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ARMY INDUSTRIAL COLLEGE

WASHINGTON, D. C.

THE ORGANIZATION AND CONTROL OF PROCUREMENT IN WAR

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February 5, 1925.

THE ORGANIZATION AND CONTROL OF PROCUREMENT IN WAR

The subject upon which I shall talk to you, gentlemen, today, is The Organization and Control of Procurement in War.

War time procurement, as I understand the term, embraces all the activities that the Government will take to assure our fighting forces, Army and Navy, the necessary munitions and general supplies to prosecute successfully their respective missions. By this definition you will note that procurement is a much broader affair than mere purchasing. The vast sums of money involved, billions of dollars, the thousands of tons of material required, and the serious nature of the business of war, require that procurement be given the gravest consideration. The subject is so large that I shall confine myself to observations of general application.

The best point of departure for our study is naturally, What was done in the World War? And next, What is done in our current industrial world? The procurement experiences of the World War should be studied by you as intently as strategists study the battlefields of France, drawing conclusions from the success or failure of the methods employed. You will doubtless have the exceptional opportunity during your course, of listening to the experiences of some of the leading actors in that phase of the last war. I understand, also, that the records of the Council of National Defense and of the War Industries Board are available to you in this office. These should be mines of most valuable information throwing light on many questions of organization and control encountered during the World War.

Second only to war experiences for study are the organization and methods of our great industrial firms. You will also have opportunities to hear representatives of these firms tell you how and why they function.

It is well to caution you at this point that the priority of importance of the elements changes for war procurement as compared with peace procurement. Time, for example, is more vital in war. But the basic principles are identical and the men who will supervise the work of war procurement by the government bureaus will be, in the main, civilians who have been trained in our large commercial organizations and who will be brought in as reserve officers or as civilians in an emergency. Naturally these men will expect the best practices of the commercial world to be followed by the government agencies.

It is perhaps obvious that the objective of all planning and organization is performance,- performance of desired functions by individuals or by groups. A plan and an organization should be flexible to meet sudden changes thrown upon it. It follows, therefore, that the best organization will be that one which will permit the individual

charged with performance - be he a machinist at the lathe, the superintendent of the shop, or a commanding general in the field - to meet this obligation most efficiently, with only that measure of limitation and control necessary to insure that the task is promptly and properly performed. Over-organization is as possible as under-organization and almost as bad. There is a certain type of mind that tends to over-organization in the desire to secure what to it appears to be intellectual completeness. Too much detail prevents flexibility; it takes away the initiative of the individual and may interfere with operations that without its dragging effect would progress smoothly.

Text books usually divide organizations into two general types: Line and Functional.

In the first each individual has one and only one other individual to whom he looks for all orders and instructions. The lines of authority flow from the central authority like the branches of a tree from its trunk.

In the second type functions are emphasized. The workman at the lathe, for example, may have his job assigned by one foreman and be directed how to do it by another. In this way the individual has to serve more than one master. We tried it in the Ordnance Department during the World War. The task of procuring munitions was divided into the functions of Engineering, Procurement, Production and Inspection. The consequence was that it became impossible to locate responsibility for trouble and delays. The system might have worked in time of peace; in time of war it was impossible.

see Crozier, "Ordnance & the world war"

The real object of any type of organization is to so subdivide an operating group as to cause it to best perform its mission. At times the line or military organization is preferable, and at others the functional organization is to be desired. It should be noted that at some step in every organization it becomes functional. For example, the chief of the Ammunition Division of the Ordnance Office is responsible to the Chief of Manufacture of that office for complete rounds of artillery ammunition. This is line organization. But within the Ammunition Division, the procurement of a round of artillery ammunition is divided among the metal components section, explosive section, loading section, etc. This is functional organization.

Again, the primary division of the War Department into military activities under the Chief of Staff, and procurement activities under the Assistant Secretary of War, is a functional division; so that neither type of organization should be condemned at all points.

In organizing to accomplish a mission, the mission should not become obscured. The mission of the War Department is to prepare for war. Consequently the organization charts for peace and war should be the same, except as regards the number of personnel engaged. This will facilitate the transition from a peace status to a war status.

The largest commercial organizations of the country are small when compared with the War Department in war. The United States Steel Corporation had gross sales in 1922 totaling $1,092,000,000. Whereas in 1918 the army consisted of 3,665,000 men and the War Department expenditures for the fiscal year 1918 were $5,702,582,090.43.

No commercial organization that has yet existed has expanded so rapidly or to so great a degree as did our War Department during the World War. In 1916 the Ordnance Department had an appropriation totaling $14,947,110. In 1918 it disbursed $1,663,246,607.67, or more than 100 times the appropriation of two years before.

On April 1, 1917, the Ordnance Department contained 97 officers and 12,688 civilians. On November 11, 1918 the Department numbered 5,954 officers and 71,182 civilians. On April 1, 1917, there were 16 Ordnance officers in Washington; on Novermber 11, 1918, there were 1,284. I cite these figures to show how rapid and great was the expansion. This will occur again, and success will depend upon constant and earnest work done in peace to perfect our organization and to complete our plan.

Some further figures that may be of interest to you are as follows:

The war appropriations of the Ordnance Department totaled approximately $8,000,000,000 in cash, and contract authorizations were in effect for an additional $8,000,000,000 at the time of the Armistice. These latter were canceled and nearly half of the cash appropriated was returned to the Treasury. Of the five billions expended, about one-half went for mountain, field, siege and anti-aircraft artillery ammunition alone. This included the cost of plant facilities for its manufacture.

A consideration of the personnel of this highly and rapidly expanded organization will immediately point out a further handicap that the War Department must carry as compared with large commercial organizations.

In commercial organizations the personnel in key positions are there because of the law of "The survival of the fittest" over a long period of time. The sudden violence of war expansion precludes this for the War Department. Careful planning and organization should, however, materially reduce the number of misfits, some of whom will get in in the confusion of war.

The experience of the World War suggests the following thought that I offer for your consideration:

Each of you is familiar with military organization and tactics. You know that each unit is backed up by supporting units and also that each unit in action has a reserve to throw in when other untis become exhausted or are threatened with failure, or to turn the tide at a critical moment, ensuring success. Have you ever thought of applying this principle

to your procurement organization? How many groups on any chart are provided with additional personnel who can be thrown in to assist the subordinate groups in critical tasks or to assist personnel who are feeling the strain of long continued responsibility of a serious nature?

Personnel, their treatment, their morale, constitute fifty percent of the problem. The Army has a tendency to forget this because in general an order is given only to be obeyed, and because perhaps our successes and our failures are remote and their reactions are not felt.

I will now sketch briefly the organization for procurement of the Ordnance Department.

The Ordnance Office is organized into three main divisions with two overhead groups. The main divisions are the

Technical Staff

Manufacturing Service, and

Field Service.

The overhead groups are the

General Office, and

Administration Division.

The Manufacturing Service is charged with procurement for the Ordnance Department. It is divided into three active divisions which in time of war will become four. Our plan contemplates and expansion in case of war and not a reorganization. In peace time the procurement is done through the arsenals. In war the arsenals continue to procure, but their activities form but a small part of the entire program. The war plan of the Department places the chief burden of procurement upon district organizations. There are now fourteen such industrial districts, and each is headed by a civilian chief, many of whom are reserve officers. This decentralizes the work of procurement and is an important feature of our organization.

War orders are placed during peace with the districts for procurement in an emergency, and with these the district chiefs perfect their plans.

The basis of the procurement plans, as for all war plans, are the mobilization rates prescribed by the General Staff. It has been generally conceded as a result of the experiences of the recent war that the man-power of a nation can be mobilized more rapidly than the material for them can be provided.

Some of the effects of a state of war upon the procurement of ordnance material will be discussed.

(a) Design.

The control of design and the steps in design will remain essentially the same as in time of peace. The threatened outbreak of hostilities will no doubt hasten to the standardization of material under development. The arsenals will be depended upon to carry out the bulk of the development work as is done in time of peace, and the Ordnance Districts will be called upon the manufacture in quantity and to develop methods of production.

(b) Purchase and Manufacture

In accordance with the war plans now being worked out, the manufacturing divisions draw up in time of peace, war orders covering the procurement of Ordnance material necessary to meet the estimated war requirements. The greater part of the material on such war orders is allocated to the Ordnance Districts for purchase or manufacture. The Ordnance Office delegates in a large measure, the control over purchase and manufacture to the Districts in time of war. Its orders to the Districts prescribe the quantities and rates of production or delivery and the points of delivery. It also coordinates the purchase or manufacture by one district on account of any of the other districts. The Ordnance Office may retain control of the purchase of certain strategic materials or coordinate the distribution of such materials within the Department when the materials are procured by an agency other than the Ordnance Department.

The purchase or manufacture of experimental or developmental material is retained in the Ordnance Office or delegated specifically to the Manufacturing Arsenals.

(c) Inspection.

Inspection in time of war is conducted following the same general principles as in time of peace. All materials must be inspected to determine that the requirements of specifications are met before payment can be made.

The responsibility for inspection ordinarily accompanies the responsibility for purchase or manufacture. However, the Districts will inspect materials purchased or manufactured within their geogtaphical limits except in specifically exempted cases as, for example, the work of Manufacturing Arsenal, or a plant enganged in experimental work.

The Ordnance Office does not delegate in time of war the authority to accept material failing to comply with specifications. General instructions may be issued in case of necessity to lower acceptance requirements and in such cases all inspection agencies may be allowed to accept materials meeting the specially authorized requirements .

(d) Proof

Proof for acceptance in time of war will be conducted at proving grounds to be established for the purpose. War time proving grounds will be provided with limited equipment, only that equipment required for making acceptance tests will be provided. Developmental tests, range firing tests, etc., will in general be conducted at Aberdeen.

(e) Payment.

In time of war the Fiscal Officer will allocate funds to the Manufacturing Service to cover the estimated cost of the procurement program. The funds so allocated will be apportioned to the Manufacturing Divisions and the section in charge of proving grounds. These units of the Ordnance Office allot money to the Districts, Arsenals and Proving Grounds. The expenditure of funds and the accounting for funds at those points are accomplished by specially designated officers on the staff of either the Commanding Officer or District Chief.

(f) Delivery

An officer on the staff of the District Chief of Commanding Officer of an Arsenal or Proving Ground will be in charge of shipments and transportation matters. He will receive shipping instructions from the Field Service for completed material ready for issue, and from the Ordnance Office and other districts regarding the shipment of components, materials partially fabricated and ballistic samples. This officer will give instructions to plant inspectors regarding shipment of materials.

As I have stated before, the organization provides the tools for executing a plan. This execution requires that at any point "The person giving an order is under obligation to see that the order is performed". In this way only can the plan be surely advanced to a successful conclusion. This is control. Any plan will run the chance of destruction like a runaway railway train if not brough under control.

An excess of smokeless powder will not assist a deficit of shell. Unfortunately this was one of the very serious conditions that developed during the World War.

Likewise, if the Army desires increased quantities of 75 mm. ammunition and decreased quantities of 155 mm. howitzer ammunition, such a change can only be effected efficiently by a flexible plan and proper control.

At this point I wish to mention a creation of the World War known as "Super-control". This super-control, like all other human "super-creations" was born of the requirements of the times. Something higher was required to weld together the uncoordinated efforts of existing agencies. These conditions arose largely from lack of a plan. An eminent official of the last war has said about the war that "all the mistakes that came to his notice arose from one of two causes: defective organization or lack of a plan". It would seem therefore that a definite clear-cut plan with

a well balanced organization to carry it out are objectives to be striven for by the supply branches of the War Department. As you are military men the analogy to field operations of an army will be apparent.

Procurement control is dependent upon an accurate knowledge of the situation that is up to date at all times. This knowledge is obtained by means of field progress reports, stock records, and a consolidated progress report.

(a) Field Progress Reports:

These reports are submitted by the inspectors in the field through the controlling offices to the Washington office where they are consolidated so that the general status of the material in question can be ascertained. They should be submitted at such frequent intervals as may be necessary to properly control production and shipments of the completed articles. They not only outline the quantities that are accepted and under manufacture, but indicate the expected production during certain succeeding intervals of time.

(b) Stock Reocrds:

Consolidated records which indicate stocks on hand and under production together with expected rate thereof are vital. During the World War it was very difficult to obtain a correct picture of what had been or was expected to be produced in many itmes of munitions. Such a condition is intolerable and arrangements must be made to prevent repetition of it in a future war. The Ordnance Department hopes to build up a system in time of peace that can be so easily expanded in time of war that accurate records will be always available. The consolidated stock records must be kept in Washington. They will not only outline to superior authorities the quantities of issue articles that are available but will also be the basis for the matching up of the various components so that complete issue articles will be obtained.

(c) Consolidated Progress Reports:

At least once a month a consolidated progress report should be made up covering the raw materials, the intermediate materials, and the items of issue that are on hand and under purchase, together with probable rates of delivery. It should also indicate the overages and shortages that are occurring with respect to the final issue articles. It should contain a summary in terms of the number of complete guns of various calibers and rounds of ammunition therefor that are on hand or are to be delivered within specified times. This report should be submitted by the Chief of Ordnance to the officials of the War Department who are controlling procurement,

Based upon this report effort can be made to increase or decrease production of particular items as the war plans of the Government may require. By this system the higher officials will know just what munitions preparedness they have at all times.

The form into which these reports will be condensed is important. A graphic chart will possibly convey condensed information most quickly and accurately. Where quantities are large and rapidly changing and the number of items large, it is felt that the time and quantity relation requires graphic representation. The Ordnance Office has expressed itself as favoring the Gannt system, and at present quarterly reports on current procurement are being made to the Assistant Secretary of War using that system. In case of war these will likewise be used, but on a larger scale.

This is rather a detail, but control can only be intelligently exercised when based on knowledge, and the knowledge must be acquired rapidly.

I will sum up by reiterating that the success of a Supply Branch in war must be founded upon a sound organization, a carefully prepared plan, and complete control of the plan by the organization throughout its execution.