

LESSONS OF WORLD WAR II AS APPLIED TO SUPPLY,  
23 May 1946.

146.000  
CONTENTS

	<u>Page</u>
Introduction--Brigadier General Donald Armstrong, Commandant, The Industrial College of the Armed Forces . . .	1
Guest speaker--Mr. Howard Bruce, Chairman of the Board, Baltimore National Bank . . . . .	1
General discussion . . . . .	9
General Armstrong	
Mr. Bruce	
Students	

LESSONS OF WORLD WAR II AS APPLIED TO SUPPLY,  
23 May 1946.

GENERAL ARMSTRONG:

Gentlemen, the speaker this morning may not want me to tell you this, but I think it ought to be known as part of his biographical background. He is the youngest graduate that VMI ever had. He graduated there at 18. I do not know how he got in exactly but that was his age when he got his diploma and a lot of medals at VMI, in addition, for the work he did there.

After he left VMI, his rise, I should say, was extremely rapid and extremely far, so as he looks back over his career today, Mr. Bruce can see that he has held in the field of engineering and business some of the outstanding positions in the United States.

I am not going to read the list because it is too long, but I am going to tell you that he has been President and General Manager of the Bartlette-Hayward Company and Chairman of the Board; Chairman of the Board of the Baltimore National Bank; Chairman of the Board of the Worthington Machine Company; Director of the B. & O. Railroad, Glenn L. Martin Company and others.

What we are particularly concerned with is Mr. Bruce's extracurricular activity in the U. S. Government during World War II. He was Director of Materiel in the Army Service Forces and his distinguished service there is well known to every officer who has served in Washington during the recent war.

It is a privilege to present Mr. Howard Bruce who will speak this morning on the "Lessons of World War II as Applied to Supply." Mr. Bruce.

MR. BRUCE:

Thank you General Armstrong. General Armstrong and officers of The Industrial College of the Armed Forces, I first want to congratulate you on the change of name--change of constitution--of this organization. I think that it spells a degree of hope for the future.

The subject of the lessons learned in World War II applicable to industrial mobilization for any future emergency is one of tremendous magnitude. You have assigned me that whole subject but I can only attempt in these remarks to draw broad conclusions from certain phases of those lessons with which I am directly familiar. I really think I might spend the rest of my natural life on it and still my effort would be inadequate.

Developments in the latter period of World War II left to the future a heritage that will dictate the strategy of any future war. Among those developments are the atomic bomb, jet propelled planes, self-propelled projectiles and radar and I might add self-propelled large artillery. I

am not competent to discuss the influence that all these scientific developments will have in the future. However, there is one conclusion that is deeply impressed on my mind. The conclusion is that the only safe policy for the Services to follow in planning industrial mobilization for the next war is to assume that such a war will come quickly and without warning. It will be an all out war that will stretch even our vast productive capacity to the ultimate limit.

It seems appropriate to review here some of the related events just before and during World War II.

Before 1939 appropriations for munitions were a mere trickle. When war broke out in Europe in September 1939, however, the President and an alarmed Congress started expanding our Armed Forces in preparation for any eventuality. Appropriations for equipment and supplies reached sizable sums. Immediately following the capitulation of France in June 1940, the War Department presented a munitions program under the Protective Mobilization Plan. This program was designed to equip an army of a million men, provide reserves of critical items for two million men, and build up industrial capacity for an army of four million men. Cost was estimated at 5.9 billion dollars. Congress in September of that year appropriated four billion dollars.

Between June 1940 and Pearl Harbor, the War Department developed five supply programs, each larger than the last, finally totalling 11.6 billion dollars. The last of these programs, based on a directive from the President to explore the "over-all production requirements to defeat our potential enemies" was completed in October 1941. This became the "Victory" program with which we started the war. It was the first program reasonably related to the productive capacity of the country.

At the time of Pearl Harbor, these programs were the stimuli behind much of the industrial mobilization accomplished in 1940 and 1941 and which was to prove invaluable in 1942.

The War Department's program of educational orders started in 1939. Somewhat later the necessary construction program was launched for cantonments, storage depots, port facilities, airfields and some sixty-odd Ordnance plants. By the time of Pearl Harbor, munitions production for the Army was at the rate of 360 million dollars per month, exclusive of aircraft.

Procurement for Lend-Lease and orders placed here by foreign governments were a large influence in stimulating our war production.

Several civilian agencies of the Government were created to assist in the conversion of our civilian economy to war production.

The Advisory Commission of the Council of National Defense gave way to other agencies such as the Office of Defense Transportation, the Office of Price Administration, the War Manpower Commission, the War Labor Board, and the Office of Production Management. The latter was the fore-runner of the War Production Board and the Office of Scientific Research and Development.

Priorities administration giving preferences to military orders began in February 1941. In August 1941, the Office of Production Management began restricting automobile production preparatory to the conversion of that great industry to war. Similar action was soon taken with respect to building construction, use of copper, and many other civilian products.

The expansion of facilities for fashioning the weapons of war begun in the preparatory period prior to Pearl Harbor was to a considerable extent financed by private capital. The tax law of 1940 permitted the Army and Navy to give contractors certificates of necessity to amortize the cost of new plants over a five-year period for income and excess profits tax purposes.

Through 1943, the War Department issued certificates covering the cost of privately financed plants valued at 4.9 billion dollars. The Army itself constructed some 300 major industrial plants. The management of these government-owned plants presented a problem. This was generally met through the use of private companies under a management contract.

It must be recognized that with modern war any normal relationship of supply and demand is badly distorted. True competition and the automatic adjustments of competitive forces are eliminated. One can understand that owners and operators of industrial properties are hesitant to undertake the manufacture of new and unfamiliar items with risk of substantial loss. It is therefore necessary, in order to obtain full and enthusiastic cooperation of industry, to set up pricing procedures to minimize this risk of loss during initial stages. As experience is gained, it is possible to work out pricing procedures which will allow a fair return to manufacturers and give them the incentive to reduce waste in use of materials and manpower while at the same time preventing excessive profits which cannot be countenanced in output for war.

Through 1941 our nation's production, our creation of useful, usable things, was increasing but we were still far from the peak of productive capacity. We were still arguing among ourselves about helping the Allies through Lend-Lease, and trying at the same time to maintain our normal way of life.

December seventh and Pearl Harbor changed our attitude. Overnight the Nation insisted on going all out in its war effort.

We were then faced with the most stupendous production undertaking the world has ever seen. It reached into every nook and corner of this country. It started with digging raw material from the earth; extracting materials from the air and from the sea; bringing lumber from the forests; producing basic products from the soil; reaching to the far corners of the world for needed materials and processing these materials, step by step, into literally hundreds of thousands of end items. These included every single thing that the ingenuity of man could conceive of as helpful to the creation of what was to become the greatest war machine ever known.

From Pearl Harbor on, time was our most precious material. The need of speed was supreme. General Somervell, the incarnation of speed and forceful action, once used these words:

"In those early months only one thing counted. That thing was speed. Speed in getting into military production; speed in headquarters itself; speed on the drawing boards of the planners; speed in the shops and mines, in the forests and on the railroads and waterways; speed in the ports and the new depots and camps; speed in making decisions and in carrying them out."

I will not dwell on facility expansion. It was unbelievably rapid. It fortunately started before Pearl Harbor, due to the purchases of our Allies, due to Lend-Lease activities and then due to our own war planning. We had difficulties, particularly with the tremendous expansion of the machine tool industry and the general machinery industry. The facilities problem reached its peak by the end of 1942. It remained with us until war's end--often in the form of a question as to whether we should use critical materials and manpower for immediate production or in the creation of capacity to produce more critical materials.

Material shortages showed a rising scale of importance through 1942 and 1943, by that time having become more critical than facility expansion.

Beginning in 1942 and continuing almost to the end of the war, control of materials was concerned with making the visible supply go farther and in trying so to distribute materials as to get maximum balanced production.

The first attempt to solve the materials problem was the priorities system. It soon developed that such a system could not, however, deal with a fundamental conflict. If all high priority orders were filled, shortages became so severe in some fields that low priorities got nothing at all. Allocation became essential.

Early attempts at allocation were not successful mainly from lack of an adequately designed procedure. What was required was the ability of claimant agencies to determine with reasonable accuracy what they needed and to match this with complete supply data in the control agency.

After various experiments with the allocation of some items, the War Production Board adopted the Controlled Materials Plan in November 1942. The plan did not get into full swing until the second quarter of 1943. The basis was the allocation of specific quantities of critical raw materials to claimant agencies. These agencies in turn sub-allotted to their contractors. It replaced the Production Requirements Plan which allocated materials through industrial channels.

The Army Service Forces claimed that the Production Requirements Plan was unworkable, since it did not tie allocations to end items or to production scheduling, and that the Controlled Materials Plan was the proper approach to the problem. The success of the Controlled Materials Plan bears out the Army's point of view.

By the end of 1943, most raw materials problems had been met in some way or another. Basic fabricating facilities had been expanded. Downward adjustments in the programs of the Armed Forces had brought them into line with estimated production. Conservation programs had substituted less critical materials for more critical materials in the specifications of

many end items. Curtailment in civilian use of critical material became effective in 1943 and finally the Controlled Materials Plan with close supervision of inventory accumulations achieved an orderly distribution of raw materials.

After the problems of plant facilities and raw materials came under reasonable control, the problem of industrial labor shortages began to grow. At the beginning of war in Europe the United States had considerable unemployment and a manpower surplus. Normal employment practices took care of the initial expansion of industrial production for war. However, as more men were inducted into the Services and war production increased, manpower shortages developed and became acute in many fields in 1944 and 1945. Strikes aggravated the problem. If the war had continued, a more positive allocation and control of labor would have been necessary. We attempted to solve the problem through various expedients such as draft deferments or exemptions, recruiting drives, employment ceilings, priority of referrals, improvements in employee relations, better community facilities and even by returning men actually in the Services. These devices were not fully effective.

No satisfactory system was developed during the war for determining labor requirements of the production programs on a broad scale and allocating labor to the essential programs in accordance with their priorities. While we translated, with reasonable accuracy, the end items programs into basic materials and components, we did not translate them into manpower requirements. This added to the difficulties of directing labor to essential jobs in accordance with their importance and priorities.

Closely allied to shortages in materials and labor was adequate production scheduling. Scheduling on the required scale would have been extremely difficult even if firm requirements could have been established a year or more in advance and there were no shortages of men or materials. The fluctuating nature of war made the problem even more difficult. Unexpected strategic and tactical developments constantly lead to changes in the character and quantity of items to be produced. Procurement agencies had to act on the best estimate of likely contingencies if they were not to be caught short or long. Close production scheduling on a monthly basis, coupled with the ability to make rapid shifts in production between items, was essential.

Initially, the Army Service Forces production scheduling was generally on a monthly basis at more or less uniform rates. It soon developed that shortages and rapidly changing demands made it necessary to gear the schedules more closely to available productive facilities. Under the Supply Control System developed by ASF for control of inventories and procurement, production schedules of principal items were reviewed monthly to insure that procurement was at rates consistent with demands.

I particularly invite your attention to this final Supply Control System. I believe that a thorough study of it, the reasons for its creation and the results that it accomplished will amply repay you students of the supply side of modern war. It assembled and brought out into the open the numerous factors of replacement issues, initial equipment, operation requirements, inventories, stock levels, procurement schedules, returned stocks,

so we could see what we were doing and bring about an approach to balance. One of the things that it proved was the impracticability in supplying military forces of having various phases of supply such as requirements, inventory control, procurement scheduling, in separate water-tight compartments. We cannot bring them too close together.

There must be coordinated ~~over-all~~ policies covering these phases and yet have operations decentralized.

The impact of Army requirements on the whole economy due to the need for facilities, materials and labor was necessarily tremendous during the recent war. It will be in any modern war. The Armed Forces must, of course, deal with and look for support from other governmental agencies having the interests of particular segments of the economy in their charge. During the last war some agencies were permanent departments of the Federal Government and others were civilian war agencies created for special needs. There were necessarily some delays at certain periods due to duplication, lack of clear-cut definition of responsibilities, and some overlapping of functions. This was natural in meeting new problems such as were bound to develop in an all encompassing emergency of this type.

We had a series of trials and errors to develop workable procedures in new and uncharted fields. The Army, for instance, was and should have been a strong partisan in pressing for its needs. So was the Navy. So were some of the civilian war agencies. That was proper and necessary because mighty decisions had to be made and without thorough presentation of the interests and requirements of all concerned the proper final choice might have been delayed or never reached.

The Army always recognized that in war it would be dependent upon civilian government agencies for general mobilization and utilization of its resources. It always knew, in spite of the rumor that the Army wanted to take over the function of the WFB and control the economy of the country, that civilian agencies and not the military should make the allocation of resources between civilian and military use.

By and large, smooth working arrangements were in effect by the end of 1943 between the Army, the War Production Board and the other governmental agencies concerned with the winning of the war. The Military Services must be concerned with the effectiveness of the operation of the civilian agencies. Teamwork on the part of all is required to win a war.

My plea is that we attempt through proper planning now to minimize the time needed to work out that teamwork.

It will always be necessary to have advocates for our varied interests. Let us also have the means of promptly and efficiently obtaining a conclusion on the direction to take.

World War II required greater utilization of the full resources of the United States than ever before in its history. Labor, industry, agriculture, transport, scientific knowledge and research and the Armed Forces were all essential in victory. Every civilian activity, to some degree, was affected by war. Practically all of them contributed in some measure to the war effort.

We had governmental controls over raw materials, manpower, industrial facilities and production. We controlled food and transportation.

Up to World War II, it had been customary to consider the potential resources of the United States practically unlimited and amply sufficient for any war in which this country might become involved. The demand of World War II, however, brought us to the very limit of many resources. Throughout the entire war, there was no period in which there were not limitations on the production of some essential item of munitions.

According to Mr. Krug's report on "Wartime Production Achievements," the Nation's total output of goods and services rose 50 percent from 1939 to 1944 and at no time during the struggle did the war effort take more than 40 percent of this output, leaving for the civilian economy a gross amount of commodities and services greater than it absorbed in the prewar good years of 1937 and 1939. During these war years, there was rationing of many items of civilian use and drastic curtailment in the civilian production of many items using materials in critically short supply such as steel, copper, lead, wood products, cloth, leather and a catalogue of other materials. Shortages of materials in many instances occurred because of manpower difficulties. The War Production Report further states: "Throughout the war the people at home were subject to inconvenience rather than sacrifice."

Without detracting from full appreciation of our magnificent industrial effort, these facts clearly point to the conclusion that during the latter part of the war period, when war production was limited by manpower, a more adequate manpower control might have drawn this manpower from civilian production to the betterment of war production. Laws are only effective when the public approves. I suggest that with intelligent plans and with the needs clearly defined, the public would recognize that industrial manpower, too, could be more effectively used if allocated under appropriate civilian controls. We might as well recognize the fact that we cannot enforce any law unless it is overwhelmingly backed by public opinion.

In studying the war effort of this country on the homefront, I suggest that you examine the statements made to our examiners after VE-Day-- I think it is Vice Admiral Speer--at any rate he was Germany's production czar during the latter part of the war. According to Speer's testimony, German industry, operating under absolute dictatorship, had the same difficulties, the same disrupting shifts in production and the same short-falls and the same conflicts between different divisions as we had in this country. This testimony indicates to me that Germany, using dictatorial power, did not do as good a job as did we with our democratic form of government. We can, however, save much time by using the hard won experience from this war in any future emergency.

And now may I summarize briefly:

I. There should be promptly completed a broad plan for industrial mobilization of the United States for any future all-out war. The work should be carried out now when the experiences of World War II are fresh in the minds of many who had a part in the industrial war effort and whose experiences and conclusions are available for aiding the preparation of an industrial plan.

II. We should keep in operation even if in skeleton form the material controls so vitally needed in wartime. We should make constant economic studies of changing requirements of materials and manpower.

III. The principles of Supply Control as practiced in the Army Service Forces might be well applied to plans for all procurement, including as well studies of wide geographic distribution of suppliers and proper allocation of contracts in accordance with manpower available.

IV. Of equal importance is the need for unremitting pressure behind our research and development program.

V. Experience certainly emphasizes the need of ample stockpiles of materials for which there is enormously increased demand in time of war, especially of those materials we obtain in whole or in part from other countries.

VI. When expanding material and manpower to the ultimate limit, there must, at every level, be some referee to rule on the relative importance of needs. There must be as there was in the late war, a referee between civilian needs and the Military needs and again as between the needs of the several military agencies. The referee should not be a coordinating agency but should have the power to command.

In striving for the ideal in the form or organization or procedure we can not permit ourselves to become too inflexible in our thinking because we are dealing with human beings and human impulses. The ideal in organization, to my mind, is a difficult-to-obtain combination of centralization and decentralization. We must have centralization of policy but to get the maximum amount of enthusiasm and dynamic force we must lean to decentralization in operations. To get the drive which is essential in critical times it may sometimes be necessary to compromise to some degree. Too many layers to an organization may minimize the possibility of visible errors but may create the greatest error of all in stifling initiative and driving force in lower working layers.

VII. In the Army as a unit and especially in the Army Service Forces, with which I am familiar and which produced close to two billion dollars of materiel per month, there was developed a type of organization that worked. It can be improved but basically it was soundly conceived. Do not tinker with it too much.

VIII. I urge that close contacts be maintained between industry and the Services. Expand the present program of exchanging members of both groups for reasonable tours of duty. We need more understanding by industry of what the Government and the Services are like and also more understanding by government and service personnel of what makes industry tick.

IX. We know that manpower or lack of manpower controlled production in the latter part of World War II and we can reasonably conclude that in any future war, if it continues for any length of time, manpower will have an even more dominating control. We should therefore develop a system by which manpower will be measured for end items and their components just as material was measured under C.M.P.

7-3

Further, any broad Industrial Mobilization Plan as outlined in "I" above should set forth what national manpower controls we believe to be necessary for an all-out effort.

In conclusion, I wish to emphasize once more the need of advance planning. Starting where we left off at VJ-Day, we must review and analyze the procedures in effect during World War II on all phases of production. We cannot afford to lose the systems that worked. We must perfect them and fill the gaps so that they will be ready to put into immediate effect should we again have war.

I thank you very much indeed for letting me appear before you. I am sorry that I cannot give you a talk on the rest of my life without having to make an added presentation.

GENERAL ARMSTRONG:

Mr. Bruce, you spoke of the ASF and your recommendation that there should be a minimum of tinkering with it. What would be your views on the making of changes that would strengthen it or make it more effective as an organization?

MR. BRUCE:

What I had primarily in mind when I said you should not tinker too much with the organization that was successful was that there are points at which the organization could be improved but what I feared was that someone might undertake to substitute a more functional organization for what, in World War II, was an objective organization.

I went through World War I as a contractor. I do not think that I would have lived through it if I had not been close to Washington. We had Purchasing on the top floor, then Engineering, and then Production, and finally, Inspection--each on a separate floor. To get action on any item, I almost wore myself out going from floor to floor, up and down, and backward and forward. It would take me several days to get a decision that I ought to have gotten in a half hour.

Based on the experience in World War I, we organized for World War II in a common-sense way. We were objective. A manufacturer of some item of ammunition could get his decisions in the main from one man. He did not have to go from one functional organization to another. The whole production problem was split up on objective lines. Ordnance items were divided into a number of divisions. Each of these divisions in turn were further divided so there was a very much decentralized organization.

The difficulty with a functional organization is that there is no clear-cut dividing line between the functions. They overlap and are interdependent. You cannot put the functions each in a watertight compartment and expect to operate expeditiously or efficiently. We should certainly adhere to the objective type of organization as far as we can go, with a broad centralization of policy making at the top.

GENERAL ARMSTRONG:

Mr. Bruce, I think that nearly everybody here is in agreement with you on the functional organization and its disadvantages. Now, sir, would you think that the Army Service Forces might have caused some of that additional layering that you object to, and we think quite properly?

MR. BRUCE:

The ASF took control at a period of feverish production activity. It was staffed largely with new men in new jobs. It took some months to shake down. Throughout the war there was continued increase in effectiveness and in the smoothness of its operation. Toward the end, it was as near a model as could be.

I do not see how it is possible to decrease the layers from the ASF staff organization down. No matter what this staff organization is called, there is need for some authority over the seven Technical Services of the ASF. There must be uniform purchase policies, over-all direction of material control such as CMP, over-all direction of storage, distribution and shipping, over-all direction of supply control and common representation of the seven services in dealing with other agencies of the Government. Without such a grouping, there would be chaotic conditions, with the seven services each making its own policies and dealing with other agencies of the Government.

GENERAL ARMSTRONG:

Mr. Bruce, I happen to know your views on renegotiation, and I think it is important, in view of our interest in pricing policies in the Industrial College, to have your statement as to your views on renegotiation included in the record. Would you be good enough to tell us that?

MR. BRUCE:

That is quite a question. Well, when renegotiation was adopted, it certainly was the best of the alternatives that seemed to be in sight and renegotiation was admirably administered. I think the opinion was very nearly unanimous in industry that the renegotiation group was fair, scrupulously fair, in the way it handled renegotiations.

On the other hand, of course, in production in this country in normal times, the stimulant is self-interest; it is the profit motive; and that is what has built up this country. When at war, when tremendous production is the goal, we want every influence in the world that will add anything to the drive for production. Now if we were fighting on our own shores and the war were close enough and if the entire population had a vivid appreciation of urgency, we could forget about it; but when the war is a long way off and when we have censorship so we do not hear promptly about what our fighting forces are doing and suffering--I guess that cannot be helped--we do not work up this instinct of self-sacrifice to the proper pitch. Well, the existence of renegotiation means that in the placing of contracts, prices were not made as close as they would have been if there had not been renegotiation.

704

Both sides will say, "What is the use of our quarreling about this; if we make too much money they will take it away from us;" so prices stabilized at a higher ceiling than they would have if there had not been renegotiation.

When a company's production brings its profits into the renegotiation zone, the company knows it and when the company spends for advertising, maintenance or any other purpose, the company is spending someone else's money. Human nature being what it is, there is, under this condition, a certain lessening of the urgency for conservation of labor and material, especially so when the company is meeting its schedules and its expenditures pass the examination by the Internal Revenue Bureau.

Then there is another thing. I have had four or five instances of this in my own experience where we were urging somebody to adopt a radical change in procedure that would save a good deal of manpower and met with a great deal of resistance. The fellow would say, "Well, we are meeting the schedules and we are making more money than we can keep in renegotiation, why change?"

So I have an idea that if we adopted a policy of close pricing with repricing at reasonable intervals, depending on the profit being made and with tax schedules which left a trickle of profit to remain with the contractor, money would be saved for the Government. I believe there would nationally be more production, because this policy would tend to save both manpower and material. This is my personal view.

GENERAL ARMSTRONG:

I might say, sir, that it is the view that we hold to down here. We rather like that idea ourselves.

MR. BRUCE:

Well, I felt that way for four years.

QUESTION:

Assuming that the ASF organization was sound and that the errors in it were due to human frailties rather than the organizational structure, do you feel that by bringing in, say, the technical services of the Air Forces, and bureaus of the Navy, within the organizational structure of the ASF, or some similar organization, we would have had too unwieldy an organization?

MR. BRUCE:

You mean if we had the Air Corps and the Navy?

QUESTION:

Bureaus within the structure of the ASF.

MR. BRUCE:

The thing you would have to do--you would break it down into three or more parts. (Laughter)

QUESTION:

Mr. Bruce, you mentioned the allocation of labor in the productive processes. How far do you think that our people would go in a national service law to control those allocations?

MR. BRUCE:

I believe if we had known what we wanted the day after Pearl Harbor we could have gotten it. Nobody can answer that question because of public opinion in this country--and there is no use kidding ourselves--we will never put over anything unless we are backed by public opinion. We cannot enforce it; we might put it over, but we cannot enforce it. It would be like Prohibition; it cannot be enforced unless public opinion is overwhelmingly back of it.

What is very clear in my mind--toward the end of this war, there was the War Production Board presumably in charge of production in the country and the main element that was limiting production was under the War Manpower Commission; it was cooperative but it just did not make sense to have that split up, as I saw it.

And another thing; the country was split up into four zones: No. 1 was the critical labor zone where there was a shortage; No. 2 was the anticipated zone of labor shortage; No. 3 was the twilight zone; and No. 4 was the zone where there was plenty of labor. We would go to extremes in all four areas and find that the components went back to No. 1 area. And we had no effective control over it. What I mean is that there would be a terrible struggle and there would be calamity howlers but there is no reason why the use of labor should not be divided exactly the way material was divided.

If, in the early part of World War II, there had been better means of measuring labor demands and if there had been the system through which we would have known the impact on different localities of the contracts we were placing, we certainly could have lessened the number of extremely critical labor areas that came into being.

I know of the calamity howlers over the CMP. There was one period when it was so new to industry that it looked like it was bogging down. There were all kinds of calamity howlers saying that this thing just would not work. And there were all kinds of remedies suggested.

After quite a struggle we agreed upon a remedy which might be called "education." The way it was implemented by the ASF was to assign two officers who were saturated with the problems of CMP from its beginning. We drafted seven other handpicked men out of the divisions of the ASF, not because of their knowledge of CMP but because of their special ability, and these seven men received the most intensive course in CMP

instruction that we could imagine. Having taken this course, we then secured five men from each of the seven Technical Services and went through the same course so that at the end of one week we had some forty specially selected men who knew CMP and were saturated with all of the many detail problems. From this point we spread out over the country and at the end of either sixty or ninety days we had indoctrinated 8,500 people in the United States as to the workings of CMP and what they had to do to get material and to eliminate the delays and conflicts.

Before this campaign of education, the greater part of my time was spent over CMP problems. To this day, it is vividly in my mind having a manufacturer tell me--"This damn thing will not work."

During the campaign of education, the complaints began to die down and by the time the program was completed, CMP had ceased to be the "problem child" of the ASF. We made it work.

The same kind of procedure applied to manpower would bring about the same result. There is no mystery about it.

QUESTION:

Mr. Bruce, would you try to handle that through the labor unions?

MR. BRUCE:

No.

QUESTION:

I would like to belabor that point a little bit further, Mr. Bruce. Taking into consideration the entrenched position in which labor is in the United States at present and the apparent power that it has in the consideration of the national labor law--we run into Mr. Baruch's objection there too in that you nationalize labor to work for the private gain of private individuals--what would be your view on the matter of nationalization of the industries in which this national labor law would work? Those people would then be working for the United States just the same as men in uniform and not Henry Ford or someone else?

MR. BRUCE:

I have not drawn that specification. I have left that to the great wisdom of you gentlemen. I have not drawn any specifications. I do not say there should be absolute universal service such as you assume; there would have to be a very critical situation and a tremendously strong public opinion back of it or it could not be enforced.

I remember very vividly when England passed such a thing back in World War I and the next day they had 400,000 railroad people quit. They could not put them all in jail; the thing collapsed. We cannot go any further than overwhelming public opinion is behind us.

You asked about labor unions--would we turn manpower over to them? No. But I would cooperate with them. Their cooperation would be absolutely essential to make any plan fully effective. I would have them in the group. We must get everybody who is interested into our group then try to work out the thing. We must get the views of everybody. But I would not turn it over to such an agency as that, or any agency, in fact.

QUESTION:

Mr. Bruce, to pursue that question just a little further, you stated, I believe, that if the war had continued there would have had to be more positive allocation and controls of labor. Now I assume from your last statement that you have not drawn a specification on the national service.

MR. BRUCE:

No.

QUESTION:

What other controls were available to us that we do not use, short of national service?

MR. BRUCE:

We were getting pretty close to it. We were competing with ourselves. We were drawing all the people from the textile mills of the South into our factories because they could go into an airplane factory--nice, clean work--and make more money. We were drawing people from the woods; they did not like that job much anyhow, so a shortage of labor developed in the cutting of timber in the woods, and in textile mills; we could not recruit labor for the copper mines; we could not recruit labor for the lead smelters and lead was critically short. I think, if the war had continued, we would have had to control labor further than we did, but we would have had public opinion back of us.

Now what I am advocating here, though, is really for us to know what we are doing then to try, by proper planning, to distribute this more uniformly. In other words, the best thing we can do is to carry the work to labor. Our struggles begin when we have to carry labor to the work. Families have to be disrupted and moved all across the country. What I am advocating primarily is a system of allocation so that when we place a big contract we know the drain there will be only in various communities. I have an idea that this country would be split up--I do not know--into maybe fifty or a hundred districts so that wherever a contract was placed it would be known that there would be 20 men from this district or 50 men from some other district; we would know what we were doing and we would get an over-all measure of labor. We never did have that in the last war.

QUESTION:

Mr. Bruce, would it not be necessary to have provisions in the prime contracts providing that the subcontracting would have to be done within certain geographical districts where there was adequate labor?

MR. BRUCE:

Yes, but the statistics would have to be in order so that the right districts would be known.

QUESTION:

I agree with you, sir, but I meant, would it not be necessary in order to avoid a controlled labor plan which would be similar in principle to our Controlled Materials Plan, and which, if instituted, would in effect be national service for labor?

MR. BRUCE:

Well, I can imagine an intermediate step there, Colonel, by which, in the proposal for any contract, there would be prepared a CMP type of report that would show you just where this contractor figured on placing his contracts and what was going to be the impact, so you knew what you were doing before you did it. I think that is fundamental. The first thing to do is to get the information and know what you are doing and you can then measure the impact.

QUESTION:

Mr. Bruce, may I ask how the plants will be taken care of that are located in places where there is poor labor supply? I am talking about what the gentlemen on The Hill call "feeding the public trough."

MR. BRUCE:

We are going to do just what we have been doing. We will never get a hundred percent absolutely rigid system. We will always have to compromise.

QUESTION:

Mr. Bruce, would you care to give us your views as regards supply-control coordination as it relates to the theaters of operation?

MR. BRUCE:

Frankly, my experience is limited to the home front. I have always felt that the matter of supply control should be spread out. If the war had gone on, it would have been applied to each theater. They were beginning to apply it to foreign theaters before the end of the war. This control could be applied throughout the supply system.

I have a story on that. I struggled over supply control. Instead of issuing an edict, I kept account. I went to 50 or 60 meetings personally--and a meeting runs from ten to seventy-five people, and it was not a meeting unless it lasted two hours. I remember telling at one meeting that there was no mystery about supply control. I compared supply control to the manner in which I had recently appraised my supply of liquor. I was about to run out and I bought more. There is nothing in

the world in which procurement is not measured against projected demand. It is common sense that anybody uses in any business, but it is a terrific job to put it into effect in the middle of a war. Of course, in the early stages there were production reports, everything segregated, to show what we were producing; then there was a storage report; then a distribution report; and there were two or three others--I forget what they were. There were all kinds of functions and each one had different specifications. The production men called it a tank when it left the tank shop; the storage people did not call it a tank until it got its radar and everything else on it. So there were two different ideas on that.

Now all we did was to collect all the information on one item on one sheet of paper and print it so everybody could look at the same thing. I have been out of touch entirely for the last eight or nine months but I understand that they are going further and further with the theory of supply control, picking up categories and broadening the base. It took us a year or more to get our reports stabilized on 2,500 items that we covered and which represented more than 80 percent in money value of the entire program.

GENERAL ARMSTRONG:

Mr. Bruce, I want to tell you, sir, that the Industrial College is at least trying to accomplish a good many of the recommendations that you have made. You can see from the mature students we have here that we are not instructing these lads; we are really a combined team trying to accomplish just what you suggested. We are trying to analyze the lessons of this war so that a new and better industrial mobilization plan can be prepared as a result of the work that these gentlemen are doing, and I can testify that such work is being exceedingly well done. Also the Industrial College has prepared and has approved a plan to send a large number of officers, beginning September first, to industry in conformity with your recommendation.

Your talk, sir, has been exceedingly stimulating and interesting, and it will help us in accomplishing our mission. I want to express the thanks of the College to you, Mr. Bruce, for being here with us this morning.

(8 July 1946--200.)S

05 00000 000