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THE ARMY INDUSTRIAL COLLEGE
Washington, D. C.

Course 1938-1939

THE ALLOCATION DIVISION

by

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December 9, 1938

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AIC 115(12/29/38)37 D

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SECTION I - INTRODUCTION AND WORLD WAR EXPERIENCE

1. Introduction. This paper deals with the Allocation Division, Planning Branch, Office of The Assistant Secretary of War. Collectively the duties and responsibilities of the Division fall within what is termed the Allocation System, which covers the allocation of productive capacity to meet war-time needs.

The subject of allocation is complex - complex in that it has so many ramifications, yet in principle allocation is simple. The term as generally understood means the assignment by proper authority of a facility in whole or in part to a procurement agency for its use in peace-time planning and war-time procurement. Please note in this connection that a facility is a factory, plant, or source of material with its pertaining organization and equipment.

The allocation system heads up in the Army and Navy Munitions Board, and covers both Army and Navy. In fact, it goes beyond the services in that it considers civilian needs. For the guiding principles and the authority for allocation, reference is made to the Industrial Mobilization Plan, 1936. It is with the proportional division of industrial resources between the Army and Navy and with the assignment of definite facilities to an authorized procurement agency to meet its needs that allocation is primarily concerned.

It is well recognized that allocation is fundamental in the framework on which all our procurement plans are built. Furthermore, it is the keystone in the arch for successful industrial mobilization. We do not pretend, however, that it is a cure-all. It doubtless has many imperfections, to some of which reference will be made later.

Let us never deceive ourselves into thinking that we will ever have a perfect system or that we shall ever get to that stage in planning where all we need to do is to press a button in the evening and production will be running smoothly by morning. I assure you that if M-Day ever comes there will still be a premium on good judgment and hard work. But with any weaknesses it may have, I am convinced that the system is sound and workable, furthermore, that it is absolutely indispensable to the timely and orderly procurement of adequate munitions in war.

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The following remarks deal mainly with the system as administered through the Allocation Division of the Planning Branch. This Division has been charged by the Munitions Board with the responsibility for maintenance of the allocation records.

Broadly speaking, the supervisory activities of the Division cover the following:

- a. Survey of Production Facilities.
- b. Match Capacities to Requirements.
- c. Distribute Industrial Load.
- d. Maintain and Publish Directories.

These responsibilities touch practically every phase of procurement planning. Our work brings us into close contact with the Munitions Board, with the Navy, and with all the other divisions of the Planning Branch. Of necessity, our activities cannot be in a watertight compartment.

2. World War Experience.

a. Confusion Due to Competition. To find the reason for an allocation system we need only to glance at World War experience. That experience was had more than twenty years ago, yet it remains a most valuable lesson upon which to base future policies. A post mortem in the light of that experience discloses many things that could have been done before the storm broke out in 1917 which would have eased the stress on the economic structure. It also shows how things should not be done in a future emergency. This is especially true in respect to the distribution of the industrial load.

We are all familiar with the confusion caused by the extreme competition between procuring agencies for preferential treatment at the hands of a few preferred sources. Manufacturers, under a cross-fire of conflicting demands, attempted to please too many procuring agencies, at home and abroad, and became hopelessly overloaded. Promises were given which were impossible of fulfillment. Some of the prime contractors sublet the major portion of their contracts. In reality they became a secondary line of governmental procuring agencies, extending the confusion.

What was the result?

- (1) Delay and loss of valuable time
- (2) Overloads on certain areas while capacity

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- remained unused elsewhere, or was devoted to non-essential production.
- (3) Unnecessary congestion in traffic
- (4) Undue costs, higher prices, exorbitant profits in some cases
- (5) Promises impossible of fulfillment.
- (6) Great confusion.

b. Clearance of Orders It was in the turmoil of this confusion that the germ of allocation originated. Early in 1917, the General Munitions Board in an effort to relieve the situation established the Clearance Committee. (See final report of the Chairman of the War Industries Board to the President of the United States, February 1919, pp. 12-13. U. S. Govt. Printing Office, Washington, 1935). Items in which there were known shortages were cleared prior to purchase. Later the requirement of clearance was broadened to include all orders which involved production in congested areas and all orders necessitating new construction.

This method, however, was only an expedient pending the creation of a more effective mechanism. Other agencies came into being. By July 1918, the Commodity Section of the War Industries Board took over the clearance function. The Clearance Committee was finally displaced by a Clearance Office which simply analyzed the projected orders and referred them to the appropriate Commodity Section for clearance, the nature of which depended upon the immediate situation in the commodity in question.

Altogether there were some 29,000 clearances, 80% of which were for the War Department, 15% for the Navy, and 5% for all other agencies.

c. Analysis. This method of clearance was applied to orders as such, not to facilities. For the average order neither the procuring agency nor the supervisory agency knew what productive capacity was available. Time did not permit the collection of detailed information from industry. One of the great handicaps referred to in the Final Report of the War Industries Board was the lack of complete and flexible statistics of the manufacturing resources of the nation. To meet that deficiency, a facilities division of the Board was created and made a hurried attempt to obtain a working inventory of available facilities. The results of its efforts, however, were not satisfactory and pointed clearly to the fact that such data must be collected and carefully analyzed in peace time in

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order that they may be made effective upon industrial mobilization.

In default of detailed information on facilities, clearances were necessarily broad. At best they merely reduced in some measure the areas of conflict. It is to be remembered also that clearance by orders naturally forced the coordinating agency into details which could have been handled more properly by operating personnel.

SECTION II - INITIATION OF A NEW SYSTEM

1. Analysis of the Problem. Naturally those in authority just after the World War felt that the system which had been used was not altogether efficient. Consequently, one of the first problems to which the War Department addressed itself was the formulation of a scheme for assuring adequate provision for future emergency needs through some system of centralized supervision divorced from detailed operations. It was felt also, with due regard for strategic considerations, that the procuring agencies should spread the load evenly over industry. This not only would tend to obviate undesirable competition but would reduce the wastages due to idle capacity and would mitigate some of the effects of the usual post-war slumps. Associated with the desire to spread the load was the general aim of safeguarding the essential needs of the civilian population and industry at large and of providing resiliency for the shock of any unforeseen contingencies.

It was in the light of these facts, emphasized in the hard school of war, that Section 5a of the National Defense Act came into being. Under that mandate, the attack on the "what, where, and how" was inaugurated. It is the "where" with which allocation primarily is concerned, for allocation answers that question. This question of where to get the items in the time and quantities required involves two main considerations: 1. It is necessary to determine the capacity of industry or of specific facilities available and suitable to perform the required production. 2. This capacity must be apportioned equitably among the procuring agencies, including the Navy. If there is not enough existing capacity - plants in being - suitable for the purpose to meet all essential needs, then plans must be made for expansion or / for new construction.

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On the one hand are the needs of the various services - the job, if you please, on the other hand, the industrial resources or facilities - the means to do the job. Through the allocation system requirements are tied to resources in an attempt to secure a balance for those items which present serious problems in procurement.

2. Purpose of Allocations. But allocation goes further. More specifically:

a. It permits exact and desirable prearrangement by the procuring agency and by the plant, for production of munitions. Each allocated plant, forewarned of the task it will be expected to perform, can now make preparations to meet it, thus facilitating early production.

b. It permits orderly distribution of the war load, especially initial production. Without such a system this load might be thrown haphazardly upon the country in an intensive and confused purchasing campaign when time is vital.

c. Undesirable competition, especially for the output of a single plant, is reduced to a minimum.

d. Allocation should also ease post-war readjustment, since an effort is made to maintain a nucleus of civilian trade in each facility. Essential civilian needs are safeguarded.

In other words, it permits us calmly to make decisions and adjustments now which otherwise would have to be made on or shortly after M-Day. That is of tremendous importance

3 Decision to Allocate Facilities. Pursuant to the mandate in Section 5a it was decided, early in 1922, that facilities should be allocated. How this was to be done and by whom was a question that caused considerable discussion. There was doubt at first whether allocations, especially to the Navy, could be made except by a superagency. Navy requirements obviously had to be considered. The Army and Navy Munitions Board was established in June 1922, but was not in shape to act on allocations until about three years later. There was no other higher coordinating agency in sight.

Colonel Ferguson, Corps of Engineers, then the Director of Procurement, by-passed the issue in the following significant declaration made on the 6th of February, 1922:

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"No matter how allocations are made, they will be changed if they are not properly thought out and made as free from error as possible. No matter who makes them, we or a superagency, they will be changed if they are not made properly."

Observe, if you please, that at the very beginning is emphasized the fact that all elements must be carefully balanced in making allocations, otherwise they will not stand.

It finally was decided in 1922 that the Office of The Assistant Secretary of War would allocate facilities to meet War Department requirements. In any event, judging by World War experience, the War Department could expect to account for the major portion of the total industrial war load. It was felt, however, that the War Department should confine itself to half the productive capacity in any given facility, the remaining capacity would be held as a factor of safety for the Navy and for civilian needs. Several years later, when the Navy began to participate, this policy was modified to provide for limiting the combined load on a given facility to half of its productive capacity.

On November 1, 1922, The Assistant Secretary directed the Supply Arms and Services to requisition facilities. A blank form was provided for this purpose which, for each facility desired, called for a statement of productive capacity and of load to be placed. It was realized that both of these statements would be estimates only. Not until 1924 was there a real military mobilization plan upon which requirements could be based, and since it is difficult to approach industry without definite requirements, little progress was made until that time, except to encourage adoption of a military plan. More to the point, the really important thing was that the allocation system had been launched.

Allocations initially were to be made for survey only, tentative for one year. Those made, however, were never revoked.

The first requisitions naturally were based on the facilities which had served the several services during the War, an unbalanced load distribution from the start which has taken years to adjust. Fortunately, as we shall see later, this condition is now fairly satisfactory when load as a whole is considered.

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SECTION III - ALLOCATED AND RESERVED FACILITIES

1. Initial Allocations. The first requisitions were received in December 1922, and the initial allocations were made in January 1923, just about sixteen years ago. The first Directory of Allocated Facilities, published in February 1923, listed some 5,400 concerns.

In the same year an important policy, still in effect, was announced (in Memorandum of November 13) as follows.

"The allocation of a facility to one supply branch does not mean that another branch is prohibited from getting supplies from that facility, but that the branch to which allocated shall have priority on its output, and that all demands of other branches on this facility must be presented to it through, or by satisfactory arrangements with, the branch or branches to which it is allocated."

The basic purpose of the policy just quoted was to open the way for full utilization of the allowable capacity of the whole facility.

2. Joint Allocations. However, it has always been preferable, insofar as practicable, to allocate a facility exclusively to a single procurement agency. In this way the possibility of conflicts should be obviated and the burden of contacts on the facility reduced.

But from the beginning it was found necessary to approve joint allocations. From time to time efforts have been made to eliminate or, at least, inhibit them. At present the policy is to discourage joint allocations and to substitute therefor allocation by capacity credit, which will be discussed later.

When a facility is jointly allocated the Service having the basic allocation surrenders its exclusive interest. If the requirements of other services on the facility are relatively small, it is preferable to avoid joint allocation by placing their requirements through the procurement agency holding the original claim.

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3. Subsidiaries, Plants, and Divisions. Originally the allocation of a facility included all of its subsidiaries and plants, no matter where located. Consequently, in many cases the allocation was so broad as to permit undue conflicts.

In 1931, it was announced that the allocation of a facility included the plants and division operated directly under the main office, but did not include corporate subsidiaries. This policy is still in effect. In fact, it has recently been extended to encourage plant allocations. Separate allocations of plants are particularly to be preferred in the case of important plants widely separated or situated in different procurement districts, and in which the main office of the controlling facility permits direct planning contacts with the plant. Allocation by plant not only facilitates detailed planning for production, but also affords a better supervision of load distribution, showing the production in the spot where it actually is located.

4. Restrictions on Numbers of Allocations. Naturally at first there was a rush for facilities. By the summer of 1925 the Services had requested and had been given more allocations than could be surveyed. Many of those granted earlier had gone out of business and cancellations were in order.

Accordingly on October 7, 1925, the branches were required to furnish "A Priority List of Essential Items" for which procurement plans would be prepared. Allocations were to be limited to facilities required for these essential items. A rating of at least "A" (\$100,000) in Thomas' Register was also stipulated for allocated facilities, except in special cases. This limit has since been reduced to \$50,000. These policies were not strictly followed.

It is the policy to restrict allocations to those items or commodities which present serious problems in procurement. Where potential capacity is greater than four times the combined requirements of the Army and Navy, and where the requirements do not involve substantial amounts of strategic or critical materials, allocations are not ordinarily made. These rules, of course, are not ironclad and must be applied with reason.

On May 25, 1927, the Office of The Assistant Secretary made an important pronouncement in disapproving a request to place schedules for a small number of insignificant commercial items. It stated that "A listing of sources of supply

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for minor requirements of strictly commercial items in lieu of accepted schedules of production is believed to be adequate for the purpose of procurement planning." (For further historical details in the development of allocations, see Lecture on Allocation System, February 23, 1937, A.I C., pp. 8-9)

It is neither necessary nor desirable to allocate specific facilities to produce all the requirements. It is estimated that fully a third of the Army's requirements in time of war should present no real procurement difficulties. Most of the material that is of a commercial nature can be procured in time in the usual manner under competitive bidding. It is desirable, of course, to obtain competition wherever it is practicable to do so. It is mainly for the technical items with no commercial counterpart or where there is a shortage in capacity and serious procurement problems will be encountered, that allocation is made, for example, to cover items like guns, military aircraft, ammunition, fire control instruments, gas masks and special motor vehicles.

It is also desirable to allocate sources of certain contributory materials, examples are machine tools and gages, without which mass production of critical munitions would be impossible. Other examples of important contributory items are woolen cloth, duck and webbing, rubber goods, aluminum products and steel products. For basic raw materials, however, like coal, iron ore, copper and cotton, allocation is not generally made. Plans for such materials fall under the Commodities Division of the Office of The Assistant Secretary of War and will be covered in a lecture by a representative of that Division.

The priority of the item determines whether allocation is necessary. No distinction is made between primary and contributory items, nor whether the supply arm or service or the prime contractor will place the contract. In other words, it is difficult to draw a straight line, to set up any hard-and-fast rule to separate those items which should be controlled by allocations from those for which allocations are not desirable. Especially is this true in respect to components entering into the finished item. Each case must be weighed on its own merits, due consideration being given to the importance of time coordination of the productive program.

To illustrate: The Quartermaster Corps has a facility allocated for production of special motor vehicles

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in the Detroit area. This facility in peace time obtains its chassis frames from another independent concern near by, and it desires to do so in war time. Therefore, other things being equal, it would appear desirable to allocate the independent concern to the Quartermaster to safeguard this contributory source to the prime contractor. Yet it would seem unnecessary to allocate the sales agency from which the prime contractor procures his paints, or the public utility from which he gets his electricity.

5. Contributory Requirements. The question as to whether commodities like machine tools, basic steel, aluminum products, and optical glass should be controlled through commodity committees or by allocation is a matter for careful study in each case. In this connection reference is made to the allocation bible, "Planning Branch Circular No. 1", for the guiding policy on borderline commodities. It states, in effect, that for basic raw materials, allocations are not generally made. Allocations are granted, however, for essential contributory requirements in commodities which present serious problems in procurement and which are produced by manufacturing facilities subject to diversion to less essential needs.

Such allocations are contingent upon the practicability of making a reasonable division and assignment of the available capacity to the procuring agencies. This normally is decided upon the recommendation of commodity or allocation committees on which all interested procuring agencies have representation. When the plans have progressed to the point where a satisfactory division of capacity can be made, the problem then falls within the purview of the allocation system for administrative control. In such cases, commodity committees normally are continued in a fact-finding and advisory capacity. Typical examples of commodities handled in this way are machine tools and basic steel.

A large group of former allocations have been cancelled covering such raw materials as manganese, copper, cotton linters, coal and coke, as well as some semi-finished products that rightly belong under the jurisdiction of Commodity Committees.

Items thus released from allocation control include building materials such as lumber, cement and plumbing supplies; petroleum products, including gasoline, kerosene, lubricating and fuel oil, paint and paint products; and office supplies and equipment like paper, pencils, and furniture.

Allocations in the great majority of cases are confined to potential manufacturing facilities. Sales agencies, jobbers, and importers are not ordinarily allocated, neither are governmental facilities and facilities outside the continental limits of the United States.

The following might constitute an exception. The Munitions Board recently divided the shoe capacity of the country between the Army and the Navy. One source apportioned to the Navy for shoes was the Federal Penitentiary at Leavenworth, Kansas. Also the optical glass capacity of the Bureau of Standards has been assigned to the Navy.

Initially allocation of some of the more complex facilities was suspended pending study, and the development of requirements. For example, General Motors was not released until 1927, the U. S. Rubber Company, 1928, and L. S. Starrett, 1932. General Electric, Westinghouse, and Standard Oil were suspended in fact until the "Reserved Facility" category was established.

6. Reserved Facilities Thus far the discussion has been confined mainly to allocations made outright, as in the case of facility assigned wholly to a single service, or jointly to two or more services. I would like to explain now briefly the category known as "Reserved Facilities "

There are two classes, first those reserved by the Munitions Board - so-called ANMB Facilities, in which both Army and Navy have an interest, and secondly, those reserved by the Office of The Assistant Secretary of War - that is, OASW Facilities, in which usually more than two Army supply agencies have an interest. Allocation of the productive capacity in these cases is made by granting capacity credits, especially applicable to certain large facilities in which all services inevitably will have requirements.

In the case of large complex organizations, production is so interdependent on common "bottle-necks" and other common factors that the resolution of conflicts through single or joint allocation is impracticable. The first step was to group such facilities for special treatment. These included basic steel, the machine tool and gage facilities, and others jointly allocated in which three or more services were interested. They were listed separately under the two reserved categories to which reference has been made.

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7. Capacity Credit. Of course you understand the term "reserved" does not mean that such facilities are not available in peace time to the procuring agencies. Once the productive capacity of a reserved facility has been estimated, portions of the available capacity, commensurate with their needs, are assigned to the services upon request. To these portions of productive capacity is applied the term "capacity credit "

It is now felt that, in general, where two or more services have or may have important interests, allocation should be by capacity credit. This form of allocation paved the way for a fuller utilization of the available productive capacity and for more effective coordination of the separate demands by a system of central control. It is especially applicable in situations of indefinite or rapidly changing requirements, where maximum flexibility with centralized control is desirable.

8. Analysis. Perhaps the greatest disadvantage of the allocation system applies to administrative control after M-Day, especially if the system is carried too far. Some people would allocate for everything - others for only the most critical items. Between these two extremes is a twilight zone through which reason and good judgment must point the way. Excessive allocations may bog down in red tape. As allocations are increased, the opportunity for free competition decreases. Negotiated prices that are too high will bring public condemnation, those which are too low will discourage effective production. Allocations, in order to stand, must be sound and justifiable before Congress and the people.

SECTION IV - SURVEYS AND SCHEDULES OF PRODUCTION

1. Questionnaires To make intelligent allocations, not only must requirements be known but also information as to what the individual facility can do is essential. It is necessary to find out how much capacity there is and where it is located. Plants must be studied and the management must be consulted. Obviously, not all firms are suitable for making munitions, nor is it desirable for some of them to attempt such production. The first method used in an effort to get this information was to flood industry with questionnaires relating to shop equipment and productive capacity. In many cases, especially in the larger concerns, it would

have taken considerable time and energy to compile the information requested. The reaction from industry was not favorable and some concerns complained to the Secretary of War. In May 1923, the use of questionnaires was forbidden. This ban is still in effect.

2. Bureau of the Census - - General Information As an alternative it was thought at one time that the Bureau of the Census could be used to assist in surveying industry. Late in 1925 the Bureau sent out special forms to some 15,000 facilities, each having a value of product of \$500,000 or more per annum. The facilities were asked to state:

- a. Principal commodity produced during the war
- b. Amount produced.
- c. Present status.
- d. Type of work for which best suited.
- e. Alterations necessary.

The reports were received in 1927 and resulted in some 500 new allocations

A second Census canvass was made from 1927 to 1929, but proved of little value. A third, inaugurated in 1929, completed in 1931, obtained certain information regarding skilled labor for the Navy and the Ordnance Department, but was of no great importance

Some assistance as to capacity and distribution of industry is also obtained from time to time in publications of other Federal Departments and of State Governments.

3. Territorial Decentralization. Experience has shown, however, that for a detailed study of individual facilities requisite for planning as well as for procurement in war time, a territorial decentralization of activities is essential. Accordingly, each of the services responsible for actual procurement has divided the country into procurement districts, the number and boundaries of which have been set to meet its particular needs.

In the typical district there is a skeletonized staff consisting of the District Chief, usually a prominent business man residing in the locality who may or may not be a reserve officer and who, incidentally, is a dollar-a-year man, giving of his time voluntarily, an Executive Assistant who is a regular officer of the branch concerned, and the necessary

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clerical help. The district organization is maintained for two very important reasons

- a. To survey industry and to make a detailed survey and study of each plant to be used to produce munitions.
- b. To form a nucleus for expansion in case of war for decentralized procurement.

4. Survey of Industry. The Regular Army personnel at the several district headquarters are literally on the "firing line," for it is through them that the great majority of contacts are made with industry. They are the educational and sales agencies for procurement planning and it is through them that good will, so essential to effective industrial mobilization, is built up. By the procedure known as "survey" they acquire detailed information relative to a facility's equipment, its capacity, and prospective suitability to produce items required by a procuring agency.

Unallocated and Reserve Facilities may be approached freely. Those allocated to another procuring agency may not be approached without prior arrangement with the procuring agency to which allocated. Up to about four years ago, in order not to antagonize industry, surveys could not be made until facilities had been allocated. The normal cycle was requisition, allocation, survey and then cancellation or placement of schedules. This resulted in much wasted effort. The present policy, with more experienced personnel in the field, is to permit preliminary survey in advance to determine suitability before allocation. This policy not only has facilitated planning in the districts but also has obviated much useless work.

We attempt, so far as practicable, to arrange for joint surveys and to present combined requirements on important facilities at one time. In some cases, especially where two or more executives are stationed in the same city, they act as a joint committee to handle certain problems. Joint production studies have been made of General Motors, Bausch and Lomb, Budd Manufacturing Co., Murray Corporation, International Harvester, and others

Let it be remembered in passing that survey of industry touches one of the vital elements in procurement planning. It will be recalled that one of the great weaknesses at the beginning of the last war was the lack of

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comprehensive statistics on manufacturing facilities. It is desirable to have a complete and up-to-date survey at all times, not only to facilitate intelligent and equitable allocations but also to furnish data for the utilization of competitive bidding when in the interest of the Government. Obviously, the survey work is a continuing function. This is necessary because neither requirements nor resources can remain fixed. Policy calls for a survey of all allocated facilities at least once every three years. It must not be forgotten, however, that surveys entail a great amount of work and are restricted by fiscal limitations. Inquiries disclose that in the districts more time is devoted to surveys and locating prospective facilities than to any other activity.

The supply arms and services, having computed their needs under the mobilization plans set up by the General Staff, apportion these requirements to their several districts. In doing this they attempt to spread the load as evenly over the country as practicable. Based upon the data which they have available, or upon additional surveys if necessary, the districts search out the facilities best suited to do the job and submit requests through their branch chiefs to the Planning Branch for definite assignment of the plants. These requests usually come in on special forms, to which reference again will be made. When the requests for allocations are received in the Allocation Division they are analyzed to see if there will be any conflict with other services or with the Navy, and if so, adjustments are made.

If there is shortage of capacity, as in the case of certain critical items, it sometimes becomes desirable to have special studies made by allocation committees on which each interested service is represented. Notable examples where this has been done are in the cases of aeronautical materiel, machine tools, and powder and explosives. In such cases, of course, it is very important that the capacity be divided equitably in line with military priority. Attempt is made to meet requirements with existing plants, but in some cases it is necessary to plan for expansion or for new construction. Special studies have been made by the Construction Division of the Planning Branch, and the areas where there is liable to be congestion in the building industry have been spotted. Any new construction is kept out of these areas as far as is possible to do so.

5. Accepted Schedules. After the plants are selected and the allocations approved, the requirements on each

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facility are finally submitted to the management by the districts on what is termed a "schedule of production". The management's signature to this schedule indicates the willingness and ability of the firm to produce the items at the rates prescribed. The "Accepted Schedule of Production" is the link which actually ties in the requirements with the resources.

These accepted schedules perform a very important function. True, they are not contracts, nor do they bind the Government or the facility in any way. But they do afford an incentive and fix definite objectives for the facility to plan in detail, and through the close contacts thus afforded, the elements of cost may more readily be studied in the development and application of war-time contracts which should protect both industry and the Government. Determination of prices by negotiation at the outset of the emergency will be facilitated. More important, perhaps, is the fact that through these schedules industry becomes conscious of our requirements and our problems.

A large number of prospective facilities have been surveyed. The work has been in progress almost continuously since the World War. From among this number some 10,000 firms have been selected and are now on the allocated list. Thousands of these, without any obligation on the part of the Government, have taken the preliminary steps incident to production. Many have prepared factory plans. They have cataloged the additional machine tools required, they have studied their sources of raw materials, and they have made plans for conversion and expansion from their normal products to the noncommercial military items. In many instances reserve officers have rendered invaluable assistance in the preparation of production studies pertaining to their own organizations. Without allocation these essential activities could not well be accomplished. This preliminary work will save months of vital time in starting production. In all these activities the War Department has received wholehearted cooperation from industry.

It is to be noted that the survey of industry by the War Department is performed by the supply arms and services in accordance with policies formulated by the higher echelons in the Allocation System. In allocation, the higher echelons are concerned primarily with matters of policy, division of capacity, assignment of facilities, and general supervision over the distribution of load.

SECTION V - LOAD

Let us turn now to a consideration of load, one of the most difficult, yet one of the most vital, elements in the whole allocation system.

1. Purpose. The purpose of recording the industrial capacity utilized by the several procuring agencies is to afford:

a. A broad picture of the war load to be placed on industry, so that suitable distribution may be assured, conversely, an indication of the industrial capacity remaining after the load has been placed, and its location.

b. A check on the load placed on individual facilities or industries to insure that they are not unnecessarily overloaded, that a proper reserve is maintained, and that civilian needs are considered.

c. An indication of the amount of conversion, expansion and new construction that will be required to carry the load.

d. Data for analysis of the problems of labor, power, construction, and transportation. ✓

2. Potential Capacity. Load is the proportion of the potential capacity of a facility which will be used to meet war-time requirements. Potential capacity, which is the maximum output of an existing facility, is taken as the base against which load is computed. This base is given an index value of 250 points regardless of the number of shifts or hours that the facility can be operated. It is assumed that in war time the great majority of facilities can run on a 24-hour basis, usually three 8-hour shifts. Since three 8-hour shifts are taken to be equivalent to two and one-half times one shift, the 250 point index is based essentially on the scale: 1 shift equal to 100 points, 2 shifts, 200 points, and 3 shifts, 250 points.

3. Reporting of Load. The load is now reported separately for each item under two categories, namely, item and plant.

a. Item Load is the number of points of capacity out of 250 potential in any given item which is to be

absorbed in meeting a given schedule. For example, suppose that we have a facility producing only two items, shoes and overcoats, and that the war load takes the maximum output from the shoe department. The item load for this commodity then would be 250 points.

b. Plant Load, on the other hand, is the proportion of the 250 points potential of the whole plant which is to be absorbed in meeting a given schedule. In the illustration just mentioned, if the production of shoes absorbs one-half the activities of the whole facility, and we take all the shoes, then the plant load for shoes would be half of 250, or 125 points. (Exhibit "A" illustrates method of computing and reporting load.)

c. Commodity Symbols. Item loads are grouped into general categories to correspond with subdivisions of productive industry. To each commodity group is assigned a commodity symbol consisting of a combination of letters on the plan outlined in the Federal Standard Stock Catalog.

4. Verification of Loads. In spite of the importance of load, it appears that no successful effort to obtain comprehensive data thereon was accomplished until 1935. On October 1 of that year the SAS rendered load reports for all their allocated facilities. Reports of changes in old loads and reports for new loadings are now being submitted as they occur. Trivial load changes are not reported.

All loads are required to be verified at least once every three years. Allocations in force for more than five years and against which no load has been reported are considered as potentially available for cancellation and re-assignment.

5. Limitation on Loads. Almost from the start, consideration has been given to limitations on load. In 1926 it was suggested that a factor of safety be reserved in each allocated facility, and in that same year the SAS were required to report all facilities being loaded in excess of half their peace-time capacity. In 1932, loads were limited to half the productive capacity except in specific cases authorized in advance. This policy, with certain modifications, is still in effect. Any capacity added by plant expansion or new construction may all be taken for the military program.

By proper supervision in the higher echelons, a reasonably even distribution of load over industry is assured. Individual plants are not loaded beyond allowable capacity. As a result the load as a whole is now fairly well distributed. There should be no vicious competition among the procuring agencies for the output of a single plant as was so prevalent in the last war. Overloading of plants and areas will be reduced to a minimum.

SECTION VI - ARMY AND NAVY MUNITIONS BOARD

1. Navy Participation Let us examine now some features of Navy allocations. The Army and Navy Munitions Board was established in 1922, but made no allocations until about three years later. In 1925 one of its committees agreed to joint allocation of seventeen facilities, the first to the Navy. From that time on allocations to the Navy increased, yet it is only within the last few years that they have assumed real significance.

The past year has seen a greatly increased activity on the part of the Navy. To secure a proper balance between the Army and Navy will require a great deal of give and take and coordination through the medium of the Army and Navy Munitions Board. Productive capacity must be equitably apportioned. In case of conflict, military priority set-up in war plans and by the Joint Board will govern. This will mean ultimately a readjustment of many of the Army allocations and placement of additional facilities in the Reserved (ANMB) category, as has been done already in certain cases (Exhibit "D-1" shows facilities by categories and changes during past year.)

2. To illustrate, let me mention the medical, shoe, aeronautical (to cover aeronautical requirements also on the automotive industry), gage, machine tool, optical and precision instruments, and steel facilities in which the capacity has been apportioned and recorded. Allocation sub-committees are now at work on airplane bombs, blankets, powder and explosives, radio equipment, shell forgings, wire and cable, and rubber goods, all types. Division of capacity in some of these categories will be made in the very near future. (For further discussion of the foregoing items, see lecture on the Allocation System, February 23, 1937, A.I.C., pp 17-18.)

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3. It seems appropriate at this time to single out four extremely important categories for a little more discussion. Reference is made to aeronautical, machine tool, optical and precision instruments, and powder and explosives.

a. Aeronautical Facilities. As regards production of aircraft a division of capacity between Army and Navy of primary aircraft facilities has been made essentially on a 50-50 basis. This 50-50 policy also holds with respect to airplane parts manufactures. The division of airplane facilities was made upon the recommendation of the Aeronautical Board, and the policy was followed by the Munitions Board to allocate facilities as far as practicable outright to the services. The Aeronautical Board has a standing request to consider continuously all current work and make suitable recommendations whenever a change in allocation status becomes desirable. During the past year a recommendation came through from the Board that the Curtiss Aeroplane Division, Buffalo, and the Glenn L. Martin Company, Baltimore, be changed from single allocations to reserved facilities with a 50-50 capacity credit for each service (Aeronautical Board, Case No. 85.)

The Aeronautical Board has submitted also its recommendations to cover aeronautical loads to be placed on certain large automotive concerns. After considerable study and some changes, the loads were approved by all concerned. This was an important accomplishment and opened the way for detailed aeronautical planning with the automotive facilities in question (Aeronautical Board, Case No. 84)

b. Machine Tools. Outstanding in our work with the Navy during 1938 were the agreements on the division of capacity for machine tools, and for optical and precision instruments. (For further details on the division of capacity for optical and precision instruments, see Report of Subcommittee, Army and Navy Munitions Board, on Optical Instruments, March 21, 1938) In connection with machine tool allocations, we had a two-day conference in January with representatives of the machine tool industry, during which the whole problem was carefully considered. The National Machine Tool Builders' Association agreed to send out questionnaires, which we helped to prepare, to get the actual production of each firm from July 1, 1936, to June 30, 1937, by types and sizes, and the estimated potential capacity. The output over the period mentioned should reflect quite well the war-time production, since the industry during that period was running at maximum capacity. As a result of this

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extensive survey we have on hand in the Munitions Board a mass of valuable data on this industry which is now being analyzed in the light of our requirements, with a view to further corrective measures and adjustments wherever necessary. Similarly, we are utilizing certain other trade associations and technical societies in connection with allocations insofar as it is practicable to do so,

But irrespective of peace-time allocations for machine tools, our plans provide for central control in war time. It is anticipated that within a few hours after M-Day the War Service Committee for this industry will be in Washington to sit down with corresponding personnel of the Army and Navy to reallocate or reappportion the capacity in accordance with priorities dictated by the situation at that time

c. Powder and Explosives. These items, and the presses and special machinery necessary in their manufacture, present a critical problem in war time. At a recent conference with The Hydraulic Machinery Manufacturers Association a working committee consisting of representatives of the industry and of the Army and Navy was created to study the subject of hydraulic machinery, with special reference to forging presses, and machinery for making powder and explosives. The Association also agreed to survey its industry for the Army and Navy and submit the reports to the Munitions Board, as was done by The National Machine Tool Builders' Association for the machine tool industry. The survey has not yet been completed.

It was intended that the committee on hydraulic machinery should work in close cooperation with the Ordnance personnel which is engaged at Wilmington in the preparation of the joint powder and explosives plan. When this plan is complete and approved it will indicate a division of capacity upon which allocation and load can be based. In the meantime, DuPont, Hercules, and Atlas Powder Companies, the main existing commercial facilities, are carried as reserved without definite load so far as powder and explosives are concerned. It is to be noted that a tremendous expansion of existing capacity will be necessary, involving a large amount of new construction.

4. Routine At this time I would like to explain more fully the normal routine in making allocations. (Exhibit "B") Take the Army side first. A request for an allocation or

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capacity credit comes in from a supply arm or service on O.A S W Form 100 (Exhibit "C"). If the request is in order and it is evident the Navy has no interest, the allocation is approved by our office. If there is any possibility that the Navy has or may have an interest, the request is referred to the Munitions Board for consideration. If it finds that the Navy is not concerned, our office is so advised and the allocation is granted in the usual manner. On the other hand, if the Navy does have an interest, the matter is adjusted by the Munitions Board alone or by assistance of an allocation subcommittee which it may appoint composed of representatives of the interested services, Army and Navy. Conflicts exclusively among the supply arms and services are adjusted by our office without reference to the Munitions Board.

Similar procedure is applicable on the Navy side, except that through the Munitions Board our office receives copies of all approved allocations or capacity credits to the Navy in order that load data and other records may be complete at all times. No loads, of course, can be placed on a Reserved (ANMB) Facility without prior approval of the Army and Navy Munitions Board.

SECTION VII - DIRECTORIES AND FILES

Before leaving the subject of allocations, it seems appropriate to examine the records. As indicated before, the Allocation Division is the office of record for all matters pertaining to allocations. It maintains a master file to which you perhaps have seen recent press references. The division also publishes periodically several directories.

1. Master File The master file consists of completed O A.S. . Forms number 100 which originate in the field and carry an abstract of pertinent survey data. The forms are arranged alphabetically by facilities in a visible Kardex file. During the past year we have handled nearly 4,000 of these forms. They are the media between this office and the operating agencies, through which the field requisitions allocations and capacity credits. Exhibit "C" shows one of the forms. The data on file for each allocated facility include such information as name and address, list of plants operated, with their location, number and kind of employees, financial rating, normal production; items to be produced in an emergency, date of accepted schedule, and the capacity utilized by the load. In support of these data is a mass of detailed survey informa-

tion maintained by the services and the districts. In the current section of the master file are recorded transactions covering over ten thousand facilities.

2. Directory of Allocated and Reserve Facilities From the master file is maintained a Directory of Allocated and Reserved Facilities, wherein the names of facilities are arranged geographically according to zone,* state, and city. To the field and other interested agencies it indicates the status of allocations in force, and is for them the basic allocation reference. It is kept up to date by a series of monthly change reports that are issued to the services by the Planning Branch

3. Directory of Load. Another document is the Directory of Load. In this Directory are indicated not only the facilities to be utilized for each commodity, but also the geographical distribution of the load under each commodity category by zone, state, and city, and the load placed or to be placed on each facility. The commodities are organized into over fifty major industrial groups with appropriate subdivisions under each group. A large amount of work is involved. Yet it is justified, for it affords a means for checking allocations and for assuring a proper distribution of load. Inequitable loadings as between and within different procurement districts automatically are signalled for correction.

4. Index of Allocated and Reserved Facilities. Still a third file is kept by the Allocation Division, namely, an Index of Allocated and Reserved Facilities. It is published simultaneously with and forms a cross reference to the two directories just described. Essentially the index is a single list in alphabetical order showing name and address of each facility, the procurement agency to which allocated or reserved, and the commodities which each facility is to furnish

5. These records are maintained on some 50,000 unit cards posted day by day. The information recorded is published to the procuring agencies by lithographic reproduction. By this means, both the Army and Navy, including their respective field agencies, are kept advised of the status of allocations and the distribution of load. These records are kept in such shape as to be readily available for use by the Munitions Board or a superagency.

* Note War Department Zones have been eliminated (Letter AG November 8, 1938, AG 400 1 (10/20/38) (Misc.) ASW-D)

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6. Analysis of Exhibits. At this point let us examine Exhibits "D", "E", and "F".* They are self-explanatory, and require only a glance to note their significance.

For example, Exhibit "D" indicates how numbers of allocations have run by services since 1923. Note that with exception of the Navy there was a comparatively rapid build-up in numbers for the first few years, then a more or less gradual reduction, which is still in progress as the undesirable allocations are being culled out. The large reduction in the Quartermaster Corps number in 1928 was due largely to the cancellation of its food facilities. The Navy started in with 17 (joint with the Army) in 1926 and has had a conservative increase since that date.

Exhibit "E" shows the percentage distribution of allocations and load (money value) by zones and services as compared with the 1929 production (money value). The total Army loads for Zones I and II are only slightly larger than the 1929 production figures. The Signal Corps load for Zone I is 59 percent of the total, yet it must be remembered that about 75 percent of the communication equipment capacity of the country is in Zone I. The Chemical Warfare Service shows a very favorable load with respect to Zone I, and a comparatively heavy load in Zone II. Yet if the load to be placed on Edgewood Arsenal were included, Zone I figures would be materially increased. As will be seen later in Exhibit "F", the Signal Corps, Medical, and Chemical Warfare loads are small in comparison with the whole, and do not greatly influence the percentage distribution of the total War Department load.

The Ordnance Department load in Zone I shows a close correlation with 1929 production, while Zone II load is slightly above 1929 production. Its load in Zone IV is comparatively small but is expected to increase.

Cost figures for Navy load were not available, but it is to be noted that 59 percent of its allocations are in Zone I.

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* Figures for column headed "1929 production" in Exhibit "G" were taken (nearest whole percent) from Committee Report on Problem No. 12, A.I.C., Course 1936-1937.

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While these figures do not show local overloads, if any, they do indicate a fairly equitable distribution of the load as a whole in comparison with 1929 production.

Exhibit "F" shows the number of allocations and capacity credits (interests) at the present time, by services, against corresponding loads in dollars for the first year only. The average load per interest is about \$700,000.

It is interesting to note that the Ordnance Department carries almost half the total allocated load on its 1061 interests (allocations or capacity credits), an average of some three million dollars per interest. The Quartermaster Corps, on the other hand, has 5810 interests to meet less than one-third the total load, an average of about \$300,000 per interest. This suggests the thought that typically the Ordnance deals with relatively large-scale industrial units.

It is to be noted that the Quartermaster Corps load given in Exhibit "F" does not include subsistence.

At the moment the Navy has 386 active interests. Assuming its requirements at about 20 percent of the whole, its load would fall somewhere under the Q.M.C. load, between one and one and one-half billion dollars.

SECTION VIII - M-DAY ACTIVITIES AND DECISIONS

1. Plans for Expansion. Detailed plans have been made for expansion of the three facilities divisions in the allocation system to handle the increased work in an emergency. The duties will be analogous to those in peace time. The Allocation Division will administer allocations within the War Department, and will submit requisitions to the Army and Navy Munitions Board, or higher authority, for additional facilities required to meet the needs of the supply arms and services. The Facilities Division of the Munitions Board will coordinate and administer allocations between the Army and Navy, and the Facilities Division of the superagency for the nation as a whole. Suffice it to say that the organization set-up is simple and flexible and built for smooth transition to an emergency basis.

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2. Authority. For authority to suspend competitive bidding, reference is made to Section 3709, Revised Statutes, which reads in part that "When immediate delivery or performance is required by the public exigency the articles or service required may be procured by open purchase or contract * * * " This was used in the World War. Let me quote one paragraph of Mr. Baker's letter of April 12, 1917 (General Orders No. 49 W D 1917). "ORDERS.

"1. It is hereby declared that an emergency exists within the meaning of Section 3709, R S., and other statutes which except in cases of emergency from the requirement that contracts for and on behalf of the Government shall only be made after advertising, as to all contracts under the War Department for the supply of the War Department and the supply and equipment of the Army and for fortifications and other works of defense, and until further ordered such contracts will be made without resort to advertising for bids in the letting of the same."

Section 120 of the National Defense Act gives specific authority to the President to place obligatory orders in war or when war is imminent, and to appoint a Board on Mobilization of Industries Essential for Military Preparedness.

Back of all, of course, are the war powers of the President.

3. Adjustments and Decisions. Inauguration of the system probably will require some adjustment in peace-time allocations. By virtue of the complexity of the problem some decisions must of necessity be left for M-Day. Current governmental orders in allocated facilities naturally will be given full consideration. Any necessary or desirable adjudications in such orders or allocations will be made by the proper authority as circumstances may dictate. The approved policy now provides that government contracts in force on M-Day normally will be carried to completion. If allocations are adjusted in peace time to take full advantage so far as practicable of experience on current work as is now being done, then the number of changes in allocations as a result of such orders will be reduced to a minimum.

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The extent to which allocations are to be applied will depend upon the nature of the emergency and other circumstances which cannot now be determined. If it is a maximum effort, the problem is comparatively simple. If a lesser effort, a greater degree of competitive bidding may be used. In either case some desirable competition will obtain even among allocated facilities within each service. During the period of strained relations information would undoubtedly be available upon which reasonable decisions could be made as to what items should be placed in allocation and what facilities should tool up for their production. Let us remember that the system is flexible -- not fixed--moving--not static--responsive to changing conditions.

SECTION IX - SUMMARY

Conclusion In conclusion, the Allocation system grew out of World War experience. Its purpose is to obviate undesirable procurement features of that experience in a future emergency, and to facilitate procurement. To the procuring agencies are left the operational details, to the central agency is given an effective means through which war-time control measures may be applied. Allocation enters both phases of the responsibility under Section 5a. It is an essential step in procurement planning. It also enters industrial mobilization in that the system is built to continue to deal with those industrial units which are to function in war.

The Allocation System has developed into a potent force in the scheme of industrial preparedness. True, only the pattern has been finished. Much work remains to be done. But policies have been established and principles enunciated to guide future activities. In all procurement planning it is axiomatic that the efforts of the Army and Navy should be coordinated. This is provided for in the Industrial Mobilization Plan of 1936. The Army and Navy, through the Army and Navy Munitions Board, are now working side by side to match requirements in the solution of allocation problems which are common to both services.

Through the Allocation System effective decentralized procurement planning is realized. In fact, allocation is vital in the framework upon which is built all detailed plans. In the words of a former Director of the Planning Branch*, it is the key to the supervision of procurement.

* (General Harris, Assistant Chief of Ordnance)

LOAD DIAGRAM

CAPACITY

- A** AUTOMOTIVE DEPT
Half of total activity of the facility devoted to production of automotive equipment
- B** AIRCRAFT ENGINE DEPT
One-fourth of total activity of the FACILITY devoted to production of aircraft engines (Potential capacity 3000 engines yearly)
- C** DROP FORGING DEPT
One-fourth of total activity of the FACILITY devoted to production of miscellaneous drop forgings

EXISTING FACILITY

COMMON DENOMINATOR
See par 3, page 27, Planning Branch
Circular No 1, November 14, 1936

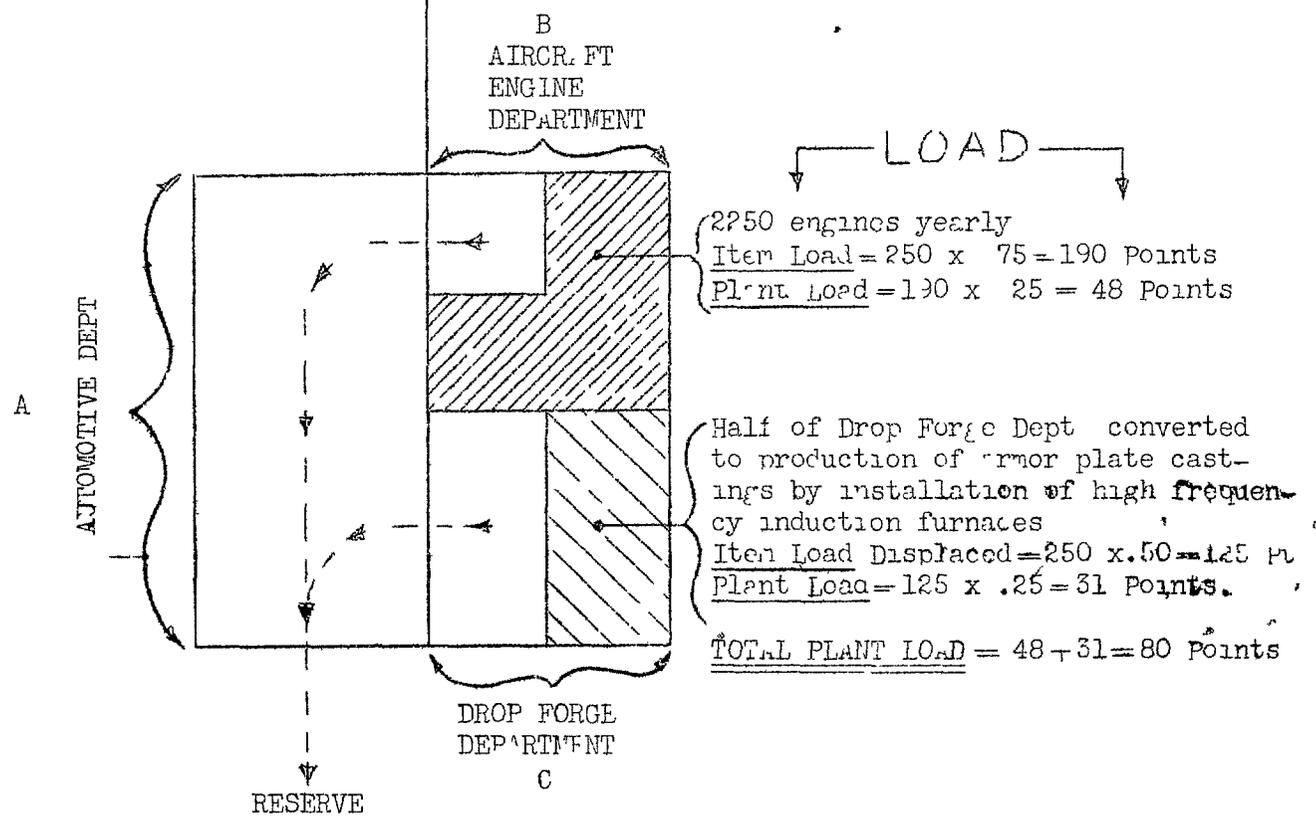


EXHIBIT "A"

ALLOCATION FLOW CHART

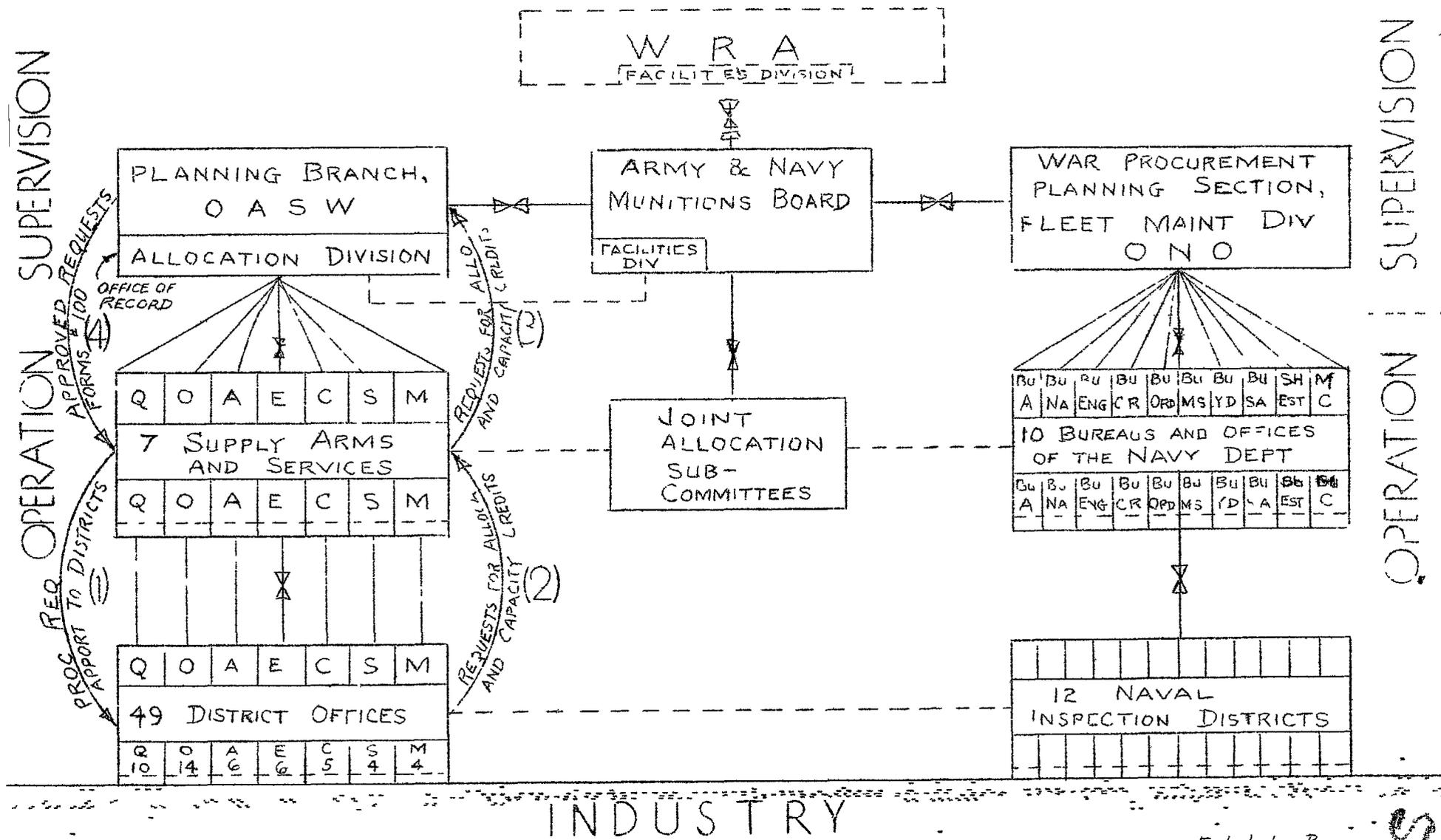


Exhibit B

SUPERVISION
OPERATION
SUPERVISION

7597

7 PRODUCTS DESIRED

11 ACQUISITIONED

MALE

FEMALE

DOES THE CONTROLLING FACILITY DESIRE TO HAVE ALL PLANNING TRANSACTIONS WITH ITS SUBSIDIARIES HANDLED THRU CONTROLLING FACILITY? PERCENT SKILLED

QUANTITY (MONTHLY OR YEARLY)

ITEM

QUANTITY (GIVE UNIT OF MEASURE) TOTAL MOS

ITEM LOAD

PLANT LOAD

SHIFTS/HOURS PLANNED

SCHEDULE

PLACED (DATE)

TO BE PLACED

COMMODITY SYMBOL

NAME AND/OR ADDRESS OF PLANTS OR DIVISIONS OPERATED

NAME AND ADDRESS OF SUBSIDIARY FACILITIES AND/OR DIVISIONS CONTROLLED BUT NOT ACTUALLY OPERATED

10 ALLOCATION

DATE

(SIG)

CAPACITY CREDIT REQUESTED

11 ALLOCATION

DATE

(SIG)

CAPACITY CREDIT RECOMMENDED

13 ALLOCATION

DATE

(SIG)

CAPACITY CREDIT APPROVED

ARMY AND NAVY MUNITIONS BOARD

12 ALLOCATION

DATE

(SIG)

CAPACITY CREDIT APPROVED

(OVER)

W D ZONE NO

FACILITY NAME

DISTRICT

PROC AGENCY

2 ADDRESS (MAIN OFFICE)

ALLOCATION DIVISION PLANNING BRANCH OASW

14 RESERVED FACILITY

OASW

ANMB

START TYPING HERE AND AFTER TYPING ON BOTTOM LINE HAS BEEN COMPLETED DETACH THIS TAB

FOR DETAILED INSTRUCTIONS SEE PLANNING BRANCH CIRCULAR NO 1 OASW

844-REMINGTON RAND INC 13 251 14649-38

IF ANY SPACE ABOVE IS NOT SUFFICIENT ENTER AN * IN THAT SPACE AND CONTINUE ON REVERSE SIDE OF FORM

EXHIBIT

558

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1/1/38 FACILITIES ALLOCATED OR RESERVED - SUMMARY BY YEARS - - - 1923 - 1938

	1923	1924	1926	1928	1935	1936	1938	
TOTAL	5,450	13,872	20,455	15,142	12,624	10,728	9,515	TOTAL
R E S E R V E D F A C I L I T I E S								
TOTAL					597	370	536	TOTAL
ANMB					355	272	423	ANMB
OASW					242	98	113	OASW
J O I N T L Y A L L O C A T E D F A C I L I T I E S (A R M Y)								
	62	217	460	271	185	205	154	
S I N G L Y A L L O C A T E D F A C I L I T I E S								
TOTAL	5,388	13,655	19,995	14,871	11,842	10,153	8,825	TOTAL
NAVY			17	171	367	395	397	NAVY
ARMY	5,388	13,655	19,978	14,700	11,475	9,758	8,428	ARMY
Q	2,463	9,110	13,665	9,232	7,805	6,604	5,772	Q
O	1,082	1,328	1,375	1,140	874	858	793	O
A	400	590	700	623	470	422	404	A
E	82	993	2,134	1,738	854	721	443	E
C	199	284	330	304	372	278	243	C
S	290	426	522	467	500	350	348	S
M	872	924	1,252	1,196	594	525	425	M

EXHIBIT "D"

12/1/38

FACILITIES ALLOCATED OR RESERVED

- 1936 - 1938 BY CATEGORIES

	TOTAL	RESERVED			JOINTLY ALLOCATED	SINGLY ALLOCATED		
		TOTAL	ANMB	O/SW		TOTAL	NAVY	ARMY
JUNE, 1936	10,728	370	272	98	205	10,153	395	9,758
%	100	3.4	2.5	.9	1.9	94.7	3.7	91.0
Net Changes - June - Dec. 1936								
Additions		9	14		1			
Cancellations	433			5		443	21	422
JANUARY, 1937	10,295	379	286	93	206	9,710	374	9,336
%	100	3.7	2.8	.9	2.0	94.3	3.6	90.7
Net Changes-1937								
Additions		157	137	2			23	
Cancellations	780				52	885		908
JANUARY, 1938	9,515	536	423	113	154	8,825	397	8,428
%	100	5.6	4.4	1.2	1.6	92.8	4.2	88.6
Net Changes-1938, up to 12/1/38								
Additions			14				13	
Cancellations	58	2		16		56		69
DECEMBER, 1938	9,457	534	437	97	154	8,769	410	8,359
%	100	5.6	4.6	1.0	1.6	92.8	4.3	88.5

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DATE 12/1/38 ALLOCATIONS AND CAPACITY CREDITS - BY PROCURING AGENCIES & CATEGORIES

	FACILITY INTERESTS	A L L O C A T I O N S		CAPACITY CREDITS	
		SINGLE	JOINT	A.N.M.B.	O.A.S.W.
TOTAL	9,869	8,769	328	638	134
%	100	88.9	3.3	6.5	1.3
NAVY	686	410	0	276	-
%	100	59.5	-	40.5	-
ARMY	9183	8359	328	362	134
%	100	91.0	3.6	3.9	1.5
Q M C	5810	5670	78	46	16
%	100	97.6	1.3	0.8	0.3
ORD D	1061	832	113	77	39
%	100	78.4	10.6	7.3	3.7
AIR C	503	390	52	48	13
%	100	77.6	10.3	9.5	2.6
C. LF E	510	399	44	40	27
%	100	78.3	8.6	7.8	5.3
C W S	283	238	17	15	13
%	100	84.1	6.0	5.3	4.6
SIG C	412	370	15	16	11
%	100	89.8	3.6	3.9	2.7
MEDICAL	604	460	9	120	15
%	100	76.1	1.5	19.9	2.5

1/1/38 INDUSTRIAL STATES WITH 100 OR MORE FACILITIES ALLOCATED OR RESERVED 32

	FACILITIES	A L L O C A T E D		R E S E R V E D	
		SINGLY	JOINTLY	N I B	O A S W
TOTAL	9515	8825	154	423	113
ZONE I	4495	4146	55	234	60
New York	1397	1275	15	75	32
Pennsylvania (East)	1146	1083	12	45	6
Massachusetts	758	701	17	35	5
New Jersey	372	334	5	26	7
Connecticut	329	292	3	27	7
Rhode Island	155	144	2	7	2
Maryland (East)	141	135	1	4	1
Balance	197	182	-	15	-
ZONE II	3317	3011	91	170	45
Illinois	822	758	23	27	14
Ohio	774	682	33	44	15
Michigan	332	284	6	33	9
Wisconsin	282	263	7	10	2
Indiana	241	221	8	10	2
Pennsylvania (West)	230	197	7	26	-
Missouri	216	200	2	11	3
Minnesota	121	120	1	-	-
Balance	299	286	4	9	-
ZONE III	961	742	1	12	3
Texas	190	190	-	-	-
Georgia	167	166	1	-	-
North Carolina	142	140	1	1	-
Balance	462	446	2	11	3
ZONE IV	742	726	4	7	5
California	546	533	4	5	4
Washington	103	100	-	2	1
Balance	93	93	-	-	-

PERCENTAGE DISTRIBUTION OF ALLOCATION & LOAD BY ZONES

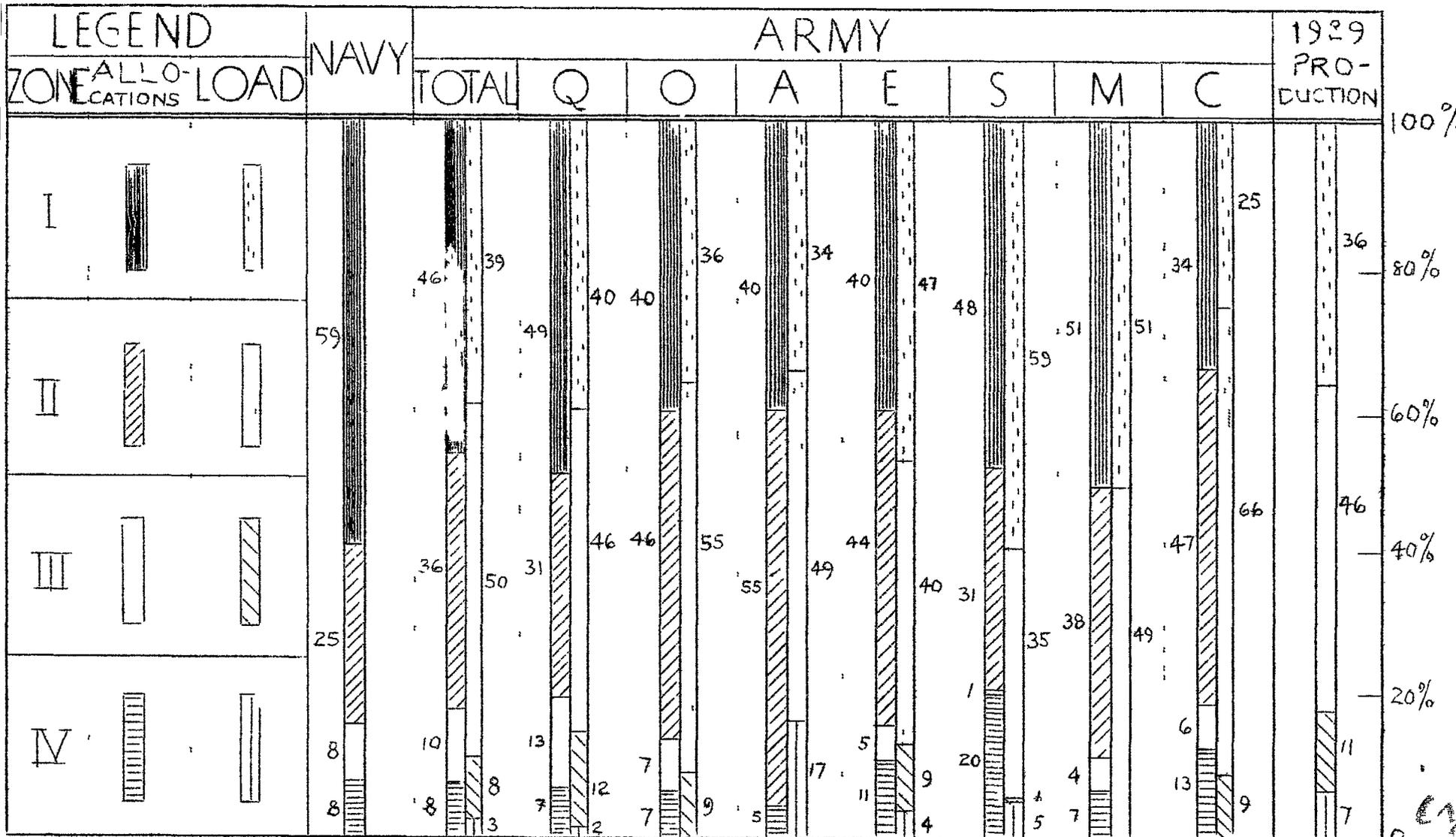


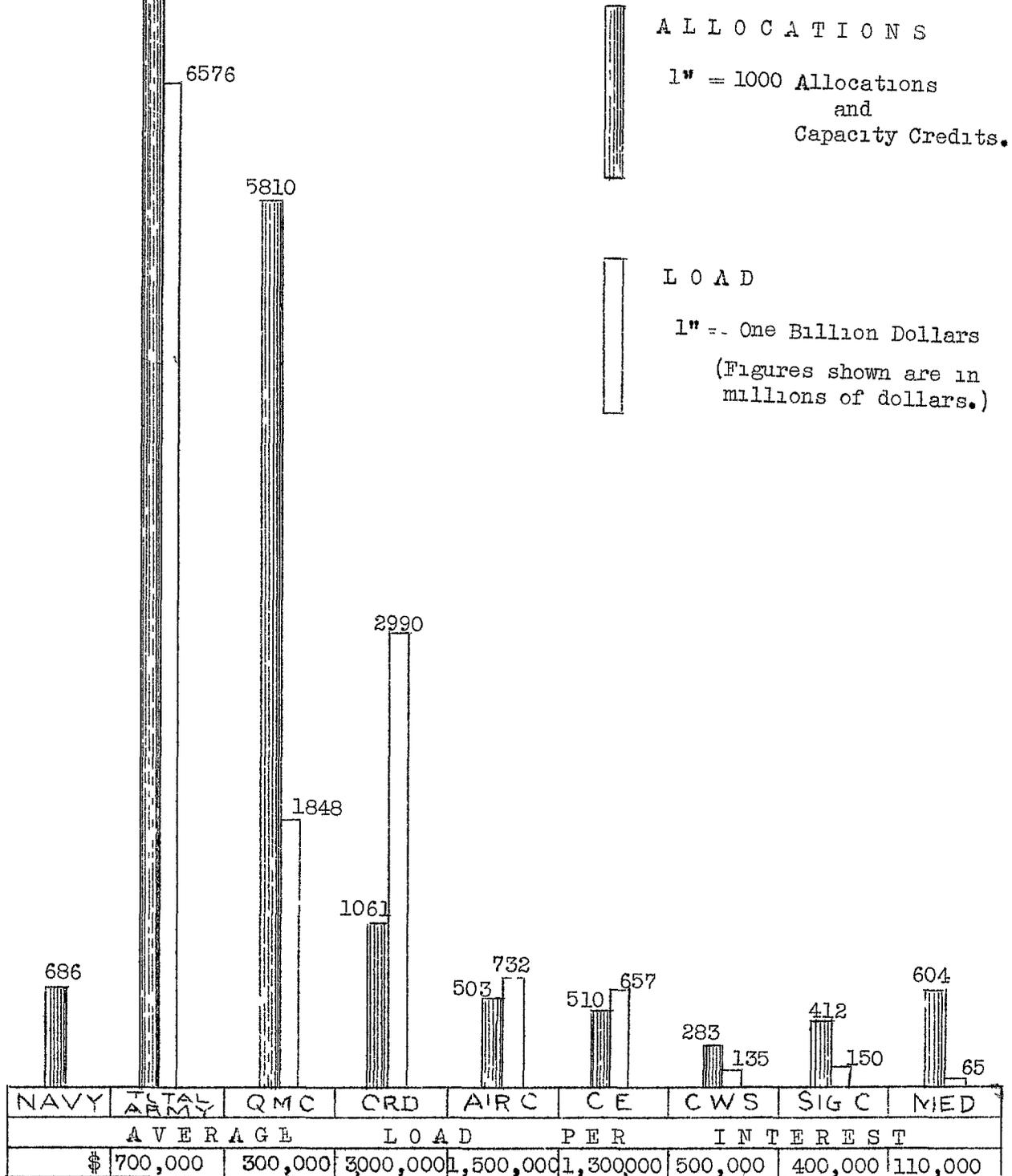
Exhibit "E"

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ALLOCATIONS-(INTERESTS) 564

VS LOAD BY SERVICES

December 9, 1938



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DISCUSSION

following lecture by Major Scott B. Ritchie, O.D.

December 9, 1938

Q. You spoke of the aviation figures on open allocations as being 27 to 30% of production capacity, with only 17% allocated, Army and Navy.

A. Yes, that is under very careful consideration now. You know the whole problem of apportionment of aviation capacity is being very carefully studied and probably some adjustments will be made very shortly.

Q. Major Ritchie, I wonder if any consideration has been given to the possibility that in another war we may have an ally who is going to use some of these facilities?

A. Well, as you know, all our planning for industrial mobilization is based on a major war, a maximum effort. Whether or not we will have allied, of course, is something that cannot be determined now. The matter has received consideration and been studied by certain committees, but it is difficult, in connection with allocations, to change the system or make adjustments on the assumption of allies. We confine our allocations, of course, to the continental limits of the United States.

Q. I realize the question is a difficult one, but it seems to me, as I understand the problem, we have pretty nearly absorbed the national industry ourselves, and I was just wondering if such a situation would not throw our plans out of whack considerably?

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A. Well, we attempt to keep the plans flexible to meet any contingencies and we retain--attempt to retain in all our facilities a nucleus for civilian trade. That nucleus constitutes reserve factories for shifting from one area to another to care for unforeseen contingencies and there are many alternate facilities which also can be turned to, at least for certain types of production. The districts maintain a list of all the facilities they have, and if the load must be shifted from one district to another, the district knows its capacity, knows what is available and can readily take care of any change in the situation. But we must be prepared to meet any situation as it develops and we cannot say whether the war is going to be on the East, West, South, or North.

Colonel Miles: I'd like to pull a Dr. Friday right here. You know you can sometimes make colossal errors by generalizing and you sometimes hit the nail on the head. During the last war the Treasury disbursements totalled about 24 billion dollars. Well, it is assumed that that was for two years, that the disbursements for either of the two years were 12 billion dollars. Now, I am trying to get at your question. If the disbursements in a particular area were 12 billion dollars, approximately somewhere between 6 or 8 billion dollars only of that amount were for technical items--certainly not more than between 6 or 8 billion dollars. Now, if we have a producing capacity in this country in round numbers of 80 billion dollars, we are not getting perilously close to over-consumption, so to speak, when we only take about 6 or 8

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billion out of 80 billion dollars produced. So it is more a question of bottlenecks and technical matters than it is of using up the total productive capacity of the country. As a matter of fact, we only use a small proportion of the productive capacity in time of war, but the trouble is that we use certain portions of our productive capacity in overcapacity. It shows that by proper adjustment, such as we are obtaining with our allocations system, that we can probably spread that load of 8 billion dollars very handily over a very much larger productive capacity. I imagine the productive capacity for war items, if properly distributed, could be raised as high as 48 to 50 billion dollars' production in a given year, but the problem is to spread it out, find it and put it to work. Now, you can see that the allocations system is ideally set up to accomplish that fact. I also want to mention another thing right now, and that is in the World War the bottlenecks caused delays in production, and while ultimately the system as it was muddled through and finally got production, we didn't get production as early as we might have if we had had an adequate system beforehand. We had a lot of overhead people shoved in on the situation. Now, the idea was that that overhead could facilitate production. Fortunately for that overhead organization the war was over on November 11, 1918, because my personal opinion of it is that had it continued it would have shown up as many bottlenecks through overorganization as the first system had shown up through underorganization, and we had literally thousands of people engaged in finding ways and means of greasing the wheels when most of them were throwing sand in the

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machinery. One great thing that we must avoid in my opinion in the next war is too early an application of this overhead control which, to be sure, has fine, brave power, but which really doesn't understand the situation at the outset of the emergency and the extent that we throw that organization on top of our existing procurement organization may mean that instead of greasing the wheels we may be throwing a lot of monkey wrenches in the machinery.

Q. Then it is not necessary or desirable to allocate all of the war load, but the main purpose and principle of allocations is the elimination of bottlenecks. Is that correct in accordance with what Colonel Miles has said? We don't want to allocate all the war load. We want to distribute it.

A. It is our feeling that we do not need to allocate those items which do not constitute problems in procurement. After we do get those problem items which constitute bottlenecks, our allocations system serves the purpose of ferreting out those bottlenecks. Take, for instance, the load study that we make. We actually go to the plant and ask "Where are you going to produce this material? On what machines? Where are you going to get your raw materials? How are you going to handle this?" By doing this we bring to light bottlenecks which otherwise would be left until M-Day. We would sail along in total, blissful ignorance right up to then and then we would have to make adjustments.

Q. You would say that the primary purpose it serves is the elimination of bottlenecks?

A. It certainly does. I think the elimination of bottlenecks is one of the most important things it does accomplish. We find

sometimes, in studying a plant, that there may be one or two machines through which the whole productive capacity of that plant must pass. Our item is only going to take so much of the activity of that plant but when we get down to tracing that item we may discover that it necessitates certain machine tools or certain other equipment or some other bottleneck in there which must be corrected, and once we disclose the problem, we have gone a long ways towards facilitating procurement. Take the problem of shell machines. We have gone a long way in the solution of that problem in developing a single rugged machine tool which can be made by any good machine shop. By developing these machine tools in peacetime or at least the patterns for them and having plants set up and allocated to that job, we will very shortly get machine tools in existence which can relieve a great load on the machine tool industry. Otherwise, if we didn't do that we would find that the machine tool industry would be still further overloaded on M-Day in trying to produce machine tools and machine shells.

Colonel Miles: Contrast the well-ordered allocations system conducted calmly with a little bit of use of the upper story in time of peace with the situation that I was confronted with in 1917. I was then an Ordnance officer and woke up one morning and found I had become an assistant to the Officer in Charge of letting the contracts for ammunition for the War Department. He had the inner office and my job was to sit in the other office and meet and talk to the incoming manufacturers. Well, there were

thousands of them. It didn't make any difference whether they had been making buttonhooks or needles or what, they all thought they were going to make shells. You can imagine the indescribable confusion which existed under that setup, with a war on us, a large amount of money available, but just how to place it and place it evenly and do it with any degree of logic or coordination was almost impossible. It wasn't a question of amount of production. It was a question of getting the production lined up, telling them what we needed and getting them started, and all that sort of thing. What an immense improvement this allocations system is.

Q. In a list I saw of the allocations in the machine tool industry I was rather surprised at the large number of joint allocations. Now it would be desirable to cut those down, wouldn't it? What militates against reducing that list? Where similar facilities exist the Army could say to the Navy: "Give me the whole of that and you take the whole of this." What is the reason that that joint allocation list couldn't be reduced further? Or is it desirable that you should have a considerable number of joint allocations?

A. Yes, a considerable number is necessary, especially in the machine tool industry, because neither the Army nor the Navy in many instances can utilize all the types of machine tools to the best advantage that are produced by any one facility. Take Warner-Swezey for example. It would be inconceivable that either the Army or the Navy could utilize all the types of equipment they

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are producing and which they normally would produce and should produce in wartime. In the machine tool industry there would not be any conversion. They will start right in producing the machine tools they normally produce for the time being and carry along until the situation necessitates otherwise. But you see these companies produce, say one machine tool. One ^{part of the plant} may produce a large size boring mill, another one a very small one. The Navy needs certain extremely large lathes; the Army needs the smaller type. Yet that same facility may produce all kinds. In other cases, though it is rather the exception, a machine tool plant is scheduled to produce some other item. Not all the facilities we have listed as machine tools are primarily machine tool facilities. There are only about 150 concerns in this country devoted exclusively to machine tools, yet we have on our list of machine tools some 350 firms. Some of those are for special machine tools which we are planning to have made, the machine shell, let us say. Some of that 350 manufacture other items normally, fire control equipment, for instance. We will use a company like that to manufacture panoramic sights. I don't know whether I have answered your question satisfactorily. It is desirable to allocate singly so far as we can because that tends to reduce the burden on industry. It gives the service, whether it is the Army or Navy, a more exclusive interest in that plant and they can learn to know the management a little better and the management comes to realize and take an interest in the situation and cooperate in an emergency, and a

mutual understanding and a stronger bond grows up between them than there would be where we have joint allocations and two different sets of people going to the same plant. But, as I mentioned before, in those larger, complex organizations we have a number of services, probably all of them participating in the capacity of that plant. It is desirable to have single allocations wherever we can get them, particularly in the machine tool industry, and that was gone into very carefully. We attempted to get single allocations outright to either the Army or Navy, but in some cases that wasn't practicable.

Q. I understand that you have, in your surveys of plant facilities, information recorded as to sources of material and contributory services. Do you have adequate means of determining from these sources whether or not those facilities have been allocated to some other agency, in order to eliminate the possibility of assigning the contributory sources of one facility to another facility?

A. That is a very important question you bring up. In many cases the principal facility has been studied to determine from what other facilities it would get contributory/^{raw}materials to meet its particular accepted schedule. In other cases we probably haven't gone as far as we'd like into these phases. You recall in the conference we had last week we discussed the desirability of making sure we are not taking a contributory source from the primary source, and making sure that that source is either sewed up by allocations or that it is not interested in too many other things. I think we had some B2 firms indexed which Mr. Lee of

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Sperry said would be necessary to meet his schedule. Of course, Sperry is one of our very important facilities. We studied that list and found that we had all but 17 of those 52 facilities allocated. Our policy governing allocations is to the effect that we must maintain, wherever we can, a nucleus, preferably half of the capacity of a plant for the regular civilian trade and other unforeseen purposes. That policy showed that probably all those facilities allocated which are going to be confined to Sperry, could still fulfill Sperry's needs and at the same time meet our allocated demands.

Colonel Miles: Which they probably wouldn't have been able to do if you hadn't had the allocations system. You have got to remember that all these firms which are now allocated are getting these contributory materials which they are now using in current production from somewhere, and while the control Major Ritchie has indicated as necessary--if that control within itself exists in peacetime, it may stand more of a drubbing than you would think offhand in wartime.

Q. It is my understanding that the system of allocations is based on negotiated contracts mainly.

A. It certainly is not based on free competition.

Q. In having competition on certain items, I don't see how competitive bidding is going to operate without causing a great deal of confusion in our system of allocations. For instance, if somebody who doesn't have a contract offer isn't up to capacity,

how are you going to keep him from getting in on competition when you want to use his facility? You are going to be tied up.

A. I think we all assume that in wartime the facilities will have plenty to do, whether allocated or not, and the placement of orders in so far as competition in allocated facilities are concerned would probably work somewhat like educational orders are working now. Our educational orders, while law places the authority to place orders without any complete measure of competition, are circularized to get a measure of competition. The Secretary of War can eliminate any he wants to; he can reduce it down to one. The law specifically says he will send those which in his judgment are best suited to producing that munition and best serve our interests in time of national defense.

Colonel Miles: We are going to have a strong Secretary of War like Newton D. Baker and he is going to tell these people where they get off. We are not going to scrap a system that we have developed in peacetime because it doesn't meet somebody's idea of what competitive bidding ought to comprise. We are going to have some guts and we are not going to throw over the system which we know will work because of some inconsequential competitive idea of what would be done if the millennium were on hand. We are having a war, not a millennium.

Colonel Ritchie: General Williams of the Marine Corps lectured to the College last year and I would like to read a few of the remarks he mad. Someone asked him: "General, how far do

you think we should carry allocations in peacetime?" The General said: "I would say--just as far as you know your requirements. I would allocate everything." That is my personal opinion. If you allocate in peacetime you have the possibility of studying the requirements and making a fair adjustment in the picture of manufacture.

Colonel Miles: You can't reiterate that kind of common sense too often. Our studies here at the College are based mainly on a theoretical point of view and it is eminently fitting that at times we should shoot into the brains of these gentlemen something that is more practical.

Commander Dunham: I think I was the one who asked General Williams how far we should carry allocations in peacetime. I certainly disagree with him in so far as allocating everything is concerned. When I took the course here in 1930-1931, the Quartermaster Corps had even gone so far as to allocate the manufacture of eggbeaters. You can't make me believe that it is necessary to allocate eggbeaters. There were something like four thousand allocations at that time. The fact still remains that that information still exists in the hands of the various supply arms in their files. They have their old allocations. The information is still there and it has been the experience in some cases that when the Navy, for example, put in for an allocation for a certain item which it was seen there would be difficulty in procuring, in spite of our general agreement that allocations will be made only in case trouble is foreseen, there is a tendency in the supply arms of the War Department to insist in the treatment of that request for an allocation for a troublesome

item by the Navy that a credit be given the Navy and the War Department still maintain a capacity in that plant for an item which they do not now consider one which will probably cause any trouble. I think we ought to recognize that these things do exist and discuss them a little bit. I think the Navy Department is thoroughly cognizant of the benefits that they derive from the surveys that have been made by the Army and they are altogether pleased in that respect, but I think the War Department should realize that there has got to be a lot of give and take there and that we should stick to our principle of making joint allocations only when it is absolutely necessary to make joint allocations. I asked Captain Winslow the other day about construction and he said, as I recall, and as you said this morning, there is only 50% of the capacity of the firm allocated. Now is there any Type G construction contemplated while we are still on a basis of 50%. Do you still think you have to build when you have 50% of the allocation left?

A. The policy is to utilize as we can existing facilities and not to build until it is absolutely necessary. Now we would probably go further than the 50% limit in that case but we aren't going to create a lot of buildings which would hang over--another lot of dead wood after the war. I don't know whether I could give you a general rule, but in most cases we would not start new construction if there was still 50% of the capacity left. It would depend upon the item and the nature of the procurement required. Our general rule is to maintain 50%. Now that rule varies as we

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go into technical items because there a plant may want to turn right over and devote practically all of its energy to the manufacture of the difficult item. Now I would like to go back to the other question. I subscribe a hundred per cent to what Commander Dunham has said regarding problem items and we are trying to do that right along. I am convinced that the Army and Navy are getting together and the problems are going to smooth out without any disturbance. I subscribe one hundred per cent to what you said about that. We do consider those items where there appears to be a difficult problem and we are making some progress in weeding those out. Of course, we must not forget that the supply arm or service is responsible by statute for the procurement of its particular needs and in some cases it may not appear to us as proper, but to the Quartermaster General or the Signal Corps it may present a serious problem. On every commodity allocated there may be the time element there to make it necessary to have the source sewed up so they can get it from a selection of stock or have the product very promptly provided, but again I subscribe to what Commander Dunham has said.

Colonel Miles: I believe General Williams had in mind the present limitations of the Allocations System when he made that rather sweeping statement.

Q. To what extent are we planning on getting three shifts out of plants which do normally work eight hours a day. In other words, are we overoptimistic? We have got to have supplies. Where are we going to get them if we can't get them now?

A. That is certainly a very serious problem. There is no nice clean-cut solution. It depends largely on good judgment and analysis of the case, but when all the factors are considered, I think we get a reasonable picture of the situation.

Q. The thing that made me bring this up, when you talk to these manufacturers privately they assume that we are going to get these second and third shift men. We are going to promise them all that. You know a second shift and a third, even now with people unemployed, are hard to get.

A. You are certainly right.

Q. We know that our problems are largely licked through the operation of public opinion. It takes time to develop that public opinion and our system of allocations is building up. I am wondering what the effect might be on the operation of the system when we consider the fact that due to this delay in development of public opinion we have a situation where the manufacturer, through political influence, may be able to dictate to us just what he is going to do. I happen to have run into that attitude on the part of some manufacturers.

A. Do you think, though, that in time of war--let us hope it is going to be a popular war if we have to have one--do you think there would be any undue or extensive dictation at that time? Wouldn't it be like the last war when they were anxious to serve the Government? They would be forced to do so by public opinion. We assume public opinion is going to be with us. Of course there will be some complaint. We can't help that, but

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by and large I think we can overcome that. Of course that depends on the speed with which the public opinion is developed. If the war is popular it will be a quick development, but how popular is war going to be at the outset? That would depend entirely on the particular situation with which the nation is faced at that time.

Q. You said that one of your war service committees was actually in operation now?

A. I don't know whether I should say that. It has been named. We call it a war service committee. This committee will be available when we need it and we recognize it as being in existence. In time of war that committee will come to Washington and be available very promptly.

Q. You can appoint committees in peacetime, apparently?

A. I shouldn't say that. This committee hasn't been appointed officially.

Q. Wouldn't it be desirable to appoint them?

A. Well, you may get in a lot of difficulty, politically and otherwise, if you attempted to. We all recognize that the machine tool industry is the key to mass production, the one which we must do everything for and get the most from, but whether it would be practical to appoint other committees at this time, I am not in a position to say. We do use other associations, however.

Q. Major Ritchie, in this allocation of our important facilities, Colonel Miles stated a few moments ago that he thought we had sufficient or could get sufficient production here to take care of any of our needs, but suppose that we have a war similar to the last

one and that war is actively in force in Europe for a year and a half before we enter. Now, during that year and a half or more they would come over here and they would take up a lot of facilities that you have allocated. What are you going to do then to stop those orders and put ours in in case we want those supplies and those facilities?

A. Well, that is a situation which we would have. We would have that year and a half you speak about to work on. The Government, of course, could command the use of any facilities in the country if the national defense required it. If we were faced with a situation like the last one we might want to furnish raw materials like we did last time and let them furnish the finished items until we got adjusted.

Colonel Miles: Whatever you lose you gain in "know how". The "know how" that you develop in time of preliminary manufacture for allies or anybody is well worth it for our own production. Now I had another experience. I don't want to tell you about my experiences all the time, but I was only 28 years old in the last war and I had responsibility far and away beyond what I should have had and what any 28 year old kid is going to have in the next war, because we are learning now how to do these things. When the war started, when I was given the job of doorboy, I was also given a second job, which I was really brought to Washington for, but which was to be done in addition to my other duties. I was brought from Picatinny Arsenal as an inspector of powder, explosives and ammunition. That was to be my job in addition to being doorboy for General Shinkle

in the outer office. But when the war started we had no specifications whatever for the loading of shell, other than the loading of explosives in the shell by the pressing method. Now we immediately placed orders for millions of rounds of three-inch shell and later for 75 and other calibers. There were no specifications whatever for the loading of shell. Nowhere did the specifications under which I inspected come from? I not only was the inspector but the technical man too. Jerry Chester, who had been with Canadian War and Foundry and was associated here with Mr. Edison, had had practical experience in the preparing of shell for the Russians and for the British. I went to Mr. Edison and told him I had to have such a man and knew the man that I wanted to have, Jerry Chester. Jerry and I sat down over here in the State War and Navy Building and wrote up specifications under which all the shell was loaded in the World War. That could not have been done had it not been for the experience which had been gained by the munitions industry.

Q. Major Ritchie, would you say just a few words about the relationship between the allocated facilities in the United States in connection with these educational orders that we hear about today? Principally, is it the plan to give these educational orders to facilities that have already been allocated?

A. Yes. I believe that the Board of officers which passed on this educational program included in their deliberations a statement something like this: That educational orders will be confined to allocated facilities unless reasons are given for not doing so. Where an order is to be placed or is placed outside of the allocated

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lists, steps will be taken immediately to have that facility allocated for that particular item. I would like to mention also that in the Ordnance program, which involves some ten or fifteen million dollars, I believe, at the present time, recent orders for items under Ordnance competitive bidding all fell largely in allocated facilities or specific items for which we had already had that facility allocated. Eighty-five per cent of the orders placed were in allocated facilities. The first awarded 1938 contracts, up to the time we made the study, were 72. War-time allocated facilities included 55, unallocated, 17. It so happened these were facilities which we normally would not allocate for anything. They were contributory materials in plants outside the allocations system, so that in effect we are getting educational orders on open competitive field bids/as well as in educational order field.

Explanation of various charts used by Major Ritchie followed this.

Colonel Miles: Are there any other questions? Any remarks from visitors? Colonel Hines?

Colonel Hines: I would like to say that Major Ritchie brought out/ splendidly the problem showing the complexities and showing how much there is to do. The only thing left for us to do is be practical and realize that we cannot do the whole thing with the limited personnel we have. If the Army and Navy would get together and combine on really essential items, and let the Navy get in their requirements quickly, which they haven't done in the past, of all really essential items so we can get them, we won't find ourselves in a situation like we did in the World War. We have got to adjust these things in time of peace or there is going to be

a lot of confusion in time of war. In time of peace we have to make important adjustments. They ought to be rechecked from distribution right back down to take and find out where we are going to get the subsidiary components and raw materials and see if there are any bottlenecks.

Colonel Miles: I think we are greatly indebted to Major Ritchie for this fine exposition of allocations.