N-2128.212

BRANCH DEPOTS VERSUS GENERAL DEPOTS

ALLEN R. CROW
Major, MSC

N-2128.212

COMMAND AND GENERAL STAFF COLLEGE 4021
Department of Logistics
Fort Leavenworth, Kansas

3 December 1948

STUDENT RESEARCH DIRECTIVE FOR SUBJECT NUMBER 1-14

STUDENT Crow, Allen R. (Name) Maj MSC (Rank) (ASN)

FACULTY ADVISOR Lt Col Everman (Name) 246 (Room No.) 5197 (Tele. No.)

SUBJECT General Depots vs Branch Depots

PURPOSE: To analyze and compare the use of General Depots and the use of Branch Depots in the Army Supply distribution system.

SCOPE: (Brief outline of subject coverage)

1. Study the army supply distribution systems used during World War II and subsequently to determine the advantages and disadvantages in the use of General Distribution Depots and Branch Distribution Depots.

2. Evaluate the advantages and disadvantages as they pertain to distribution of all classes of supply and to the distribution of special categories of supplies.

3. Evaluate the advantages and disadvantages with respect to the most efficient performance of the mission of the distribution system in peace and in war.

4. Make recommendations concerning the use of either or both types of distribution depots in the army distribution system to produce the greatest economy and efficiency.

NOTE TO STUDENTS:

1. The scope suggested above is intended as a guide only and is not to be construed as a limitation on the students perusal of the subject. The student is encouraged to modify the above scope as he may find necessary to outline and define the specific problem he visualizes and proposes to develop in his research study.

(over)

2. The references below are furnished to give the student enough material with which to begin his research. It is anticipated that the student will make use of other available sources in order to give adequate scope to his subject, and to include latest developments pertaining to the subject.

REFERENCES:

1. FM 100-10 Field Service Regulations Adm.

2. FM 10-5 QM Operations Chap 3 Sect III.

3. WD Cir 138 par 14 Responsibility of Technical Services to Director of Supply.

4. SB 38-31X Ports. Depot Missions.

5. 986 File No., Hornor, Industrial War College, 1947-48, Distribution Systems.

6. Booklet, Hall Board, Army & Air Force Agreements.

7. File No. 1268 Organization & Functional Manual Gen Depot Schenectady

8. File No. 1269 Organizational & Functional Manual San Antonio G.D.

9. File No. 1270 Organization & Functional Manual Belle Mead G.D.

10. M 4200.73 B 6 Beeman, The Port War Depot System, "QM Review May-June 1947.

11. M 209 C.73D 4E2D Henning - Five Basic Supply Jobs. "Military Review" Dec 1947 and Jan 1948.

12. M 420 C.73 B 6 the Depot Commander "QM Review" Nov-Dec 1947.

COORDINATION: (Confer with the authors of these subjects for pertinent information and coordination)

1-15
1-16
1-17

REMARKS:

COMMAND AND GENERAL STAFF COLLEGE

FORT LEAVENWORTH, KANSAS

Logistics Specialized Course
Regular Class 1948-1949

BRANCH DEPOTS VERSUS GENERAL DEPOTS

ALLEN R. CROW
Major, MSC

Date submitted: 24 May 1949

COMMAND AND GENERAL STAFF COLLEGE
Department of Logistics
Fort Leavenworth, Kansas

File No. 1-14

Subject: Branch Depots Versus General Depots.

To: Director, Department of Logistics, C&GSC.

1. PROBLEM. To determine whether Branch Depots or General Depots will produce greater economy and efficiency in a future war, based on the army supply distribution system of World War II.

2. ASSUMPTIONS. a. That mass destructive weapons will preclude the use of large installations. (Annex 4.)

b. That future planning will include an accurate, standardized, stock control system which will reduce theater excesses. (Annex 5.)

c. That the transportation system to include air transport will be integrated and flexible. (Annex 6.)

3. FACTS BEARING ON THE PROBLEM. Branch depots and General depots operating in the communications zone of World War II had the following deficiencies:

a. They had insufficient personnel and materials handling equipment. (Annex 7.)

b. Personnel were poorly trained. (Annex 8.)

4. DISCUSSION. (Due to the scope of the problem, this study is limited to the communications zone.)

a. Branch depots have the following advantages:

(1) They have mobility as contrasted to General depots, which are semipermanent and cannot meet a fast moving situation. (Annex 3.)

(2) They require less operating facilities as contrasted to General depots which must, by their nature have large facilities in order to efficiently utilize savings in pooling of labor, materials handling equipment, utilities, and transportation.

(3) They can be dispersed making them less vulnerable to mass destruction.

(4) They reduce backhauling and turnaround time by locating close to the forces they are supporting.

b. General depots have the following advantages:

(1) Better operating facilities due to their more permanent nature.

(2) Pooling of labor, materials handling equipment, utilities, and transportation.

5. CONCLUSION. Mobility of depots to meet tactical advances and reverses is a necessity. The use of mass destructive weapons will require greater dispersion. An efficient transportation and stock control system will reduce the amount of supplies in the distribution system. The use of materials handling equipment, will reduce the number of personnel required to operate depots.

6. ACTION RECOMMENDED. a. That Branch depots be used exclusively in the communications zone in any future war.

b. That this study be approved and forwarded to the Director of Logistics, GSUSA for consideration.

ALLEN R. CROW
Major, MSC

ANNEXES:

Annex 1. Draft Memorandum to the Commandant, C&GSC.
Annex 2. Draft Letter of Transmittal to Director of Logistics, GSUSA.
Annex 3. Depot Organization -- Theater of Operations.
Annex 4. Mass Destructive Weapons.
Annex 5. Stock Control.
Annex 6. Transportation.
Annex 7. Materials Handling Equipment.
Annex 8. Training.
Annex 9. Bibliography.

Concurrence - Omitted
Noncurrences - Omitted
Consideration of nocurrences - Omitted
Annexes added - Omitted

APPROVED: 24 May 1949

F. A. HENNING
Colonel, F.A.
Director

ANNEX 1

DRAFT MEMORANDUM, COMMANDANT, C&GSC

COMMAND AND GENERAL STAFF COLLEGE
FORT LEAVENWORTH, KANSAS

SUBJECT: BRANCH DEPOTS VERSUS GENERAL DEPOTS

(IDENTIFY THIS MEMORANDUM SLIP WITH PAPERS TO WHICH ATTACHED.)

TO	SUBJECT MATTER	FROM DATE AND INITIAL
Comdt C&GSC	1. I concur in the recommendations of the attached research study. 2. Request that the study be transmitted to the Director of Logistics, GSUSA, by means of a letter (Annex 2) which has been prepared for your signature.	24 May 49 F.A.Henning Col. F.A. Director Dept.of Log.

(USE REVERSE SIDE IF NECESSARY)

P9-1328—C&GSC—15 Feb 49—20M

ANNEX 2

DRAFT LETTER OF TRANSMITTAL TO

DIRECTOR OF LOGISTICS, GSUSA

D R A F T

COMMAND AND GENERAL STAFF COLLEGE

FORT LEAVENWORTH, KANSAS

24 May 1949

Subject: Branch Depots versus General Depots.

To: The Director
Logistics Division, GSUSA
The Pentagon
Washington 25, D.C.

1. The attached staff study, "Branch Depots versus General Depots," is transmitted to you for your consideration and appropriate action.

2. The research study was prepared by a student in the College, and concurred in by the Director, Department of Logistics. The recommendations made for utilization of Branch Depots exclusively in the communications zone in any future war appear to have considerable merit.

M. S. EDDY
Lt. General, U.S.A.
Commandant

ANNEX 3

DEPOT ORGANIZATION

THEATER OF OPERATIONS

[redacted]

Annex 3. DEPOT ORGANIZATION--THEATER OF OPERATIONS

1. GENERAL.--Depots are classified as to their organization, type of supply stored, mission, and command responsibility for their operation. When classified as to their organization, depots are either branch depots (stocking supplies stored by a single service) or general depots (stocking supplies stored by two or more services). Branch depots are the type normally used. When general depots are organized, internal structure must provide for branch sections which function in the technical channel of their respective services.

2. DEPOT FUNCTIONS.--Functions performed by depots include staff functions and operating functions as shown below:

a. Staff Functions.

(1) Control.

(a) Management analysis.

(b) Statistics and progress.

(2) Administration.

(a) Administration.

(b) Security.

(c) Depot property.

(d) Communication and records.

(3) Personnel.

(a) Administration.

(b) Military personnel.

(c) Civilian personnel.

(d) Dispensary.

(4) Repair and utilities.

(a) Maintenance and repair.

(b) Utilities.

(c) Fire prevention.

(5) Fiscal.

(a) Fund control.

(b) Fiscal accounting.

(c) Commercial voucher.

(6) Transportation.

(a) Administration.

(b) Commercial traffic.

(c) War Department Shipping Document.

(d) Internal transportation.

(e) Freight consolidation.

(7) Maintenance.

(a) Inspection.

(b) Production control.

(8) Machine records.

(a) Administration.

(b) Document processing and review.

(c) Stock records.

b. Operating Functions.

(1) Stock control.

(a) Administration.

(b) Incoming property.

(c) Outgoing property.

(d) Stock accounting.

(e) Inventory control.

(f) Property disposal.

(2) Storage.

(a) Administration

(b) Storekeeping (includes inventories and locator system)

(c) Inspection and classification.

(d) Labor and equipment.

(3) Procurement.

(a) Administration.

(b) Purchasing.

(c) Inspection control.

The extent to which a depot exercises each of the above functions depends upon its location, mission, type, and service. The Department of the Army prescribes Tables of Organization and Equipment for the various depot types in the theater of operations, and incorporates in the Tables of Organization and Equipment the organization necessary to perform the required functions.

3. DEPOT CONTROL.--a. Depots in the theater of operations are under the control of the commanding general of the theater and in general are operated in accordance with the policies set forth for the operation of depots in the zone of interior. These policies are modified as required in the theater of operations. The theater army commander establishes and organizes his depots based on the conditions which exist in the theater, so that the best possible organization and control results. Control of depots is normally decentralized to the major command responsible for operations, i.e. communications zone or field army. Communication zone depots are further decentralized to the various base, intermediate, or advance sections in which the depots are located. The chief of technical service at communication zone headquarters recommends missions, levels, use or assignment of personnel or organizations to sections, stock control, and policies and procedures by which supplies pertaining to his service are routed through the supply channels. New policies and procedures or important changes are processed to

section commanders through command channels. Detailed operations within the established policies or procedures normally follow technical channels so that operations within a section or between sections is decentralized to the maximum extent. The control of branch depots is largely the responsibility of the teachnical service chief of the communication zone section. In the case of general depots, the commander of the communication zone section is charged with the control of the depot. However, the commander of a base, intermediate, or advance section has a responsibility as a commander that all depots in his section, whether general or branch, are performing the mission assigned to them.

b. The branch depot and the technical service section of the general depot are concerned with the functions of procurement, stock control, and storage of only a single technical service. A general depot commander is responsible for providing certain services to the technical service supply sections having space at his depot and for over-all supervision of the sections to insure efficient operations and to meet the depot's mission, but a general depot commander is not responsible for prescribing the detailed technical supply activities of the sections. The commanding officer of a branch depot, on the other hand, performs the functions of both depot commander and technical service supply officer. He is responsible for and controls both the administration and the fulfillment of the supply mission of the depot. The commander of a branch depot may delegate to another officer the duties, but not the responsibilities, of the depot supply officer.

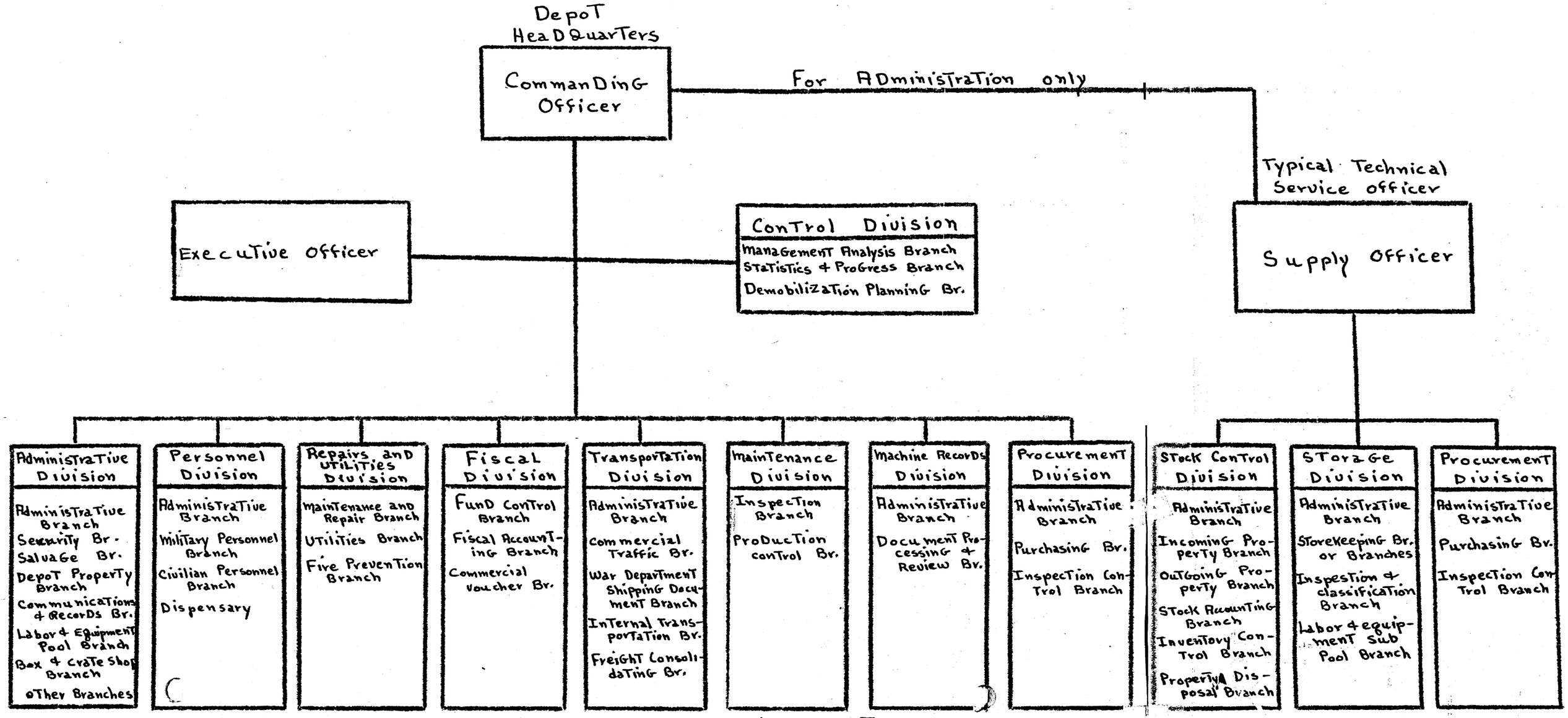
c. Where it becomes necessary or advisable to operate

two or more branch depots in the same physical location, the organization of a general depot headquarters is necessary for coordination of resources used in common. The principal functions of a general depot headquarters are housekeeping in nature, being largely responsible for security, protection, local transportation pools, materials handling equipment, labor pools, housing, utilities, space allotment, traffic control, and similar common use requirements. The general depot headquarters as such does not enter into the supply chain. It is sometimes convenient in the field to designate a general area as a "maintenance area" within which principal supply and maintenance units serving a designated group of troops are to be located. The designation of such a "maintenance area" is merely a convenient means of controlling the location of new installations, and does not imply the creation of an area command or of general depots.

d. The theater army commander is responsible for prescribing within the theater the levels of supply, as authorized by the Department of the Army, including the level to be maintained in the combat zone. The communication zone commander is responsible for the breakdown of levels to be held within the various sections. The communication zone technical service chief, operating through his central point and the service chiefs of the sections concerned, are responsible that the prescribed levels are maintained. This chain of responsibility is carried further down to the branch depot commander or to the supply officer of the technical service section of a general depot.

APPENDIX A TO ANNEX 3

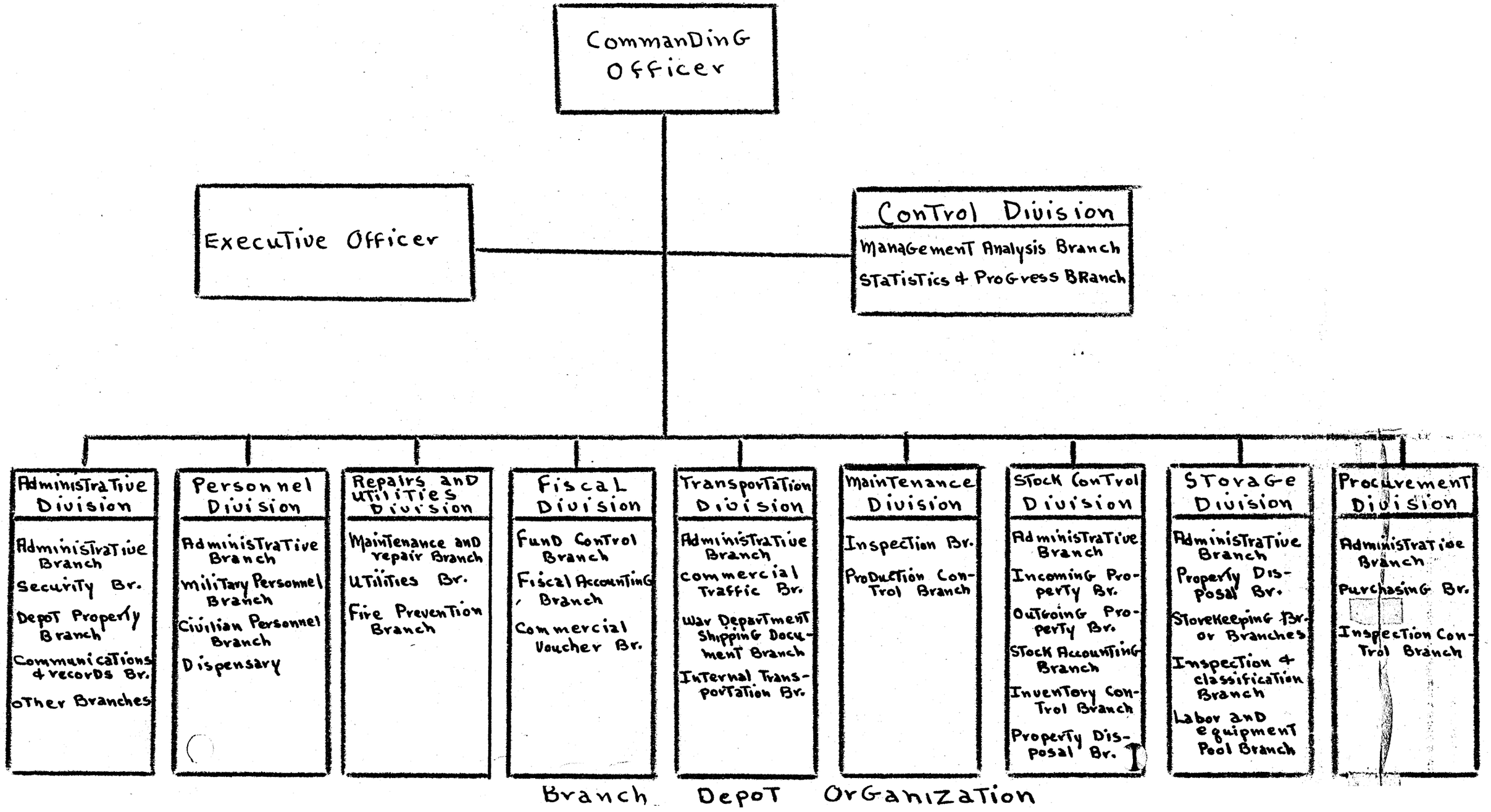
GENERAL DEPOT ORGANIZATION



General depot Organization

APPENDIX B TO ANNEX 3

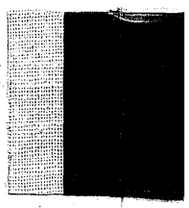
BRANCH DEPOT ORGANIZATION



Branch Depot Organization

ANNEX 4

MASS DESTRUCTIVE WEAPONS



ANNEX 4. MASS DESTRUCTIVE WEAPONS.

The destructive force of the atomic bomb was proved at Hiroshima and Nagasaki. At Hiroshima the bomb completely pulverized an area of about 4 square miles and the area of destruction extended over some 27 square miles. At least 150,000 persons were killed and injured. At Nagasaki a smaller area was damaged because of the physical characteristics of the city, but Dr. J. Robert Oppenheimer has said that the Nagasaki bomb - which was more powerful than the Hiroshima bomb, "would have taken out 10 square miles, or a bit more, if there had been 10 square miles to take out". The Atomic Energy Commission has announced that the atomic bombs tested at Eniwetok Atoll in April of 1948 were more powerful than the Nagasaki bomb.

Our experiences in World War II showed us that we could not stop the German V-1 and V-2 attacks until our forces occupied the enemy territory. Any large concentrations can easily be subjected to guided-missile attacks.

A deployed force would suffer relatively few casualties and the use of the atomic bomb against such a force would be comparatively unprofitable. While opposing forces were locked in battle, neither side could use atomic bombs in forward areas without destroying its own troops. It could use the bombs against concentrations of troops and supplies in the rear areas and will undoubtedly do so. Here again the amount of damage would depend upon the degree of dispersion.

In World War II thousands of prisoners of war and civilians were used in the communications zone. If our country abides by the rules of the Geneva Convention we may not be able to utilize prisoners in the communications zone of a future war as we have in past wars.

Field Manual 27-10, Rules of Land Warfare, states

"rrisoners of war shall be evacuated within the shortest possible period after their capture to depots located in a region far enough from the combat zone for them to be out of danger. rrisoners shall not be needlessly exposed to danger while awaiting their evacuation from the combat zone." The communications zone of any future war, as explained above, will present lucrative targets for atomic bombs and guided-missiles. It is reasonable to assume that civilians will refuse to work in any installation when they know they are subject to atomic bombs and guided-missile attacks.

In view of the above it can be seen that our depots must be mobile and capable of rapid dispersion. General depots lack mobility and in order to efficiently utilize any savings in the pooling of labor, materials handling equipment, utilities, and transportation, they must be concentrated in an area that could be blanketed by an atomic bomb. Also, our depots must be organized and equipped to perform their mission without dependence on labor and equipment pools.

Any warfare of the future will be fluid warfare. Armies and the service organizations must have great mobility and be capable of rapid dispersion to minimize the effects of atomic bombs and guided-missile attacks.

ANNEX 5

STOCK CONTROL

ANNEX 5

ANNEX 5 STOCK CONTROL.

1. Stock control has for its objective the management of supply operations so that distribution can be accomplished with a minimum of supplies in the distribution system. Stock control within the depot can never be stressed too much. Each supply section has a stock accounting branch. However, in a general depot which has a machine records division, that division can handle the accounting for the entire depot. In the UNITED KINGDOM in the past war, the base section went one step further and exercised the functions of stock control over all the depots in the base section. Practically all the technical service units organized to operate supply sections in a general depot did have stock control personnel and preferred to maintain their own accounts. Regardless of where the stock control records are maintained, they must be accurately maintained, and facilities for keeping them accurate must be available. Even where machine records are available, the stock control is not always of the best. In the theater of operations the system broke down frequently. Too often a unit was told to pick up supplies at a specified depot only to find that depot out of stock. Sometimes the unit was sent to several depots without finding the needed items. This definitely was poor stock control.

2. Some defects in the theater of operations were as follows:

a. Poor planning by the depot commanders in setting up the projected work load of the depots and offloading of supplies into sorting sheds for lengthy periods before storage in the proper warehouse. This resulted in delays in posting of the supplies to the stock record account.

b. Inexperienced personnel used in inventorying.

c. Poor stock location systems.

3. These defects were at times remedied by the following corrective measures:

a. Careful screening of personnel before assignment to a job position.

b. Conducting instruction after duty hours under the chiefs of the branches in which difficulties encountered were discussed and solutions offered.

c. Unannounced spot checking of stock records by branch chiefs.

d. Rotation of personnel within a service section to acquaint personnel with all phases of depot operation within the section.

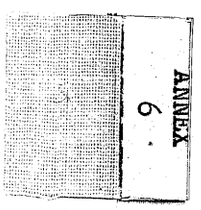
e. Advance planning on the projected work load so that labor and equipment were available when required.

4. Another basic requirement in the stock control system is uniformity among depots of all major commands. To effect continuous depot support to the using troops, and integrated depot system is required. This means that all depots would possess similar locator and inventory systems, stock records, reports, and organization. Since the theater commander controls all depots in the theater such uniform administration can be effected, and a smoothly functioning, theater-wide, integrated depot system results. Then as the fighting troops advance, the armies will establish new depots or supply points forward, leaving the existing army depots to be taken over by the advance section. As the advance section area moves forward, the base or intermediate section assumes its depots. Constant liaison between the armies and advance section, and between the Communication Zone sections facilitates efficient, continuous depot services. An extract from the

Operational History of ADSEC, European Theater of Operations reveals such coordination during an early phase on the continent during the last war.

ANNEX 6

TRANSPORTATION



ANNEX 6. TRANSPORTATION.

1. SURFACE TRANSPORTATION. There is perhaps no better summary of the Transportation situation that existed during World War II than that contained in the report of General Charles P. Gross, Chief of Transportation. Speaking about transportation in the various theaters of operations, he says: "Viewed as a whole, transportation organization in the oversea theaters suffered from a lack of proper definition and War Department directives, War Department failure to understand the transportation problems involved in conducting offensive campaigns across the Atlantic and Pacific, and a consequent lack of forethought and planning. Basically this may be attributed to the absence of an integrated transportation service during the peace period. The fact that no War Department directive was issued to correct the situation until almost 2 years after we had entered the conflict and that when issued it only partially met the requirements was due to the difficulty of having the need fully appreciated by higher echelons. The experience of World War I and the establishment of a transportation service in the zone of the interior in March, 1942 were favorable to the establishment of an integrated transportation service in the theaters, but the extent of integration and the form of organization were left to the theater commanders. The result was a marked lack of uniformity between transportation organizations in the several theaters. Those that were set up in the early days of the war were found to be inadequate or unsuitable in certain respects and numerous changes were necessary. These differences and fluctuations complicated the task which confronted the chief of transportation, Army Service Forces, in establishing smooth

working relationships with the theaters. War Department Circular No. 256, 1943, expressly provided for a transportation service in the headquarters of a theater of operations embracing shipping, railways, highways, and inland waterways, and with authority to coordinate air transport with other means of transport. However, this circular left many aspects of theater transportation untouched, and furthermore, it was not immediately reflected in the transportation organization in established theaters."

"The major difficulties which resulted from these circumstances may be summarized briefly: For example, in the North African theater, later known as the Mediterranean theater, there were not only transportation organizations in the Allied Force Headquarters and the United States Army Headquarters, but also in the services of supply and the several base sections. Coordination was eventually achieved by having a single individual serve as chief of transportation for AFHQ, NATOUSA, and SOS, NATOUSA. In the European theater of operations, lack of a clear-cut differentiation between the responsibilities of the chief of transportation and the G-4 of the communications zone was a source of difficulty for a time. In the Southwest Pacific, up to the closing days of the war, the chief transportation officer was handicapped by the fact that the movement of ships was under the control of the chief regulating officer attached to General Headquarters. A fundamental problem encountered in most theaters arose from the fact that the base section commanders had complete control of certain transportation activities within their areas, making coordination on a theater-wide basis difficult. The essence of a good transportation service

is integration and the control cannot be spread over a number of geographical units without endangering smooth and efficient operations."

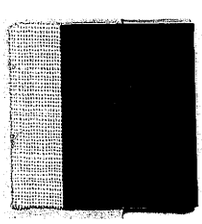
Post World War II.--As a result of the experience of World Wars I and II, there is now an adequate concept of what is required in order to have efficient military transportation in a theater of operations. The essence of this concept is centralized control, wherever conditions permit, of an integrated transportation service, and an organization which will provide the most expeditious means of coordination of the transportation function with all other logistical functions.

2. AIR TRANSPORTATION. Airplanes may become the most reliable means of inter-theater transportation in a future war. It is not at all unrealistic to make this assumption. The latest Cargo-carrying plane, the XC-99, is designed to carry either 400 troops or 50 tons of cargo. Much larger planes may be built in the future, and promising new power plants are under development which may greatly increase the speed and range. It is confidently expected that in the near future cargo planes will be capable of carrying all but the heaviest pieces of equipment required in the communications zone. Rocket-assisted takeoffs are already obviating the necessity for tremendously long run-ways, and it is hoped that the use of reversible propellers and rockets in reverse will shorten the landing strips required. Furthermore, developments in tracked landing gear may even eliminate the necessity for elaborate paved landing strips. Again, it is possible to assume that supplies may be flown direct from the Zone of Interior to the advance depots, or to

the using units insofar as possible, thus greatly reducing the amount of supplies in the pipeline or distribution system.

ANNEX 7

MATERIALS HANDLING EQUIPMENT



ANNEX 7. MATERIALS HANDLING EQUIPMENT.

1. One of the most important factors in the success of storage operations during World War II was the adoption of and later improvement of modern commercial methods of material handling. Production facilities for materials handling equipment were limited and an acute shortage developed immediately. Materials handling equipment was distributed to depots as effectively as possible, but supply remained critical throughout the war.

2. The development of pallets facilitated the handling of supplies in storage and the palletized unit load was a marked improvement both in handling and in shipment of supplies. Such loads after being assembled at the production plant or oversea shipment depot were handled mechanically from point of departure to ultimate destination. Palletized loads were moved into and out of freight car or truck in one handling. At shipside they were easily loaded by ships' gear, cargo was protected from damage and pilferage, stowed compactly, required minimum dunnage, and reduced unloading time at overseas ports. Turnaround time of ships was reduced by several days through use of palletized cargo.

3. Depot companies were not authorized any materials handling equipment during World War II. Due to the critical shortage, the equipment was obtained from Class IV stock kept in a depot pool. Because of the continuing need for this equipment during World War II and due to the present Department of the Army policy of eliminating, to a large extent, laborers as organic to a depot type company, materials handling equipment is now being included in the T/O&E's of depot companies. As an example, T/O&E 10-227 Quartermaster Clothing and General Supplies Depot Company, published April 3, 1949, included sixteen

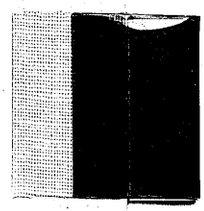
(16) fork lift trucks.

4. The use of half tracks or full tracks on fork lifts will permit them to operate on beaches or muddy terrain. Also it is possible to modify trucks for attachment of fork lifts in emergencies. The use of materials handling equipment during World War II was never developed or exploited to the utmost.

5. It is realized the materials handling equipment was not the only reason for economy in man hours per ton handled. This type of equipment was, however, directly responsible for two primary gains, speed in movement of supplies, and maximum use of critical storage space. The application of materials handling equipment made it possible to utilize maximum cube capacity of space, enabled fewer men to move more supplies in less time, with fewer accidents to personnel and less damage to supplies. The use of the fork lift truck displaced gangs of six to eight men using manual methods.

ANNEX 8

TRAINING



ANNEX 8 TRAINING.

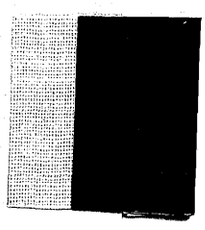
1. Plans for the logistic task in Theaters of Operations were only sketchily drawn during the years before Pearl Harbor. Insufficient provision was made in War Department plans for service troops. Also, the Army doctrine gave little indication of the size of the job, its essential characteristics, its tremendous complexities, or the organization and procedures that would be required. For the most part, Army schools and the War Department General Staff in peacetime planned, trained for, and studied combat operations. To a great extent the Army neglected the logistic problems of operations. This was a deficiency that proved to be costly.

2. Throughout the war insufficient numbers of service troops were provided in the War Department Troop Bases, which governed the number of service personnel trained and units activated. The needs of Theater Commanders were never completely filled; nor was the quality of service troops as high as desired, because sufficient time was seldom provided for their training, and the need for the assignment of able individuals to service activities was not fully recognized. It is clear that in the future service troops will be increasingly vital to operations, that they must be carefully trained, and that they must be provided in adequate numbers both in the Zone of the Interior and in the Theaters of Operations.

3. The gigantic logistic achievements in oversea Theaters during World War II owed less to foresight or advance planning than to the ingenuity and selfless devotion of thousands of officers and men in the service organization.

ANNEX 9

BIBLIOGRAPHY



ANNEX 9. BIBLIOGRAPHY.

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