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1477

## ECONOMIC MOBILIZATION LESSONS FROM THE WORLD WAR II EXPERIENCES OF ENGLAND AND GERMANY

25 February 1953

### CONTENTS

	<u>Page</u>
INTRODUCTION--Dr. M. S. Reichley, Director of Instruction, ICAF..	1
SPEAKER--Dr. John D. Millett, Professor of Public Administration, Columbia University.....	1
GENERAL DISCUSSION.....	19

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1478

Dr. John D. Millett, Professor of Public Administration, Columbia University, was born in Indianapolis, Indiana, 14 March 1912. He was educated at DePauw University and at Columbia University where he received the Ph.D. degree in 1938. In 1936 he was a staff member of the President's Committee on Administrative Management. From 1938 to 1941 he was associated with the Social Science Research Council and then spent a year as special assistant to the director of the National Resources Planning Board. For a part of this time he was on loan as consultant on organization to the War Production Board. In 1942 he was commissioned a major in the Army, assigned to the Control Division, Headquarters, Army Service Forces, where he served as chief, General Publications Section, and as historical officer of the Army Service Forces. He was promoted to lieutenant colonel in October 1943, to colonel in November 1945, and was separated from the Army in January 1946. In the summer of 1947 he was recalled to active duty in the Army to serve as staff assistant to Major General C. F. Robinson. He was assigned to make an investigation in Europe of foreign logistical organizations and methods. In 1948-1949 he was assistant to the director of the Hoover Commission on Organization of the Executive Branch of the Government. From 1949 to 1952 he was on leave from Columbia to serve as executive director of a specially created Commission on Financing Higher Education. He is the author of many books, including one on "The Process and Organization of Government Planning"; "Financing Higher Education in the United States"; and a study on the "Organizational Problems of the Army Service Forces" which is to be published soon.

# RESTRICTED

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1479

## ECONOMIC MOBILIZATION LESSONS FROM THE WORLD WAR II EXPERIENCES OF ENGLAND AND GERMANY

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DR. REICHLEY: Our lecture this morning is another of our vertical series which has general application to our course in economic mobilization. In planning for economic mobilization, many lessons can be learned from past experiences. Now this applies not only to our own national experiences but to the experiences of other major industrial powers.

This morning we have asked Dr. Millett to discuss these lessons from the standpoint of the experiences of England and Germany during the last war. We have asked him to draw on his studies in this field, which you know of through his biography, and to cite to us both the strengths and the weaknesses of their systems for converting their economies for war. I know we are in for an excellent session. Dr. Millett has a broad knowledge as both a soldier and a civilian to draw on; he has assisted the Industrial College numerous times in the past. His lectures are always analytical, pointed, and interesting.

Dr. Millett, it gives me great pleasure to welcome you and to introduce you to another class at the Industrial College.

DR. MILLETT: General Hovey and gentlemen: It is a great pleasure to be invited back here once more yet I am somewhat at a loss to know what to emphasize the most in a brief lecture about so vast a subject as the "Economic Mobilization Lessons from the World War II experiences of England and Germany." I am afraid I am likely to get off on some other subjects that may be interesting to me, if not to you, at the moment. Whenever you turn a platform over to a speaker, you are in the same kind of a position as a university student I once heard about who faced the problem of what to write on his final examination.

For reasons not clear to me, it seems all colleges and universities have some course known as a "snap" course for the students to take. In almost all these courses it happens further that the college athletes sooner or later show up in them. Again for reasons not entirely clear to me, it seems these courses are likely to involve the Bible. In this particular college the Old Testament course was known as the snap course. The professor was accustomed to ask the same question year after year after year in the final examination. This question had to do with the trials and tribulations of Job. On this particular occasion for some reason the professor decided to change his question; so he asked for an enumeration of the major and minor prophets. This particular athlete,

# RESTRICTED

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confronted with this sudden shift in practice, was somewhat confused and uncertain about how he should answer this question. He finally decided to start his paper this way: "Far be it from me to draw invidious comparisons among prophets; but, if you would like to know about the trials and tribulations of Job, they were as follows: . . . ."

Now I don't intend to draw any invidious comparisons between prophets here this morning. But it may be I shall from time to time detour from the subject of foreign mobilization practices in the last war to make some remarks about our own practices, and it is inevitable, obviously, that this will get also involved in what might we do next time. But I will apologize for this in advance and think no more about it.

There are several footnotes that I ought to begin with. Let us get all of them on the record right to start with, and we need not worry about them any more in the course of this discussion.

First of all, it does happen I did have a part to play in the preparation of a report on this subject of the German and the British practices in economic mobilization in the last war. This report I am sure is in your library. It was reproduced I should say on 15 October 1947. It is called "Foreign Logistical Organizations and Methods." All the worldly wisdom I have on this subject is contained herein. If you really want to know what I know, it is all written down. I can't add anything to it.

All I can do this morning is to draw a few highlights and call special attention to certain parts of this larger study, which will be, I am sure, of considerable value to you if you are interested in this subject.

Another qualification is this.--It is inevitable that we should think of foreign experience largely in terms of our own experience. Years ago I learned an interesting fact about history that is pretty well known to professional historians but often overlooked by the rest of us. It is that each generation tends to rewrite the history of the past in the light of its own present interests and concerns. A great deal of historical authorship is only this--a rewriting of the past, not so much from the historic point of view, of seeing how accurately one can convey a sense of the past, but in trying to see what the past has to illuminate for us in the present.

So it is in drawing information about foreign experience. We are most apt to draw those aspects of that experience which are most interesting to us in the light of our own experience. So I am sure in the course of these remarks it is inevitable that I shall make comments about foreign experience in the light of our own experience in World War II. It is this that gives me my real frame of reference, and consequently causes me to view what I am likely to talk about as being

RESTRICTED

# RESTRICTED

1481

important. Probably a German or a Britisher talking on the same subject would pick out very different aspects to draw upon.

The third and last of these footnotes, which I want to emphasize is this: One of the few things I have learned as a scholar, supposedly-- let's put it in quote marks, in the field of government in the last 20 years is that all systems of government are indigenous to the society in which they operate, and the institutions and practices of one governmental system cannot be readily transferred to another. This is one of the few things, it seems to me, one can say about government with a considerable amount of finality or positiveness.

So it is with the institutions of England and Germany. Bear in mind that these institutions and their practices in the field of economic mobilization were peculiar to the society and to the past traditions of the nation in which they operated. If I don't always have the time to underline this as I go along, please nonetheless bear it in mind. I might give an illustration or two which will be useful to you to start with. I will take two kinds of examples.

In Great Britain in the governmental or administrative structure, there is a tradition of numerous small operating agencies and a general hostility to large administrative departments. This is a tradition which has grown up for reasons not entirely clear to me, but the idea of having a ministry of supply in World War II taking over the procurement function largely of the army seemed perfectly natural to the British, I suggest, because of this very tradition I am mentioning. The British have never been bothered about any concern for span of control which our organizational technicians beguile us with from time to time. I wish I had a few minutes to pay my respects to this whole subject of numbers of administrative agencies.

The British have never worried about numbers. It is not unusual to have 60 ministers in the government of the day. Not all of these ministers sit in the cabinet. It has been governmental practice for 50 years that only a small number of secretaries of state or other ministers serve in the cabinet. But there are 60 or more in the government. I don't know what the number is today. I haven't counted them lately. But this general arrangement of government organization makes sense to the British.

The idea of setting up a ministry of supply apparently rose up out of this tradition that when a department gets big when it has a large job to do, why the British just split it up and have two departments. This seems a perfectly natural thing to do. Needless to say that we do not have this same tradition here.

To give you another illustration, I think one of the reasons the Germans encountered difficulty in the relationship between the armed

# RESTRICTED

# RESTRICTED

1482

forces and the economic mobilization agencies of the German Government was probably because of the past military tradition in German society. The only kind of personnel in the military organization who had prestige were the general staff officers and the field commanders. Command was the elite job in the German Army. This came out of the old Prussian tradition. Anybody who was a technical officer was just beneath the notice of this privileged class.

There was thus a very sharp cleavage in the German Army, I discovered, between the technical officer, as he was called, and the general staff officer and the field commander. As a matter of fact, the general staff officer was not a general staff officer of the army in the way in which Army officers in this country have understood it since the general staff system was introduced in 1903. The general staff was concerned only with field operations and not with the internal administration of the army. The army general staff had nothing to do with the zone of the interior operations.

This sharp cleavage between technical and staff officer was emphasized in the German Army's educational system.

Some place between being commissioned a second lieutenant, or what would correspond to that, and serving in the grade of captain, all officers were given written examinations and were reviewed by selection boards. If a man came from the right kind of family--that was terribly important; he had to come from the right family, which meant from the nobility or lesser nobility--if he had the necessary social standing and grace, and if he had the ability, then he was sent to the Kriegs Akademie, to the War Academy, and was destined to become a general staff officer or a field commander. The two were virtually the same.

If a man was still an able officer but didn't come quite from the right side of the railroad tracks, he became a technical officer, if he so desired, and would be sent to what the Germans called a technische Hochschule, what we would call an engineering school, the principal one of which was in Berlin. After that he went into one of the technical offices--we would call them supply arms and services--and had his career there. He could not expect to rise to military command.

I see a few of you wearing engineer insignia. I must go on to make one further contrast here. The U. S. Military Academy was created originally as an offshoot of the Corps of Engineers. Notice the tradition in the American Army that if a man stands really high in his West Point class he goes into the Corps of Engineers. This was inconceivable in the German Army. Nobody in his right mind would ever want to be an engineer.

# RESTRICTED

RESTRICTED

1483

There are two sets of problems in foreign economic mobilization experience which I want to talk about primarily for a few minutes: (1) The first of these is the role of the military forces in the mobilization of the whole economy; that is, what was the role of the armed forces in the total operation and the total government organization for mobilization of the nation's economic resources? and (2) the second problem I want to talk about is more strictly a military problem--the role of the procurement and supply, but mostly procurement, organization within the armed forces themselves. Both countries had a considerable degree of varied experience, on both these subjects.

If I should draw a conclusion from the remarks to follow, I would make it something like this--I would say that there are two reassuring aspects in this whole story: (1) One is that both countries had a considerable amount of trouble and tried a good deal of experimentation on both matters; there were no hard and final answers to either of these two sets of problems and (2) the other conclusion is that the Germans in particular experienced a great deal of wasted effort from internal administrative conflicts. Some of us might think that conflict and confusion occur only in a democratic society, that a democratic society moves slowly and faces many obstacles to quick action.

I find the Nazi experience extremely reassuring on this score. The organization of the German Government throughout the war went through several different phases, and was pretty confused most of the time. I can't trace the details of this here, but the report I referred to earlier tells the full story. Of course, remember, a dictator has the problem of remaining in power. One of the aspects a dictator has to be sure about is to never let any one subordinate get too much power in his hands. A dictator never dares let a rival grow up inside the bosom of his own family.

The great personality in the German economic mobilization was a man named Albert Speer, without question a man of remarkable ability. I had the pleasure of talking to him when I was in Germany. This does not mean I am apologizing for the Nazis. I am not. I am looking at the whole matter objectively and others besides myself have agreed that Speer was a great personality. He was one of the 15 top defendants in the Nuremburg Trials. He was given a 15-year sentence. Most of the Americans at Nuremburg who interrogated him came to have considerable respect for his capacity.

Now Speer exercised tremendous power. He was a very close confidant of Hitler. You will find an accurate picture of the relationship between Speer and Hitler in a remarkable little book by Trevor-Roper entitled "The Last Days of Hitler." Yet Speer never had complete control over the economic resources of Germany. One of the biggest segments of the economy over which he never had any jurisdiction at any time was the labor

RESTRICTED

# RESTRICTED

1484

force. The labor force was organized and directed by a Nazi official of a very different caliber from Speer--Speer was a technician who liked to think of himself as being the nonpolitical head of the German economic front. During the war the man who controlled the labor force was Fritz Sauckel. Sauckel was a gauleiter, one of the district heads of the Nazi Party, a thorough Nazi in every way. He wasn't going to let Speer get hold of the labor force if he could help it, and Hitler always permitted the division to remain. Sauckel cooperated with Speer when he felt like it; it was Sauckel who decided where labor resources should be used.

Speer complained about this situation to Hitler several times, but Hitler refused to put labor supply under Albert Speer, close personal associate though he had previously been. I think Speer should be thankful for this: The Allies hanged Fritz Sauckel for his slave labor practices during the war. Albert Speer is still alive in Spandau Prison. But it is time to return to my two major items of interest.

One of the debates we heard a great deal about here in Washington during the last war, and I am sure we will continue to hear about in the future, is the interrelationship between strategy and logistics, and between strategy and economic mobilization of resources. It is a difficult relationship to define. It is a difficult one to make hard rules about. Sometimes there were persons in the War Production Board (WPB) who said, "You guys are kidding us when you tell us there is a relationship." There were people in the Army in the last war whose general idea was, "Let's mobilize all we can get out of the civilian economy. Let's get all the military supplies we can. These will become a pool upon which we will draw for the strategic operations we decide are best."

The attitude of the supply planners and of my boss, General Somervell, during the war was that strategy had to be framed in terms of both logistic capabilities and logistic needs of the armed forces. There was no point in talking about supplies in general; the army had to have supplies, in particular, in terms of where operations were planned. It made a difference in procurement of whether men were going to fight in warm or cold climates; whether they were going to fight in areas where there were already port and rail facilities and other facilities for troops, or whether they were going to be fighting in the jungles of New Guinea. The numbers of men to be engaged in various theaters of operation had to be reflected in the procurement needs of the Armed Forces. In general they were.

The strategists never were too happy about this situation. They said to the supply planners: "You are trying to contract our freedom of decision; you are trying to make logistics set the strategic pattern. We are not going to have ourselves tied down this way." This argument

# RESTRICTED

# RESTRICTED

1485

continued inside the Army. I am sure it must have continued in the Navy and the Air Force, too, from time to time, throughout the whole war. By and large, within certain limits, it was the Somervell point of view that since wartime procurement placed heavy burdens upon the national economy, the armed forces had to be sure they obtained maximum results with what supplies they obtained.

In the German and British experience there was a good deal of the same sort of problem. Hitler had very definite strategic ideas which in turn had their impact upon economic mobilization. Hitler, when he started out in 1939, was definitely committed to the idea of limited strategic objectives and short, fast campaigns. I was amazed when I saw the records on the supplies that were held in reserve at the time of the invasion of Poland. There were ammunition reserves in Germany sufficient for six weeks of fighting at the rate of expenditure of the Polish campaign; but the Polish campaign lasted only three weeks. You could operate on a reserve of a six-week supply when you could accomplish your military objectives in three weeks.

One of the German staff officers whom I interrogated in 1947 told me that Hitler asked the general staff how long it would take to conquer Poland. The general staff said, "Four weeks." Hitler said, "I think you can do it in three weeks." They did. When the invasion of France was planned, Hitler asked for a timetable on strategic objectives. The High Command gave him a timetable of three months. The objectives were realized in six weeks.

Hitler now had all the evidence of his genius he needed. From that time on his sense of military strategy was obviously superior to that of the high command of the Army. And that is when the war began to go downhill, thank heavens. With Hitler's kind of strategic sense, there was no great pressure on the German Government for extensive mobilization of economic resources. The real mobilization of German economic resources didn't begin until after February 1942; about the same time we were just getting started in this country.

One reason the results of the war were so successful from the Allies point of view is that the Germans didn't have anything like the economic mobilization that is commonly assumed from 1933 to 1939, and only a very limited mobilization from 1939 to 1941. The Nazi regime was much concerned about trying to feed, clothe, and house the German population at succeedingly higher standards of personal comfort. That was one of the ways the Nazi regime endeavored to maintain popularity. There were politicians arguing constantly with Hitler that unless the regime achieved higher standards of living for the populace, the war potential would be seriously undermined. This debate took place in Germany even as it took place here in this country.

# RESTRICTED

# RESTRICTED

1486

The British experience was very much the same sort of thing. The British were slow and somewhat reluctant to mobilize their full resources, partly because their resources were more limited than were the German resources, and of course far inferior to our own, but also because they had the same kind of political and economic worries to face all the time.

The end result was something like this: From the best figures I have been able to find, peak military deliveries in the German economy to the armed forces occurred in September 1944, in spite of the efforts of strategic bombing. I draw this information from the Strategic Bombing Survey, a very useful survey. Now, it is true that although the armament industry reached its peak production in September 1944, the rest of the economy had already started to go downhill pretty fast. The thing that really broke the backbone in the German industry was the Air Force assault upon railroads. Then the Germans were no longer able to move raw materials and component parts to production factories. It would appear that the most effective bombing was that which destroyed communication facilities. But undoubtedly there was a real strategic gain in the pin-point bombing of ball bearing works and the jet aircraft plants.

The Germans never got to a point where they mobilized for direct war purposes more than one-third of their economic output. In Britain it got probably as high as 45 percent. In the United States we got one time as high as 40 percent. The Germans were never fully mobilized. I was amazed to find figures on second- and third-shift operations in German industry which indicated very limited resort to this practice for getting maximum output. It was not until December 1941 that Hitler issued orders for a very sizable expansion of the industrial output for war purposes in Germany. He was then bogged down in Russia.

The British also constantly struggled with this business of relating strategic objectives to industrial war potential. There seems to have been a great deal of uncertainty in the British Government about what the actual strategic objective should be. From the books published to date on it, there would appear to have been great fear of a major frontal attack on the Germans in northwest Europe. This was undoubtedly influenced by the vivid recollection of the failures of World War I. Those of you who have studied British military operations in that war know that the Passchendaele offensive of 1917 was the most controversial aspect of World War I. When I was in England in 1938 this controversy was still raging. That offensive accomplished nothing and almost finished wiping out the flower of British manhood. Lloyd George was exceedingly bitter about the whole matter and Winston Churchill never forgot the episode. He was concerned never to become involved in another offensive as costly in casualties as that failure of 1917.

This experience had its impact upon strategic thinking and resulted in some disposition to strengthen navy and air force roles as contrasted

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# RESTRICTED

# RESTRICTED

1487

with army power. The British were uncertain about committing their ground forces except in the Near East, where their responsibilities were large and where Rommel soon became a major embarrassment. But the point here is that British strategy and economic mobilization were not closely geared under all this uncertainty, and American resources eventually had to help to implement strategic decisions.

Insofar as organizational machinery for economic mobilization is concerned, let us trace briefly the developments in Germany. Let us look primarily at events after February 1942. Hitler had set up earlier a Ministry of Weapons and Ammunition under Fritz Todt. Nothing very much had been done with it, however, because the French campaign lasted such a very short period of time.

Chart 1, following page, refers to the war economic agencies of the German Government. The Ministry of Armaments and War Production on the lower left-hand side was the Speer ministry. It was organized in February 1942 when Albert Speer became minister following the death of Todt in an airplane crash. Before that Speer, who was a young man in his early forties, had been Hitler's personal architect. He was a very personable kind of fellow, a big man, six feet tall, 180 pounds, with great energy, great personal charm; the kind Hitler liked to have around. He had been an intimate of the immediate circle around Hitler. Once he became a minister Speer did not have time to be part of the family circle any more. Speer took hold of the new ministry with drive, enthusiasm, and determination. He was aggressive, he had an immense capacity to make decisions, he displayed an ability to understand production problems, and he moved rapidly ahead.

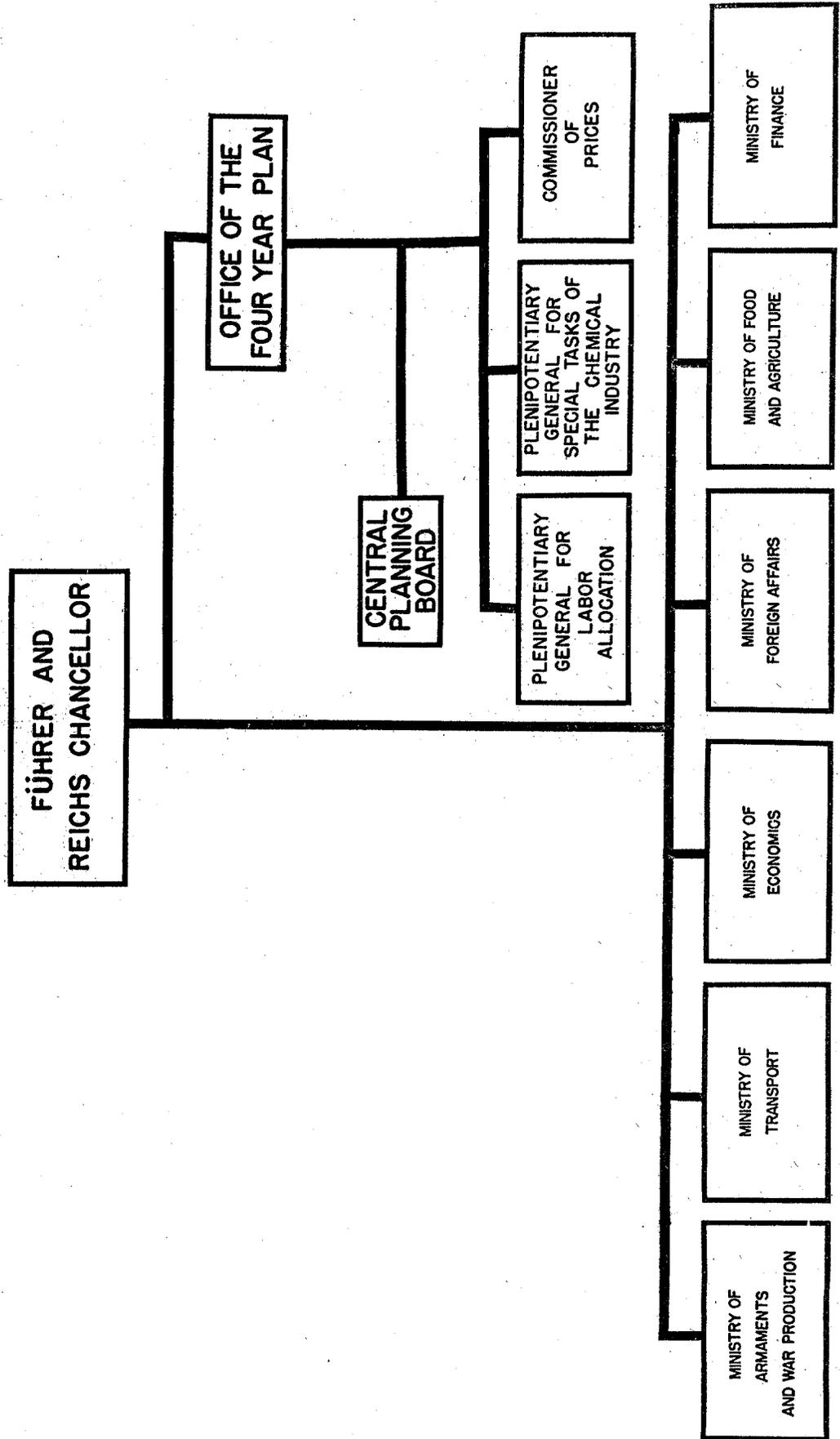
Speer took over most of the production operations of the army within a very short time after the ministry was organized; he acquired navy production in 1943. Admiral Doenitz turned over submarine production in that year because the navy was having trouble with production schedules. Speer acquired complete control of aircraft production from the German Air Forces in 1944.

You will notice on the chart the Office of the Four-Year Plan. This became the central governmental control agency. In a sense, if you are looking for an analogy, you might say this corresponded to our own Office of War Mobilization, the office headed by Justice Byrnes. The nominal head throughout the war years of this central planning office was Goering. But Goering never paid any attention to this agency. He was too much interested in playing with electric trains.

The Office of the Four-Year Plan was really Albert Speer. But Speer was smart enough always to work in Goering's name. He never alienated Goering by trying to get the title for himself. He was one of the rare individuals who was content to have power without the title and trappings

# RESTRICTED

# WAR ECONOMIC AGENCIES OF THE GERMAN GOVERNMENT (1944)



# RESTRICTED

1489

of power. Within the Office of the Four-Year Plan, Speer created a Central Planning Board. This was the agency which made the general economic decisions governing all the agencies down on the lower line of the chart. The board, directed by Speer, made the decisions in the name of Hitler.

Speer did see Hitler very often and cleared most of his major policy matters with him. But Speer did try to operate the central controls through this office of the Four-Year Plan and not through the Ministry of Armaments and War Production, although he was actually head of that organization.

Notice also the position on the Chart under the office of the Four-Year Plan called Plenipotentiary General for Labor Allocation. That was the post held by Fritz Sauckel. He also worked in the name of Goering; he was smart, too. Fritz Sauckel was the only one of the people who would never take orders from Speer. The others--the Ministry of Economics; the Ministry of Food and Agriculture; the Ministry of Transport; the Ministry of Foreign Affairs (involved in the control and exploitation of economic resources in other lands like France, Holland, Belgium)--these ministries all took their orders from Speer, operating in the name of the Four-Year Plan. Sauckel, as Plenipotentiary General for Labor Allocation, never did.

The Ministry of Armaments and War Production took over a great deal of the actual operation of the procurement function from the armed forces. Now, all the armed forces did have their own procurement activities. I will get to that in just a moment. But what Speer took over largely was the decision-making on production scheduling, and, to a limited degree, the decision-making on standardization of designs.

I was surprised to discover the degree to which German industry was not on a mass production basis. This was a thing that had been exaggerated in our own thinking about economic developments in Germany. Most German manufacture was still in a handicraft stage when World War II began. Only plants built by American capital with American engineers between the two wars had developed mass production techniques. One reason there was an increase of 200 percent in war production between January 1942 and September 1944 was because of the introduction of mass production techniques throughout German industry. This was all handled through the Speer ministry. Speer had two major operations in the Ministry of Armaments and War Production. He had on one hand the control of raw materials allocations. This machinery he took over early in his career from the Ministry of Economics. He had a very able industrialist, Hans Kehrl, who ran this part of the machinery for him. On the other side he had a production man whose name was Karl Sauer. Sauer was a German engineer--a very competent one.

# RESTRICTED

# RESTRICTED

All German industry was organized into what the Germans called main committees and ring committees. Chart 2, following page, shows where these committees fitted into the detailed organization of Speers Ministry for Armaments and War Production. The ring committees were industries that controlled basic industrial operations, like steel, copper, aluminum, chemistry, and so on; the main committees were made up of industries producing end items of output. Both of these committees were formed of people from individual companies in the industry. Speer insisted upon two things: (1) Nobody could serve as a representative of industry who was over 45 years of age. Speer was convinced he could get satisfactory output from industry only if he worked with young engineers and technicians.

He distrusted the older men in industrial management and (2) Speer would not permit any president or vice president in charge of finance to sit on one of these industrial committees. He wanted production experts and not finance experts.

These committees were used to exchange information about best production techniques. They provided information about production capacity and they allocated production schedules among themselves. When the pressure was on to increase output, the committees divided up the production among themselves, always watched over by Karl Sauer; he was another great driver, an engineer who kept pushing very successfully all the time. The main committees raised output three times between 1942 and 1944. In the meantime through the ring committees the Speer ministry expanded raw material production and directed its distribution to manufacturers of weapons.

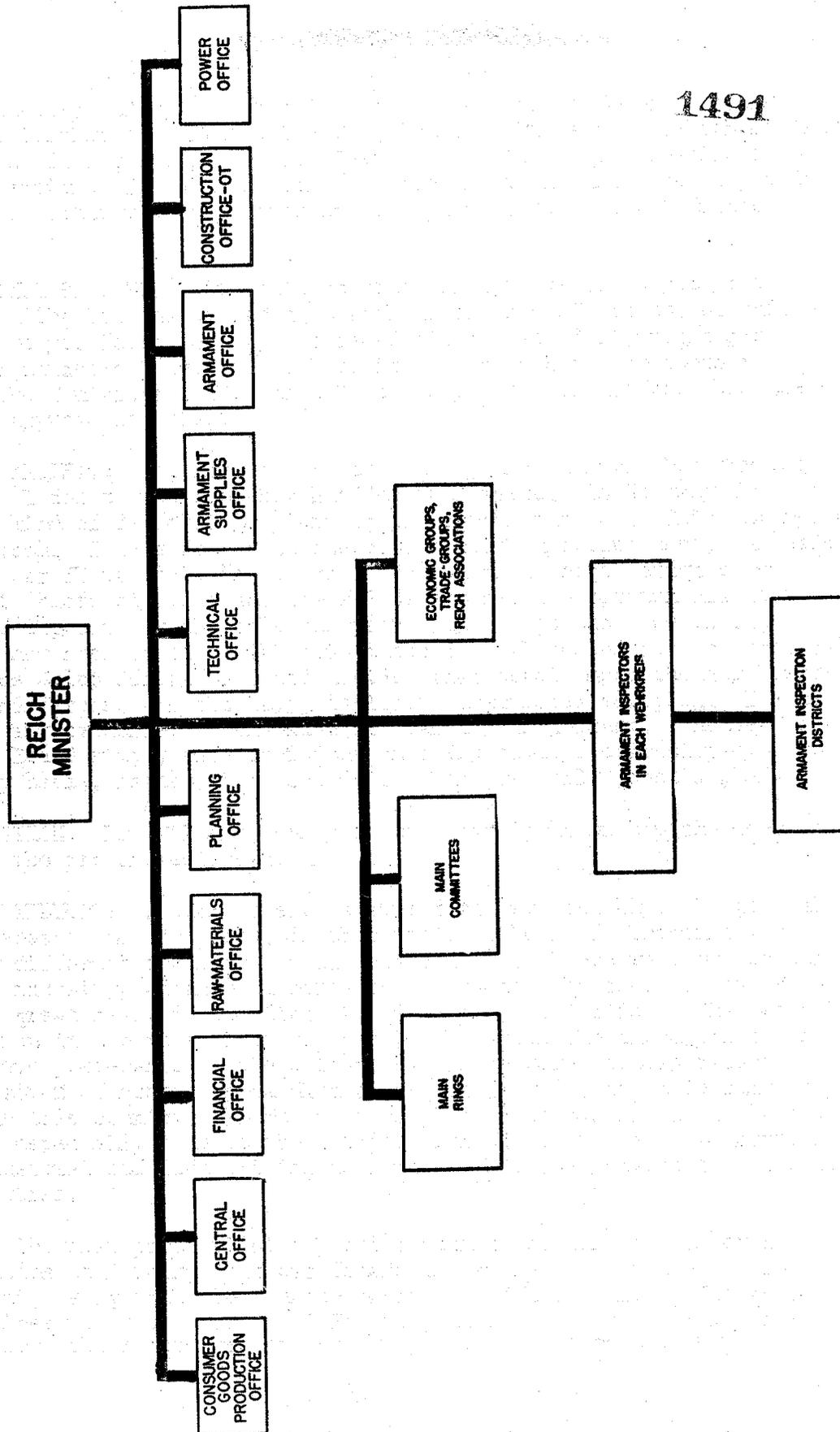
The military forces continued to let contracts and to indicate design specifications. But these practices were subject to modification at any time by Speer. Little by little the Speer ministry took over most phases of military procurement with only a small degree of participation by the armed forces themselves. The very lack of interest in procurement by high military figures was in large part responsible for this situation.

Chart 3, given on page 14, shows the army procurement organization. The practice in the army is representative of all three services. The most important part of the procurement organization of the German Army was the office you see on the right-hand side of the chart, called the Army Weapons Office. This was the procurement center of the German Army. Notice it was under a zone-of-the-interior commander who reported directly, theoretically anyway, to Hitler. General Fromm, who held this post through most of the war, was persona non grata to Hitler personally. His relations were formal and pretty much on a written basis. This zone-of-the-interior commander had two sets of functions. On the one hand he raised and trained troops who were then assigned to the field, after

# RESTRICTED

1491

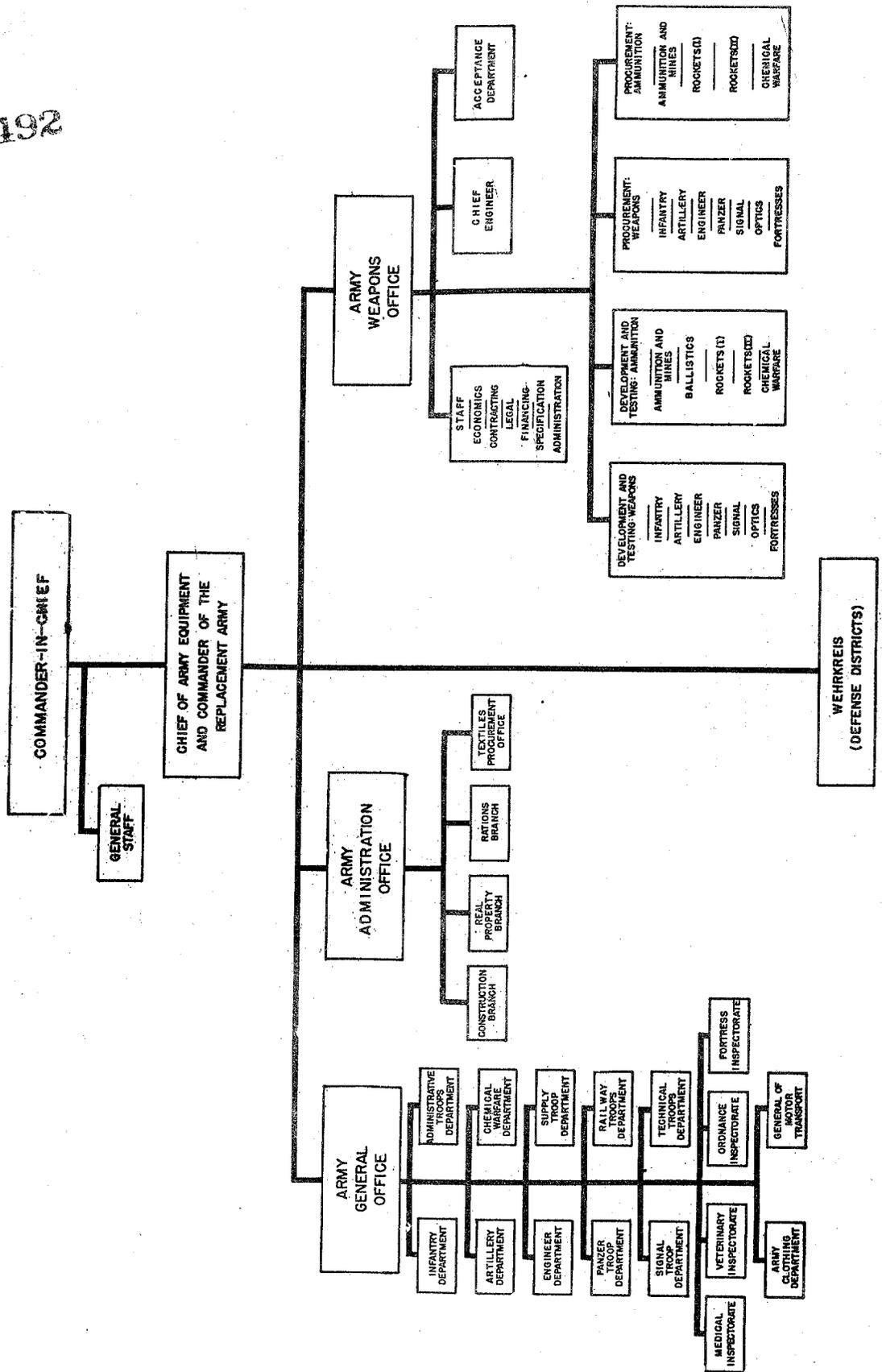
REICH MINISTRY FOR ARMAMENTS AND WAR PRODUCTION  
(EARLY 1944)



**PROCUREMENT ORGANIZATION OF THE GERMAN ARMY  
(EARLY 1944)**

1492

CHART 3



# RESTRICTED

1493

1941 principally to Russia. His second responsibility was handling administrative and procurement operations for the army inside Germany proper.

There was some procurement work done by the Army Administration Office, such as foodstuffs and textiles. The Army General Office, over on the left-hand side, was the organization which did two things-- it prepared the tables of organization and equipment for the troop units you see listed there and it purchased gasoline, medical supplies and certain other items. This Army General Office also ran the depot system inside Germany. All goods delivered by industry were turned over to it.

Inside the German Army there was a distinction between supply as procurement and supply as distribution. General Fromm as zone-of-the-interior commander was responsible for procurement as provided by the Speer ministry. Distribution was directed largely by the general staff issuing its orders in the field to the supply depots back inside Germany. There was no close integration of supply procurement and distribution at a high-planning level as was provided by our Army Service Forces during World War II.

The General Staff said it didn't worry about procurement, it issued all the supplies it could when it got them. It never had enough stock stored up to have an excess on hand.

There was no commander-in-chief of the army after 1941 except Hitler himself. The army was directed by a Chief of Staff. But neither the Chief of Staff nor the general staff was located in Berlin. The entire general staff was a field command. This meant it was located in Russia. The army high command ran the war in Russia after June 1941. The personal staff of Hitler, called the OKW, ran the war in the West after the invasion of 1944. But General Fromm ran the army in the zone of the interior and ran it as he saw fit, more or less, with such instructions as he got from time to time, which mostly came from Speer, or from General Buehle, who was on Hitler's personal staff. There was thus a very limited interrelationship between strategic decisions and supply operations within the zone of the interior.

One reason why the Speer ministry probably, it seems to me, took over a very large part of the direction of procurement operations was because the high command of the German Army was not interested in the whole business. If there had been a high command in the German Army interested in procurement and distribution operations, the story might have been different. There wasn't any real interest in these matters inside the German Army high command during the whole course of the war.

There was much the same kind of situation in its navy and its air force. The German Navy built submarines, a fair number of them, but this

# RESTRICTED

# RESTRICTED

1494

was a minor rather than a major strategic program. The German Air Force program of course was important strategically. Yet after the Battle of Britain the air force was pretty much tied to defensive operations or to tactical support of ground troops. There was no such broad strategic mission as that undertaken by the U. S. Air Force.

Field Marchall Milch who as Goering's deputy ran the air force wasn't particularly interested in procurement operations and was pretty glad to turn the work over to Speer when the going got tough, especially after the ball bearing industry and jet propulsion plants were heavily bombed. The air force did not play a very vital role in the mobilization of industrial resources.

The story is a little bit different in Great Britain, but not exceedingly different. Chart 4, following page, shows the British Ministry of Supply. This ministry was set up as a central procurement office, separate from the War Office. In addition to that there was a separate Ministry of Aircraft Production, which took over procurement for the Royal Air Force. The navy had its own procurement program, although some common items like small arms and ammunition and clothing were provided from a central source. The chart was drawn as of 1947 and so includes the purchase of aircraft. That was because the Ministry of Aircraft Production was abolished soon after the end of the war and made a part of the Ministry of Supply. One thing that interested me was to find in the Ministry of Supply during the war and again in 1947 that the actual direction of procurement was in the hands of a general from the army. Many military personnel were scattered down through parts of the organization.

The British administrative system does not tolerate much internal conflict. There is no administrative system in the world which is as long on coordination as the British. I think it is primarily because of the peculiar status of the administrative class in the British Civil Service. If you are going to understand how ministries work in England, you have to understand the past history of the administrative class. These men largely out of Oxford and Cambridge, who enjoy the top permanent civil service positions of the British Civil Service, are shifted around from one agency to another. Their career is in government, not in one department. They know one another pretty well. The number of people in this class has never been more than 2,500. They keep in touch with one another and exchange information. They constantly clear matters of mutual interest among themselves and across departmental lines. I sometimes wonder if the British Civil Service doesn't spend more time in committee meetings and talking than in getting anything done. But at least there is very little conflict in this kind of situation. So the relations between the War Office and the Ministry of Supply, and the relations between the RAF and the Minister of Aircraft Production were very smooth. They were very cooperative. There was very little difficulty experienced during the war.

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The general feeling was that the army was made up of good military men, but was short in any real knowledge of industry. The Ministry of Supply accordingly directed general policy on procurement. The system seemed to work because of the peculiarities of the British system of government.

Another interesting aspect of this is that the Ministry of Supply also controlled the use of raw materials and determined what part of the raw materials supply should go into military and what part should go into civilian production. I think this label of civilian production in wartime is a misnomer. The Germans had a better designation. They divided all output into direct military production and indirect military production; this seems better to me than "war" and "civilian." In an all-out war all production is war production, whether it is military end items or whether it is that production necessary to keep the economy going. If the economy isn't kept in running order, you don't have any war production eventually. I think the German labels of direct military production and indirect military production are preferable to our own use of military and civilian production.

Insofar as internal army organization is concerned, note that the Quartermaster General occupies a prominent place in the War Office. He is not under the Chief of Staff. There are three top officers in the War Office--the Chief of the Imperial General Staff, the Quartermaster General, and the Adjutant General. The Adjutant General runs the personnel system; the Quartermaster General determines procurement needs and handles supply distribution. The Quartermaster General is the supply officer of the army and has great influence. The three together--the Chief of the Imperial General Staff, the Quartermaster General, and the Adjutant General--make up the British War Council. The three report to the Secretary of State for War and his principal political and administrative advisers.

These interrelationships, as I said earlier, between the control of the economy as a whole and the part the armed forces themselves shall have in industrial mobilization are issues of continuing complexity under modern conditions. What status and what importance shall the military forces themselves assign to the logistical and procurement organization? If the armed forces believe logistics to be important and if there is a close relationship between strategy and logistics, then the armed forces will wish to keep a major part of procurement under their direct control. But the armed forces do not therefore control industrial mobilization as a whole.

The extent to which some of these lessons may be applicable to our problems in this country is something which perhaps we can explore in the question period to follow.

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1497

I can only end with my conclusion at the start. These problems of interrelationship complicated the industrial mobilization of both England and Germany during the last war. They are problems which require constant attention. There is no easy solution to them, and I do not believe that either country found better answers than we here in the United States.

COLONEL BARTLETT: It would be beneficial if we could get your opinion on the lessons we can draw insofar as they affect our organization. Have you found any type of feasibility test of strategic plans in any organization, such as we have in JCS or such as the contacts between the Munitions Board and ODM in the present situation. Was there anything approaching that?

DR. MILLETT: No, not in Germany; and I can't answer that for the British. I don't know how they handled this issue. In Germany I couldn't find any kind of feasibility planning throughout the war. This interested me very much. I have felt that one of the most important decisions made in World War II was that in November 1942 which by negotiation between the Joint Chiefs of Staff and the WPB determined the maximum military procurement goals for the calendar year 1943. This was done on the basis of how much of the total output could be allocated for war production. The Joint Chiefs of Staff divided that total among the Air Force, the Ground Forces, and the Navy, including commercial shipping. I could not find any evidence of this kind of planning in Germany. The Central Planning Board simply made decisions on a day-to-day, commodity-by-commodity basis, rather than according to an over-all economic plan.

QUESTION: Dr. Millett, can you cast some light on how the Germans financed the procurement program?

DR. MILLETT: I will have to answer that very quickly. In general, what interested me here, too, is that their methods of financing were not very different from our own in this country. There were production loans to industry, advance payments on contracts, the same way as we had here. A great deal of attention was given to price policy. The general disposition in the Speer Ministry was to feel that the fixed price contracts were preferable to the cost-plus. There were certain amounts of renegotiation of contracts handled almost as formally or as legally as we did in this country. There was some government ownership of plants. This was especially true of the Goering Iron Works in the Harz Mountains. Most industrialists didn't think much of Goering's endeavors to build up an iron works.

For the most part, plant expansion took place through the existing organization of Germany, but was financed very heavily by the German Government, using both the finance machinery of the military forces and the machinery of the Ministry of Finance, including the Central bank. By and large their methods were not very different from our own in this country.

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# RESTRICTED

1498

QUESTION: Dr. Millett, one of the problems we had during the war was the resistance of many industrial people to facilities expansion. That was overcome finally by many methods including some sort of government subsidy and tax amortization. Did the Germans have that kind of problem, too?

DR. MILLETT: Yes; you must remember World War II was fought on the heels of a disastrous worldwide depression. It is hard to overcome that kind of psychology in industrial managers when they have had to cope for 10 years or more with declining levels of output, declining markets, and general fear of overcapacity to produce. The same situation existed in Germany. Hitler's whole regime, I think, would never have come into power except for the disastrous levels of unemployment and the industrial curtailment that took place in Germany.

If you will look at the record of I. G. Farben you will find early hostility to industrial expansion, which was gradually overcome. German industrialists stood high in the whole power structure of the Nazi regime and had great influence. Many of the presidents and leaders of German industry were, as I have said, not production men, but finance men. They were the ones very much alarmed about the potentialities of capital investments in plants which would not be productive and would not pay off. They withstood various attempts by the German Government to expand. There was a very elaborate machinery of industrial organization set up in Germany after 1933. I discovered that this was mostly a paper organization. It never amounted to anything; never made any decisions; never was powerful in controlling the growth of German industries, because German industry was fearful of growth.

Growth took place gradually and slowly after 1933, as the markets expanded and the Nazi regime went in for public works, and so on. By the time the war started in 1939 there had been only a small expansion of the productivity plant in Germany. Most of the expansion had to take place after 1939 in those areas where great output was needed for war purposes.

We are going to have a different psychology when and if we get into war again. It will be: How do you curtail output for indirect military supply when you want to increase production for direct military supply? This will not be easy to do.

QUESTION: With our general staff structure, and having a G-4 who is the coordinator of supply, why was it necessary to have the ASF empire during the war?

DR. MILLETT: Well, now, I am getting paid back. I am not really an objective witness on this score. I know the ASF was an extremely unpopular organization in some quarters. As one who served in that organization, I feel a great sense of loyalty and devotion to the whole

# RESTRICTED

# RESTRICTED

1455

organization. But I would be the last person in the world who would maintain that it is the only conceivable organizational structure. Now I shall have to give you in one minute my lecture on organization. I try to point out to people interested in the subject of organization that there are three different aspects of the subject. You never can look at organization and understand it in just any one of these respects. You must understand all three. The first aspect in the public service is political. Organization must reflect certain political struggles for power that go on in our society. Second, organization is constructed around personalities. We must never forget that people make up an organization. Personal relationships are far more important, in my judgment, than organization charts. In the third place, there are technical aspects of organization, and these technical considerations do have some validity but are not necessarily always controlling.

The ASF had no political connotations, by and large. It had a very important personal connotation and it was set up for very important technical reasons. On the personal side I think you can't understand the ASF except in these terms. General Marshall, as Chief of Staff, wanted an organization in which one man would be responsible for procurement and supply. He didn't want any more of the bickering which had characterized relations between the technical services and G-4 in the period prior to World War II. That was partly an aftermath that General Goethals left from World War I. If you will look at the testimony that was given at the hearings in 1919 on what became the Defense Act of 1920, you will find there was much dissatisfaction with General Goethals and the General Staff during World War I. The people who remembered this were still in the Army in 1941. It was inevitable that some of this bitterness should remain. I am not passing judgment on it. It simply existed and was carried on into World War II.

General Marshall wanted to get away from this conflict as much as possible. He was determined he was going to have a different kind of setup. As I understand it he wanted one man to be in charge of logistics, from planning and coordinating to actual performance, General Marshall understood that his job was to fight a global war with a global strategy. General Marshall could not do this if he had to spend much time settling internal disputes. He placed one man in full charge of logistical support responsible directly to him, a person who was an adviser and an operator at one and the same time.

I am convinced that ASF would not have lasted as long as it did if it hadn't been for the personal relationship between General Marshall and General Somervell, and if it had not been for the personal characteristics of General Somervell. Those characteristics alienated some persons; I have no doubt of that at all. Others felt differently, but the new Chief of Staff after World War II saw no immediate necessity to continue the ASF.

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1500

COLONEL BARTLETT: We are grateful, particularly for your opening advice to look at the problem from both a historical and a social viewpoint. I think the class may very well profit by your remarks in their final problem if they look at different organizational structures from both views. On behalf of the college, I thank you very much for your frank and illuminating remarks.

(17 Apr 1953--250)S/n

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