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INTRODUCTION TO MOBILIZATION PLANNING

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SPEAKER -- Dr. Louis C. Hunter, Department of Research,
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INTRODUCTION TO MOBILIZATION PLANNING

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DR. HUNTER:

This morning I am to give the first of two lectures on American experience in economic mobilization. You will have a period of ten (10) months in which to cover the period of the recent war. I am faced with the job of covering seventy-five (75) years in fifty (50) minutes. That means the treatment will have to be general and rather superficial. Yet I think that a review, even though very general, is essential to give certain depth and perspective to the examination of the more recent period. I shall be forced to be rather hurried and, I am afraid, also rather dull. I will have no time for any stories, of which quite a number were told from the speaker's platform during the interim course in the Pentagon. My remarks will contain no classified information, no top-drawer, off the record revelations. I am sorry that this last is the case because I would be tempted to go the War College one better and request, in the interest of security, not only that you take no notes but that before leaving the room you forget everything you have heard.

The lecture today will fall into three (3) broad divisions; the experience of the Civil War in economic mobilization; the same for the First World War; and planning for economic mobilization, 1920-1939.

Prior to 1914 the term "mobilization" was applied to the system and procedures of placing our armed forces on a war basis. In Europe, especially, it had reference to the calling up for active service of the Armed Reservists when war was imminent.

The principal lesson learned from our experience in World War I was that the problems of equipment and supply in the First World War are greater than the problems of placing armies in the field. Modern war, it was learned calls for the mobilization of economic resources as well as the mobilization of men. Since the most acute needs were for materiel and munitions attention was focussed on the industrial aspects of this process and the term "industrial mobilization" was coined. The problem was primarily one of getting industry organized for the job.

In recent years there has been a growing recognition that mobilization of industry is but one phase of a much more comprehensive mobilization of the entire economy of the nation; that manufacturing industry is but the cutting edge of a war economy, and behind this cutting edge we have mines and minerals, agriculture, utilities, manpower, technology, transportation, and all the rest.

The idea of the systematic organization of economic resources in war is very new, but dependence on such resources in war time, of course, is very old. The problem of equipping armies and keeping them supplied is as

old as organized warfare. The mobilization of resources in the past, however, was largely left to improvisation after war broke out. The chief economic preparation for war long consisted in having a full war chest; that is, getting plenty of cash in the form of gold and silver. A full treasury was the best preparation for war for many centuries.

Every war, of course, brings increased demands on the economy for food clothing, equipment, munitions, and supplies. In every war economic resources have to be mobilized to some extent. Manpower must be obtained for soldiers and sailors; raw materials must be converted into necessary supplies and equipment through manufacturing; troops and supplies must be transported to the field of action.

Every war in our history from the Seventeenth Century on down presented its own problems of equipment and supply. But warfare was long waged on a very small scale due to the crudeness of weapons and equipment, the limited number of men available for military service and especially to the small productive capacity of what, during the greater part of our history, was primarily an agricultural economy. Then, too, the crude, inefficient, and costly means of transportation long restricted warfare to a very limited basis. So far as this country is concerned, it was not until the Civil War, the War between the States, that we had anything approaching industrial or economic mobilization; and then, surprisingly enough, it was not the industrial North that first faced the problem of systematically mobilizing its economy for war; it was the agrarian South.

The Civil War introduced a warfare of a new kind and on a vastly larger scale than had been known up to that time. The weapons and materials of war, it is true, were not greatly different from those of the Revolution. The main reliance was on the traditional types of small arms. There was, however, a greatly increased use of the artillery, and the introduction of armor plate marked the beginning of revolution of naval warfare. The remarkable feature of the war lay in the huge scale on which it was fought, with armies running up into the hundreds of thousands; with simultaneous operations in a number of theaters and with the swift movement of armies from one theater to another.

To mobilize, train, equip, transport, and supply huge armies under these conditions obviously presented very great problems. These problems were only solved as a result of the advance of industrialization in this country in the generation before the Civil War. War on this scale was made possible only by the introduction of new methods of production, new machinery, and steampower; by technical and managerial developments in the iron industry, the metal-working industries, the textile, shoe, and clothing industries, and many others. Large-scale production of munitions equipment and supplies was thus made possible.

But the key to the new mode of warfare is to be found above all in the revolutionary methods of transportation, supplied by the railroad and the steamboat. This was the first major war in history in which the railroad played a significant role. It made possible extraordinary feats in the large-scale movement and supply of the armies.

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On the economic and industrial side the North, of course, had great superiority over the South. It was far ahead in industrialization. Its transportation facilities were better. It had a greater population and far greater wealth. Because of superior economic resources the North was able to wage war on a large scale and yet carry on business and other economic activities pretty much as usual.

The economic growth of the North was slowed down slightly, but not to any great extent during the war. There were few scarcities and comparatively little civilian hardship. Economic conditions, it is true, were, to some extent, abnormal. There was a business boom of large proportions due to government contracts. There was inflation of the currency and of prices because of the methods adopted for financing the war.

In the first year of the war, too, there was a great deal of waste and confusion in procurement due to the lack of experience in dealing with the problems of supply on a tremendous scale. In no proper sense of the term was there industrial or economic mobilization in the North; that is to say, there was almost nothing of the central planning and direction of the economy as a whole which marks the true war economy. The equipment and supply of the Federal Army and Navy was simply a very difficult procurement job.

The position of the South stood in marked contrast to that of the North. The South had a predominately agricultural economy, one dependent on foreign markets which were now cut off. The South had very limited industrial resources, being dependent on the North and on England for most manufactured goods.

An especially serious weakness was the inadequate transportation system and facilities of the South. Because of her limited resources, the South could only hope to win, on the economic front, if these resources were applied with maximum efficiency.

Her supply problems, surprisingly enough, were not primarily in the field of munitions. The military position of the South was never, I believe, seriously threatened by the lack of basic weapons, although the Confederate Armies were quite weak in artillery. She had met her needs for small arms, powder, and shot through hurriedly improvised manufacturing programs, blockade-running and, so far as small arms were concerned, to a surprising degree by battlefield salvage.

The most serious problems of war production and supply centered around such items as clothing, shoes, and equipment made of leather. Salt, interestingly enough, was probably the outstanding "strategic commodity" of the war because of its use in the preservation of meat for both civilian and military use. Medicines presented another difficult problem of supply.

Perhaps the most serious Confederate shortages were in transportation, equipment, and supplies which the South had been accustomed to obtain from the North and from England-locomotive cars and other equipment. There also was a very serious shortage of horses, especially after western supplies were cut off following the establishment of Federal control of the Mississippi.

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The situation of the Confederate Government really called for a centrally-planned and directed mobilization of the southern economy for war, but for such mobilization there were no precedents; there was no experience. Moreover, the southern states were opposed, on principle, to the centralization of authority. One of the major objectives in the war, of course, was escape from the increasing centralization of power in the Federal Government. Yet, under the pressure of the urgent war necessity, the Confederate Government took steps which in substance, gradually although incompletely, did mobilize the southern economy for war. These measures included the establishment and operation by the Government of plants for the manufacture of a variety of things -- shoes and clothing, small arms and artillery, boats, powder, lead, and salt.

The Confederate Government took active direction and control of foreign trade, establishing a long list of goods, the importation of which was prohibited, and owning and operating blockade-runners. Certain materials and manpower controls were set up. They used the draft, or more correctly speaking, exemptions from the draft, to bring pressure on labor-hungry manufacturers to produce under government contracts instead of the more profitable civilian markets. Draftees were frequently detailed for essential civilian services in manufacturing, and other economic activities.

The raw materials supply was controlled in a crude and limited manner by the Quartermaster Department through its authority over transportation. This control over transportation was weak, ineffective, and half-hearted, but it represented an attempt to deal with this serious problem. There was some control of cotton and tobacco planting in an effort to limit production of commodities which had slight value in a war economy, due to the inaccessibility of markets. There was crude price-fixing on a few commodities. They had new, unusual, and very painful taxes. They even authorized the destruction of cotton, if necessary, to escape capture by the invading armies from the North.

The record shows that Confederate statesmen, without experience, without plans of any kind, moved slowly, haphazardly, and rather blindly toward a centrally-directed war economy. But they failed to move fast enough or far enough. The economy literally broke down and the cause of the Confederacy broke with it. The Confederacy was closer to total war than anything that has been experienced in this country prior to World War II. Indeed, from some of the accounts of life in the Confederacy, we obtain a picture of a civilian economy that approximated conditions of total war to a greater degree than that of the country in the recent war.

In many respects, Confederate experience anticipated the problems of economic mobilization faced by the major powers in the First and Second World Wars, but this experience received little serious attention.

Between 1865 and 1914 there were extraordinary advances in both the economic and military fields. In this, as in other advanced nations, a long series of major technological developments associated with the industrialization took place: developments in the metal and metal-working industries. Electricity came in as a new source of power; and even more revolutionary, in its implications for warfare was the invention and development of the internal combustion engine.

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Then we have the rise of a whole new series of industries -- chemical, rubber, aluminum, automobile, electrical, and all the rest. The innovations were accompanied by equally important developments in large-scale organization and production, the trust, the huge corporation, the cartel, and the holding company appears on the scene. In this country such great industrial giants as U. S. Steel, A. T. & T., General Electric, Anaconda Copper, Standard Oil, and the Pennsylvania Railroad appear on the scene. An entire transformation of the economy relative to industrial organization took place.

There were also major developments in methods of mass production that were unknown or little practiced prior to the Civil War: continuous process methods, the interchangeable part system, standardization, assembly line techniques, automatic machinery, laboratory controls, efficient factory layout, and "scientific management" studies.

Industrialization with the extraordinary expansion of productive capacity resulting from these developments spread, in one degree or another, to many parts of the world. No nation could possibly hope to remain a major power without industrialization. By greatly enlarging the productive capacity of the great powers, it provided the basis for a new kind of warfare, using novel and extraordinarily effective weapons and materiel and organization on a far vaster scale than at any previous time.

The key to the new kind of warfare can be found, on the one hand, in the mechanization of combat and, on the other hand, in the industrialization of supply. In the Civil War the advance of industrial production and distribution had made possible the movement and supply of armies that were, for that day, of great size. But actual combat in the Civil War, with minor exceptions, continued, as for centuries, to be essentially a hand operation. Still they relied mainly on hand weapons.

By the outbreak of the First World War, mechanization had been introduced into combat as a result of the general introduction of the breech-loading rifle and metallic cartridge, the machine gun and the breech-loading rapid-fire field gun which a perfected recoil mechanism made possible. The internal combustion engine was applied to combat and supply in the tank, the airplane, and the truck.

Naval, as well as land, warfare had been revolutionized as a result in the previous half-century, of the shift from sail and wood to steam and steel. With this new and mechanized materiel, warfare was carried on on a scale and with an intensity that was unprecedented. Huge conscript armies were mobilized and put into the field. The early attempts in the war in Europe to force a quick decision were followed by a prolonged stalemate of trench warfare on fronts hundreds of miles long. The high rate of fire resulted in the expenditure of huge amounts of ammunition.

Terrific barrages of massed artillery fire were continued on extended fronts at times for many days. It wasn't long before the belligerents were all in a desperate position because of the rapid, unprecedented and quite unexpected depletion of their ammunition reserves. The belligerents,

therefore, found themselves compelled, in the midst of a terrific war, to reorganize the whole system of procurement and production for war. The result was the systematic mobilization of the economies of the belligerent powers for war. The traditional methods of procurement could not deliver the goods. Since no one had realized the necessity of economic mobilization, there had been no plans prepared for it; improvization was therefore necessary.

Economic mobilization in the United States was likewise largely improvised, although we had, of course, some forwarning and took some steps in preparation for the new type of warfare. The beginning of our industrial mobilization, as it was then called, resulted from the mounting stream of orders from the Allied powers. As the war advanced, the Services took a number of measures in the direction of industrial preparedness. Several boards and commissions were set up in 1915 and 1916 to study our production resources and problems, especially in the case of steel, munitions, and aircraft.

There was also an interesting General Staff Corps Report, in the Fall of 1915, on the mobilization of industries for war purposes. In this report the experiences of the European belligerents were reviewed and measures to prepare for industrial mobilization were urged.

But the over-all results of these commissions and boards were not impressive. Good preliminary studies and surveys were made, but there was no follow-up; no action was taken. So when we entered the war in April 1918 our preparations were slight. At that time, April 1917, the position of the Allied powers was extremely critical. The urgency of the situation was such that it demanded the mobilization of all our resources with the greatest possible speed. Heretofore only a small part of American industry had been engaged in the production of war goods and, for the most part, they were producing the simpler types of munitions. The scale and complexity of the production job was greatly increased by the decision to send a huge expeditionary force to France. The United States faced the tremendous task of quickly converting our immense industrial resources to war production.

The first year was one of great confusion, wasted motion, and misdirected effort. There was a heavy rush to get into war production. This soon brought great pressure on equipment, on facilities, and on materials. There was active competition between the procurement agencies to place contracts and obtain supplies. The result was that prices soared; the markets became disorganized; and scarcities mounted. There was inadequate knowledge, on the one hand, as to what the Armed Services needed and, on the other hand, we were equally ignorant still as to the situation regarding industrial facilities, raw material supply, and productive capacity generally.

There was no central authority to obtain and organize the essential information, to coordinate the placing of contracts, and to determine the order and importance of things that were needed. Centralized planning and direction were early recognized as primary essentials in the production pro-

gram. But there were many obstacles before the necessary organization could be set up to do the job, especially to establish and make effective the necessary controls. We lacked the experience. We also lacked the administrative machinery. The general public was very slow to recognize that a modern war economy is, of necessity, a planned and controlled economy.

Without a plan we had to improvise as the production program developed. Centralized planning was not only foreign to the American experience, but it was very repugnant to a people who were strong individualists and who believed that the role of the Government should be kept to the barest minimum. The result was that we moved very slowly and reluctantly in the provision of the necessary war organization and controls.

The first step was the creation of the Council of National Defense to provide the over-all coordination of industries and resources. This Council set up, as its working-body, the Advisory Commission to the Council of National Defense. This Advisory Commission, in turn, was supplemented by certain other boards -- the Munitions Standards Board and later the General Munitions Board -- to effect coordination between the services' procurement.

It was not until the end of July 1917 that the War Industries Board was established as a central war production agency. Nearly nine months passed before the War Industries Board was given real authority, power, to direct and coordinate the war production program. Under Bernard Baruch's direction the War Industries Board became a kind of industrial General Staff for the direction of operations on the economic front.

With the War Industries Board functional divisions were set up to deal with such matters as priorities, facilities and inventories, requirements, price-fixing, and all the rest. Some fifty-seven commodity sections were established under the Raw Materials and Finished Products Divisions to deal specifically with problems of production in these areas. War Service Committees were set up, which were the predecessors of the Industry Advisory Committees in the recent war.

When it was finally given the necessary power, the War Industries Board, of course, did a very effective job in the conversion and expansion of facilities, opening up new sources of raw materials, the conservation of scarce materials and labor, the effective distribution of materials where most needed, and price control. Other agencies, in time, were set up to handle related problems in the field of food and fuel, railroad, shipping, labor and foreign trade.

Nearly a year passed after our entrance into the war before the mobilization of our economic resources was really very far advanced. The controls necessary for effective operation were strongly resisted and they were very slowly imposed. For example, the automobile industry strenuously opposed all suggestions for curtailing production, and succeeded until the great German drive was on in the Spring of 1918 when an agreement was reached by which the production of automobiles was somewhat reduced.

Eventually, very sweeping controls were established in fields affecting especially manufacturing and construction industries. The main controls were those established over materials through a system of priorities and allocations applied chiefly to the scarcer metals but also in one degree or another to such materials as rubber, sulphur and chlorine. Labor controls were nonexistent in the war. The rationing of civilian goods was almost unknown, except, on a quasi-voluntary basis, in the case of wheat and sugar. Domestic fuel rationing began in April 1918, and control over the preparation and distribution of coal and petroleum products was effected through a licensing system.

Little or nothing was done to control prices until after we entered the war. When price controls were established in July 1917, prices already had risen some 85 percent above the prewar level. From that time on they were fairly well stabilized until after the end of the war.

Some of our toughest problems developed in the field of transportation, where the Government stepped in eventually and on January 1, 1918, took over and operated the railroad system directly. Six months later the telephone and telegraph services also were taken over and operated by the Government. Under the Emergency Fleet Corporation of the United States Shipping Board a tremendous shipbuilding program was carried out.

The mobilization of the American economy for war, in many respects, was a very great achievement. With only a modest headstart from Allied orders we built up a war production system of tremendous capacity. We supplied our Allies with great quantities of food, raw materiel, and manufactured goods; recruited, trained, equipped, and transported a huge army to France; moved from an economy almost without controls to one which was, in some fundamental respects, not only controlled but regimented.

A At the same time, however, there were a great many weaknesses and shortcomings in the war production program. There were great delays, for example, in establishing the central control and direction necessary for a full and effective operation of the economy in war. There were great delays and mistakes in the determination of military requirements, which with a miscalculation of the probable length of the war, prevented us from throwing the full weight of our industrial power into the conflict. Production goals were set so high that a disproportionate share of labor, facilities, and materials were absorbed simply in tooling up for production. Production was just getting into high gear when the war came to an end. The result was that in such major items of materiel as artillery, shells, and airplanes, our Army was supplied, to a very great extent, by our Allies.

Another major weakness in our war production effort was the failure to place sharp restrictions on many lines of production not essential to the war effort in order to force rapid conversion to essential war production.

Finally, the administration gave so little attention, in fact it gave virtually no attention, to the problems of industrial demobilization and reconversion that it was without plans or preparation for the difficult transition from a war to a peacetime economy. The inevitable result was that we ended the war in as much confusion as we began it.

The experience of World War I - it was called the "Great War" then - drove home two major lessons: first, the staggering proportions of the equipment and supply problem in modern mechanized and mass warfare; second, the grave dangers of the failure to make careful advance plans and preparations for coping with this problem. Modern industry and technology made available an enormous productive capacity which could be, and therefore would be, brought to the support of war by powerful nations. It was clear that plans for military mobilization must be paralleled by plans for mobilizing the industrial and economic resources of the nation. The experience of the first World War had demonstrated the heavy costs of improvising in this field. The lack of plans had delayed our active and full participation in the war; it had resulted in widespread confusion, waste and duplication in procurement; and it added substantially to the cost of the war in lives and in money.

In the reorganization of the military establishment following the war, a determined effort was made to heed the lessons of this experience. In the National Defense Act of 1920 Congress made provision for industrial mobilization planning. Section 5a of this act placed responsibility for such planning on the Assistant Secretary of War. In addition to his duties in the supervision of all current procurement of military supplies, the Assistant Secretary was charged with the preparation of plans for wartime procurement and for mobilization of essential materiel and industrial organizations. Confusion regarding the division of responsibility for industrial mobilization between the General Staff and the Office of the Assistant Secretary was removed by the decision of the Harbord Board in 1921. Under this decision the plans of the Office of the Assistant Secretary were to be based upon, and guided by, requirements as established by the General Staff.

To carry out the War Department's responsibilities for industrial mobilization planning, three agencies were established during the next several years: The Planning Branch, Office of the Assistant Secretary of War in 1921; the Army and Navy Munitions Board in 1922; and the Army Industrial College in 1924. In addition to the planning work of these agencies on the staff and policy level, there were the planning activities on the operating level in the supply arms and services. Here the hard pick-and-shovel work of translating over-all planning policies into actual working plans for the procurement of specific articles was carried on. The supply arms and services provided the direct connecting link between the over-all plans and the industries and individual plants to be mobilized in a national emergency.

In order to carry out the Assistant Secretary's responsibility for industrial mobilization planning, the Planning Branch was organized into a number of divisions: procurement plans, allocations, commodities,

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standards, contributory, construction, and the like. For each major item of munitions and equipment the Planning Branch sought to determine how much was needed, where these requirements could be satisfied, what production difficulties were apt to arise, and how these difficulties could be overcome. The Planning Branch made up the Army side of the Army and Navy Munitions Board. Throughout the planning period the Planning Branch carried the main load of industrial mobilization planning. Not only had responsibility for this aspect of military planning been placed by statute in the Office of the Assistant Secretary of War, but with a fleet in being, the Navy never felt the same urgent need for peacetime planning as did the Army. For this reason the product of planning was usually, and with some justice, known as the Army Industrial Mobilization Plan.

The need to bring the Navy into the planning program was early recognized and provided for in the setting up in 1922 of the Army and Navy Munitions Board. Granting the difference in the Navy's position, it was essential to provide for the exchange of information and for the coordination of procurement plans relative to such matters as the allocation of facilities and industrial capacity. Without Navy participation the Army's carefully worked out plans for mobilizing industry might be upset by independent and conflicting action by the Services in wartime procurement. For nearly ten years, however, because of the inability of the Services to reach agreement on basic planning procedures, the Army and Navy Munitions Board was largely inactive. In 1932 the Army and Navy Munitions Board was reorganized and thereafter served as active coordinator of Army and Navy planning in this field. The Board was composed of the Assistant Secretaries of the War and Navy Departments but its activities were carried on by a number of divisions, paralleling those of the Planning Branch, under the direction of an executive committee. The Army and Navy Munitions Board was sponsor of the Industrial Mobilization Plan, and in the event of war it was intended that it should serve as the key agency for industrial mobilization during a transition period until the super-agencies provided for in the Industrial Mobilization Plan could be organized and take over the load. Actually, with the advance of the defense period in 1939, the Army and Navy Munitions Board became the central coordinating agency for Army and Navy procurement.

The Army Industrial College was established under the direct supervision of the Assistant Secretary of War in 1924 to train officers in the supervision of military procurement in wartime and other phases of industrial mobilization planning. The Army Industrial College took over and placed on a systematic basis training hitherto done on a quasi-apprentice basis in the Planning Branch. A careful program of studies was developed covering the various aspects and problems of industrial mobilization. The relationship between the Army Industrial College and the Planning Branch was close and important contributions were made by both faculty and students to the planning program, through the interchange of ideas and the preparation of studies dealing with specific planning problems. Over a thousand regular and reserve officers received valuable training for wartime duties in the Army Industrial College prior to the outbreak of World War II.

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The planning work of the supply arms and services was carried on under the general supervision and coordination of the Planning Branch. In general, planning in the Supply Arms and Services was decentralized into the district procurement planning offices. The district offices made surveys of industrial facilities and industrial capacity, arranged for the allocation of facilities, sought to match supply against demand, gave information and advice to industry regarding industrial mobilization plans and, in general, spread the gospel of industrial mobilization planning. The procurement planning districts of the supply services provided nuclei around which war procurement organization could be built.

The planning activities of the several planning agencies were directed along two broad lines: 1) plans for meeting the procurement responsibilities of the services in time of war; 2) plans for the over-all organization and direction of the economic resources of the nation for war. Little attention was given to the second type of planning until the 1930s. In procurement planning attention was fixed on the major steps involved in the wartime procurement of the major items of materiel: determination of types of material required, that is, what was needed; computation of requirements, that is, how much was needed and when; allocation of facilities as between Army and Navy and between the different supply arms and services; development of schedules of production for the more difficult end items; and the preparation of industrial facilities for war production through plant surveys, production studies, and educational orders.

The more spectacular side of industrial mobilization planning had to do with the over-all coordination and control of the economy for war. This was referred to in the 1939 edition of the Industrial Mobilization Plan as the "utilization of national resources and the mobilization of industry in time of a major war." Although the attention of the planning agencies was for some years concentrated on procurement planning, it was early recognized that however essential this aspect of planning was not enough in itself. The experience of the first World War had demonstrated that the peacetime economy, unsupported and uncontrolled, could not stand up under the tremendous strain imposed by war procurement. Under war conditions of unlimited demand and unlimited purchase funds opposed to limited materials, limited facilities, and limited manpower, the normal relationships and functioning of the economy inevitably break down. In modern war, as we have seen, the armed forces are but the cutting edge of military power which is composed of all the resources of the nation. Not only must all the economic resources of the nation be harnessed to the war effort but they must be used with maximum effect. The disorganization of the economy under the impact of mushrooming procurement goals cannot be allowed. Poor coordination of economic resources may have as harmful results as poor coordination of military forces. The normal controls of the market place, of supply and demand, of the price system simply won't function properly under war conditions. A war economy is of necessity a planned and controlled economy as contrasted with the peacetime economy in which economic forces have substantially free play.

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Thus, the problems facing the planners in working out a program for the over-all control and direction of the economy were tremendous. What controls were necessary? How should they be exercised? And by whom? By what agencies should the powerful controls over the economy be exercised? On the last issue -- the most crucial one in many respects -- three rather obvious answers may be given. The over-all controls might be exercised by the agencies having power over procurement, the military services. Or they might be exercised by the regular peacetime agencies of the government whose functions bore the closest relation to them. Or they might be placed in the hands of newly created war or emergency agencies. There were obvious objections to the first two proposals. In view of the prevailing civilian distrust of the military, there was slight chance of the procurement authorities being charged with the exercise of controls over the economy as a whole. It was recognized, too, that the need for an arbiter or umpire to decide conflicting claims of the various sectors of the war economy, especially as between military and civilian demands, made it desirable for the over-all controls to be placed in a non-military agency. It was believed on the other hand that the old-line civilian agencies were not too well equipped to do the job. Peacetime routine operations created grooves in practices and attitudes from which it would be difficult to escape. The leisurely tempo of operations and the limitations of knowledge and skills required for the control of a war economy were further arguments against the use of the old-line agencies.

The decision was early reached by the planners to follow the example afforded by the first World War and rely upon specially created war agencies for the exercise of the essential over-all controls, the so-called "super-agencies." How then should the wartime functions and controls be divided among the super-agencies? Should the major controls be given to a key super-agency or should they be distributed among a number of super-agencies, all on the same level of authority? There was considerable controversy on this question and more than one change of mind among the planners.

Many other questions had to be decided in providing for the over-all organization and functioning of the war economy. What were the relationships to be between the many agencies, old-line and emergency, military and civilian? What functions and powers should be vested in what agencies? How to arrange the internal organization of the emergency agencies -- and so on down the line to the more detailed problems of wartime administration. The officers and civilians in the planning agencies studied and restudied these problems, considered alternative solutions, and reached conclusions which were revised from time to time. For some fifteen years they worked and reworked their plans, on the basis of new data, new studies and new ideas.

The planners were not a large group. The average number of personnel in the Office of the Assistant Secretary of War engaged in this work probably didn't average more than twenty or twenty-five during the entire period. As late as August 1939, this personnel consisted of seventeen

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officers and fifteen civilians. The Army and Navy Munitions Board contained the same number on the Army side with a smaller number from the Navy. In the thirties there were six or eight officers on the staff of the Army Industrial College and a student body of from sixty to eighty officers. In the supply armes and services the number of men assigned to planning was very small in proportion to the size of the job to be done.

The most publicized result of all this planning activity was a series of Industrial Mobilization Plans. The first came out in 1931, the second in 1933, the third in 1936, and the third and last edition in 1939. To trace the evolution of these several plans is not possible here. Two of the studies on your list of collateral reading discuss these matters in considerable detail and these can be examined to the extent of your time and interest. There is Dr. Thatcher's Plans for Industrial Mobilization, 1920-1940, and Dr. Yoshpe's study with a similar title which gives less attention to the broad over-all plan and more to the evolution of the procurement aspects of industrial mobilization planning than does Dr. Thatcher's work.

In summary, the significant thing to keep in mind is that during the years between the first and second World Wars, the military services, especially the Army, engaged in long and careful planning. The major end product of this planning activity was a series of Industrial Mobilization Plans which laid down, in main outlines, a system of wartime organization and of wartime controls of the economy which embodied, to a large extent, the lessons and experience of industrial mobilization in World War I. Yet when war finally came, all this work seemed to go for nothing. The Industrial Mobilization Plan, was in the main, ignored and the actual mobilization of the economy followed a course far different from that contemplated by the planners. For the most part the Plan went into the waste basket. The reasons for this outcome will be considered in the lecture next Monday.

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