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INDUSTRIAL MOBILIZATION FOR A GREAT WAR.

Lecture

by

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INTRODUCTORY REMARKS - GEN. C.L'H RUGGLES, ORD. DEPT.

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Gentlemen

We all regret very much that the Assistant Secretary of War cannot be here today to listen to the very illuminating talk of Colonel Scott. The reason the Assistant Secretary cannot be here is that some months ago he made an engagement to go to Connecticut to be present at a meeting between the Industrial Preparedness Section of the Connecticut Association of Manufacturers and the Ordnance District Chief. They are having a business meeting today at which the Assistant Secretary will be present.

In the absence of the Assistant Secretary it is my privilege to introduce the speaker of the day - Colonel Frank A. Scott, Ord-Res., the President of the Warner-Swasey Company of Cleveland, Ohio, manufacturers of machine tools and instruments of precision, director in many other important industrial enterprises, director in colleges, hospitals and other public spirited organizations. Colonel Scott is also a member of the Honorary Board of Advisors of the Army Industrial College as well as Chief of the Cleveland Ordnance Procurement District.

While a very young man as industrial leaders went at the time we entered the World War, Colonel Scott was among the first of our citizens to be called to the aid of our Country in mobilizing our industry for that war. He was Chairman of the General Munitions Board which was later merged into the War Industries Board, and was the first Chairman of that Board. He carried out the very important work with great skill and good judgment and laid the foundation for the splendid and invaluable work done by that Board throughout our participation in the war. For his very kind services at that time he was awarded the Distinguished Service Medal. Unfortunately he thought too little of his own self at that time, he worked unreasonably long hours. His friends remonstrated with him at the time but he replied that under the circumstances the man was not important - it was the work. As a result he became very ill and it was not until several years later that he made a complete recovery.

Notwithstanding this, he has always taken a great interest in matters of National Defense and has aided the War Department on many occasions, addressing the War College and the Army Industrial College several times.

Colonel Scott, we welcome you today most heartily - as we always do. We feel assured that you, perhaps better than any other man, know the chaos and confusion inevitably resulting to a country attempting to mobilize industry for a vast war without adequate preparation and plans. Therefore we are going to listen to your talk with the greatest pleasure and will benefit by it.

Gentlemen, Colonel Frank A. Scott.

INDUSTRIAL PREPAREDNESS FOR A GREAT WAR.

Ten years after the event the preparations made for our last great war may well be created as history. By this time they should have passed out of the domain of reminiscence and not yet have entered that of fable. An examination of the activities and achievements of that period, if made thoroughly and disinterestedly, may well yield valuable suggestions for our future conduct.

We entered the World War unprepared. That is the common verdict almost universally accepted. We were not prepared to take the field, God knows, but we were prepared in certain fundamentals, certain indispensable fundamentals, that may have made the difference between success and failure.

We had developed the Federal Reserve System, without which we could not have financed the war, we had the National Defense Act of June 3, 1916, and August 29, 1916, creating the Council of National Defense and the Advisory Commission of the Council. Then, after the declaration of war, in May, 1917, we had the Selective Service Act. To these legislative enactments you must add the war powers of the President of the United States -- powers more extensive than are possessed by any other executive in the world -- and you have a platform on which to build a war machine in war time that leaves little to be desired

It is true these acts and powers were not established with relation to each other, there was much that was not clearly defined, and yet, in the working out of a war problem, the very indefiniteness gave strength and opportunity to act, for it is certainly a defensible position that wherever Congress did not specify or specifically limit, it must have been the intention to allow freedom of action in the nation's interest in a time of great national emergency. This, at any rate, was the attitude of the President and the Secretary of War, to the great benefit of our Country.

Our difficulty rested not so much in lack of authority as in lack of general appreciation of the power inferentially conferred by these enactments, lack of expansive power in the structure of our departments within the Army, lack of coordination of these departments with each other and with the Bureaus of the Navy, together with the presence on our statute books of numberless laws governing peace-time procedure that were not automatically repealed by a declaration of war. We already had a General Staff. Therefore I record as the three greatest factors in preparation for the last war -

The Federal Reserve Act,
The Council of National Defense,
The Selective Service Act.

From the National Defense Act we derived the authority to create the General Munitions Board which later became the War Industries Board, to establish the divisions of industry headed by Willard Baruch, Coffin, Rosenwald, and Godfrey, and the departments headed by Dr. Franklin Martin, and Samuel Gompers, We developed the power to fix prices, to locate new facilities, to establish priority to appoint and utilize the vast list of committees of industry which later also developed into subdivisions of the War Industries Board; the power exercised by the Secretary of War on April 9, 1917, declaring that an emergency existed, and ordering the Supply Branches of the Army to disregard the competitive system in instances when the national welfare demanded other methods in order to save time or protect our people, in a word, these acts made possible the war activities in the industrial, financial and commercial fields that preceded the Lever Act of 1917 and the Overman Act of 1918.

Heretofore I have told this College, and I reiterate, that the crucial time in our preparation was the first four months. The belief was widely held in influential groups that our Army could not coordinate and expand its procurement departments in time to meet the need. There was enough basis for this opinion to render it dangerous. The plan of the General Munitions Board was suggested by me to provide a coordinating and initiating body that would stand the strain and keep things moving until the Army could expand to take the load of its part of the work. My work has not been written up yet, it has not been understood, and, of course, not appreciated outside of the Army, but the point is, there was no Department of Munitions established, the Army did expand and carry its share of the load, we did demonstrate that the Army had potential powers not thoroughly comprehended outside, we still have our procurement departments. and we now have this Army College through which we may guard against any future threat of emasculating the military services.

Gentlemen, I want to read you the following extract from Mr. Grosvenor B. Clarkson's "Industrial America in the World War".

> "Mr. Scott was throughout a firm believer in the creation of a civilian organization that would complement the army supply system instead of superseding it. It is probable that it was due to him that the Executive decision did not swing to a department of munitions in the first two or three months of the war. He had a high opinion of the capacity of the Regular Army Officers, and his consequent friendly relations with them did much to cause them to welcome in an increasing degree the assistance of the War Industries Board. The

eventual evolution of the Board conformed to his original conception of a civilian organization that would be a coordinating body standing between the Army and Navy and other war instrumentalities and industry, but went farther, because in its field it became commanding.

With all his understanding, Scott did not achieve complete success in the War Industries Board and could not have succeeded, because he was too respectful of the Army. A uniform to him was the equivalent of a certificate of superiority in military matters. He clearly perceived the dire need of the army for civilian assistance, but he did not fully grasp the need of civilian domination in supply matters."

Now really, gentlemen, the joke is not on me; it is on those who did not believe, as I did, that the Army could do these things. However, honesty compels me to acknowledge that I did not make the discovery of the Army's potential power and true adaptability. I am willing to acknowledge that other abler men had discovered it before my time. My virtue lay in trusting their discoveries.

As one example of similar opinion, let me give you this quotation from Henderson's Life of Stonewall Jackson, (Vol. 2, page 479-480)

"The Civil War was prolific of great leaders. The young American generals, inexperienced as they were in dealing with large armies, and compelled to improvise their tactics as they improvised their staff, displayed a talent for command such as soldiers more regularly trained could hardly have surpassed. Neither the deficiencies of their material nor the difficulties of the theatre of war were to be lightly overcome, and yet their methods displayed a refreshing originality. Not only in mechanical auxiliaries did the inventive genius of their race find scope. The principles which govern civilized warfare, the rules which control the employment of each arm, the technical and mechanical arts, were rapidly modified to the exigencies of the troops and of the country. Cavalry, intrenchments, the railways, the telegraph, balloons, signalling, were all used in a manner which had been hitherto unknown. Monitors and torpedoes were for the first time seen, and even the formations of infantry were made sufficiently elastic to meet the requirements of a modern battle-field. Nor was the conduct of the operations fettered by an adherence to conventional practice."

Within the first four months, the Army, Navy and General Munitions Board, in cooperation, had accomplished, among other things, among hundreds of other things -

The establishment of price fixing,
The establishment of priority;
The purchase of the rifle plants and the contracts for rifles;
Contracts for small arms ammunition,
Contracts for artillery ammunition,
Contracts for artillery of all adopted calibres,
Contracts for the building of the cantonments,
Contracts for equipments,
Contracts for clothing,
Contracts for shoes,
Contracts for blankets,
Contracts for food,
Contracts for the men to be called in September, 1917,

and what, in addition to these and other actual pieces of work, was done in developing a war organization and war-making activities, I will submit by again quoting from Mr. Clarkson (page 45)

> "The functional instrumentalities of the Board developed rapidly after the formation of the War Industries Board in August, 1917. The principle of priorities was well established, as also its administration. Conservation was in full swing. Clearance, on paper at least, was working smoothly. The vital Inter-Allied Purchasing Commission had been firmly established Price-fixing was making a good start. The appraisement of resources was steadily going on and headway was being made in the massing and systematization of requirements. The labor division was functioning effectively. The commodity sections were busily at work, as far as they had been created. While the machine as a whole was not yet filling the void in the great structure of industrial unification in support of the Army and Navy and the maintenance of the national industrial fabric, it was already taking much the final form in which it was later welded so successfully. Time was lost in the gradual growth, but at the same time each functional activity, as a result of the gradual process, met with little opposition when proposed. The machine was one that was developed rather than projected. It was the child of experience and of obvious necessity, and not the product of theory. Each part worked when introduced because it was manifestly needed."

The Assistant Secretary Crowell and Captain Wilson, in their volume "The Giant Hand", have this to say in a general discussion of early war industry

> "The chief value of the General Munitions Board was that its experience pointed the way to absolute control, the one factor that could save the war enterprises. On July 28, 1917 after less than four months of existence, the General Munitions Board gave way and was succeeded by the War Industries Board.
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> This procedure constituted in reality a reorganization of the General Munitions Board. Mr. Scott, even then fighting against exhaustion of brain and nerve, was made chairman of the new War Industries Board, which still continued to be part of the Council of National Defense, although its importance was so great that it quite overshadowed the parent organization. It still possessed no legal authority over the executive departments but from the date of its formation its actual authority began to grow. As a controlling organization it became efficient, and efficiency was a thing which the federal departments sorely needed. The departmental heads gradually enforced the cooperation of the unexecutive War Industries Board upon the procurement bureaus.
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> This was not accomplished in a hurry. For several months after the formation of the Board, the confusion in industry continued. In fact, American war industry did not cross the divide until the late autumn of 1917. After that the control gained on the disorganization, becoming absolute about four months later.
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> The efficiency of the War Industries Board, as formed from the General Munitions Board, was due to the efficiency of its organization. For the first time complete activities in industrial control were brought together in single branches of the Board and placed under the direction of single executives."

Now you have before you the chief criticisms and conclusions of keen observers of the early activities in 1917. To my mind, these criticisms argue for several things, all of which are now possible:

First. the centralized control of procurement within the Army, coordinated with the Navy. The Act of June 1920 assures opportunity and authority for this.

Second, the super-control of resources, industry labor, prices; and priority through some super-body such as the War Industries Board of 1918.

This may be had, in war time, throughtthe National Defense Act, or through the exercise of the war power of the President. He can exercise such super-control in time of war and consequently he can delegate the right to exercise it. The best proof of this pudding is the fact that we have already eaten it.

Third, the training of our military men so that they fully appreciate the need of industrial aid to win a war. This is being accomplished right here in this College.

The first request I made of the General Staff, after my appointment, was for a copy of any program or plan worked out by the General Staff College for the mobilization of industry. The reply was that there was none. Could there be a more impressive evidence of unpreparedness? The General Staff had been kept so small, and had been given so little opportunity for a general survey of our military problem that its entire time and energy had flowed into channels related to the use of manpower in war for fighting. As if soldiers could fight without materiel.

Today our whole military program is still out of balance, notwithstanding the grave lessons the war should have taught us, so that procurement, even now, is being given far too little consideration in the general military scheme. We know now that the manpower problem is a lesser one than the problem of materiel.

Perhaps to the ultra-military mind, the activities of such a school as the Army Industrial College may seem removed from the field and service of a soldier. No man can be a great soldier who cannot appraise his resources and their availability. Time was when this was not necessary, perhaps; but in all modern, major wars it has been. General Grant may not have out-manoeuvred and out-fought General Lee, but he did know that he had superior resources at his back, and he fought his campaign of "attrition" with full confidence in the result.

The best that can be said of the General Munitions Board and the War Industries Board of 1917 is that they saved the normal structure of the Army, they accomplished a vast amount of vital work urgently needed, they worked toward centralization of responsibility and authority.

In Congress and out of it, in the criticism of the work of these early organizations, no consideration has been given to the fact that no provision was made for the personnel comprising them - so that, for instance, all

the civilian members and the Chairman of the General Munitions Board were here at their own expense. This became a commonplace later, but in the early days of the war, before people recognized the paramount need for service, it was no easy matter to locate just the right man, who at the same time was willing to leave home and business and pay his way for the privilege of serving.

Even the studied and kindly criticisms of Crowell and of Clarkson omit consideration, I am sure, of this very heavy handicap. Indeed, now it is all over, I am amazed at the efficiency of these hastily scrambled up organizations.

Parallel to the voluntary aid rendered by industry in the early days, was the action of the railroads in organizing for united action on their own initiative. Subsequently they were taken over by the Government, but for the first few months they served voluntarily and took whatever legal risk was involved in such united action.

The War Trade Board was not one of the earliest war control bodies, although it should have been, for at the outset a number of us saw that control of vital items should be gained immediately to avoid loss through export, as well as to prevent such items from creeping into the enemy countries through roundabout channels.

Food and fuel were handled separately from war industries, under the Food Administration. Food might have been separated, properly, but fuel which means power surely should have been aligned with production, and so should have been within the General Munitions and War Industries Board.

There were many forms of waste, and I will illustrate by mentioning only one, i.e., new developments that did not result in materiel which was timely or acceptable in the field, or effective when tried.

Many suggestions were made and many of them must be tried. Such experimentation is frequently expensive, and often fruitless. So it is in business, but, whereas in business we are usually experimenting with experienced men in a well-known field, in war we must frequently confide our tasks to unknown or inexperienced men who are to work in a field unfamiliar to them and to us.

In business, our experimentation is nearly always costly and often fruitless. Is it a cause for surprise that in war it should be more so? Suppose the loss and waste right at this minute in the experimental and development departments of America's vast business organization were suddenly to be ascertained and made public? Would any one be pleased? We may rest satisfied it would

appear a public scandal, yet we express surprise at a similar situation in a hastily developed war-time organization.

After the war when every one had cooled off, and most of us were suffering from the depression of the reaction, much was said of incompetence and waste, and I am sorry to add, even of fraud. My own first impression still remains clear, the big men were honest, zealous, and competent. The lesser men were as honest and zealous, but less competent. Naturally mistakes are made. Do we not have something under five hundred business failures in our country every week? If we do, in time of peace, does this not prove a tremendous percentage of error and incompetence among business men who are not working under any special pressure, nor perplexed by extraordinary and incalculable changes in economic and business conditions such as war introduces? Why should any one assume that a declaration of war would miraculously eliminate this weakness from our business personnel, and suddenly give us, for the Government's service, prodigies of sound judgment and farsightedness, even when dealing with totally unfamiliar subjects? Why this astonishment at the waste which war creates? Was it peculiar to the World War or confined to the experience of the United States in that war? In the material sense, has war anywhere, at any time, ever failed to create waste? War is waste in the material sense - so much so that if it did not create other values there probably would have been only one war - the first one.

Our review has now brought us to the point from which we may contemplate the general lay-out in a future emergency.

We have the new powers of the Assistant Secretary of War, those should take care of the Army Departments and possibly the Navy. We will have the Procurement Department Districts, which are a tremendous advance over what existed in early 1917. We will have a super-body which will represent the vast war powers of the President. We will have the Federal Reserve System, and our transportation will doubtless be even more efficient than it was before. That sounds well as to the machine, but will we be ready to feed the material into the machine? That will depend upon the work done now in this College and in the War College.

If we know how to use our powers and opportunities, we are the strongest nation in the world to sustain a long war. No other nation can so readily concentrate the entire national power through one executive as we can through the President. We will not forget that, but even more important to be remembered is that the first four months will probably dictate the story. What would we be prepared to do tomorrow? The working out of details must not be allowed to obscure the development of the vast overhead problem, nor must study of the overhead, with its

allurements of glittering generalities, lead us to neglect the arrangement of details. We must, if time and money permit, work out all the details of our plan, but in any case, and first of all, we must work out the fundamentals of our problem, materials available at home, or only obtainable abroad, labor, production facilities, new sources of supply, of materials, and of manufacture.

There must be developed and accepted some power to peg the price of both material and labor, and modify only so far and so fast as modification may be demanded by conditions throughout the period of the war.

There are essential raw materials not found, or not developed in commercial quantities, within our own borders, have you arranged with the Navy to protect certain sea routes until these supplies can be assembled in sufficient quantities within our country?, have you studied possible substitutes?; have you made peace-time contracts, looking toward war time service, with the organizations that can render the greatest assistance in these fields - for example, the American Chemical Society, and the American Institute of Mining Engineers?

Have you studied the eventual effect of our peace-time economic or political programs on our war-time efficiency? For example, there is at present a tariff on manganese. Does this encourage or discourage the importation of manganese? If it discourages importation, are our natural supplies large enough to assure a sufficient domestic supply in event of a long war? If not, is it not a part of the duty of our military branches to bring to the attention of Congress the unwisdom of this tariff policy? Would it not be better to import manganese and conserve our domestic supply? If this seems too far-fetched, or too complicated, let me assure you that it is the A-B-C of real military preparedness. It harms none, and it may, in an emergency, greatly influence our possibilities of success. Understand I mention manganese only as an example, by study you may easily develop a score of such items.

Assume that we have located a score of items to be imported, then, in addition to protecting the sea routes, have we tonnage available for the movement? If not, where do we expect to get it? From country "A"? But perhaps we will be at war with "A". From country "B"? But perhaps "B" will be an ally of "A", or at least more friendly to "A" than to us, and so on. A task of limitless proportions, you may say, and futile at the best, because none of it may fit the case when it occurs. Principles always fit some case. Knowledge of the principles gives us decision and strength in the emergency.

All your work is based on supposition, and one perchance is no more violent than another, War is an art, and

and can not be defined in set terms. It is also a science, and, therefore, certain rules are fundamental and unchanging. Certain fundamentals in supply and certain principles of supply were as effective in their control of the plans of Hannibal and Alexander as they were in their control of Napoleon's and Wellington's, or as they will be of ours in the next emergency.

Within our own country, in the history of a portion of our American nation, we have a classic in the problem of supply. The experience of the Confederacy during the Civil War was the experience, in little, of Germany during the World War. There was the same gradual choking off from over-sea sources, the same necessity for developing sources of supply within a restricted area, and with a constantly lessening manpower, the same necessity for discovering and using substitutes. Do not neglect this inspiring and instructive field of reading and study.

Must all our expenditures during the first few weeks be from appropriations previously made and specifically ear-marked for such expenditures?

Must our officers rest under the threat of penal statutes, even in time of war, if to save the nation's cause they break or avoid any such laws?

There are peace time statutes which form a dreadful barrier to prompt action after war has been declared.

May we employ clerks and draftsmen as needed, or must we wait for the routine of the civil service? May we rent buildings for offices in Washington?

Heretofore, I have recommended to this College a study of this group of limitinggstatutes which are proper enough in peace time but a deadly menace in time of war because they cause loss of time. They should be scheduled, and the appropriate committee of Congress familiarized with them so that they may be automatically repealed on a declaration of war.

For you men who are now actively engaged in this work, I have a final word. There are voices calling to you out of shadowland - the voices of soldiers and sailors who have already given their all for our country. There are voices that would call to you if they could - the voices of the boys of the future who must bear the struggles yet to come. They all petition you to lay aside all petty considerations of departments and branches of service, and build broadly and wisely. It is hard to build a structure which may never be used, hard to scheme and plan devotedly for events which may never transpire. We tend to lose a sense of realities

in this work. We are not the only ones who have felt this. 256

Winston Churchill, First Lord of the British Admiralty before and during the World War, felt this keenly and had expressed it vividly. I can perhaps do no better than leave with you his picture of it. (The World Crisis, page 174).

> "It is easy to underrate the difficulty of such work in days of peace.
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> In time of war there is great uncertainty as to what the enemy will do and what will happen next. But still once you are at war the task is definite and all dominating. Whatever may be your surmises about the enemy or the future, your own action is circumscribed within practical limits. There are only a certain number of alternatives open. Also, you live in a world of reality where theories are constantly being corrected and curbed by experiment. Resultant facts accumulate and govern to a very large extent the next decision.
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> But suppose the whole process of war is transported out of the region of reality into that of imagination. Suppose you have to assume to begin with that there will be a war at all, secondly, that your country will be in it when it comes, thirdly, that you will go in as a united nation and that the nation will be united and convinced in time, and that the necessary measures will be taken before it is too late, - then the processes of thought become speculative indeed. Every set of assumptions which it is necessary to make, draws new veils of varying density in front of the dark curtain of the future. The life of the thoughtful soldier or sailor in time of peace is made up of these experiences - intense effort, amid every conceivable distraction, to pick out across and among a swarm of confusing hypotheses what actually will happen on a given day and what actually must be done to meet it before that day is ended. Meanwhile all around people greatly superior in authority and often in intelligence regard him as a plotting knave, or at the best an overgrown child playing with toys, and dangerous toys at that."

The work upon which you and the War College are engaged is the most important in our country today. Any of the other things we are doing may be neglected, and there will be time to repair the neglect. Upon your work alone, the life of our nation may some day depend.