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INDUSTRIAL MOBILIZATION

by

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It is my privilege, pleasure and honor to present to the students of the Foreign Service School of the State Department an outline of Industrial Mobilization. This subject will be traced from its origin, in a discussion of the development of the movement and its meaning references are continually made to lessons drawn from the World War. The purpose of these references is not to criticise the marvelous accomplishments of industry during that hectic period but rather to emphasize the fact that we are now profiting by that costly experience.

Industrial Mobilization had its origin in the World War. During this great conflict, and for the first time in all history the entire resources of nations were marshalled for the needs of battle. For every boy in khaki four men in civil life were required in the Industrial Army of the nation. A chain of perhaps a million different kinds of items spanned the Atlantic Ocean and lengthened by thousands of miles to the farms, forests, mines and factories throughout America. Our vast industrial resources were just beginning to be mobilized twelve months after our first fighting troops engaged the enemy.

Lack of Industrial Preparedness seriously limited our ability to wage war. Shortages in supplies developed at once and were felt throughout the conflict. During the latter part of 1917 our troops were sorely in need of winter clothing. About this time also American industrial and transportation systems were so ensnared as to threaten the success of our participation with the Allies. It seemed to be the general impression that the best way to win the war was to pile everything in freight cars and get these supplies to seaboard, whether ship transportation was available or not. Usually it was not. Up to the very time of the Armistice no American tank or fighting plane had reached the battle front. We fought the war principally with borrowed artillery. America had learned a bitter lesson in Industrial Mobilization.

Fortunately, America profited by this lesson. In the hearings before the Congress on the National Defense Act of 1920 the weight of evidence is conclusive that our people were alive to the necessity of placing the responsibility for the business affairs of the Army under a civilian head. The American people were resolved that this state of industrial unpreparedness should never occur again. Responsibility for planning the greatest business undertaking in the world, the mobilization of American industries, was definitely fixed in one civilian, the Assistant Secretary of War. Section 5a, National Defense Act of 1920, charges the Assistant Secretary of War with responsibility for the "assurance of adequate pro-

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vision for the mobilization of material and industrial organizations essential to war time needs".

This was a revolutionary change in the organization of the Army. For the first time in the history of the service the military affairs were segregated under the Chief of Staff, the General Staff and the Fighting Arms while the purely business matters were placed under the Assistant Secretary of War, an Industrial Staff and the Supply Branches. While the Spanish American War led to the creating of the Army War College to train our General Staff Officers, it took the World War to demonstrate the need for the present Army Industrial College which develops an industrial staff from supply officers, training them in the broad economic principles underlying Industrial Mobilization and Industrial Strategy.

Obviously, the Assistant Secretary of War is not charged with the actual mobilization of industry in time of peace. He has no such vast control over industry. He is required by law to assure adequate provision for mobilizing industry for war time needs. He provides this assurance by planning. Upon the extent to which he develops these economic plans directly depends the extent to which he attains his goal, Industrial Preparedness, for the nation. Nor is the Assistant Secretary of War given authority to execute these plans. Authority for the actual mobilization of industry can be delegated only by the President of the United States in exercising war powers. Moreover, the extent to which these plans will be utilized in the event of an emergency depends primarily upon the extent to which we develop and keep up to date sound flexible plans in cooperation with industry. A thorough knowledge of these plans throughout American Industry promises well for thorough execution.

The cooperation of industry has been most gratifying. The necessity to avert chaotic conditions both at the beginning and after a major war is fully realized by our present generation of business men. They consider the splendid service which they are voluntarily rendering to widen the horizon and extend the influence of Industrial Preparedness as a premium on a Patriotic Insurance Policy. This policy guarantees on the one hand that any nation will hesitate to attack prepared America. This Policy thereby serves to strengthen America's influence in stabilizing the Peace of the World. On the other hand in case our country is forced into war the security of American business, American homes and firesides is likewise guaranteed.

In organizing our office for the mission imposed by Congress every effort is being made to capitalize the experience of the War Industries Board, all records of which are repositied in the office of the Assistant Secretary of War. Since the War Industries Board, particularly at the time of the Armistice, had developed organizations and methods which were effective in mobilizing American industries it is to be expected that our set-up parallels theirs in essential features. Thus, provision is made for supervising and coordinating the procurement activities of the seven supply branches (ordnance, Quartermaster, Engineer, Air Service, Signal, Chemical Warfare, and Medical) in such matters as manufacturing facilities, raw materials, priorities in production and

distribution, prices to be paid, contracts to be let, and demands in power, finance, labor and transportation.

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We have divided the United States along industrial lines into fourteen War Department Procurement Districts. The main reason for this decentralization is to expedite procurement, since Time is the all important factor in war. A representative of each Supply Branch called the District Chief would be in charge of the actual procurement, inspection and acceptance of supplies in the districts during war while general control, supervision, and coordination of their operations would be centralized in Washington. In time of peace these District Chiefs conduct surveys of facilities and plan the solution of procurement problems with which they would be faced in an emergency

Should we ever be forced into another war it will not be necessary to improvise the complete structure from the ground up as was the case with the War Industries Board and other agencies created in the stress of the emergency. All such delay, confusion and trial and error should be avoided. There will be a sound going organization and well developed, simple, flexible plans which have been perfected over years of peace with the hearty cooperation of industry. The existing organization could readily be expanded to meet a major national effort by calling in reserve officers and industrial leaders with whom we have current contact in time of peace, and existing plans intelligible to industry could be executed without misunderstanding and delay.

I do not wish to create the impression that our plans are near-completion. While very encouraging results have been accomplished both within the Army and between the Army and the Navy through the medium of the Army and Navy Munitions Board an explanation of the vast scope of the work will of itself carry the conviction that years of work stretch ahead before America can be assured of adequate Industrial Preparedness.

The first step in developing Procurement Plans is determining Requirements. In other words, before we are prepared to place an order we have to know what we want. Then it becomes necessary to locate the best factories and plants where these war needs can be produced in the quantity and in the time demanded. An estimate of requirements in finished items is made in Washington by the Chief of the different supply branches, while a determination of the facilities where these supplies can best be produced is made by surveys in the field under District Chiefs.

As we discuss these different steps in referring to some of our major plans it may be well to point out in passing the way we are profiting by some of the typical lessons of the World War.

Let us start with requirements. We know what we need. We didn't know our requirements in the past war, and as a result bought millions upon millions of dollars more supplies than we could possibly use. In the item of leather alone we bought about \$240,000,000 more than was actually required.

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Our requirements are now based upon a major defensive effort in accordance with a Basic Mobilization Plan drawn up by the General Staff. accordingly, we are presenting industry with a major project composed of thousands of major procurement problems. We are confident that when industry has prepared plans to meet this major project that any procurement program of less magnitude can all the more readily be met. That is, if war were declared by Congress and the particular war were to call for the execution of some special strategical plan as drawn up by the Joint Army and Navy Board we could scale down the individual requirements in a few days at the most to meet this special plan and industry would be prepared to go ahead at the flash of telegrams or radio messages through the air.

The very opposite state of affairs existed before our entrance in the World War. One branch of the War Department, for example, had gone as far as perfecting detailed plans for equipping 500,000 men. But the plans practically stopped there. These plans were kept secret. Few officers were acquainted with them. Industry did not even know of their existence. They were too secret, too inflexible. They did not allow for expansion. Consequently they could not work. In fact, even after our entrance in the war no one could visualize at the time 300,000 men in khaki with their equipment and supplies being transported across the Atlantic each month. We thought that all we could lend to our Allies was moral and financial aid. By contrast, under the operation of our present plans which will take several years more to perfect it is estimated that as many as eight million men may be withdrawn from our population to the colors if necessary and still the industrial power of America will be on the increase rather than on the wane under the impetus of co-ordination and cooperation arranged for in advance, and the assistance to be rendered industry by the American Government.

The Basic Mobilization Plan calls for the mobilization of about 4,000,000 men in two years. Of course, our plans for conversion, substitution, conservation and curtailment of industries and materials and infiltration of female labor granting preferential treatment in men, money, transportation, power and materials to the most essential industries have to synchronize with the withdrawal of men from industry as these men are called to the colors. While military plans have to be changed continually to meet the will of the enemy, industrial plans have a far more stable foundation in conforming to our own will, that is, the will of the American people. In this way there should be no disruption or dislocation either in the transformation of American industry to war purposes or during the period of reconstruction after the war. In this way too, once we are prepared for the major project any programs based upon the special emergency confronting the country may be readily fitted into the larger picture.

In spite of the fact that many of our industries were working on Allied orders before we entered the conflict and were readily diverted to our own war program, and in spite of the fact that our Allies furnished all necessary equipment to our troops which was lacking when we sent them abroad, we are attaining a status in Industrial Preparedness which will more than compensate for these particularly favorable conditions and will result in the saving of millions of dollars in war reserves.

A few examples of our requirements may be interesting in suggesting the scope of the work:

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The cut soles of shoes required would form a pile 375 miles high or 68 times taller than Mt. Everest, the highest mountain peak in the world.

Requirements in cal. .30 cartridges if placed end to end would form four girdles about the earth at the equator.

The number of airplanes required would extend from here to the moon with a distance apart in flying time of less than five minutes.

It took fifty officers over a year to calculate these requirements. I believe you will admit that this time was well spent when you reflect upon the saving of millions of dollars in overbuying and the saving of months of delay in starting production. Industry will be prepared to start at once on procurement orders which may be increased as the military and naval situation demand to a project of the greatest magnitude.

Before we actually survey facilities an intermediate step is taken. Chiefs of Supply Branches in Washington apportion their requirements for each item equitably over the fourteen War Department Procurement Districts. This apportionment is based mainly on the capacity and field service of the facilities in the district. In this way we spread the war load out over the whole country. We avoid having plants booked a year or more ahead of their capacity. We obviate congestion in power, labor and transportation such as occurred in the World War when about 85% of our orders were placed in the congested district north of the Ohio and east of the Mississippi River.

Last year it was gratifying to note when the Assistant Secretary of War visited Milwaukee, Wisconsin, and checked up the status of procurement plans in the Chicago District that the Quartermaster load in particular in that District would probably be twice as great as the World War load. Greater advantage is being taken of the thriving agricultural, dairying, meat, clothing, wood, automobile and steel industries in that district. Similar results are anticipated in the San Francisco District which will be checked up by personal visit of the Assistant Secretary of War around July of this year. Current analysis of the major district loads by the office of the Assistant Secretary of War and the Army Industrial College have failed to disclose any unbalanced apportionment to date which might call for readjustment by the Assistant Secretary of War. Moreover, the Ordnance Department and the Air Service which require a large number of new facilities are continuously regulating their load on those localities where economic congestion occurred during the World War.

After this apportionment is made the various District Chiefs know the problems they have to solve as represented by the requirements apportioned to them. From their familiarity with the industrial activities in their districts they request the allocation of facilities for purposes of survey. They make certain that the facilities allocated to them can produce the requirement by surveying these plants and factories in such detail as may be necessary. Beyond the assistance rendered by industry to the surveying officers there is often required a detailed "factory plan" particularly in the case of non-commercial

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items. Many commercial establishments have voluntarily gone to the expense of thousands of dollars in preparing "factory plans" by working up the technical manufacturing processes and their requirements in power, labor, transportation, machine tools, jigs, fixtures, and gauges. They are determined to save every second of time possible by planning. They want to be prepared to leap into action at the crack of the starting pistol, should the emergency ever arise.

Often two or more supply branches request the same facility. These conflicts are reconciled or adjusted by the Allocation Section of the Office of the Assistant Secretary of War. Joint allocations are held down to a minimum. Of 20,000 facilities allocated to date less than 500 are jointly allocated. About fifty per cent of the total allocations have been surveyed.

You can readily appreciate the value of this work. We will not have a repetition of supply branches competing against each other for the service of facilities. It will not be necessary to convene numerous boards and committees of business men to find out the best places to purchase supplies. We will not be swamped by thousands of letters, telegrams and visits of patriotic manufacturers who wanted to serve in the past war but who could find no one who had a clear picture of industrial mobilization, nor anyone to indicate the best direction in which they could bend their efforts.

Moreover, by providing that no facility shall be given a load greater than fifty per cent of its capacity our plans look forward to the period of reconstruction. The facilities should retain adequate commercial trade during the war so that bankruptcy, failure, and economic catastrophe will not be staring them in the face upon the sudden cessation of hostilities.

Briefly, I would like to call attention to certain of our broader plans which transcend purely naval and military lines and reach to the farthest corners of the economic activities of the nation. Let me again emphasize the fact that the Assistant Secretary of War is charged by law with the responsibility of preparing all essential plans for industrial mobilization even though he is not charged by law with their execution. He cannot shirk this responsibility no matter how small or how great may be the assistance rendered him by other governmental agencies or by industry.

I believe that the Congress was very wise in not placing this responsibility in a military or a naval board or in a board of industrialists but in nailing this responsibility upon one office, upon one man, the Assistant Secretary of War. In the preparation of these plans to meet Army needs we must be sure that we do not interfere with the needs of the Navy and essential civilian requirements. We go much further than this in seeking the active cooperation of all concerned. In point of fact, so much assistance has been rendered by industry, that these plans have been aptly termed "The Business Men's Contribution to National Defense." Among the many examples of plans developed in entirety by civilians are those on minerals of major importance in national defense prepared by the American Institute of

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Mining and Metallurgical Engineers upon request of our office. Their studies and recommendations have been incorporated bodily in our raw material plans.

We have nineteen active and thirty-five inactive Commodity Committees studying 180 commodities, both critical and strategic. These studies have the purpose of averting shortage in these materials especially when sea lanes are interrupted or closed. A material is considered strategic when domestic supply is negligible or meets our needs only in part and no substitute is available. The most important strategic materials are Manganese, Tungsten, Antimony, Mica and Opium. Our commodity committees are in contact with Industrialists who represent as far as practicable the trade of the commodity as a whole. As explained above in discussing requirements, the only information we need from other Governmental Departments in order to go ahead with our procurement plans is a statement of their war requirements. In the case of the Navy this information is furnished by the Army and Navy Munitions Board. Essential civilian needs are estimated from records of the World War and from information furnished by industry.

Before leaving the subject of raw materials I wish to stress the necessity for war reserves. Manganese is typical. Unless we are assured of 600,000 tons in addition to all the manganese ore we can mine at any price under the greatest stimulus of war we will find ourselves in a hopeless plight. We cannot fight a war without steel -- steel for shell, for shrapnel, for artillery, for machine guns, rifles, pistols, for tanks, tractors and airplanes. Manganese is the key to steel production. It has been estimated that if our foreign supply of manganese were cut off our steel production would drop almost fifty per cent in a year. What would happen to the economic structure of this country if hundreds of thousands of men in the steel and allied trades such as railroads and automobiles were suddenly discharged from work because of lack of steel? Draw your own conclusions.

War reserves are not only required in raw materials but in finished products of non-commercial articles as well. Take the 75 mm. shell. Under the best possible conditions of industrial preparedness and with the most optimistic estimate of production we may hope for the first complete round in four months. Mass production adequate to meet requirements will probably not be achieved within thirteen months. For this one item alone Industrial Preparedness has created a potential saving of millions of dollars in war reserves, and has created an actual saving of ten months in the time necessary to meet requirements as compared with the results of the past war. The first six months of warfare, however, may mean victory or defeat. We must have adequate war reserves in important non-commercial items until Industry is prepared to gain its stride. It is just as highly essential to maintain a nucleus of stock of certain vital raw materials and finished articles in war reserves as it is necessary to maintain a nucleus of military men in time of peace. Our plans, therefore, should strike a balance of men and material which Congress is willing to finance within the Budget limit of the Army.

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Priority integrates into all these broader plans. This function is based upon military necessity. For the execution of our plans in getting power, labor, transportation and materials we require priority authority vested and exercised to inhibit others from using supplies and services essential to the Army. Our main task in connection with priorities is to define our military priorities, that is, the preferential treatment needed to the accomplishment of the military procurement program.

Our plans affecting capital and labor simply have the purpose in mind of separating the most essential from the non-war uses of capital and labor and diverting all activities into essential channels. This appears to be a sound plan which is equitable in its application to both capital and labor. These measures will assist in the conservation of financial resources, labor and material so that they may be available for the most essential uses toward winning the war.

Tentative war time contract forms have been given constant study for the past two years. In cooperation with industry we are working on forms of contracts to procure war requirements. These forms are essentially different from peace time contracts in that we provide for liquidation at the end of war and also for payments in preparatory stages when there is no product. The fact that they have received favorable criticism throughout the business world indicates that the American business man on the average believes in the principle that it should be more costly to wage war than to maintain peace. Our patriotic citizens whether capitalists or laborers do not want to profiteer or build their fortune on their countries' ruin.

By this system of general criticism in perfecting these plans we hope in due time to have them express the will of the free people of America. In large measure plans effecting labor, capital and the American people will have to be executed just as was the selective service draft law in the World War, by the American people themselves. The force of public opinion will be a most potent weapon in policing industry of the Slacker and the Profiteer. I, for one, am confident that what the American people plan they can be thoroughly relied upon for efficient execution.

Our financial plans include an estimate of cost of the entire program so that this may be presented to Congress and properly supported. Appropriations will then follow without the weeks of delay that occurred during the World War. Our fiscal plans give due consideration also to the subject of price control. We realize that a fair price for the Army should be the same fair price paid by the civilian.

Our power plans include a survey of the power resources over the whole of the United States which has been completed by the Corps of Engineers, U.S.A. It is believed that we are now in a position to avert a major power shortage such as those which occurred around Niagara Falls and Pittsburgh during the past war.

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Plans for transportation have been drafted which should result in coordinating requirements and reconciling conflicting orders within the War Department Procurement Districts so that a definite program showing relative priority may be agreed to for the railroads to follow out. Likewise our plans cover cases of local congestion of transportation and where movements of supplies for troops and for essential industrial establishments are concerned. The War Department and the Association of Railroad Executives have drawn up a plan for the control of the railroads by the Government in the event that such action becomes necessary in an emergency. It is felt that adequate provision is being made to insure a satisfactory solution of the transportation problem.

Such is a review of our work to date. While these plans are yet far from complete America stands better prepared in an industrial sense than ever before in her history. May I take this occasion to express the deepest appreciation of the office of the Assistant Secretary of War for the hearty cooperation received from the General Staff, the Navy and other Government Departments in our work? The Bureau of Mines, Census of Manufactures, the Bureau of Standards and the Bureau of Internal Revenue in particular have given us every assistance. They have found the way of helping most effectively the cause of National Defense in direct line with their current endeavors.

I hope that the big theme of this little talk may stimulate the interest of the students of the Foreign Service School of the State Department and serve as a contact with Industrial Preparedness which will prove everlasting. I am confident that the Assistant Secretary of War would be very grateful for your further cooperation in a movement which we believe will shorten the day to a better understanding between nations in the elimination of some of the major causes of war, and thereby advance humanity closer to the universal goal of International Security and World Peace.
