

PURCHASE (PROCUREMENT) PROBLEMS IN THE ATOMIC AGE

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 Commanding General for Supply, T-4, Air
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PURCHASE (PROCUREMENT) PROBLEMS IN THE ATOMIC AGE.

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GENERAL MCKINLEY:

Gentlemen, this morning our speaker is from the Air Forces. General Thomas is a graduate of St. Louis University (1917) with a Bachelor of Law degree. He admitted a little while ago he has not practiced much law since.

In World War I, he enlisted as a sergeant in the Aviation Section of the Signal Reserve. He was commissioned First Lieutenant, Signal Reserve, in 1917 and became a First Lieutenant in the Regular Army in 1920. He has all sorts of aeronautical ratings. You will see them on his chest when he stands up here.

In 1942 General Thomas was ordered to the War Department General Staff and was later designated Chief of Staff of the 12th Air Force Service Command in the North African Theater. In 1945 he became Assistant Chief Air Staff, A-4, in the Mediterranean Theater of Operations, with headquarters in Italy. He then returned to the United States as Assistant Chief of Air Staff, A-4, and was later assigned to Headquarters Air Technical Service Command, at Wright Field. In 1946 he became Deputy Commanding General for Supply, T-4, Air Materiel Command, Wright Field.

His subject this morning will be "Purchase Problems in the Atomic Age". I take pleasure in presenting Brigadier General Arthur Thomas.

PURCHASE PROBLEMS IN THE ATOMIC AGE

In discussing this subject as applicable to the Army Air Forces, it is necessary to consider what the Atomic Age requires in the way of supplies and services. The phrase "Atomic Age" is often used as a slang expression to indicate an era of scientific development which has affected, not only the method of warfare, but the kind and nature of the supplies to be used as implements in any future national emergency. This phrase taxes the imagination. Many of the ideas of the implements of war which were thought to be fantastic or of the "Buck Rogers" type are now thought to be feasible and realistic. Many of these implements will have no counterpart in the commercial world, or will have only a limited application so that the nature of our supplies may reasonably be considered as drawing more into a specialized field than has ever been the case in the past. Men have usually fought with equipment which was useful in the daily life of a nation's citizens.

In our day the airplane, while originally designed for the convenience of man in his peaceful pursuits, has had its development greatly expanded and accelerated because of its adaptability as a new military weapon, and its adoption and development has had its affect on important changes in the technique of war. The urge for survival and the need for an alert national defense leads one to believe that the implements of war in the Atomic Age will be far greater in their destructive ability, more ingenious in their design and more terrific in their energy than has ever been the case in the past. For that reason they will not have their inception for, nor be primarily suited to the usual peaceful life of the country's inhabitants. It is also reasonable to presume that the facilities and techniques in producing these newer implements of war will also depart far from the requirements of a civilized nation in its peaceful pursuits. Basic sciences are affected; research and development are stimulated by such requirements.

The extent and size of these developments and the facilities and costs and time for their quantity procurements has poised a number of purchase problems. While this nation's prime objective is a peaceful world, to assure the accomplishment of that objective and to discharge our obligation of an alert defense to our nation, we must constantly secure new and improved and more effective implements of war. The requirements of the Atomic Age has taken us far into the field of pure science, research and development in search of such implements. Many of our purchases for scientific studies, research and development are made with organizations, institutions and companies never before contracted with. These sources have been selected because of their ability, their personnel and facilities and their general interests in these developments. Under the authority of existing procurement legislation, purchases from these organizations have been made on the selected basis without the use of competitive bidding. Presently, several hundred contracts of this kind have been placed running into millions of dollars; practically one hundred contracts of this kind have been placed with universities, foundations and other institutions where profit is not a factor or prohibited by charter or otherwise. These institutions are required to zealously guard their endowment funds.

Since the nature of these purchases are such that the costs cannot be determined in advance with a reasonable degree of certainty, and because of circumstances of financing, many of these contracts are placed on a cost reimbursable basis. Since the services differ substantially from those which might be required in the purchase of supplies from the industry, the usual definition of costs used in the cost-plus-a-fixed-fee type contract permitted by legislation during the war cannot be used. It is necessary, therefore, to agree in advance on the definitions of cost which will be recognized as necessary and incidental to the performance of the contract. Unless the contract makes these matters clear, the contractor runs into danger of having costs disallowed.

During the war; substantially all of our contracts, whether for pure science, research and development and experimental articles; or for quantity items, were entered into by negotiation rather than by competitive bidding. The use of a cost-plus-a-fixed-fee type contract was very largely resorted to for experimental procurements; approximately 60 percent of airframes and 40 percent of aircraft engines during the war were also let on this type contract. This type contract is particularly suited for experimental and research work where the extent of effort cannot be easily defined, and for circumstances of uncertainty in the labor and material market. This type of contract reimburses the contractor for costs necessary and incidental to the performance of the contract, and fixes the amount of profit or fee in advance. The fee remains stationary regardless of the fact that the contractor's actual costs may be higher or lower than estimated at the time the contract was entered into. Research and development and experimental contracts, contracts for airplanes, aircraft engines and propellers; and contracts for supplies in which the contractor has proprietary rights or is the sole source for the article, may now be made negotiations; that is, without the use of competitive bidding. Whether such procedure will continue will depend upon legislation provided by Congress.

As you know, during the war many manufacturers were engaged in the manufacture of munitions and implements of war differing substantially from the kind of products they previously manufactured. The size of contracts in many instances were scores and even hundreds of times greater than their capital investment. The facilities with which to manufacture these implements were either not available or not suited to large quantity production. The government, therefore, supplied facilities costing billions of dollars, and financed the manufacturer by means of advanced payments or by the use of V-loans. It is now the government's policy in these postwar days to have its supplies procured without the use of government owned facilities. Contractors are, therefore, required to supply their own facilities, or if operating in government-owned facilities, should purchase or lease such facilities from the War Assets Corporation at more than nominal rent. Exceptions, on a limited basis, are however, provided in connection with research and development contracts. This is particularly important where competitive bidding is contemplated in order that all bidders be on an equal basis. The Atomic Age will undoubtedly lead to such implements of war as will require, at least in part, facilities differing substantially from those which the American industry would or could supply in its normal peaceful pursuits. There is a belief in many quarters that any future major war in which this country would be involved will come without warning; and that it will not be possible to hold the enemy at bay for the manufacture of implements of war. If this were the case, it would be necessary, where specialized facilities are involved, to have them in being or sufficiently well arranged to permit rapid expansion at the time the enemy strikes, in

order to insure victory. Rapid changes of design and the creation of new designs have the effect of obsoleting special facilities. It appears that facilities now in being will not be wholly suited to the construction of new equipments of war. Whether capital will be willing to invest in specialized facilities for the manufacture of war weapons in a competitive market with no commercial use for these facilities is problematical. This involves a purchase problem for the future, the answer to which will lie in future developments and in the kind of legislation which Congress may grant to meet this problem. The use of advance payments, except in a very limited field, and primarily for development purposes, has been discontinued. Whether the type of contracts which we will be permitted to use in the future will require government financing, will also depend upon the kind of legislation which we will have during the postwar period.

Since the war, the cost-plus-a-fixed-fee type contract has been discouraged, except for experimental contracts. This has been done for two main reasons: (1) There is a strong feeling in the War Department that this type of contract is wasteful and inefficient; (2) that it has no place in competitive bidding. As an alternate, there has been devised a number of contract price redetermination articles for use in fixed price contract. These articles for the most part are found in the procurement Regulations, emanating from the Under Secretary of War's Office. These redetermination articles, while not applicable to price competition do offer an incentive to a contractor to lower the costs and affords the contractor much of the protection of cost changed beyond his control, that he would receive under the cost-plus-a-fixed-fee type contract. Briefly, these articles permit the contractor to proceed at a fixed price, and after a portion of the contract has been completed and the cost accurately kept, the price is again reviewed and either raised or lowered depending upon the experience. Several variations are provided in fixing the price at this time. Some articles provide for retroactive adjustment in the first period as well as the prospective portion; others provide for the prospective portion only, and others provide that further redetermination of price may take place prospectively. These articles are so devised as to permit portions of the contractor, and thereby avoiding the danger of having entered into a cost-plus-a-percentage of cost contract, so expressly prohibited by statute. The amount of profit included in the price is determined by the efficiency and the economy with which the contractor has performed.

There are other problems of purchase in the Atomic Age that are partly created by the type of equipment and partly due to the fact that we have moved from wartime procurement to peacetime procurement. These involve matters such as patents and royalties, close pricing so as to avoid excessive profits, and labor provisions. None of these thus far have become insurmountable, but they do require detail looking into because of the expiration of, or change in wartime legislation, such as the Renegotiation Act, the Patents and Royalties Act, and circumstances with

regard to employment of aliens, and overtime employment, the expiration of the Excess Profit Tax, and the effectivity of the Vinson-Trammell Act regulating profits on complete aircraft and parts thereof.

With the arrival of the Atomic Age has come more complex and technical equipment. These items will take considerable time to develop and test, and to manufacture in quantities. As you may know, there is a statutory time limit placed on the expenditure of funds appropriated by Congress for the War Department. In fact, the Constitution of the United States provides that monies appropriated to raise and support armies shall not be used for a term longer than two years; i.e. two years beyond the year for which they have been appropriated. This means that the sequence of development and procurement in quantities must be broken down into portions and in some instances the procurement must be taken in steps or phases. As you may readily see, much of the equipment contemplated in the Atomic Age is made up by assembling various components which are separately developed. Delay in the development of any of these components may delay the final development and testing of the entire article so that the time in which the funds appropriated for these procurements may pass before the articles are completed and the funds will automatically lapse. In such case, it is necessary that completion be included in subsequent estimates for the reappropriation of funds. Some of the developments presently contemplated will involve periods from eight to ten years to cover the span from their inception to finished product with which to supply our armed forces. In order to shorten this span of time, it was necessary during the war to somewhat abrogate the rules of purchasing only fully developed types. This was done by procuring articles which gave promise of great improvement, based on the general knowledge, accelerating the tests of the early articles and incorporating improvements and changes during construction. Similar action appears necessary in the Atomic Age and, therefore, presents a problem of purchase to shorten this time span.

Industrial planning is intended to help in the problem of procurement in the Atomic Age. The preliminary work which has to be completed before any contract is made, will have been accomplished. Even with negotiation and letter contracts, the time necessarily consumed both by the contractor and the Government before materials, tooling facilities and labor could be started cannot be justified in the days of "surprise" wars.

The necessity for adequate national defense involves the use of public funds. Under our system of government, the use of public funds not only requires legislation to make these funds available, but also legislation which spells out the rules on how these funds are to be expended and under whose authorization and guidance. Before the late war and the declared emergencies, just preceding it, the Army Air Forces procurements were accomplished primarily under the revised statutes and the Air Corps Act of 1926. This meant that, with the exception of experimental items, we were required to obtain our

supplies and equipment by the use of competitive bidding. Whether such procedure has brought out the best possible equipment and at the least ultimate cost, is a question long in debate. It is sufficient however, to say that when the emergency was upon us Congress passed new legislation which permitted the setting aside of price competition and permitted procurements to be made with the prime objective of obtaining supplies of the kind and in the quantities and at the time required to expedite the winning of the war. We are now operating under these wartime legislative acts. Insofar as purchasing is concerned, our procedure is based primarily on two statutes, the National Defense Act and the First War Powers Act.

Section 5-a of the National Defense Act charges the Secretary of War "with the supervision of the procurement of all military supplies and other business of the War Department pertaining thereto and the assurance of adequate provision for the mobilization of material and industrial organizations essential to wartime needs. ****." This act speaks in terms of responsibility for procurement.

The First War Powers Act which was passed later, supplies the authority for contracting. The act authorizes the President to confer almost unrestricted contracting power on the Government Departments for wartime procurement. These powers were conferred on the War Department by the President's Executive Order No. 9001.

The Secretary of War has delegated his duties under Section 5-a of the National Defense Act to the Under Secretary of War. The type of material desired having been specified by the proper agency of the War Department, the responsibility for the business activities of the War Department in the field of procurement and the delivery of military supplies to supply arms has therefore been passed to the Under Secretary of War.

In the same way the Secretary of War has also delegated to the Under Secretary of War with power of redelegation, all of his authority under the First War Powers Act. The Under Secretary of War is, therefore, authorized, either personally or through officials of the War Department to whom he may delegate authority, to enter into contracts and into amendments to, or modification of contracts heretofore or hereafter made and to make advance payments, progress, and other payments thereon without regard to the provisions of law relating to the making, performance, amendment, or modification of contracts whenever he deems such action would facilitate the prosecution of war. These are very broad powers; however, the legislation bans the cost-plus-a-percentage-of-cost system of contracts.

The Under Secretary of War has caused rules and procedures to be

set up as instructions and guidance to all personnel engaged in procurement and purchasing activities. These are embodied in the Procurement Regulations receiving wide distribution. The authority delegated to the Under Secretary of War has in turn been redelegated to the Chiefs of the various services and in turn, on down to the lowest echelon engaged in purchasing. Each delegation, however, has hold something back. For instance, the authority to approve contracts for amounts in excess of \$100,000 has been reserved to a representative of the Under Secretary of War.

With the advent of V-J Day a number of the policies and procedures which were appropriate in time of war were immediately inappropriate. The Under Secretary of War has, therefore, caused important changes in the Procurement Regulations to be made, limiting or changing the action to be taken in the field of purchasing. Some of these are:

- a. The authority to amend contracts without legal consideration.
- b. The making of advance payments except under very limited circumstances.
- c. The furnishing of government owned facilities with minor exceptions.
- d. The obtaining of supplies without the use of overtime with limited exceptions.
- e. The general policy of procurement on a competitive basis is now strongly emphasized and required on a large number of items.

Title I and II of the First War Powers Act expires six months after termination of the war, or until such earlier time as the Congress by current resolution, or the President, may designate. Should this Act expire before new legislation for procurement is passed by Congress, great portions of the procurement regulations will automatically become invalidated. So far as the Air Force is concerned, it appears that without new legislation we will be required to revert to legislation existing before the war; viz-revised statutes and the Air Corps Act of 1926. The Air Corps Act of 1926 is obsolete in many respects. It was designed at a time when the aircraft industry was in its infancy and was also to encourage development of aviation and to improve the efficiency of Army and Navy aeronautical material. The type of equipment procured in the days of the passage of this Act was the so-called stick and wire airplane. Airplane speeds were less than 150 miles per hour, and the range with any load did not exceed a few hundred miles. The art of airplane building embraced a limited number of sciences. Today the art embraces practically all fields of science. Supersonic speeds are in contemplation; pilotless

airplanes are a reality; radar is in use; and the Atomic Age has been reached. Aircraft as now used in military operations requires productive capacities of which the framers of the 1926 Act never dreamed. Adequate national defense requires a greater latitude and flexibility in procurement matters than in pre-war days. It should be possible to enlist the aid of all scientific and development effort in the interest of national defense. This should be permitted with or without the use of competition. A statute along this line was drafted for the Army Air Force, but was recently set aside in favor of a statute along more general lines for departments of the Government primarily concerned with the national defense as a whole; that is, the War Department, Navy Department, the Maritime Commission, and the War Shipping Administration. This bill, while it contemplates procurement by advertising, and on a competitive bid basis, permits 15 important exceptions to this type of procurement. Important among these exceptions to the Army Air Force are:

- a. Procurement made during the period of a national emergency declared by the President;
- b. For professional services;
- c. The agency head determines that the purchase or contract is for experimental, developmental, or research work or for manufacture or furnishing of supplies for experimentation, development, research or test;
- d. For supplies as to which the agency head determines that the procurement thereof without advertising is necessary in order to assure standardization of equipment and interchangeability of parts;
- e. The agency head determines that it is in the interests of the national defense that any plant, mine, or facility or any producer, manufacturer, or other supplier be made or kept available for furnishing supplies or services in the event of a national emergency, or of the national defense in maintaining active engineering, research and development.

This bill prohibits the use of the cost-plus-a-percentage-of-cost system of contract, but does permit the use of the cost-plus-a-fixed-fee contract for experimental, developmental, and research work, and such other contracts as the agency head determines is a method of contracts as the agency head determines is a method of contracting likely to be less costly than other methods, or that it is impractical to secure the supplies or services of the kind and quality required without the use of a cost-plus-a-fixed-fee contract, or an incentive type contract. The bill also provides for the making of advance payments under certain conditions, which were not permitted before the war.

There are many other problems of purchase in the Atomic Age not touched on in this discussion. In general, the ability to meet these problems will be determined by the nature of the supplies and services required, the general economy of the country, and the legislation provided. Purchase policies in the Atomic Age requires imagination, exploration, and initiation parallel with that of other endeavors in the War Department. Purchase problems in the Atomic Age will require many points of decision which are closely related to the public at large, and therefore vulnerable to review, second guessing and criticism. Its basic requirements, however are honest dealing, intelligence and a willingness to serve. It can create heroic effort and often does.

(2 Jan. 1947 ---- 350) L.