany proper of certain geographical areas. Frequently, there are references to the Rhineland, and more loosely, the so-called Ruhr areas, and areas east of the Oder River.

What would be the economic consequences of any one or all of these political separations? What would the impact be on German economic and industrial disarmament? The answer to these questions requires the collection and analysis of a good deal of factual data and information concerning the economic relationships of these areas to Germany and, in turn, the bordering areas of adjacent countries.

For example, the vital stake of the U. S. in long-term security and in measures of economic and industrial disarmament related thereto calls for a particular examination of this type of suggestion. Would a political separation serve the purpose of industrial and economic disarmament?

Would the industrial disarmament measures under consideration for certain German industries, such as the aircraft and petroleum industries, be applicable to these hypothetical separated areas?

If not, what arrangements would be made to provide assurance to the United Nations that such plant facilities would not again fall into and become a part of an aggressive and revived Germany?

What would be the effect of such a political separation on German economic domination of Europe?

Like the former question, the answer to this one probably depends upon a definition of political separation and a specification of the additional economic and ownership readjustments that would be contemplated.

These are only a few samples of the type of questions to which such a study project would be directed.

It should be viewed as peculiarly important since it is one of the types of solution which is quite likely to be seriously raised by some participating nation in the peace settlement.

This study should be distinguished from those parts of projects 17 and 18, for example, which raised the question of an international ownership of certain industrial properties. This latter question will be considered under these projects.

PROJECT 23. THE POST-SURRENDER TREATMENT OF GERMAN LANDED ESTATES AND THE PRACTICE OF ECONOMIC AUTARCHY IN FOOD PRODUCTS

Although much has been said and written concerning the relationship of German industries to that nation's war making power, little emphasis has been given to certain phases of Germany's agricultural economy in relation to its aggressive power.

A glance at Germany's economic history indicates that, from the time of Bismarck, self-sufficiency in the food field was looked upon as an indispensable to Germany's war potential. A series of tariffs and related economic measures were constantly utilized and adjusted to maintain this self-sufficiency. Since the First World War the ordinary devices of tariffs gave way to a regulation of imports through the foreign exchange mechanism. The resulting stabilization of Germany's agricultural production and prices at a relatively high level made the potentialities of economic blockade less formidable from the food point of view.

It has been suggested by some that this self-sufficiency in the food field should be replaced by the elimination of restrictions against importation of certain food items, for example, the grains (*a*) because these devices are a method by which Germany maintains her war potential in the food field, (*b*) because they are in conflict with United States principles of good world commercial policy.

Questions to be considered in this connection are—

What should be the Allied Control Commission's attitude toward utilization of import licenses and foreign exchange controls in particular food fields?

What should be the attitude toward the maintenance of the large German estates which are the basis of a self-sustained Germany in certain fields such as grain?

What international commercial arrangements in the food field would be designed to increase Germany's dependence upon the outside world for certain food products and yet provide adequate quantities of the particular foodstuffs needed for Germany's population on a more economic basis than they can be produced in Germany?

The topics of this study, although obviously related, are to be distinguished from the purely occupational aspects of food production and distribution.

PROJECT 24. AN APPRAISAL OF THE TECHNICAL POTENTIALITIES FOR THE DEVELOPMENT OF "PEACEFUL" INDUSTRIAL ACTIVITY IN GERMANY FOR BOTH HOME CONSUMPTION AND EXPORT

One of the most commonly repeated objections to the feasibility of proposals concerning German economic and industrial disarmament is that they would create unmanageable unemployment and unrest in Germany and damage the economies of Germany and other European countries which are said to be dependent upon Germany.

This objection cannot be generally accepted or rejected. It should be explored on the basis of facts. Moreover, international interest in the benefits of long-term security from German aggression may outweigh temporary damage to the economies of Germany and countries that have been dependent upon it.

A large number of relevant facts, not normally taken into account, should be explored because of their bearing on this problem. It is sufficient here to cite a few examples.

First, what was the occupational distribution of the German population as between the relatively "safe" industries and those which are within the purview of various conceptions of industrial disarmament? Obviously, the occupational distribution of the German population during the war and in the late thirties is highly distorted because during that period it was a nation in arms.

In 1925 the manufacturing industries represented a little over 40 percent of the gainfully employed, with agriculture absorbing about 30 percent and the remainder distributed between Commerce, Transportation, and the Services. Although by 1939 the employment in manufacturing industries had increased only 6 or 7 percent, the category of industries importantly related to the output of war products had increased to a much greater degree. Thus the category of machinery in 1939 showed an increase of about 50 percent over 1925. The electro-technical and electro-chemical and precision instrument industries showed substantial increases from 30 percent upward. The construction industries showed an increase of about 35 to 40 percent, devoted in large part to war projects of the Nazi Government. On the other hand, consumer-goods industries showed either a stable level of employment or, in some instances, a decline.

According to the 1925 pattern, the industries normally considered most important to a war potential represented approximately 10 percent of the gainfully employed population. Admitting that there are a number of factors which must be weighed in this type of statistical appraisal, the figures cited do tender an important issue, namely, whether or not a substantial reshaping of the German industrial pattern with a substantially less effective industrial war potential need necessarily result in substantially less jobs and consumer goods for the population of Germany and the countries to which it exports. The application of the same manpower and materials in constructing better housing, for example, rather than new war plants, might employ the same number of persons to the greater benefit of the average German.

Another factor which should be taken into account in appraising assertions that the application of industrial disarmament measures will damage the economies which were dependent upon Germany is the existence of substitute sources of supply in other nations. For

example, the tremendous export of new machine tools from Germany which serve to maintain that industry at a high level for war potential may not prove indispensable to the importing countries if interest of industrial disarmament rule otherwise. Vast quantities of Government-owned surpluses existing now in Germany and in Great Britain and the United States and excess capacity built up in the latter two countries to curb German aggression could be utilized as a substitute source of supply.

These few illustrations indicate the importance of a technical appraisal of the economic realities in objections to a policy of German industrial disarmament on the grounds that it would be disastrous both for Germany and the remainder of Europe.

PROJECT 25. THE NEED FOR AND NATURE OF ALLIED ACTIVITIES RELATING TO GERMAN PROPERTY ASSETS, INDUSTRIAL PERSONNEL, AND ECONOMIC ACTIVITIES OUTSIDE GERMANY, DESIGNED TO ENFORCE ECONOMIC AND INDUSTRIAL SECURITY MEASURES PERTAINING TO GERMANY

Any economic program for limiting Germany's industrial war potential must give a position of major importance to German attempts to evade or circumvent instructions applicable within Germany by economic or industrial activities outside of Germany. Likewise, security provisions against Germany's capacity to wage war must be implemented by economic and industrial measures designed to curb or regulate Germany's hold on economic and industrial resources outside Germany.

Germany has acquired, through various devices of domination and penetration, a powerful hold on industries in foreign territory. Fundamentally, the techniques of penetration have been utilized in order to build up military and industrial potential in foreign countries and frustrate anticipated Allied controls of Germany following German defeat. It has been the German aim to establish the Nazi industrial empire over all key industries in occupied countries in such a way as to have permanent effect on the industrial life of those areas even after the withdrawal of German military forces. Much of the control will be found to have been achieved in a form which has the semblance of legality.

Basic techniques which have been used include the flight of capital to neutral countries and transfer of assets to the Western Hemisphere; the appointment of local Germans as managers; the establishment of contractual rights, such as cartel agreements; patent and trade-mark agreements, rights to future delivery of prepaid goods, deferred payment for delivered goods, options to repurchase stocks and general ownership, after hostilities, of assets allegedly sold to neutral parties; the purchasing of either complete or controlling interest in industrial organizations in once Axis-occupied territory, sometimes, ostensibly, upon payment of a fair price, by using funds derived from the levying of occupation costs—other times at confiscatory prices or payment in the form of newly issued shares. These are but a partial list of the devices employed.

German domination and penetration in Axis-occupied territory, including satellite countries, and flight of capital to neutral countries, is usually directed to destroying Germany's control acquired in the

course of war. However, economic and industrial security measures will also have to be directed against German assets including contractual rights and German personnel which were established in foreign countries during the period before the war.

Experience after the last war demonstrated the fact that these property assets and economic activities outside Germany were used by the Germans, "according to plan," to frustrate and evade Allied controls in Germany under the sovereignty of other nations and build up a new industrial base for aggression.

Ample evidence exists already of a repetition of this process on a much more intensive scale.

It is important now to define this problem, delineate the types of devices employed, survey the efficacy of existing or proposed measures by the Allied Powers to cope with the situation, and develop a concrete and specific program to deal with it. These topics should be considered in any study project responsive to the President's letter of September 29.

Parts of this program of treatment which should be considered are—

(1) A segregation, cataloging, and appraisal of total German-owned or controlled assets abroad including both those which existed before the war and those which have passed from Germany to the outside world during the war years.

(2) A location of the channels through which various types of property and personnel will move and have moved.

(3) The obtaining of adequate control of the property assets now being managed by or under the direction of German controlled interests.

(4) An establishment of a control of the flow of property and personnel.

(5) The exercise of control of this property abroad so as to prevent it from being used as an economic base for activities hostile to the purposes of the Allies in their efforts to control Germany's power and capacity to make war in the future.

(6) The establishment and maintenance of an adequate system of economic investigation and intelligence relating to this problem.

A number of specific projects need to be taken into account including first and foremost the establishment of adequately empowered and organized U. S. governmental units. A next logical step would be to project the type of international organization, which, acting complementary to the Allied Control Commission and subsidiary to the United Nations Organization contemplated in the Dumbarton Oaks proposals, would be in a position to coordinate the efforts of various individual nations effectively.

Such a report should delineate the important questions of policy and program, which are presented by this problem. For example, the use of existing sanctions and their improvement to this end should be outlined. Publicity, diplomatic representation, export and import control, the use of the proclaimed list and fund freezing are typical instruments which might be analyzed for possible use on a national or combined basis by the Allies.

A canvass of new sanctions, supply and trade policies, and other measures designed to effectuate the Allied purposes in this field, is another important phase of this project.

The subject of this project, as indicated above, presents one of the most challenging and, indeed, most immediately critical problems of controlling Germany's industrial war potential. In fact, it is the only one now in the definitely operable stage.

Separate but related projects devoted to the German relations in international cartels and government-sponsored foreign trade arrangements will be the subject of other such studies.

PROJECT 26. THE POST-SURRENDER TREATMENT OF GERMAN PARTICIPATION IN INTERNATIONAL CARTELS AFFECTING INTERNATIONAL SECURITY

One of the most important and well-known weapons of German economic penetration is the international cartel. By these private trade agreements between German-owned or controlled corporations and those of other countries, German industrialists, in aid of the plans of German military and political authorities, forwarded two closely related aims:

(a) The protection of an increasing disparity between Germany's industrial war potential in certain vital industrial products and that of potential enemies of the Reich;

(b) The extension and perpetuation of an economic domination in certain key industrial fields, which could be exercised to forward Germany's war and trade interests alike.

This subject has long been the subject of extensive investigation, disclosure, and debate in the United States particularly.¹

Reports show how the Germans utilized these cartels as a lethal instrument in a systematic economic warfare against the United States as a prelude to military aggression. The impact on other¹ countries, although less widely known, is suspected by some experts to be even more striking and important, particularly since the public policy of most of the nations toward cartels and other private monopolistic trade arrangements is not nearly so hostile as that represented by the U. S. antitrust laws.

On this subject, the President has already spoken in a letter to Mr. Hull, then Secretary of State, in which he said:

The history of the use of the I. G. Farben trust by the Nazis reads like a detective story. Defeat of the Nazi armies will have to be followed by the eradication of these weapons of economic warfare. But more than elimination of the political activities of German cartels will be required. Cartel practices which restrict the free flow of goods in foreign commerce will have to be curbed. With international trade involved, this end can be achieved only through collaborative action by the United Nations.

It will be the purpose of this study project to—

(a) Summarize the record of German abuse of this device and its particular impact on the industrial war potential of Germany and her prospective foes.

(b) Outline a program of economic detection which, if followed, will complete the available record on this aspect of German participation in international cartels.

(c) Develop and appraise a series of alternative methods whereby this weapon in the German arsenal can be eliminated as a threat to world security and a source of potential German aggression.

¹ For a convenient summary, see *Cartels and National Security*, pts. I and II, Senate Report of Subcommittee of Senate Military Affairs Committee on War Mobilization, November 13, 1944.

A distinction between this study project and others common in the field of international cartels should be drawn. Usually these studies are focused upon the incompatibility of cartel practices with U. S. conceptions of world commercial policy and proposals are geared accordingly. This project, however, is centered upon German participation in these arrangements with an economic or industrial warfare significance and ways and means of limiting this menace as an international security measure.

PROJECT 27. THE POSTSURRENDER TREATMENT OF GERMAN FOREIGN TRADE CONSONANT WITH ECONOMIC AND INDUSTRIAL DISARMAMENT CONSIDERATIONS

Since the rise of Nazism, German foreign trade policy, based largely on bilateral negotiations and arrangements and discriminatory practices, has been turned into a weapon of economic and political aggression, and has become a powerful instrument in the domination of weaker countries. The quantity, flow, and direction of European trade, and even the internal production policies of many countries, have been decisively influenced by German practices, particularly by the German armament program. Since the outbreak of war, Germany has become by far the most important single factor in the foreign trade of all continental countries, and, in 1942, accounted on the average for some 80 percent of the total trade of its satellites, victims, and even neutral countries.

The defeat of Germany will spell the end of the use of continental resources in the interests of the German war machine. Rebuilding European economics and changes in political assignments will entail new production and new trade patterns, and the renewal of trade relations between areas previously under German domination and the rest of the world will in itself cause redirection of foreign trade. Trade agreements previously governing foreign trade of continental countries will, therefore, cease to have validity and should be suspended. It will further become necessary to set up interim procedures in accordance with which essential exports from and imports into Germany can be effected.

As indicated, German Foreign Trade movements and methods, both before and during the war were designed to promote the Nazi war machine. This foreign trade and the methods of conducting it will have to be examined as carefully as the related policies and procedures affecting German industry. This will be necessary, both to protect the interest of the victims of German economic domination, and for military reasons, to complement any program to limit the power and capacity of Germany to make war in the future.

It should be recognized at the outset that there will be other competing policy themes which will struggle to obtain a position of primacy.

Immediately after surrender, the movement of goods in and out of Germany may be affected by the immediate supply problems of the liberated areas. The temptation may be great to give primacy to these immediate needs, despite the fact that in the case of certain products their movement from Germany runs counter to the interests of long-term industrial disarmament.

The same might be said of the production and movement of new war material out of Germany for the Japanese war.

Then, ultimately there may be pressure to handle a reparations program with regard for the needs and desires of the claimants rather than the effect of the production of goods and movement of foreign trade on economic and industrial disarmament and the breaking up of Germany's economic domination of certain industries and areas via foreign trade.

For these reasons it becomes highly important to correlate the planning of the movements of goods from Germany to the broad objectives outlined in the title of the project.

To what extent should these movements out of and any necessary imports into Germany square substantively with any adopted or seriously considered program for reducing Germany's industrial war potential? For example, to what extent can plant removal be substituted for claims for new capital equipment? Or, again, under what conditions of outside demand and supply, would a key industry, such as the automotive industry, be maintained at a high level of operations? What items are suitable for German foreign trade, using that term in the broad sense? What quantities of given items in exports square with some appropriate pre-Hitler pattern, achieved without benefit of abnormal devices of economic penetration and domination, or without reference to a plan for a huge industrial war potential? What pattern of German foreign trade in various products groups should be approved by the U. S. at various stages of control, as consistent with our security and commercial policy objectives?

Another group of questions concern the procedural devices for handling this movement of goods into and out of Germany, with its incidents of financial and foreign exchange.

What is to be the U. S. position toward a future German use of subsidies, forced loans, quotas, tariffs, blocked currency, etc., which are related substantially to some rearmament design or attempt to maintain or achieve economic domination over a given industrial or trade area? What devices are practicable to effectuate that U. S. position?

Should measures of control be exercised over movements and exchanges, on a nonreparations basis, for example, with the neutral countries?

How can such measures be exercised so as to prevent the escape of German property from Germany and a host of evasions of internal controls?

Should an Allied organization be responsible, as a middleman, in all foreign trade movements, regardless of their basis, reparations, or otherwise? What type of mechanism would be best designed to achieve U. S. objectives?

How will the various trade and financial agreements to which Germany is a party be treated so as to free Europe from potential economic domination from this source?

Finally, this study project must be addressed to defining the principles and procedures which, from a U. S. point of view, should be a necessary part of any system of post-surrender German foreign trade movement, whether or not taking the form of reparations, restitution, state or private trading.

In the development of the foregoing study projects and such additional ones as may be added from time to time, a considerable experi-

ence with the problem of devising appropriate controls to accomplish desired economic and industrial disarmament measures will have been gained.

Of course, the most immediate and familiar background for the general type of industrial controls envisaged is the War Production Board process of controlling or regulating production.¹ The series of so-called L and M orders, which were issued as a part of the program of conversion from peace to war constitute a rich pattern for exploration in this connection.

These orders serve a variety of purposes. Under L orders the production of certain products was eliminated or limited to a given level of production; types of a given product were eliminated or specifications made mandatory; new construction was strictly regulated (see L-42). Under the series of M orders, the importation, allocation, production and use of various key or critical materials was regulated. Not only was the methodology of formulation and issuance developed but a compliance system and procedures were worked out.

Of course, there are many points at which the analogy between economic and industrial disarmament measures and the War Production Board pattern breaks down. One was devised for the purpose of converting a nation's industry from peace to war; the other presumably will be devised for converting a nation's productive economy from warlike to peaceful purposes. The one system was developed and enforced with the backing of a patriotic nation including producers, management and labor alike, who were anxious to cooperate. The other system will have to be devised to apply to a hostile nation and will be confronted by a German public opinion that is likely to consider any cooperation unpatriotic.

Therefore, in the formulation of any system of economic and industrial disarmament measures for Germany, a premium should be placed upon simplicity, directness, and the other elements that will tend to make it a practicable and feasible operation in the atmosphere with which it is concerned.

Although it is not specifically included as a separate study project, perhaps, the most important phase of the entire study will be the selection, from the various alternatives available, of that happy combination which combines the maximum of effectiveness and endurance.

It should not be inferred from the ground covered by the specific projects listed that this study project is premised upon any conclusion that something substantial will or should be done in all of the fields indicated. Nor, should it be concluded that the fields listed are the only ones in which such explorations are profitable.

Indeed, the study project is intended to exemplify an approach to this problem through inductive reasoning. The project is based upon the assumption that effective measures must be devised and enforced. The exact identity of those measures which are best suited for the purposes and the acceptable combinations which are likely to prove practicable over a long period of time can probably be determined only after both a considerable study of the various alternatives and the application of some of them through a process of trial and error.

¹ For a helpful general discussion of this system of production control, see an article entitled "The War Production Board Administrative Policies and Procedures" in the *George Washington Law Review*, December 1944. The authors of this article are Messrs. John Lord O'Brien who was General Counsel for the agency and Mr. Manly Fleischmann who was Assistant General Counsel.

VI. METHODS AND RELATIONSHIPS

1. The methods and procedures adopted by the Foreign Economic Administration German Branch for the prosecution of this study project are designed to make it a coordinating workshop. This approach is modeled, in part, after the operation of the Economic and Industrial Planning Section in the British Foreign Office, which was set up to carry forward a comparable operation. It calls for the active participation, on an organized basis, of expert personnel in many agencies and departments of the government. As indicated above, the FEA German Branch will be the focal point, providing a nucleus of personnel. This nucleus will serve to give continuity and organization to the study project. It is the objective of this nucleus group to organize the collection of information and the making of analyses on various aspects of the subject in such a way that the wealth of experts in other agencies can be utilized.

2. Informal working parties will be established for many of the topics selected for a study and report. These working parties will include, not only representatives from the FEA German Branch but also experts on the subject from other key agencies. The War Production Board, the Office of Scientific Research and Development, the OSS, and the appropriate sections of the War and Navy Departments will be requested to permit certain of their key personnel to serve part-time on these working parties. In some instances personnel from the Tariff Commission, the Bureau of Foreign and Domestic Commerce, the Department of the Treasury, the Department of Justice, and many other agencies may be utilized to advantage.

3. These working parties, constituted informally by the FEA German Branch with the cooperation of the other agencies, will operate under specific terms of reference provided by the FEA. These terms of reference will outline the nature of the problem, which is to be the subject of the study and report, and suggest, for illustrative purposes, some of the more important questions or topics on which information or technical judgment is requested. They will also include a statement of the procedures which the working parties should follow so that the various studies can be kept coordinated and the delivery of results on time assured.

4. In some cases the Chairman or steering member of the working party may be selected from some agency other than FEA, but, in every case either the Chairman or the Executive Officer of the working party will be from the FEA.

5. Preliminary analyses from the factual information already available to the FEA, will be submitted to each working party. An organized pool of information bearing on the subject will be kept constantly up to date in the FEA German Branch.

6. In some especial cases, such as projects Nos. 1, 2, and 4 (see V), it seems desirable to redelegate the responsibility for a particular study and report, under adequate terms of reference, to a single agency or department. For example, project No. 2 dealing with the post-surrender treatment of the German aircraft industry, falls quite naturally into the Army Air Corps. It would seem that the great wealth of technical and expert personnel available in that organization for treating this subject could be more effectively mobilized by the Army Air Corps, than by the FEA or some interagency working party. Of course, in such a case initial guidance, in the terms of reference and by assignment of one or two liaison personnel from FEA

with a general grasp of the industrial disarmament problem, will be necessary.

7. In other cases it may be found that the interagency working party device is not a practicable one and a distinct self-contained unit in the German Branch may be required.

8. The procedures will be kept flexible and the one seemingly best adapted to the particular subject at hand will be employed. However, it is hoped that the procedures described above will result in the maximum concentration of available brains and information on this subject in a minimum period of time.

9. This study project is proceeding immediately with the technical data and economic and industrial information on hand. However, it is recognized that the analyses and conclusions in any given study may be faulty or inadequate because of the lack of complete and up-to-date information concerning German economic and industrial operations, which will only be obtainable after hostilities have concluded. Therefore, the initial studies and reports will have to be reviewed, and, perhaps revised, when refreshed by new economic intelligence.

10. The FEA German Branch is looking to the special intelligence services which are already established, or in process of being established, to obtain the great bulk of original information in the field of technical industrial intelligence. For example, it will utilize and look to the Technical Industrial Intelligence Committee, operating under the JIC, as a most useful and desirable complement to its operations.

11. The distinction between the two procedures is clear. The study project, responsive to the President's letter, is established to appraise, evaluate, and make judgments upon particular German industries and economic activities for the postsurrender period. The new and up-to-date information on which such analyses and conclusions can be most realistically based is to be provided by other organizations specialized in the field of procurement of original industrial information, such as the Technical Industrial Intelligence Committee. It may be that for some phase of its studies, relating to particular types of economic activity, as distinct from the working of a particular industry, the existing machinery will not prove adequate. Before resorting to any especial expedient in this field, however, the FEA German Branch will utilize to the fullest existing sources of procurement of original intelligence. It will seek constantly to confine its activities in this field to the maintenance of appropriate liaison and the provision of adequate direction for the special investigations to be undertaken on its behalf.

12. One other aspect of interagency relationship should be noted. The reports which are the results of this study project presumably will be made available to the President and the Department of State, and on appropriate clearance, to such bodies as the U. S. Section of the European Advisory Commission and the U. S. Control Group of the Allied Control Commission for Germany. The methods and procedures whereby the conclusions and recommendations in these reports would be translated into positive action or become binding upon U. S. representatives have not been worked out. It will be clearly understood, however, that the studies and reports as developed will not constitute firm policy of this Government until some executory action is taken by the President, Department of State, or other properly empowered agency. In other words, the studies and reports, rather than representing action, provide a basis on which action can be more advantageously determined.

EXHIBIT 8

TECHNICAL INDUSTRIAL DISARMAMENT STUDIES

A short time before the Yalta conference at which President Roosevelt, Prime Minister Churchill, and Marshall Stalin pledged their respective nations to "eliminate or control all German industry that could be used for military production," the Director of the Enemy Branch of the Foreign Economic Administration set up a number of separate study projects, dealing with some of the most important German economic and industrial disarmament problems. Each of the studies is being made by a group of the most competent and best informed men in the Government, particularly trained to deal with certain specific problems of production, industry, and economics. The majority of these studies have been undertaken by interagency working groups whose members have been provided through the cooperation of other government agencies. The balance of the projects are being coordinated within FEA or by a particularly selected agency.

Each of the completed Technical Industrial Disarmament Studies will be submitted to the Director of the Enemy Branch. They will be reports of an advisory character rather than reports having the status of approved policy documents. They are reports to the FEA rather than by the FEA. They will constitute the views of the individual signatories rather than the agencies to which they are accredited. As such they will be made available by the FEA to all U. S. officials responsible in this field. Thus, through these TID reports, the FEA and other interested agencies will have the benefit of expert advice from industrial and economic specialists in the Government pursuant to an organized and systematic work project.

The lists appearing on the following pages (along with a table of contents) show the Technical Industrial Disarmament Studies which are now being made, the persons making each study, and the Government agency by which each such person is employed. It will be noted that no projects have been set up for numbers 28 and 29. These numbers have been left open for possible additional general economic studies on Germany of the same type as projects 20 through 27.

Technical industrial disarmament studies

TABLE OF CONTENTS

	Page
Project No. 1. Armament and munitions.....	1
Project No. 2. Aircraft.....	1
Project No. 3. Scientific research.....	2
Project No. 4. Secret weapons.....	1
Project No. 5. Light metals.....	3
Project No. 6. Petroleum.....	5
Project No. 7. Rubber.....	6
Project No. 8. Electronics.....	7
Project No. 9. Bearings.....	8

Technical industrial disarmament studies—Continued

TABLE OF CONTENTS—Continued

	Page
Project No. 10. Common components.....	9
Project No. 11. Machine tools.....	10
Project No. 12. Automotive.....	11
Project No. 13. Shipbuilding and shipping.....	12
Project No. 14. Machinery.....	13
Project No. 15. Ferrous metals.....	14
Project No. 16. Chemicals.....	16
Project No. 17. Solid fuels.....	17
Project No. 18. Power.....	18
Project No. 19. Nonferrous metals.....	20
Project No. 20. Foreign trade controls.....	21
Project No. 21. Allied Disarmament Commission.....	22
Project No. 22. Territorial separation.....	22
Project No. 23. Agriculture.....	23
Project No. 24. Development of safe industries.....	23
Project No. 25. External economic security.....	24
Project No. 26. International cartels.....	24
Project No. 27. Combined with project No. 20.....	21
* * * * * *	
Project No. 30. Forest products.....	25
Project No. 31. Scientific equipment.....	26

TECHNICAL INDUSTRIAL DISARMAMENT STUDIES

Cooperating agencies:

	Letter of invitation addressed to—	Liaison representative
Department of Commerce.....	Mr. Wayne C. Taylor.....	Dr. Frank A. Waring.
Department of Interior.....	Hon. Harold Ickes.....	Mr. Stephen Raushenbush.
Department of the Navy.....	Hon. James Forrestal.....	Admiral T. D. Raddock.
Office of Scientific Research and Development.	Dr. Vannevar Bush.....	Dr. Lyman Chalkley.
Office of Strategic Services.....	Dr. William L. Langer.....	Mr. Sherman Kent.
Department of State.....	Mr. Emile Despres.....	Mr. John C. De Wilde.
War Department.....	Hon. Henry Stimson.....	Maj. Gen. K. B. Wolfe.
War Production Board.....	Mr. J. A. Krug.....	Mr. William Batt.
War Shipping Administration.....	Vice Adm. E. S. Land.....	Vice Adm. H. L. Vickery.

Other agencies contributing personnel:

Department of Agriculture
 Bureau of the Budget
 Federal Power Commission
 Department of Justice
 Office of War Mobilization and Reconversion
 U. S. Tariff Commission
 Department of the Treasury

Technical Industrial Disarmament Committee to Study the Treatment of German Production of Armaments, Munitions, and Implements of War (project No. 1); Technical Industrial Disarmament Committee to Study the Treatment of the German Aircraft Industry (project No. 2); Technical Industrial Disarmament Committee to Study the Treatment of German Engineering and Research in the "Secret Weapon" Field (project No. 4): These projects are being handled by the Army-Navy Ad Hoc Interdepartmental Committee for FEA Projects. Members of the committee are—

Rear Admiral T. D. Raddock, USN
 Maj. Gen. K. B. Wolfe, USA
 Brig. Gen. H. C. Minton, GSC
 Capt. B. G. Leighton, USNR, Retired

Executive officers:

Capt. A. M. Hartman
Lt. F. D. McAlister, USNR

Technical Industrial Disarmament Committee to Study the Treatment of German Research Related to Armaments, Munitions, and Implements of War (project No. 3): This project was delegated to the Office of Scientific Research and Development which invited certain members of the National Academy of Sciences to serve on the Committee. They include—

Dr. Roger Adams, Chairman
Dr. R. W. King, Secretary
Dr. O. E. Buckley
Dr. George O. Curme, Jr.
Dr. Hugh Dryden
Dr. Ross G. Harrison
Dr. Zay Jeffries
Dr. W. K. Lewis
Dr. I. I. Rabi
Mrs. Helen Hill Miller, Foreign Economic Administration Liaison Officer

Technical Industrial Disarmament Committee to Study the Treatment of the German Light Metals Industries (project No. 5):

Mr. Arthur Bunker, Chairman; Foreign Economic Administration Consultant.
Mr. Philip D. Wilson, Vice Chairman; Combined Production and Resources Board.
Mr. Thomas Covell, War Production Board, Deputy Director, Aluminum and Magnesium Division.
Miss Dorothy Cruger, Combined Production Resources Board, Aluminum and Magnesium Consultant.
Lt. Comdr. J. H. Faunce, Navy Department, Head, Materials Branch, Bureau of Aeronautics.
Lt. Isaiah Frank, Office of Strategic Services, Acting Chief, Industry and Trade Section, Research and Analysis Branch.
Mr. Leo Grant, Foreign Economic Administration Consultant.
Mr. Arthur P. Hall, Foreign Economic Administration Consultant.
Mr. T. E. Hancock, Counsel; War Production Board, Attorney for the Aluminum and Magnesium Division.
Mr. Walter A. Janssen, Department of Commerce, Chief, Metals and Minerals Unit.
Lt. Col. N. O. Kraft, War Department, Chief, Aluminum and Magnesium Section, Army Service Forces.
Mr. Samuel Lipkowitz, State Department, Chief, Minerals Section, Commodities Division.
Mr. Arthur B. Menefee, War Production Board, Chief, Bauxite Section.
Mr. Thomas Miller, Department of the Interior, Assistant Chief, Economics and Statistics Branch, Bureau of Mines.

Technical industrial disarmament committee to study the treatment of the German oil and petroleum industry (project No. 6):

Mr. Ralph K. Davies, Chairman; Deputy Petroleum Administrator for War.
Rear Admiral A. F. Carter, USNR, Army-Navy Petroleum Board.
Brig. Gen. H. L. Peckham, Fuels and Lubricants Division, War Department.
Mr. Charles Rayner, State Department.
Col. Jay L. Taylor (Alternate), War Department.
Mr. Brandon H. Grove, Executive Officer; Foreign Economic Administration, Assistant Chief, Petroleum Division.
Mrs. Miralotte Ickes, Executive Secretary; Foreign Economic Administration Analyst.

Technical industrial disarmament committee to study the treatment of the German rubber and rubber products industry (project No. 7):

Mr. Lucius D. Tompkins, Chairman; Office of War Mobilization and Reconversion.
 Mr. E. B. Babcock, Combined Production Resources Board Consultant.
 Mr. Golden W. Bell, War Production Board, Assistant General Counsel.
 Mr. John Collyer, War Production Board, Director, Rubber Programs.
 Mr. Joseph N. DuBarry IV, State Department, Commodity Specialist.
 Dr. E. R. Gilliland (Alternate), Office of Scientific Research and Development.
 Mr. Robert A. Gordon (Alternate), Combined Raw Materials Board.
 Capt. Henry E. Haxo, Jr. (Alternate), War Department, Headquarters, ASF.
 Mr. Everett G. Holt, Department of Commerce Rubber Analyst.
 Lt. Comdr. H. W. Julian, Navy Department.
 Mr. Thomas J. Lynch, Treasury Department Assistant General Counsel.
 Mr. Sheldon P. Thacher, War Department Consultant.
 Mr. Walter Emery, Executive Officer; Foreign Economic Administration Consultant.
 Miss Mildred Zahn, Executive Secretary; Foreign Economic Administration Analyst.

Technical industrial disarmament committee to study the treatment of the German electronics equipment industry (project No. 8):

Mr. Ray C. Ellis, Chairman; Foreign Economic Administration Consultant.
 Mr. Ralph Bown, Office of Scientific Research and Development.
 Mr. Louis J. Chatten, War Production Board, Director, Radio and Radar Division.
 Capt. F. C. Layne, Navy Department, Chief, Electronics Division.
 Capt. Gilbert B. Myers, Navy Department, Secretary of Joint Communications Board.
 Brig. Gen. T. C. Rives, Army Air Forces.
 Mr. James M. Kerbey, Executive Officer, Foreign Economic Administration Consultant.
 Mrs. Elizabeth Hawkins, Executive Secretary, Foreign Economic Administration Analyst.

Technical Industrial Disarmament Committee to Study the Treatment of the German Anti-Friction Bearing Industry (Project No. 9):

Mr. Stanley M. Cooper, Chairman; Foreign Economic Administration Consultant.
 Mr. Albert E. Fawley, Vice Chairman; Foreign Economic Administration Consultant, detailed from War Production Board.
 Lt. Comdr. Preston Gaddis (Alternate), Navy Department, Assistant to Assistant Director of Production, Bureau of Ordnance.
 Mr. Aldon B. Gomez, War Production Board, Legal Counsel, Tools Division.
 Brig. Gen. F. M. Hopkins, War Department, Chief, Resources Division, AC/AS. Materials and Services.
 Mr. Claude C. Ostrom, War Production Board, Assistant Director, Tools Division.
 Lt. H. F. Venneman, Navy Department, Machine Tools Section.
 Lt. Col. Ralph M. Wood (alternate).
 Mr. Lester G. Hawkins, Executive Officer; Foreign Economic Administration Analyst.
 Miss Louise Eaton, Executive Secretary, Foreign Economic Administration Analyst.

Technical Industrial Disarmament Committee to Study the Treatment of the German Common Components Industries (Project No. 10):

Mr. Michael J. Deutch, Chairman; War Production Board, Special Assistant to the Chairman.
 Mr. James J. Farriss, State Department Assistant Advisor, Commodities Division.
 Mr. W. M. Haile, War Production Board, Director, General Industrial Equipment Division.
 Mr. V. S. Kolesnikoff, Bureau of the Budget, Chief Economist.
 Dr. Heinrich Kronstein, Department of Justice, Special Attorney.

Lt. Comdr. H. D. Murray, Navy Department, Executive Officer, Production Division.
 Mr. William H. Myer, Department of Commerce, Chief, Machinery and Motive Products Unit.
 Mr. J. W. Ould, Counsel, War Production Board, Counsel, General Industrial Equipment Division.
 Mr. Virgil Tobin, Combined Production Resources Board, Program Officer.
 Col. G. D. Woods, War Department, Assistant Director for Production Services.
 Mr. Lester G. Hawkins, Executive Officer; Foreign Economic Administration Analyst.
 Miss M. J. Wichser, Executive Secretary; Foreign Economic Administration.

Technical Industrial Disarmament Committee to Study the Treatment of the German Machine Tool Industry (project No. 11):

Mr. Mason Britton, Chairman, Foreign Economic Administration Consultant.
 Mr. George Adams, State Department, Economist, Division of Territorial Studies.
 Mr. William L. Beck, Department of Commerce, Assistant Chief, Machinery Unit, Bureau of Foreign and Domestic Commerce.
 Lt. William Bray, Office of Strategic Services Economist.
 Mr. John S. Chafee, War Production Board, Director, Tools Division, Equipment Bureau.
 Cdr. E. A. Ewing, Navy Department, Chief, Machine Tools Section.
 Mr. Frederick Geier, Foreign Economic Administration Technical Consultant.
 Mr. Aldon B. Gomez, War Production Board, Legal Counsel, Tools Division.
 Lt. Col. P. L. Houser, War Department, Chief, Equipment Branch, ASF Prod. Division.
 Brig. Gen. H. F. Safford, War Department, Chief, Production Service Division Office, Chief of Ordnance.
 Mr. Franz T. Stone, Executive Officer; Foreign Economic Administration Consultant, detailed from War Production Board.
 Miss Louise Eaton, Executive Secretary; Foreign Economic Administration Analyst.

Technical Industrial Disarmament Committee to Study the Treatment of the German Automotive Industry (project No. 12):

Mr. Courtney Johnson, Chairman; Foreign Economic Administration Consultant.
 Lt. William Bray, Office of Strategic Services, Economist.
 Mr. John P. Brown, War Production Board, Divisional Counsel, Automotive Division, Equipment Bureau.
 Mr. James Cope, Foreign Economic Administration, Consultant.
 Brig. Gen. A. R. Glancy (retired), Combined Production Resources Board Consultant.
 Lt. Cdr. E. E. Krogstad, Navy Department, Bureau of Yards and Docks, Transportation Subsection Head.
 Mr. Francis F. Lincoln, State Department, Economist, Division of Territorial Studies.
 Mr. Oscar P. Pearson, Foreign Economic Administration, Consultant.
 Mr. R. I. Roberge, Foreign Economic Administration, Consultant.
 Lt. Col. H. P. Valentine (alternate), War Department, Chief, Transport and Automotive Branch Production Division, Headquarters, ASF.
 Col. G. W. White, War Department, Office, Chief of Ordnance.
 Mr. Carl Wynne, Foreign Economic Administration, Consultant.
 Mr. Charles R. Weaver, Executive Officer; Foreign Economic Administration, Consultant.
 Miss Peggy Garrison, Executive Secretary; Foreign Economic Administration.

Technical industrial disarmament committee to study the treatment of the German shipbuilding industry (project No. 13): This project has been delegated to the War Shipping Administration to be dealt with by—

Vice Admiral Emory S. Land, War Shipping Administrator, Chairman, Maritime Commission.
 Vice Admiral H. L. Vickery, Deputy War Shipping Administrator, Vice Chairman Maritime Commission.

Technical industrial disarmament committee to study the treatment of the aggregate of the German machinery industries (project No. 14): This project is being handled by a Foreign Economic Administration Drafting Committee.

Mr. Albert C. Shire, chairman.
Mr. H. C. Cassell.

Mr. John Ehrhardt
Mr. John F. Coneybear, executive officer

Technical industrial disarmament committee to study the treatment of the German ferrous metals industries (project No. 15):

Mr. Hiland G. Batcheller, chairman; War Production Board, Chief of Operations.
Mr. Leon Goldenberg, executive officer; Foreign Economic Administration, Acting Chief, Basic Industries.
Mrs. Alice Nagel, executive secretary; Foreign Economic Administration, analyst.

Iron and steel subcommittee:

Mr. Norman W. Foy, chairman; War Production Board, consultant.
Lt. Comdr. Roger S. Ahlbrandt, Navy Department.
Lt. Isaiah Frank, Office of Strategic Services, Industry and Trade Section.
Col. Thomas Galbreath, Office of Chief of Ordnance, War Department.
Mr. Sidney D. Merlin, Department of State, Division of Commercial Policy.
Mr. C. E. Nighman, Interior Department, Bureau of Mines.
Mr. Peter M. Rouzitsky, Combined Production Resources Board.
Dr. Walter S. Tower, Foreign Economic Administration Consultant.

Ferro-alloys subcommittee:

Dr. A. B. Kinzel, chairman; Foreign Economic Administration, consultant.
Mr. Charles E. Adams, Combined Production Resources Board.
Lt. Comdr. Roger S. Ahlbrandt, Navy Department.
Col. John Frye, War Department, Office of Chief of Ordnance.
Mr. Edwin K. Jenckes, Interior Department, Bureau of Mines.
Mr. Carl M. Loeb, Jr., Foreign Economic Administration, consultant.
Dr. Paul D. Merica, Foreign Economic Administration, consultant.

Technical Industrial Disarmament Committee to Study the Treatment of the German Chemical Industries (project No. 16):

Col. Frederick Pope, chairman; Office of War Mobilization and Reconversion.
Dr. D. P. Morgan, (acting Chairman), War Production Board, Director, Chemicals Bureau.
Mr. John W. Barnet, Department of State, Minerals Specialist, Commodities Division.
Lt. Comdr. R. B. Colgate, Navy Department, Chief, Chemicals Section, Office of Procurement and Material.
Mr. C. C. Concannon, Department of Commerce, Chief, Chemical Unit, Bureau of Foreign and Domestic Commerce.
Mr. J. Forsyth Glenn, War Production Board, Counsel, Chemicals Bureau.
Mr. Thomas S. Nichols, War Production Board, Principal Consultant.
Mr. Oliver Ralston, Department of Interior, Assistant Chief, Metallurgical Branch.
Lt. Col. W. F. Sterling, War Department, Chief, Commodities Branch, Production Division, Headquarters, ASF.
Mr. Martin T. Bennett, Executive Officer; Foreign Economic Administration, Chief, Industry Division.
Mrs. Thelma Lewis, Executive Secretary; Foreign Economic Administration, Editor.

Technical Industrial Disarmament Committee to Study the Treatment of the German Coal Industry (project No. 17):

Mr. Charles J. Potter, Chairman; Interior Department, Deputy Solid Fuels Administrator.
Mr. George Lamb, Vice Chairman; Department of Interior, Assistant Director, Bureau of Mines.
Mr. Ralph Bowen, State Department, Country Economics Specialist, Division of Commercial Policy.

Lt. R. S. Hauck, Navy Department.
 Lt. Col. C. R. Mabley, War Department, Chief, Solid Fuels Branch, Office of Quartermaster General.
 Mr. Arthur Notman, Foreign Economic Administration, Technical Consultant.
 Mr. Sam Schurr, Office of Strategic Services, Economist.
 Mr. R. M. Weidenhammer, Department of Commerce, Assistant Chief, Metals and Minerals Unit.
 Mr. Antonio Villa, Executive Officer; Foreign Economic Administration, Planning Staff.
 Mrs. Phenola Carroll, Executive Secretary; Foreign Economic Administration Analyst.

Technical Industrial Disarmament Committee to Study the Treatment of the German Electric Power Industry (project No. 18):

Mr. Edward Falck, Chairman; War Production Board, Director, Office of War Utilities.
 Mr. Curtis E. Calder, War Production Board Consultant.
 Mr. C. Girard Davidson, War Production Board, Assistant General Counsel.
 Mr. Samuel Ferguson, Foreign Economic Administration Consultant.
 Mr. Arthur Goldschmidt, Department of Interior, Director, Division of Power.
 Lt. Col. Preston E. James, Office of Strategic Services, Chief, Geographic Sub-division, Europe-Africa Division.
 Dr. Herschel F. Jones, War Production Board, Assistant to Director, Office of War Utilities.
 Mr. Basil Manly, Federal Power Commission Chairman.
 Lt. Daniel V. McNamee, USNR, War Production Board, Legal Counsel.
 Mr. Herbert S. Marks, Department of State, Assistant to Assistant Secretary Acheson.
 Lt. Comdr. C. N. Metcalf, Navy Department, Bureau of Yards and Docks.
 Dr. John C. Parker, Foreign Economic Administration Consultant.
 Mr. Walter A. Radius, State Department, Special Assistant to Director, Office of Transport and Communication.
 Mr. Philip Sporn, War Production Board Consultant.
 Brig. Gen. J. H. Stratton, War Department.
 Lt. Col. A. R. Williams (Alternate for General Stratton), War Department, Production Division.
 Warren H. Marple, Executive Officer; Foreign Economic Administration Consultant.
 Miss Jewell Wilson, Executive Secretary; Foreign Economic Administration.

Technical Industrial Disarmament Committee to Study the Treatment of the Strategic Minerals for German Industries (project No. 19):

Mr. Arthur Notman, Chairman; Foreign Economic Administration.
 Dr. C. K. Leith, Acting Chairman; Combined Production Resources Board.
 Mr. Alan Bateman, Foreign Economic Administration, Assistant Director, Foreign Procurement and Development Branch.
 Lt. Col. J. A. Church, Army Service Forces, Chief, Miscellaneous Metals and Minerals Section.
 Mr. James Douglas, War Production Board, Deputy Vice Chairman for Metals and Minerals.
 Mr. Thomas Helde, Office of Strategic Services, Chief, Industries Subsection, Europe-Africa Division.
 Mr. Walter A. Janssen, Department of Commerce, Chief, Metals and Minerals Unit, Board of Foreign and Domestic Commerce.
 Mr. Andrew Leith, Foreign Economic Administration Consultant.
 Mr. John C. Parsons, War Production Board Attorney, Miscellaneous Minerals Division.
 Mr. Elmer Pehrson, Interior Department, Chief, Economic and Statistics Branch.
 Lt. J. F. Widman, Navy Department.
 Mr. Leon Goldenberg, Executive Officer; Foreign Economic Administration, Acting Chief, Basic Industries.
 Mrs. Phenola Carroll, Executive Secretary; Foreign Economic Administration Analyst.

Technical Industrial Disarmament Committee to Study the Treatment of German Foreign Trade and Import Controls (projects Nos. 20 and 27):

Mr. Clair Wilcox, Chairman; State Department Consultant, Office of International Trade Policy.
 Lt. S. S. Alexander, Office of Strategic Services, Chief, Economic Subdivision, Europe-Africa Division.
 Mr. Norton M. Banks, War Production Board, Director, Division of Stock-piling and Shipping.
 Lt. William Bray, Office of Strategic Services, Economist.
 Mr. Edward J. Browning, War Production Board, Deputy Vice Chairman, International Supply.
 Dr. Arthur Burns, Foreign Economic Administration, Consultant.
 Mr. Louis Domeratzky, Bureau of Foreign and Domestic Commerce, Chief, European Unit.
 Mr. Hal B. Lary, Department of Commerce, Chief, International Payments Unit, Bureau of Foreign and Domestic Commerce.
 Mr. Sidney D. Merlin, State Department, Country Specialist, Division of Commercial Policy.
 Mr. John Parsons, War Production Board, Attorney, Legal Division.
 Miss Ethel Dietrich, Executive Officer; Foreign Economic Administration, Chief, Export-Import Control Division.
 Miss Beatrice Rosholt, Executive Secretary; Foreign Economic Administration, Analyst.

Technical Industrial Disarmament Committee to Study the Technical Requirements for a Permanent Allied Commission to Enforce International Arrangements Relating to German Industrial Disarmament (project No. 21): Completion of this report has been delayed pending completion of the other reports.

Technical Industrial Disarmament Committee to Study the Economic Consequences of a Separation from Germany of the Rhineland and/or the Ruhr and/or Areas East of the Oder River (project No. 22): This project is being handled by a Foreign Economic Administration Drafting Committee of which Philip M. Kaiser, FEA, is Chairman and on which Committee also serve Mr. Martin Bennett, Mr. David Levitan, Mr. Frank Lorimer, Miss Margaret Stone, Dr. George Wonderligh.

Technical Industrial Disarmament Committee to study the treatment of German landed estates and the practice of economic autarchy in food products (project No. 23): This project is being handled by a Foreign Economic Administration Drafting Committee of which Mr. Herbert Parisius, FEA, is chairman, and on which also serve—

From FEA:

Dr. Carl Brandt
 Mr. Theo. W. Schultz
 Mr. John Cassels
 Mr. Norman Jasny

From OSS: Mr. Wilfred Mallenbaum

From Agriculture:

Mr. Hans Richter
 Mr. H. R. Tolley

Technical Industrial Disarmament Committee to appraise the technical potentialities for the development of "Peaceful" industrial activity in Germany for both home consumption and export (project No. 24): This project is being handled by a Foreign Economic Administration Drafting Committee, of which Mr. Donald Longman, FEA, is Chairman.

Technical Industrial Disarmament Committee to study the need for and nature of Allied activities relating to German property assets, industrial personnel, and economic activities outside Germany, designed to enforce economic and industrial security measures pertaining to Germany (project No. 25): This project is being handled by a Foreign Economic Administration Drafting Committee, of which Mr. Richard C. Harrison, FEA, is Chairman.

Technical Industrial Disarmament Committee to study the treatment of German participation in international cartels affecting international security (project No. 26): This project is being handled by a Foreign Economic Administration Drafting Committee, of which Mr. David M. Levitan, FEA, is Chairman.

Project No. 27 has been combined with project No. 20.

Technical Industrial Disarmament Committee to Study the Treatment of the German Forest Resources and Forest Products Industries (project No. 30):

Mr. Lyle F. Watts, Chairman; Department of Agriculture, Chief, Forest Service.
Mr. E. I. Katok, Vice Chairman; Department of Agriculture, Assistant Chief, Forest Service.

Mr. John B. Appleton, Office of Strategic Services, Assistant Chief, Far East Division; Chief, Geographic Subdivision.

Mr. Arthur Bevan, Foreign Economic Administration, Chief, Paper, Lumber, and Containers Section, Requirements and Supply Branch.

Mr. Benton R. Cancell, War Production Board, Chief, Forest Products Bureau.
Colonel John G. Cooke, War Department, Assistant Director for Materials and Products, Production Division, ASF.

Lt. Lawrence B. Culter (Alternate), War Department, Commodities Branch, Production Division, ASF, Forest Products Section.

Commander W. W. Kellogg, Navy Department, Lumber Coordinator, Navy Lumber Coordinating Unit, Bureau Supplies and Accounts.

Mr. Franklin H. Smith, U. S. Tariff Commission, Chief, Lumber and Paper Division.

Mr. Henry W. Spiegel, Office of Strategic Services, Europe-Africa Division, Economics Subdivision.

Dr. Amos E. Taylor, Department of Commerce, Chief, Bureau of Foreign and Domestic Commerce.

Dr. Edward C. Crafts, Executive Officer; Department of Agriculture, Forest Service.

Miss Ruth Coffman, Executive Secretary; Department of Agriculture, Forest Service.

Technical Industrial Disarmament Committee to Study the Treatment of the German Optical Glass and Technical and Scientific Equipment Industries (project No. 31):

Mr. Frank Howard, Chairman; War Production Board, Chief, Safety and Technical Division.

Mr. Mort N. Lansing, Department of Commerce, Specialties Unit, Bureau of Foreign and Domestic Commerce.

Mr. Lawrence Radford, Navy Department, Bureau of Ordnance, Production Division TR-7.

Mr. Francis M. Shields, Foreign Economic Administration Consultant.

Dr. F. E. Wright, War Department, Army, Navy Munitions Board.

Mr. John Flynn, Executive Officer; War Production Board, Chief, Facilities Section, Safety and Technical Equipment Division.

Mrs. Elizabeth Hawkins, Executive Secretary; Foreign Economic Administration Analyst.

SUPPLEMENT TO EXHIBIT 8

For the information of the Committee, there are added below notes concerning the principal public and private affiliations of the TIDC Project Chairmen designated by FEA and those Technical Consult-

ants brought in by the FEA to advise with the TID Committees. Any further information concerning the individuals designated by the participating agencies can be secured from these agencies.

Individual	Agency and title	Principal present affiliation outside Federal Government
Mr. Hiland G. Batcheller, Chairman, project No. 15, Ferrous Metals.	WPB, Chief of Operations.	President, Allegheny-Ludlum Steel Corp., Pittsburgh, Pa.
Mr. Arthur Bunker, Chairman, project No. 5, Light Metals.	FEA Consultant.....	Executive Vice President, the Lehman Corporation, New York, N. Y.
Dr. Arthur Burns, FEA Member, projects Nos. 20 and 27, Foreign Trade Controls.	.....do.....	Professor of Economics, Columbia University, New York, N. Y.
Mr. Staley M. Cooper, Chairman, project No. 9, Bearings.	.....do.....	Executive Vice President, Fafnir Bearings Co., New Britain, Conn.
Mr. James Cope, FEA Member, project No. 12, Automotive.	.....do.....	Assistant to President, Chrysler Corporation, Detroit, Mich.
Mr. Ralph K. Davies, Chairman, project No. 6, Petroleum.	Deputy Petroleum Administrator for War.	Formerly Vice President, Standard Oil of California, San Francisco, Calif.
Mr. Michael J. Deutch, Chairman, project No. 10, Common Components.	Regularly employed by WPB as Special Assistant to the Chairman.	
Mr. Ray C. Ellis, Chairman, project No. 8, Electronics.	FEA Consultant.....	Applied Physics Laboratory, Johns Hopkins University, Silver Springs, Md.
Mr. Edward Falch, Chairman, project No. 18, Power.	Regularly employed by WPB as Director of the Office of War Utilities.	
Mr. Albert E. Fawley, Vice Chairman, project No. 9, Bearings.	FEA Consultant, detailed from WPB.	Manager, Detroit Office, Marlin-Bockwell Corp., New York, N. Y.
Mr. Samuel Ferguson, FEA Member, Power.	FEA Consultant.....	President, Hartford Electric Co., Hartford, Conn.
Mr. Howard Frank, Chairman, project No. 31, Scientific Equipment.	Regularly employed by WPB as Director of Safety & Technical Division.	
Mr. Frederick Geier, FEA Member, project No. 11, Machine Tools.	FEA Consultant.....	President, Cincinnati Milling Machine Co., Cincinnati.
Mr. Leo Grant, FEA Member, project No. 5, Light Metals.	.....do.....	The Dow Chemical Co., Midland, Mich.
Mr. Arthur Hall, FEA Member, project No. 5, Light Metals.	.....do.....	Aluminum Co. of America, Washington, D. C.
Mr. Richard C. Harrison, Chairman, Drafting Committee, project No. 25, External Economic Security.	Regularly employed by FEA as Chief of External Economic Security Staff.	
Mr. Courtney Johnson, Chairman, project No. 12, Automotive.	FEA Consultant.....	Vice President, Studebaker Co., South Bend, Ind.
Mr. Philip M. Kaiser, Chairman; Drafting Committee, project No. 22, Territorial Separation.	Regularly employed by FEA as Assistant Chief of Planning Staff, Enemy Branch.	
Dr. A. B. Kinzel, Chairman; project No. 15, Ferrous Metals.	FEA Consultant.....	Vice President, Electro-Melt, and Chief of Research Laboratories, Union Carbon & Carbide, New York, N. Y.
Vice Admiral Emory S. Land, Co-chairman, project No. 13, Shipbuilding and Shipping.	Regularly employed as War Shipping Administrator and Chairman, Maritime Commission.	
Mr. Andrew Leith, FEA Member, project No. 19, Nonferrous Metals.	FEA Consultant.....	Lavine Co., Philadelphia, Pa.
Mr. David Levitan, Chairman, Drafting Committee, project No. 26, International Cartels.	Regularly employed by FEA as Chief of Property Control Division, Enemy Branch.	
Mr. Carl M. Loeb, Jr., FEA Member, project No. 15, Ferrous Metals.	FEA Consultant.....	Vice President, Climax Molybdenum Co., New York, N. Y.
Mr. Donald Longman, Chairman, Drafting Committee, project No. 24, Safe Industries.	Regularly employed by FEA as Chief of Consumer Economy Division, Enemy Branch.	
Dr. Paul D. Merica, FEA Member, project No. 15, Ferrous Metals.	FEA Consultant.....	Vice President, International Nickel Co., New York, N. Y.
Mr. Arthur Notman, Chairman, project No. 19, Nonferrous Metals; FEA Member, Project No. 17, Solid Fuels.	.....do.....	Consulting Engineer, 40 Wall Street, New York, N. Y.
Mr. Herbert Parisius, Chairman, Drafting Committee, Project No. 23, Agriculture.	Regularly employed by FEA as Director of the Office of Food Programs, Bureau of Supplies.	

Individual	Agency and title	Principal present affiliation outside Federal Government
Dr. John C. Parker, FEA Member, project No. 18, Power.	FEA Consultant.....	Vice President, Consolidated Edison Co., New York, N. Y.
Mr. Oscar P. Pearson, FEA Member, Project No. 12, Automotive.	.....do.....	Manager, Statistical Department, Automobile Manufacturers' Assn., Detroit, Mich.
Col. Frederick Pope, Chairman, project No. 16, Chemicals.	Office of War Mobilization and Reconversion.	American Cyanamid Co., 30 Rockefeller Plaza, New York, N. Y.
Mr. Charles J. Potter, Chairman, project No. 17, Solid Fuels.	Deputy Solid Fuels Administrator.	Assistant to the President, Rochester & Pittsburgh Coal Co., Indiana, Pa.
Mr. R. I. Roberge, FEA Member, project No. 12, Automotive.	FEA Consultant.....	In charge of Foreign Operations, Ford Motor Co., Dearborn, Mich.
Mr. Francis M. Shields, FEA Member, project No. 31, Scientific Equipment.	FEA Consultant; formerly regularly employed by WPB as Deputy Bureau Director of the Equipment Division.	
Mr. Albert C. Shire, Chairman, Drafting Committee, project No. 14, Machinery.	Regularly employed by FEA as Chief Engineer, Engineering Service, Bureau of Supplies.	
Mr. Lucius D. Tompkins, Chairman, project No. 7, Rubber.	Office of War Mobilization and Reconversion.	Vice President, U. S. Rubber Co., New York, N. Y.
Dr. Walter S. Tower, FEA Member, project No. 15, Ferrous Metals.	FEA Consultant.....	President, American Iron and Steel Institute, New York, N. Y.
Vice Adm. H. L. Vickery, Co-chairman, project No. 13, Shipbuilding and Shipping.	Regularly employed as Deputy Vice Chairman, Maritime Commission.	War Shipping Administrator and Vice Chairman, Maritime Commission.
Mr. Lyle F. Watts, Chairman, project No. 30, Forest Products.	Regularly employed as Chief of Agriculture.	Department of Forest Service, Department of Agriculture.
Mr. Clair Wilcox, Chairman, project Nos. 20, 27, Foreign Trade Controls.	Department of State, Consultant to the Office of International Trade Policy.	Professor of Economics, Swarthmore College, Swarthmore, Pa.
Mr. Carl Wynne, FEA Member, Project No. 12, Automotive.	FEA Consultant.....	Director of Exports, Diamond T Motor Car Co., Chicago, Ill.

EXHIBIT 9

[Excerpt from *The Sun*, Baltimore, June 30, 1945]

WARNINGS ON GERMANY OPPORTUNE

(By Philip W. Whitcomb, Sun staff correspondent)

PARIS, June 28 [By radio—delayed]—One day after the statement from the head of the United States Foreign Economic Administration that Germany stands next to America as “the outstanding armaments machine shop of the world,” comes a declaration by the chief of the American Army’s enemy technical intelligence branch that 1,200 topline German scientists, whom he has interrogated and classified, had made such fantastic advances in scientific modes of attack that our own excellent equipment would soon have been “hopelessly antiquated.”

Leo T. Crowley’s warning that Germany’s economic power could be greater than ever in a few years, and Lt. Col. John A. Keck’s implication that the capture of 1,200 military scientists in 1945 doesn’t prevent thousands more being ready in 1950, must be added to the stern declaration by Gen. Dwight D. Eisenhower in Paris the day before he returned home, that: “the German people show no sense of responsibility and almost no remorse for what has happened.”

WARNINGS FULLY SUPPORTED

Each of these three warnings, coming so opportunely at this moment when plans for the occupation of western Germany are still undecided, are fully supported by all that this correspondent has learned in nearly 6 years of continuous reporting of this war on the spot.

There was a tendency in FEA, in the days before teams of experts could enter Germany and study production capacity, to minimize dangerously Germany’s resources and output and to exaggerate ridiculously the effect of bombing.

Crowley’s statement yesterday shows that these days have passed.

CONFIRMS WRITERS’ OPINIONS

In saying that “practically all the iron and steel furnaces are ready for operation,” that “Germany’s potential in machine tools was greater in 1939 than America’s and she has today 4,000,000 more tons of machine tools than she needs and a vast undamaged capacity for new machine-tool production,” that, “contrary to belief, Allied bombing did not reduce most German plants to ruin,” and finally that “five years from now Germany could be far better prepared for war than she was in 1939,” Crowley was confirming the opinion of every American correspondent familiar with Germany who has been studying results since V-day.

Colonel Keck’s disclosures also confirm what had gradually become a certainty, that Germany intended to bring the entire war onto a new scientific plane where all our weapons would prove as outdated as bows and arrows.

This favorite German thesis was often reported in the newspapers, and the basis for it stands out clearly in these statements by the chief of enemy equipment intelligence in the American Army.

GRIM STORY OF ROCKETS

His grim stories of giant rockets that could be guided for thousands of miles, of cannon 400 feet long with a range of 82 miles and muzzle velocity of 4,500 feet a second, of rockets that shoot up from apparatus under the sea, and of anti-aircraft rockets that can come within ten yards of planes flying 10 miles in the air, all show what Germany was up to.

“And Hitler almost made it,” were Colonel Keck’s exact words to the war correspondents in Paris. This statement, like every other coming from competent experts, shows how vital was the speed with which General Eisenhower drove his

armies, equipped as they were with what, in the next war, will probably be regarded as "hopelessly old-fashioned" equipment, until they made their most important capture of all—not of forts, guns, and soldiers, but of scientists.

RUSSIA USES DEFINITE PLAN

The Western Allies in general, and the Military Government in particular, have not yet found a way to deal with this new triple threat—the total absence of a feeling of remorse or guilt on the part of the German people, Germany's industrial power and the apparently unending crop of scientists whom Keck described as "practical, sound, and completely free from fantasy."

Russia seems to be following a definite plan, and following it fast, to judge by Radio Berlin and other broadcasts describing what they are doing. We, on our side, are still in "the day-to-day stage."

We are certainly right in taking time to make up our minds; but we must not wait too long. While we are busy interrogating our 1,200 classified scientists, as Colonel Keck calls them, another 12,000 may be busily preparing new atomic bombs which can be made in grease-paint factories and which, when they are put into use by 80,000,000 unrepentent Germans, will make the V-2's as out of date as tomahawks.

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