

THE ARMY INDUSTRIAL COLLEGE  
WASHINGTON, D. C.

Course 1931-1932

THE IMPORTANCE OF A PLANNED WAR ECONOMY  
TO THE SUCCESSFUL CONDUCT OF WAR.

by

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December 21, 1931.

The word "Economics" comes from the Greek word Oikos which means the management of household affairs. Economics is the science of business, or, in the modern interpretation, the science of accumulating wealth. It has also been defined by one German writer as the science of life. General economic activity proceeds in three forms - production, consumption, and distribution. Economy in the modern languages has come to connote generally the attempt to obtain the desired end with the least possible expenditure of means.

Now let us look at economics as applied to the provisioning of an army. In older times soldiers provided themselves with their own arms, which had been produced by their own efforts, and they also had to provide their own clothing. Only the bodyguards were clothed by the monarchs themselves. Furthermore the soldiers provisioned themselves by any means at hand, and this led to robbery and extortion. After the armies became state institutions, requirements developed into organized demand, hand workers were replaced by gun foundries and arsenals, and uniformity of weapons and of clothing was made possible as hand work gave way to machine work. As the worker became divorced from his tool the factory came into being, and capitalism took its place in industrial life.

The Industrial Revolution changed the order of things; and the practice of household and state economies was influenced and changed by new inventions. Individual and collective operations were made to conform to the new mechanized order, and the science of the accumulation of wealth was correlated to the new conception of industry.

One of the prerequisites to capitalism is a market which exerts a definite demand, and military requirements gradually became favorable to such a demand. Economy presupposes scarcity, and the sum of the activities incident to the balancing of wants with the means of satisfying them is an economy.

In war time the sum of the activities which serves to satisfy the needs of the army and the civilian population is war economy, and the specific task of the economy is to secure, as well as it can, an adjustment between the wants and the means of satisfying them.

It is obvious that a planned war economy is most important to the conduct of war; in fact, the mission of the school as stated in the order establishing it (quoted from the National Defense Act) is to train officers in the useful knowledge pertaining to the supervision of procurement of all military supplies in time of war and to the assurance of adequate provision for the mobilization of materiel and industrial organizations essential to war-time needs.

In previous years the Army Industrial College concerned itself primarily with the subject of Procurement Planning; lately, however, more time and thought has been spent on the subject of Industrial Mobilization and it is possible that in the near future consideration will be given to certain phases of planning directed toward economic strangulation of the enemy.

The basic principles of Procurement Planning, Industrial Mobilization, and economic strangulation lie in the field of economics. In Procurement Planning you encounter such terms as requirements, facilities, allocations, war orders, and others. These terms are synonymous to the economic terms of wants, purchasing power, demand, supply, factors of production, and the like.

In war-time the preservation of the nation is the dominating consideration in the formulation of national policies and economic considerations should constitute an integral part of the plans adopted for national preservation. Procurement Planning and Industrial Mobilization are effective only if the economic resources of the country are utilized to the maximum in furthering the national policy. If put into effect, a policy of economic strangulation would close to the enemy sources of strategic materials and this would cause a disruption in the economic and industrial life of the people of that nation. How can this be accomplished? What is the starting point?

Our thinking should be directed toward a synthesis of the foreign worlds of war and economics. My contention is that these worlds have been too long treated as foreign. Economists have considered their science as purely constructive and the art of war as totally destructive. The essence of war from the economic viewpoint has been consumption of a totally destructive nature without any economic aim. Military leaders have concentrated on military activities, leaving economics for the economists and politics for the politician. War economy has been ignored as a science; only a few radical thinkers have recognized it, and then largely in the light of a pathological condition.

Due to our limited time, and for the purpose of this discussion, the World War will be considered as the only modern war. You will remember that at its outbreak the popular opinion was, that Russia, with its predominance of manpower, would decide the military issue. As time went on and England's efforts were aimed at blocking German, this promised, to the mind of the layman, to be the effective tool that would bring an end to the war. However, Germany continued to maintain herself despite the fact that her economic isolation was becoming so complete that she was being reduced to a closed trade state. The thought became general that Germany had hidden power, since she was furnishing herself with the materials to continue a gigantic struggle which involved munitions in quantities and types beyond any previous conception. It was realized that Germany was practicing economies in her materials and in her national life that were beyond belief. Records are only now becoming available

which show the extreme measures she was forced to adopt in the administration of her affairs. The economies she practiced in the administration of raw materials are worthy of study. Germany, therefore, is the nation which more nearly approximated a maximum effort, for in that country even the pots and pans were confiscated - were taken out of the kitchens and the metals mobilized for the prosecution of the war. It does not require a very exhaustive study to show conclusively that in comparison with Germany, America did not exert a maximum effort.

Thus, from the economic point of view it is felt that the selection of Germany as a subject of study is justified. From the military point of view it is generally believed that her military machine was the most powerful in the world; her military command was considered to be efficient, and her General Staff organization promises to be a subject of study by military students for some time to come. Your studies have given you a picture of the economic policies that were adopted and the economic controls attempted in the United States during the World War, so we will focus this discussion on Germany's experiences. The individuals charged with the conduct of war in Germany were typical of the General Staff caste. They represented the aristocracy of the country, and considered it beneath them to engage in business and commercial activity. They were well educated, and highly efficient from a military point of view, but withal they were incapable of understanding the full importance of economic influences. They were concerned only with the military.

At the beginning of the war Von Moltke was chief of the German General Staff. With the reverses at the Marne, von Falkenhayn was appointed to replace him and remained in that position until the crisis of 1916 when he was relieved by von Hindenberg who served in the capacity of chief of the General Staff until the end of the war. In the eyes of her military leaders Germany's army was invincible, her strategy sound, and her plan flawless. This plan was based upon a war of two fronts and of short duration, and estimates of supplies were computed upon these considerations. The Marne reverses were the first indication to Germany that the war would not be one of short duration. Fortunately for Germany, one of her great industrialists, Walther Rathenau, president of the German General Electric Company, did not view the outcome of the war as optimistically as did the military. He observed with alarm Germany's great dependence upon her raw materials. He realized the fact that she was self-supporting only in coal and potash, nearly self-supporting in zinc and lead, and only partially self-supporting in such raw materials as iron, manganese, copper ore, oil, saltpetre, rubber, and cotton. He realized that the sources of these materials would be denied to Germany unless she was able to command the sea lanes, and that there was little probability of her being able to do this except in the case of Swedish iron ore.

On August 8, 1914, just when Germany apparently had every reason to have confidence in the success of her military machine, for outwardly, and even to the trained observer of military organization, there appeared to be no weak link in her military mobilization, Walther Rathenau, with the the tremendous vision which he possessed, presented his views to von Falkenhayn. Briefly these views were that Germany could scarcely be provided with the necessary materials of war for more than a few months, and that something should be done to prevent her economic strangulation. Von Falkenhayn immediately came to an authoritative decision which, according to Rathenau, made a turning point in this field. It should be borne in mind that von Falkenhayn was Minister of War at that time, as well as Chief of the Great General Staff. He set up an organization, with Rathenau as its head, which later became the famous War Raw Material Section. This organization was placed in the War Ministry. Thus it was that problems of economy were for the first time enunciated in concrete form by an industrial leader and addressed to a General of the army who immediately recognized their importance and put into effect the first necessary measures.

The operations of the Raw Material Section furnish the best example of war economy practice in Germany. Side by side with this organization was the economic organization in the Department of the Interior, under Delbrück. The latter section functioned principally in the field of foods and is somewhat analogous to the American Food Administration. Delbrück's economic activities preceded those of Rathenau, but they were of a different character and it was not long before the operations of Rathenau's section of the War Ministry far overshadowed those of the Department of the Interior. The importance of Rathenau's activities in comparison even with those of the military, is continuously seen; for example, when, at the time of the Marne reverses, a shortage of ammunition was foreseen by the military commanders, it was Rathenau who took steps to conserve the critical materials and to utilize all possible sources thereof to a maximum advantage. In the words of Colonel Bauer of the German General Staff:

"The conduct of the war in the West commencing with the fall of 1914 suffered very much from the lack of ammunition, equipment and replacements. Falkenhayn made an effort to correct this shortage, but in the face of the impediments did not use the necessary iron firmness and consistency, so that everything remained a half measure....Falkenhayn's collaboration in the political affairs was not sufficiently firm and methodical, one can almost say that he paid no attention to it and left everything to the Chancellor. That was wrong. The commander-in-chief, and Falkenhayn was that, must arrange the strategy in accordance with the National Policy. One without the other is almost inconceivable...withal Falkenhayn was a man of great talents. If we had had a few such men in the Reichstag and in the government the war would not have been lost."

From this statement it would appear that great dependence was placed upon the Chancellor. The Chancellor, Delbrück, later published a book to justify what he did. However, neither Delbrück nor any of the military commanders arose to the occasion.

in 1914

The military commanders/for the first time seemed to realize that nitrogen was a necessary component of ammunitions, and that with the supply of nitrogen then available ammunition would not be forthcoming and the war would have to be brought to a close. Rathenau, however, instituted action to prevent this impasse. He began to confiscate all the supplies of nitrate in the German Empire, and later in the occupied territories, thus securing a supply of this material which consisted chiefly of an immense number of small and even minute quantities that the peasants had been hoarding for fertilizer, and which in a few weeks would have been spread over the soil and irrevocably lost as far as the army was concerned. By appropriating these supplies and deflecting them to the munitions factories, even in the face of desperate opposition on the part of the farmer, Rathenau held in check the nitrate shortage until such time as this substance, which hitherto had been exclusively an imported article, could finally be produced in the country itself. The Haber-Bosch process was utilized to produce nitrogen from the air and certain factories were charged with the task. As a result of Rathenau's energy and organizing ability these facilities were able to get into production in time to augment the decreasing supplies of requisitioned material, and by the end of 1914 the nitrogen crisis had been overcome. The methods adopted by Rathenau in attempting to increase the supplies of rubber and copper were not as dramatic and spectacular as the nitrogen experiment but they were equally as effective. This has been described in the monograph on German War Economy.

It can be said that Rathenau saved the military command from an early and certain defeat, but the opposition he had to overcome would have broken many a stronger man. Some of the military bureaucrats regarded him, the civilian and the Jew, whom they had to tolerate because he was making up for what they themselves had neglected to do in the long years of peace, with a distrust which they seemed to take pleasure in accentuating. One day his department was isolated by a wooden partition, which had grown up overnight, from those of the other established gentlemen in the War Office. Rathenau was able, however, in spite of all difficulties, to perfect his organization, and after nine months hand it over on April 1, 1915 to Colonel Koeth from the War Office, whom he had selected to succeed him. It is interesting to note that Colonel Koeth has been described as a soldier trained by Clausewitz and an economist trained by Rathenau, and as such he was the synthesis of the hitherto foreign worlds of war and economy.

How foreign these worlds were to each other was shown by the 1914 German Army organization for supply. The forthcoming monograph on German War Economy will show that this organization was made up of representatives of the army and navy and that there was no systematic basis for the procurement of supplies. The separate branches were doing their own procuring, and even when the problems were too extensive for the old peace-time quasi-procurement organization section of the war ministry, known as the Feldzugmeistereit, and a new organization, the Wumba, replaced it, there was still lacking any coordinated policy for procurement. The Wumba was created to carry on the entire production of military small arms and ammunition for the army, but it was not given authority to organize so as properly to control and procure all the raw materials and regulate the manufacturing facilities of the nation.

The necessity to the efficient utilization of productive energy of a policy of coordination was eventually realized. In this crisis von Hindenberg, appointed Chief of the Great General Staff (August, 1916) relieving General von Falkenhayn, General Ludendorff appointed First Quartermaster General acting as Hindenberg's Chief of Staff, and Colonel Bauer, formulated a new munitions program calling for a maximum industrial effort. It was called the Hindenberg Program.

A committee of German industrial leaders called by the War Minister, meeting in Berlin, September 16, 1916, advised the Minister that the Hindenberg Program could be carried out only if effective control and coordination of the country's resources could be assured, and recommended the formation of a new department with absolute control over all matters affecting procurement and production. By a Cabinet Council Order of November 1, 1916, the War Office (Kriegsamt) was created for the stated purpose of converting the entire resources of the nation, together with the efforts of each individual, to the carrying on and winning of the war. While the Kriegsamt was, to all intents and purposes, under the War Minister, it had, by 1918, completely overshadowed the Ministry itself, having even taken over the functions of the civil government in some areas. However, inasmuch as the Kriegsamt lacked the necessary authority to coordinate the industrial effort, and inasmuch as the Air Service, Motor Transport Corps, Navy, and other independent agencies remained outside its jurisdiction, there continued to be divided authority, misdirected effort, and wasted opportunity.

A discussion of the War Raw Material Section will attempt to show the economy practiced by this section, and its influence upon the nation and the conduct of war.

The number of materials to which this section first gave attention was small, only about a dozen. Metals were the first to receive attention, then chemicals, jute, wool, rubber, cotton, leather, hides, flax, linen and horsehair. Four different methods were devised by Rathenau and were described by him as follows:

"Firstly, all the raw materials in the country were controlled (by commandeering); they were no longer left at the disposal of individual will and individual caprice. No material or semi-product was allowed to be used for luxury or for subsidiary purposes;

"Secondly, we had to force all available materials from over the frontier into the country, either by buying them in neutral countries, or by requisitioning them in occupied territory;

"Thirdly, there was manufacture. We had to see that everything indispensable or unobtainable elsewhere was manufactured in the country, and that new methods of production were discovered and developed in cases where the old methods were no longer adequate;

"Fourthly, the materials which were difficult to obtain had to be replaced by others more easily procurable."

After the commandeered materials were gathered there remained the problem of distributing or allocating them to the most pressing needs. For this purpose Rathenau invented and created a new type of undertaking, the War Company, whose task it was to be commercial manager of the requisitioned raw material; that is to say, after this had been commandeered it was the business of the company to get hold of them, if necessary, to collect and store them, to fix their price, and finally to allot them to industry at the right time and in the proper quantities. Rathenau did not believe that a bureaucratic organization composed solely of officials would be able to perform the tasks necessary, nor did he believe that it would be possible through that free play of forces which is called private enterprise.

In describing these companies Rathenau referred to their paradoxical nature by saying:

"On the one hand, they signified a decisive step in the direction of state socialism. On the other hand, they aimed at self-government in industry and this was on the largest scale. They were instituted under strict official supervision, they were run for the public benefit and could not issue dividends or profits from liquidation. In this way they occupied a position between a joint stock company which embodies the capitalistic form of enterprise, and the bureaucratic organization. In short, through the activity of these companies, the whole German industry was converted into a series of self-governing bodies which, under the supervision of the Central State Administration had all production and distribution in their hands, an industry regulated in accordance with the needs of society carried through to completion and functioning systematically, which for the first time in history took the place of an industry existing for the profit of the private capitalist."

This expression of Rathenau, conveying its altruistic interpretation of the war companies, was not upheld by Ludendorff who contended that "Their operation was productive of infinite friction."

However, this may be another example of the failure of the military mind to envision the economic world. One thing was certain, changes were occurring - everywhere was in a state of flux. Improvisation was encountered everywhere. The experiences of the various industries are interesting and instructive, but time will not allow us to go into them here. It should be noted, however, that the measures adopted in one industry were not necessarily applicable to all industries. For example, in the case of nitrogen, the supply was increased; in the cases of rubber and copper greatest accomplishment resulted from the efforts that were made to reduce consumption. The monthly consumption of copper by the Master of Ordnance was reduced from approximately 12,000 tons at the beginning of the war, to a monthly consumption of 5,000 tons in 1917, while ammunition production actually increased in the meantime. Supplies of copper were augmented by imports, and by higher yield from ore in the ground resulting from better technique and state aid. Utilization of waste and leftovers, together with the mobilization of metals, increased the supply.

The mobilization of metals was an interesting German expedient. It consisted in attempting to render acceptable to the war economy the great stocks of metals which are employed in modern industrial processes, without a great outlay of labor and without great disorganization of private industry. It was believed that if a fraction of the amount of such supplies could be mobilized, every conceivable demand of the army could be met. The difficulties that were encountered lay not so much in the non-existence of the necessary quantities of the metals themselves as in the means of bringing about their recovery. The requirements resorted to forced the heavy burdens of the war directly into the consciousness of the people by despoiling symbols of culture, wrecking facilities of production, and interfering with domestic economy. The task was a tremendous one, yet the objective was generally realized. In the case of copper, for example, large supplies were available when hostilities ceased.

In recapitulation it will be remembered that at the outbreak of the World War Germany was a highly industrialized country, manufacturing in excess of domestic consumption and tremendously dependent upon imported raw materials. Her economic isolation became so complete that she was reduced to a closed trade state wherein she was compelled to attempt to maintain herself upon domestic sources. Her war raw material economy evolved as a necessity economy, and time after time the effective measures that were adopted by the war raw material section enabled the military to continue the war.

As has been stated elsewhere, the German Great General Staff was effective from the military point of view, but they never had the experience nor the training to enable them to think in terms of industry and materials. Industrial mobilization possibilities were

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not understood. The military organization of Germany did not provide for coordinated procurement, procuring agencies competed with one another, types were duplicated, standardization of designs, drawings, etc. was impossible. The efficient coordination of national effort was impossible. Even when an organization was set up to carry out the Hindenberg Plan, which aimed at coordinated effort, it did not possess the necessary authority to coordinate the industrial effort; consequently there was divided authority, misdirected effort and wasted opportunity.

However critical one may become of Germany in this respect, her accomplishments in this field will become history and much can be learned from her efforts. One of the fundamental lessons is that plans must correlate to contemporaneous conditions.

From your study of economics you will be able to picture peace economy. The picture may be somewhat different from the one presented in the monograph on Peace Economy. At any rate you must visualize, in your own way, modern exchange economy characterized by a highly individualistic spirit, motivated principally by the lure of profit, and regulated by competition.

In our modern economy the apportionment of productive energy corresponds to certain forces. It will be seen that production goes on in anticipation of demand, that profit is the motivating force, that competition is the regulator, and that industry is conducted on a price basis. Changes in price affect the apportionment of productive energy and this, in turn, affects the entire economic structure.

After peace economy is clearly visualized it is necessary to speculate on the influence that war will have upon certain economic forces. How will war conditions change the apportionment of productive energy? This is a matter of fundamental importance, for before any superagency for control is set up careful thought should be given to the purposes for which the organization is necessary. The primary purpose for which a control agency is set up in war is to put into effect certain economic measures which will be adopted in an effort to direct the operation of economic forces during the emergency. Therefore, it would appear that the first step in Procurement Planning, Industrial Mobilization, and economic strangulation is to attempt to visualize war economy in an uncontrolled free state. This will give a picture of the influence that war will have upon normal peace economy. In other words, a theoretical approach to a planned war economy would foresee the necessity to national preservation policies of mobilizing industry in a manner to make its activities of normal nature under abnormal conditions. Before the Chief Executive or his advisors could select a man to administer the policies of a superagency for economic control, it would be necessary to visualize as clearly as possible the changes that would be effected in peace economy by a condition of war. Specifically the economic forces that would be subject to control should be clearly defined, and the probable results of the control policies should be carefully

considered. This approach is a little different from the conventional one, for the application of economic theory to national defense plans has heretofore been disregarded. It is my belief that a consideration of war economic theory is a logical precursor to the adoption of war economic policies.

The picture of war economy in an uncontrolled free state, as it is visualized by you individually, may be different from that which has been attempted in the monograph on War Economy. However, the one I have described will indicate the possible waste of the nation's resources, and the effect on production, consumption, and distribution. A clear picture would show the student wherein certain of our peacetime economic concepts must undergo change for the practice of an efficient war economy. If there is a clear understanding of peace economy and the changes that will result because of war conditions, a study of the economic control measures that should be adopted in war economy must be considered.

We are concerned here with the phenomena caused by the effects of war upon economic relations. While the nature of the effects is controversial we know that war conditions change the whole pattern of economic life. All the economic interrelationships become complicated. Our discussion however will be limited to the effect of war influences upon the operation of certain economic forces. The ones selected are those which are believed logically to come under the influence of economic measures that are proposed for adoption in connection with the suggested organizations to be set up for their administration.

The effects of war upon production, exchange, and consumption will be considered. These are manifest in two distinct phases. The outbreak of war brings an impact which, after running a certain course, extends into the conduct of war from the standpoint of economy. In the beginning cash and certain goods will be in great demand. The desire to get oneself in liquid condition will result in the selling of securities and some types of commodities. The demand for necessities will increase, wages will increase, and subsequently luxury demand will respond.

The rush for the essential wares will cause wide fluctuations in prices, but the uncertainty of the situation will be disastrous for production from the standpoint of balancing production with demand. However, numerous factors have to be considered; the location of the theatre of war, whether there is confidence in the outcome of the war, whether the credit structure of the nation is such as to insure a ready furnishing of cash or its equivalent by means of credit arrangements, and many others. If the financial structure, for instance, maintains a reasonable stability, the rush for cash will subside and the normal incentives for economic trade will operate, purchasing power will increase, and the demand for essential wares will be intensified and will exert its influence upon related markets. These reactions are the precursors of war economy.

As war continues competition becomes severe, and the system of production erected on the structure of man's conception of his own welfare, and based upon the interchange of goods and money in a competitive field is apt to manifest a lack of adaptability to the national air. Individualism, if unrestrained, indulges in cutthroat competition with nationalism. The individuals and the nation engage in a competitive struggle that, if it is not controlled, can but end disastrously for one or the other.

Since the army consumption is destructive of values, there will be an ever-increasing destruction of both consumption and production in goods which will entail a constant diminution in the productive capital of the country, with a resulting gradual lessening in production. Necessity of reduction in consumption follows, with the ultimate result that the foundations for production and consumption are completely destroyed. Production accordingly is influenced by the war demand which can be classified as army requirements and civilian demands. The two forces make themselves felt through the prices that are offered and that influence the amount of production which goes into satisfying each of them. In short, the productive energy of the country, in responding to the profit urge as interpreted by an uncoordinated group of entrepreneurs who are dominated by selfish interest and who lack the knowledge of the cooperative effort that should exist in the national emergency, is not utilized for the national needs but is dissipated and tends to become so disorganized that a tremendous waste occurs.

War orders, method of financing war, stage in business cycle, point in secular trend, seasonal influence, and world conditions, are all influences of tremendous economic significance, but time is limited and these are discussed in detail in the monograph on War Economy.

The nation comes first, and if the necessary emergency supplies are not procurable on the basis of private ownership and the right of free contract, the state will be compelled to confiscate them.

The power of commandeering during the World War was vested in the President. In war time the rights of the individual become secondary to the public welfare. Individuals must cooperate under national coordination. The private economic motives in production and consumption must give way to national aims. The war state requires enormous supplies of capital and goods. Supply and demand must be correlated. Production and supply must be organized on the one hand, and consumption and demand must be organized on the other; while the two must be correlated to each other and to the national policies. Information concerning requirements must be available; and inasmuch as all major wars are characterized by insatiable demand, steps must be taken both to increase production and to control consumption.

Increase in production can be attempted by several means. Among these is the application of the principles of rationalization; then, too, increased efficiency in facilities of production can be achieved through a plan for the selective apportionment of labor. The latter will be instrumental in maintaining the level of production, both quantitatively and qualitatively, and will permit the carrying out of modern industrial technique and practices. Increased production can also be achieved by creating new facilities for production and by converting others to the manufacture of war articles. Equally potent in balancing production and consumption is the restraining influence upon the latter of the establishment of priorities. As an aid to increased production the state could attempt to control prices. Mr. Bernard Baruch has said that the three basic powers required in a state controlled war economy are the power to commandeer, the power to arrange priorities, and the power to control prices.\* With these powers an economy can be planned and measures can be adopted that will insure the maximum effort of the nation.

In a planned war economy the stage is set for the rejection of the private economic decision and its replacement by a compulsory form, which can put the entire business of war production into the hands of the state itself. It is a form of economy whereby centralization of decision is vested in the state. The product to be made, the apportionment of facilities, of materials, of labor, or money, the use to which the product is to be put, all are decisions made by the state. The power of decision is limited only by the availability and adaptability of the national resources.

The purpose of a planned war economy is to direct productive energy into proper channels; in short to utilize industrial resources with the minimum loss of efficiency under the changed economic conditions of war.

In discussing a planned economy as the objective of Industrial Mobilization, let us review again the experience of Germany during the World War in order to illustrate the desirability of a planned economy as opposed to a necessity economy. In the latter years of the war Germany had to resort to a necessity economy in order to maintain herself, and it has been claimed that because of this alone, the absence of a plan economy, she lost the war. Certain of Germany's experiences have been mentioned, and these and others have been described in greater detail in the monograph on German War Economy. If time permitted numerous others could be described to show the consequences of the piecemeal measures adopted.

The economy practiced by the War Raw Material Section was a process of evolution - it was not a planned economy. A planned economy would have conceived and carried through to the end, theoretically, a plan based on state economy and carefully formulated with the sole aim of victory. The path followed was experimental. There were

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\*Taking the Profit out of War.

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several distinct periods in the evolvement of the War Raw Material economy. These were the result of the development of needs in relation to the available supplies, and the measures which it became necessary to adopt for their satisfaction.

Brief consideration may be given here to the various steps in the development of German War Economy. In the first stage, the War Reserve period, the demand of the fighting forces was regarded as beyond question, and economic measures were applied only to a few articles. The second stage, the Spoils period came into being as the German army began to accumulate the spoils of war. These spoils were sufficient at that time to help maintain the requirements of the army as they were being formulated on a short war basis. The third stage, a General Saving Economy, became current when it became apparent that the war would not end as early as had been anticipated. Exports of stocks were limited, civilian consumption was curtailed, and the requirements of the army and the war economy organizations were scrutinized. The fourth stage, the Increased Production period, was characterized by the adoption of measures for increasing the production of raw material and utilizing substitutes, and for reconstituting used materials. This period ushered in a centralized plan which attempted to control all raw material problems. The state now regulated all imports and exports. Drastic measures were adopted in connection with the appropriation and distribution of all raw materials for every purpose whatsoever. Additional war organizations were established that distributed raw materials as subagencies, which reviewed individual requirements and made distribution according to directions. The fifth stage, the Urgent Need Economy period, was introduced by the adoption of the Auxiliary Service Law, at the end of 1916, which attempted to make all men and materials subordinate to the national effort.

The shortage of materials and the limitation of communication became so serious that operations had to be curtailed in some industries and in some districts. Production was limited to the absolutely essential articles and localized to the efficient producers who were utilized to the maximum. Non-operatives had to be sheltered and compensated, far-reaching encroachments were made on the freedom of trade, and regulation of price was practically impossible. Confiscation became increasingly extended, and finally it reached practically all raw materials. Demand was more strictly scrutinized, army requirements were subjected to quotas, and systematic exchange of materials with Austria, Turkey, and the Ukraine was attempted.

Legislation, as adopted in war economy, was not considered by the German economists as a principal factor, but rather as a secondary one. The actual practice of war economy was forced, when there was no other way out, to stretch the laws and construe them widely, for German legislation did not escape the error of trying to regulate too many details instead of merely sharply defining authority and responsibility. Voluntary cooperation was, on the whole, the principal force in the execution of individual tasks. The use of

contracts and the final adoption of local pressure were expedients which were resorted to in the advanced stage of necessity economy. The development of the complicated administrative structure ran parallel to the gradual development of the war tasks, the changing technique of war economy and the resulting legislation.

A planned economy should have as its purpose the one aim of making every effort to achieve the economic plan for victory. It would doubtless demand an intense subordination of the private effort for gain. Planned war economy should be based upon the realization that war is the destroyer of economic wealth, and that in the final analysis war carried to its ultimate will destroy all economic wealth. The control measures adopted should give assurance that the economic resources of the nation will be utilized at maximum efficiency for national preservation purposes.

Now authority must exist for the adoption of any control to be administered by a superagency if this should become necessary. It is not advocated, however, that arbitrary means be adopted without consideration of the morale of the people. Although it is realized that the needs of the nation are more important than those of the individual, it is also realized that the nation is an aggregation of individuals and that national policy can be disorganized by public opinion. This fact, however, does not in any way militate against the advantages of a planned war economy.

A planned war economy can be considered in its entirety. It can outline economic measures, agree upon the number and kind of organizations that are believed to be capable of putting control measures into effect, and select individuals to administer these organizations. All of these phases can be considered in the minds of creative thinkers who are in charge of planning. They can be reduced to paper in the form of plans, they can be discussed, they can be brought before the public and if public opinion is receptive it can be coordinated to the general plans and purposes. All of this can be done without committing the arrangements to an inflexible basis. Production should be organized so that the various factors can be operated at their optimum efficiency, new processes should be adopted in conformity with procurement planning objectives, waste should be eliminated, and consumption should be organized so that destruction of wealth by war influences will be retarded and minimized. All consumption that does not further the national aims should be proscribed; and since the proposed reorganization of production involves the distribution of wealth, distribution economics become important in view of an equitable division of the war burdens. The end of the war should leave each individual in the relative economic position that he occupied before the war.

The classic works on the conduct of war do not analyze the relationship between war economy and the conduct of war, nor do the classic works on economic subjects discuss the relationship exhaustively. The conduct of war heretofore has been in the hands of individuals trained in military strategy, but who have not possessed the economic insight which has come to be a part of the industrial mobilization concept. The modern industrial mobilization concept should comprehend a plan for the full utilization of resources in an emergency, and should visualize, as a point of departure, a planned war economy. \*

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\* This lecture, delivered as part of the course in Economics, which is a subdivision of the problem "Fundamentals of Business," is likewise a partial summary of the series of monographs on the various phases of war Economy in course of preparation during the present school year. In the respective monographs credit has been given for the numerous sources of data, but this was not undertaken in the extemporaneous delivery of the subject matter herein.