FM 9–25

WAR DEPARTMENT

ORDNANCE FIELD MANUAL

THE ORDNANCE COMPANY, DEPOT

September 3, 1942

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FM 9–25, Ordnance Field Manual, The Ordnance Company, Depot, is published for the information and guidance of all concerned. It is based on the fundamentals of ordnance service contained in FM 9–5 and Table of Organization 9–18.

The purpose of this manual is to present a plan for the operation of ordnance companies, depot, in the field. No attempt has been made to present the complete solution for all problems confronting the company commander. Reference must be made by the user of this manual to other publications which cover in more detail matters which are common to other agencies of the Army. Appropriate reference has been made to these publications where necessary.

IMPORTANT

During time of peace, the operations of the depot company are complicated due to various current strict property accountability and responsibility regulations. In time of war, strict property accountability normally ceases. Such action usually reduces many of the records required by law for depot company operations. This manual will serve as an *exact* guide for peacetime operations. For wartime operations, many of the steps enumerated will be disregarded; however, the *sequence* of the steps will remain the same. In short, this manual, as presented, is applicable to operations of the depot company in time of peace; in time of war, it is equally applicable by simply omitting certain steps and procedures no longer required by the theater commander.

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(For explanation of symbols see FM 21–6.)

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ORDNANCE FIELD MANUAL

THE ORDNANCE COMPANY, DEPOT

CHAPTER 1

DEFINITIONS

■ 1. DEFINITIONS.—*a. Accountability.*—See AR 35–6520.

b. Audit.—An audit is an official examination and authentication of accounts, with vouchers, etc. The general purpose of an audit is to determine whether—

(1) Regulations governing property accountability have been observed.

(2) The stock record account reflects a true accounting of all property. (See AR 35–6740.)

c. Combat zone.—A combat zone comprises that part of a theater of operations required for the active operations of the combatant forces. It is divided into army, corps, and division areas, each comprising the zone of operations of the unit to which it pertains. (See FM 100–5.)

d. Communications zone.—A communications zone is that part of a theater of operations, contiguous to the combat zone, which contains the lines of communication, establishments for supply and evacuation, and other agencies required for the immediate support and maintenance of the field forces in the theater of operations. (See FM 100–5.)

e. Contact party.—A contact party is a detachment of ordnance soldiers sent from an ordnance organization or field shop to units requiring ordnance assistance. Such a party may consist of as many men and as much equipment as is considered necessary for the mission.

f. Depot.—A depot is an establishment for the receipt, classification, storage, and issue of supplies.

g. Down time.—In a depot, down time is that period of time elapsing between the receipt of a request for supplies and the actual delivery of the supplies into the hands of the troops making the request.

h. Dues-in.—Dues-in represents supplies which have been requisitioned but not yet received.

i. Dues-out.—Dues-out represents supplies for which a requisition has been received but not yet filled.

j. Hold file.—A hold file is a file of correspondence upon which action must be temporarily withheld.

k. OFM forms.—Forms listed in the 9 series of Field Manuals are designated "OFM Forms" (Ordnance Field Manual) and a number which may range from 101 to 499. The numbers are assigned by blocks as follows:

Classification of forms	*Number series*
Maintenance and repairs	100
Inspection	200
Ammunition field supply	300
General ordnance supply	400

l. Policy book.—A policy book is a notebook or folder in which the following are recorded for the future reference of interested personnel:

(1) The policies of the officer in charge of the echelon to which the book pertains, on problems the solutions to which are discretionary with such officers.

(2) The procedures adopted for handling matters not covered by authorized publications.

Such a book is useful in maintaining a continuity of policy.

m. Railhead.—A railhead is a supply point where supplies are transferred from rail to another type of transportation, generally motorized trains.

n. Responsibility.—Responsibility is the state of being liable which devolves upon any person having public property in his physical possession.

o. Stock record account.—A stock record account is a uniform, complete, and accurate record, showing quantities of property on hand, received, and issued. It is kept on W. D., Q. M. C. Form No. 423 (Stock Record Card), or an authorized modification, by all officers having accountability for property.

p. Tally-in.—A tally-in is a list of the items received in a shipment, compiled from packing lists, invoices, and inventory by the personnel receiving the shipment, for later comparison with the corresponding shipping ticket.

q. Tally-out.—A tally-out is a list of the items being included in a shipment, compiled by the personnel making up the shipment, for later use in making out the corresponding shipping ticket. If the shipment is delivered directly to the consignee at the depot, the tally-out, signed by the consignee, acts as a temporary receipt, pending the return of the signed shipping ticket.

r. Theater of operations.—A theater of operations is an area of the theater of war necessary for military operations and the administration and supply incident to military operations. The War Department designates one or more theaters of operations.

s. Voucher.—Any instrument which authorizes an accountable officer to pick up or drop property from his stock record account is a voucher. Each entry made in the stock record account must be supported by a valid voucher.

t. Zone of the interior.—The zone of the interior comprises the area of the national territory exclusive of areas included in the theaters of operations.

CHAPTER 2

GENERAL

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SECTION I

GENERAL

■ 2. MISSION.—The mission of the ordnance depot company is to organize and operate ordnance general supply depots or, when necessary, the ordnance section of general supply depots.

■ 3. CLASSIFICATION OF DEPOTS.—Depots are classified as follows:

a. General.—Those affording accommodations for the operation of two or more supply arms or services.

b. Branch.—Those pertaining to a single supply arm or service.

c. Communications zone.—General or branch depots of the communications zone. They may be base, intermediate, or advance depots, depending upon their location in the communications zone.

d. Army.—Army depots are branch depots located in the combat zone under the jurisdiction of the army commander.

e. Corps.—When a corps is operating independently and is charged with primary responsibility for its supply, it will usually be necessary to establish branch depots similar to army depots. These are designated corps depots.

■ 4. COMMUNICATIONS ZONE GENERAL DEPOTS.—*a. General.*—General depots are organized into sections corresponding to

the several supply services represented; for example, quartermaster section, communications zone general depot No. 3. The depot commander is designated by the commander of the communications zone and operates directly under him. The commander of a general depot coordinates the activities of the several sections in such matters as the assignment of storage space, use of the common labor pool and utilities, and transportation, while leaving to section commanders the internal management of their respective sections. The number, location, and character of communications zone depots are fixed by the communications zone commander in accordance with instructions and policies of the theater commander.

b. Stock levels.—The level of stocks to be maintained in these depots is determined by the theater commander.

■ 5. ARMY ORDNANCE DEPOTS.—The army ordnance depot is a supply point established by the army ordnance officer for ordnance general supplies. It is operated by the depot companies under the direct control of the army ordnance officer, who is responsible to the army commander for the ordnance service of the army as a whole. The nature and quantity of the supplies to be stored require that a certain amount of covered storage be employed, and warehouse facilities must be provided to enable the depot to make prompt issues of supplies. Construction in the theater of operations is the responsibility of the corps of engineers. Open storage will be required for the various types of vehicles and artillery.

a. Stock levels.—The level of stocks to be maintained in the army depot is determined by the army commander within the credits made available to the army by the theater commander.

b. Location.—The following conditions should be fulfilled so far as possible in the location of an army ordnance depot:

(1) It must be on the best all-weather road net available, with access to all units to be served.

(2) It should be on or near a standard gage railroad with adequate siding facilities.

(3) It should be protected by location, dispersion, and camouflage from the hazards of enemy artillery or aerial bombardment, and terrestrial or aerial raids.

(4) Existing buildings should be used after being camouflaged to conceal depot characteristics from aerial observation.

(5) It should be within easy hauling distance of a navigable body of water and an airfield when supplies are being, or might be, received by water or air.

(6) It should have adequate water facilities for fighting fires.

(7) The ground should be fairly level, firm, and well drained.

c. *Function.*—The function of an ordnance general supply depot in the army service area is to stock those ordnance items (less ammunition) needed to maintain the combat efficiency of all troops in the army area. The army maintains in its depots only such stockages as the military situation demands be kept nearer the front than the depots of the communications zone. The decision as to the kinds and quantities of supplies to be maintained is a responsibility of command. Accumulations of excessive amounts of supplies in the combat zone should be avoided. The fullest use must be made of serviceable ordnance matériel recovered by the quartermaster salvage service. For further details concerning salvage operations see paragraphs 486 to 490, FM 100–10.

d. Movement.—When the army advances or withdraws, and the ordnance depot must be moved to a new location, advance arrangements for additional labor and transportation may have to be made. It is therefore necessary that the depot commander know at all times the status of the stocks in the depot, and the transportation and labor required to move the depot. Requests for additional transportation and labor are made to the army ordnance officer by the depot commander.

e. Subdepots.—(1) Often it will be desirable to establish a subdepot. Usually this will be in the nature of a forward echelon during an advance, and of a rear echelon during a withdrawal. (See par. 13.)

(2) Occasionally it may prove desirable to establish a subdepot laterally. Such an occasion would arise when the communications between a portion of the army and the parent depot are very vulnerable. For example, if the army zone is

cut into two sectors by a very wide river which is spanned by only one bridge, a subdepot should be established across the river from the parent depot. (See ch. 9.)

f. Mobile depots.—In a rapidly moving situation the army depot, with the approval of the theater commander, may retain its reserve of supplies loaded either on trucks or on railroad cars. Usually the amount of transportation available determines the extent to which a depot can be made mobile.

g. Defense of a depot.—The depot commander must prepare plans for the defense of the depot against attack by combat vehicles, ground troops, parachutists, and chemical agents. A suitable outpost system should be established which will give adequate warning of the approach of the enemy. Full use should be made of all available ordnance matériel suitable for the defense of the depot. Weapons should be emplaced to cover effectively the possible approaches to the depot. Where necessary, fields of fire should be prepared. Positions should be prepared which provide protection from enemy fire and observation. Depot personnel must be trained to operate the available weapons. Each man in the depot must have a specific assignment in the defense plan. Ammunition for the available weapons must be kept in the immediate vicinity of the firing position. Depot personnel will keep their weapons on or near them while performing their normal duties and be prepared to take immediately their assigned defense posts when the alarm is given. The depot commander should be thoroughly familiar with the technique of defensive combat as outlined in chapter 3, part 2, FM 7–5.

h. Destruction of a depot.—In case of a sudden withdrawal, it may be necessary to destroy the depot and its stock to keep it from falling into the hands of the enemy. Depot personnel should smash important parts of major items, and do everything possible to render unit assemblies useless. The depot should then be set afire. The use of available inflammable materials will help produce sufficient heat to render useless large amounts of metal parts. Any available demolition material may also be used advantageously. Although the orders for the destruction of the depot should come from the

army ordnance officer, the depot commander may have to make this decision himself in an emergency. In making this decision, the depot commander should consider whether or not the enemy will be able to exploit the depot stocks. For example, an enemy force might appear in the vicinity of the depot on a raid, or during a partial break-through which our reserves can overcome. In either of these cases, the enemy himself would seek to destroy our stores before withdrawing. On the other hand, when circumstances indicate that the enemy will retain possession of the vicinity indefinitely, the depot commander must destroy stocks.

i. Dispersion and camouflage (see par. 176).—The principles of dispersion and camouflage must be observed, both in mobile and immobile depots, in order to avoid aerial detection and to minimize property damage from resulting attacks.

■ 6. DEPOT OPERATION.—*a. Stockage.*—Supplies for stockage of the army ordnance depot are shipped into the army service area from ordnance depots in the communications zone or the zone of the interior, usually by rail. The ordnance depot commander is notified in advance of the time and place of arrival of these supplies. It is then his duty to arrange for the transportation of these supplies from the railhead to the depot and for their disposition in the depot. So far as possible, he carries out this work with the personnel and equipment of his unit. In the case of large shipments requiring additional labor and transportation, he should make timely application for such labor and transportation to the army ordnance officer.

b. Issues.—Normally, the issue of supplies by the depot is made in one of two ways:

(1) On requisitions according to policies established by the army ordnance officer.

(2) On calls against credits established by the army commander and transmitted to the depot by the army ordnance officer.

c. Delivery to troops.—The ordnance depot company is not charged with the transportation or the delivery of supplies from the depot to the troop units. Normally, the ordnance

depot is the supply point where trains of divisions or other units are sent to receive ordnance general supplies. When it is necessary to place the supplies within practicable hauling distance of the troops for whom they are intended, depots will arrange with the railway service to make deliveries at class I railheads. At times, in order to facilitate supply by shortening the length of hauls, the army may establish and operate one or more subdepots under the parent depot. In such cases the parent depot may establish, stock and maintain these subdepots, providing the necessary detachment therefor, or the subdepot may be stocked directly from the communications zone.

d. Requisitions.—Requests for supplies for troops engaged in active operations are honored regardless of the form in which submitted. Unit commanders are fully responsible for the contents of their requisitions.

e. Records.—In the combat zone, formal accounting for supplies is not required. However, it is essential that the depot keep a running record of issues and of balances on hand of critical items, such as major items, important unit assemblies, etc. The depot commander should keep the army ordnance officer informed as to the status of such items. Receipts will be taken for all supplies issued.

■ 7. DEPOT OPERATION ON 24-HOUR BASIS.—In the combat zone the army ordnance depot must be prepared to make receipts and issues at all hours of the day and night. The considerations which must be borne in mind by the depot commander when organizing his unit for 24-hour operation are listed below.

a. Time of day or night during which the greatest load is usually experienced.

b. Amount of clerical work which must necessarily be accomplished on the night relief as compared to that which can be accomplished by the day relief.

c. Degree of simplification of administrative procedures possible in offices and sections due to operation in the combat zone.

d. Arrangements for the expeditious handling of heavy and unexpected loads. (This may require the employment of certain personnel of a relief not on duty.)

e. Relative strength of the various reliefs, that is, whether the relief operating during the night or early morning hours will be of the same or different strengths as those operating during the daytime.

f. Number of reliefs to be used, that is, whether it will be better to form two or three reliefs from the personnel available.

g. Amount of time overlap required between the various reliefs to insure continuity of operations.

h. Arrangements which must be made for the rationing of the reliefs including requirements for an increase in the number of cooks.

i. Assignment of key or specially trained personnel to reliefs to insure the most efficient operation.

j. Training of duplicate personnel to fill key positions.

k. Assignment of officers necessary to insure efficient company administration, and depot operation.

l. Arrangements for alternating personnel from one relief to another, that is from a day relief to a night relief, as an equitable distribution of day and night duty.

m. Provision of facilities for the daytime rest of personnel on the night relief.

n. Maintenance of adequate security provisions during both day and night operation.

■ **8. Flow of Requests for Ordnance Supplies** (fig. 1).—*a. Troop units.*—Troop units request supplies from the contact parties serving them, or directly (by requisition) from the proper ordnance officer, division, corps, or army, as the case may be. The proper ordnance officer will effect the necessary supply in one of the following ways:

(1) Issues from stock under his control.

(2) Requisition on the next higher echelon.

(3) In conformity with any special instructions on the subject issued by the army commander.

b. Channels for requisitions.—The channel through which requisitions for ordnance supplies flow from lower echelons

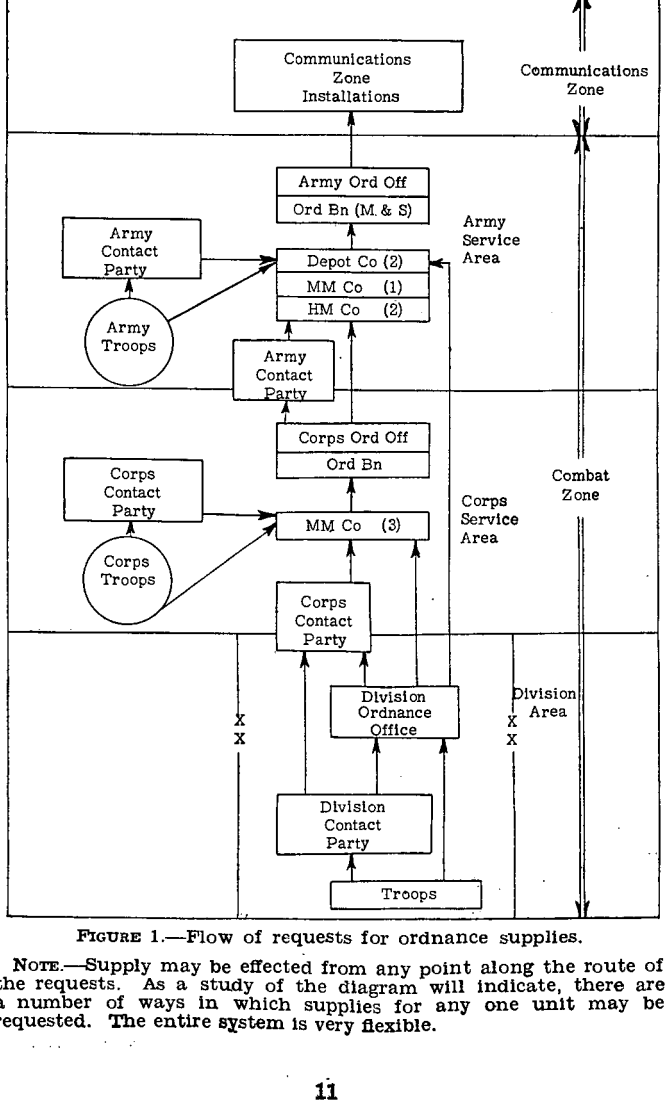

FIGURE 1.—Flow of requests for ordnance supplies.

NOTE.—Supply may be effected from any point along the route of the requests. As a study of the diagram will indicate, there are a number of ways in which supplies for any one unit may be requested. The entire system is very flexible.

to the army depot is determined to a great extent by the chain of command between the initiating organization and the depot. Units of the arms and services requiring supplies will submit their requisitions to the immediate headquarters having an ordnance officer on its staff for appropriate action by that officer and transmission to the army depot. Unless it is specifically directed otherwise by the army ordnance officer, all requisitions on the army maintenance and supply battalion will be transmitted to the army depot for appropriate action by that agency. In all cases wherein the quantities and types of items requested are such that the echelon of ordnance service receiving the requisition can fill the requisition, such supply will usually be effected and the requisition will not be transmitted to a higher echelon. When only partial supply of items requested can be effected, an extract requisition should be forwarded to the army depot. In such cases, delivery of supplies may be effected in the manner considered most suitable, that is, through ordnance service channels, or direct to the troops through class I railheads or truckheads, or by other means. (For addressing requisitions, see par. 45*a*.)

c. Ordnance contact parties.—Normally, the supply of the contact parties of the various echelons is effected by the proper ordnance officer. However, circumstances will often make it advisable that they supply one another, as far as possible, with any spare parts urgently needed. In general, the field supply of ordnance items is very flexible and requires the cooperation of all ordnance personnel.

d. Army service area.—Ordnance supplies are moved into the combat zone as the result of requisitions placed by the army ordnance officer against credits in communications zone supply installations. The supplies may be stocked in the army ordnance depot or may be routed directly to the using unit.

■ 9. LOCAL PROCUREMENT OF SUPPLIES:—Although the bulk of supplies required in the theater of operations is obtained from the zone of the interior, as many of the supplies as practicable, under War Department policy, should be procured from local resources. The principles of mobility and

simplicity of supply are best realized when minimum transportation facilities are required in delivering supplies to the theater of operations.

■ 10. TRANSPORTATION.—*a. Within communications zone.*—Transportation of ordnance supplies within the communications zone is arranged by the ordnance officer, communications zone, with the various transportation agencies on the staff of the communications zone commander.

b. Between communications zone and combat zone.—The ordnance officer at the regulating station arranges with the regulating officer for all rail transportation of ordnance supplies between the communications zone and the combat zone. In case motor or water transportation is employed, the ordnance officer at the corresponding regulating station makes the necessary arrangements.

c. Within combat zone.—Transportation requirements in the combat zone may be considered from four angles:

(1) *Establishment of advance army depots, or truckheads in order to furnish closer support to its divisions.*—In this case the army may move its supplies forward from its depots and railheads by its own motor transport, or may arrange with the regulating officer to forward shipments direct from the communications zone to advance locations.

(2) *Flow of daily requirements for ordnance stores to the troops from ordnance maintenance echelons.*—In this case stores are delivered to the troops by contact parties of the ordnance maintenance echelons.

(3) *Flow of large shipments of ordnance stores to the troops from the army maintenance and supply battalion or direct from the communications zone.*—This case may be handled as in (1) above. The army ordnance officer will complete all arrangements for transportation through the army G–4.

(4) *Transportation of ordnance stores to the troops during emergencies.*—In this case transportation requirements may be met by the dispatch of organic transportation of combat elements to ordnance supply points.

■ 11. PLANNING—*a. General.*—Depot company commanders must plan continually to meet a wide variety of con-

tingencies. They must constantly study their personnel with a view to strengthening the organization where it may be weak, or where losses affecting the efficiency of the company may be expected to occur. They must be alert for new noncommissioned officer material and observe the conduct and efficiency of all noncommissioned officers currently holding the various grades.

b. Planning for supply.—(1) The planning required to meet the future ordnance requirements of the organizations served is a continuing process. Such planning merits the thoughtful attention of all personnel in the supply system.

(2) Depot commanders must make it their business to secure information concerning the exact types and models of equipment in the hands of the combat units in the army. Whenever automotive equipment is involved, this information should extend to the make and model number of all important components of ordnance vehicles, such as the motors, motor accessories, gages, etc. Whenever new units are assigned or attached to the army, the depot commander should promptly take appropriate action to stock the items required by the new units.

(3) The types of operations in which the combat units are engaged will materially affect the demands of the units upon the supply agencies. Depot commanders must try at all times to anticipate sudden and abnormal demands. The requirements of supply will vary continually, and the problem of maintaining stock levels has many complexities. The maintenance of simple, clear, and complete supply records is necessary to efficient planning.

■ 12. DEPOT PERSONNEL.—*a. Training.*—There is an urgent necessity for the rotation of all men in all jobs as fast as they become proficient. This may tend to yield a lower or mediocre level of efficiency during the initial training period, but is essential to continuity of operations in the field.

b. Responsbilities.—As far as practicable, the responsibility for a duty should be placed squarely upon the individual required to perform that duty. The individual should not be unduly interfered with, but should be required and ex-

pected to solve his own problems and perform the tasks connected with his duty.

c. Instructions to personnel.—Except in emergencies requiring prompt action, instructions should not be given direct to depot personnel by persons other than these directly in charge of the personnel concerned. In every case where instructions are so given, the responsible chief should be promptly notified.

■ 13. MOVEMENT OF ORDNANCE DEPOTS.—*a. General.*—Depot commanders must be constantly alert to the possibility of the movement of the depot to a new location. The army ordnance officer and the depot commander should keep abreast of the tactical situation and thus foresee the direction and extent of any movement of the depot in an advance or withdrawal. Map reconnaissance followed by personal reconnaissance should be made before any movement. (The depot commander makes his recommendations for the new site to G–4 through the army ordnance officer.) Movements must be planned and carried out in such a manner that the requirements for supply of the combat troops, or of the maintenance echelons, will be satisfied. The ideal condition for the satisfaction of these requirements obtains when the depot is organized as a number of subdepots dispersed laterally and in depth throughout the army service area. Under such conditions, the displacement of any of the subdepots may easily be accomplished without disrupting the continuity of supply by merely routing troops requiring resupply to one of the subdepots not being moved. When two depot companies are operating with the army, an equal division of stocks between the companies will facilitate the movement of depots.

b. Plans.—Detailed plans should be prepared prior to the movement of a depot. Such plans should include consideration of the following factors:

(1) The status of stocks now in the hands of combat troops and ordnance maintenance echelons. All concerned may be notified to replenish their stocks prior to a date preceding the move.

(2) A division of stocks in such manner that a depot containing some of all types of items carried may be opened in the new location at the time the depot is closed in the old location.

(3) Plans for the requirements of trucks or railroad cars, the labor required, the time required for the movement, and the time the new depot will be open. (Timely requisition for transportation and labor must be made to G–4 through the army ordnance officer.)

(4) Plans for the progressive establishment of the new depot by exhausting stocks at the old location and ordering all shipments of additional stocks to the new location.

(5) Notification of the interested units of the time of closing of the old and the opening of the new depot.

(6) The provision of proper dunnage, tarpaulins, and maneuvering equipment at the new depot site.

SECTION II

ASSIGNMENTS

■ 14. ASSIGNMENTS OF DEPOT COMPANY.—*a. General.*—Depot companies are normally assigned as follows: Two per ordnance maintenance and supply battalion of the army; to the air force as required; and in the case of the communications zone, one company is assigned for every 216,000 men in the area served.

b. In the army.—In the army, the depot company is part of the ordnance battalion, maintenance and supply. The battalion is composed of a headquarters and headquarters detachment, two heavy maintenance companies, one medium maintenance company, two depot companies, and attached medical. The total ordnance service in the army consists of one maintenance and supply battalion and two ammunition battalions (six ammunition companies each) and is under the command of the army ordnance officer.

c. In the air force.—In the air force, the depot company establishes and operates the ordnance general supply depot from which the air base and medium maintenance companies draw supplies. The number of depot companies assigned to

the air force will depend on the strength and location of the air force units involved.

SECTION III

ORGANIZATION AND EQUIPMENT

■ 15. ORGANIZATION.—*a. Requirement.*—The organization of the depot company has been planned so as to utilize its personnel efficiently in establishing and operating communications zone, air force, or army ordnance general supply depots on a 24-hour basis. It has an organizational flexibility which permits it to handle the various supply problems in a field army, an air force, or in theater reserve. (See T/O 9–57, and fig. 2.)

b. Military organization.—The military organization is similar to that of an infantry company. The company headquarters, providing the military administration of the unit, is similar to that prescribed for the headquarters of an infantry company. The number of men engaged in military administration will be kept to the minimum.

c. Technical organization.—The technical organization embodies two parts: the property records section (property office), and the warehousing section (storehouse office). All the problems of property administration are handled by the former section, while the latter section takes care of the receipt, storage, maintenance, and issuance of materials.

d. Flexibility.—The internal organization of the depot company as outlined in this manual and as prescribed in T/O 9–57, is not to be considered as a rigid requirement which must be adhered to under all circumstances. The company commander should regard it as a guide and make such changes in the strengths of sections, assignments of duties, and disposition of grades and ratings as he sees fit to meet the needs of the situation.

■ 16. EQUIPMENT.—From Table of Basic Allowances No. 9, Ordnance Department, a complete list of all of the equipment of the company may be determined. A detailed list of general tools and supplies normally issued to a depot company will be found in Standard Nomenclature List N–11.

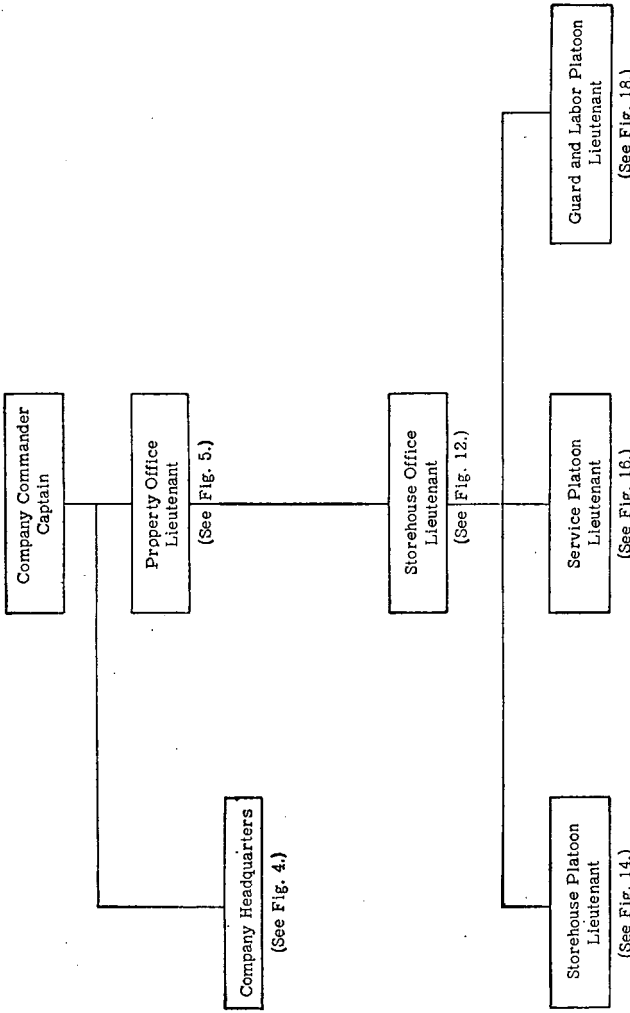

FIGURE 2.—Organization of ordnance company, depot.

SECTION IV

OPERATIONS

■ 17. GENERAL.—The operation of the depot company will vary somewhat, depending upon whether the company is operating a single large depot or several smaller subdepots. In general, however, operation in either case will follow the same principles. All operations may be roughly classified in two categories, that is, those which are technical in nature, and those which are military in nature. In the discussions which follow, no effort has been made to establish a clear-cut division between these two categories.

■ 18. TRAINING.—In addition to the usual training of personnel in matters pertaining to depot operation and the basic military training necessary to weld the company into an efficient military organization, certain other subjects should be stressed.

a. Officers.—Company officers should receive as much training as possible in all military subjects which will increase their effectiveness and efficiency in the combat zone, and in their relations with the combat branches. Such training should cover the matters outlined below. More detailed information on these subjects will be found in FM 21–45.

(1) A complete knowledge of the entire ordnance service picture in the combat zone, including specific knowledge of all ordnance service organizations in the army area, together with a knowledge of their capabilities and functions.

(2) The art of small maneuvers and a knowledge of the ground in their vicinity. Whenever the organization moves to a new location, officers should make every effort to gain for themselves a thorough knowledge of the ground in all directions for a distance of 50 miles or more according to the nature of the country. Particular attention should be paid to difficult places, alternate routes, etc.

(3) Steps necessary for unit defense, antiaircraft and ground.

(4) Map and compass reading.

(5) Motor movements by night using only odometer readings and a compass (without reliance on sign posts).

(6) A personal knowledge of all hand arms, machine guns, and antitank weapons.

(7) Ability to make a logical and concise estimate of the situation and to write logical and concise orders.

(8) A knowledge of military and staff terms.

(9) A thorough knowledge of first aid.

(10) A knowledge of vehicle and driver discipline, and the habit of observing the country on both sides of the road in order that immediate cover can be taken against aircraft attack. (On the appearance of enemy aircraft, drivers must not park their vehicles in the road and run for cover. Burning or otherwise disabled vehicles will block the road.)

(11) The ability to render approximate returns promptly when the rendition of more accurate returns will result in delay that will render them useless.

(12) The fact that an officer should always consider his vehicles and equipment first, men next, self last.

(13) The interior administration of units, in order that every officer may operate a small unit when it is not being administered by a parent echelon.

(14) The fact that it is better to use initiative and act, even if wrong, than to do nothing.

(15) The need for close liaison with aid stations and salvage organizations.

(16) Familiarity with the various divisional axes of supply in use, and the alternate axis which may be used in the future. They should also be familiar with the conditions under which switches to the alternate axis would be effected.

(17) A complete knowledge of measures necessary to safeguard military information and protect against carelessness. (See FM 21–45 and FM 30–25.)

b. Enlisted men.—Enlisted men should receive training in all of the matters mentioned above which are particularly applicable to them in the performance of their duties. In addition, the storehouse personnel should be trained to recognize ordnance material on sight, not only to expedite handling items, but also to insure identification of materials which have become scattered by enemy fire.

■ 19. GENERAL DEPOT POLICIES.—All persons having business to transact will go first to the property office. Depot personnel will not deal directly with such persons, but will direct them through the proper channels. If it is necessary for persons requesting material to consult with particular storehouse personnel, they will be directed by the property office personnel to the storehouse office, where the storehouse superintendent will determine their needs.

■ 20. GENERAL POLICIES OF OFFICE OPERATION.—*a. Office rules.*—The following office rules, if observed, will assist in attaining efficient office operation:

(1) Keep desk clean and as neat as possible.

(2) Do not engage in unnecessary conversation; other members who are trying to do their jobs will be disturbed.

(3) Be cheerful, alert, and cooperative.

(4) Take care of the equipment in your charge.

(5) Perform all tasks neatly and accurately.

(6) Endeavor to complete all the work on desk before leaving at the close of the day.

(7) Familiarize yourself with office procedure, and learn as much as possible about the tasks performed by other members of the section.

b. Routing correspondence.—One of the greatest difficulties involved in the operation of large offices lies in the problem of keeping the great volume of papers flowing through the proper channels with a minimum of waste or dead time and a minimum of lost or misplaced papers. It is important, therefore, that the number of hands or baskets to which a paper is routed be kept to a minimum. It is also important that each person required to act on a paper do so promptly and exercise great care that the paper is properly routed to the next office or desk. The proper use of the routing slip (see par. 85) will greatly assist in the solution of this problem. It is also important that supervisory personnel take such steps as may be necessary to insure that papers routed through their section are not unduly delayed. Whenever possible, it should be mandatory that all baskets be cleared as fast as possible.

■ 21. CONTINUITY OF OPERATION.—All personnel, officer or enlisted, should endeavor to insure continuity of policy and work by keeping the next person in the chain of command or supervision informed of the current status of work or of any changes of policy affecting the echelon in question. An excellent method of crystallizing procedures and of insuring such continuity of policy is the policy book (see par. 23). All supervisory personnel should familiarize themselves with the capabilities and limitations of the personnel under their supervision. Substitutes should be trained for each job in the company, and jobs rotated from time to time, to insure continuity of operation in the event that losses are experienced.

■ 22. GENERAL OUTLINE OF OPERATIONS.—A brief outline of the issuing and receiving operations, and a summary of the operations performed by the various sections of the depot company are given below.

a. Receipts.—The shipping ticket section of the property office records the incoming shipping ticket in the voucher register and assigns it a voucher number (pars. 80 and 140). The shipping ticket is forwarded to the storehouse office where the pertinent tally-in is prepared (pars. 81 and 141). The tally-in is turned over to the receiving section of the service platoon. This platoon unloads the shipment and checks the material against the tally-in (pars. 81 and 141). The service platoon turns the material over to the storehouse group chief who stores it (pars. 96 and 131). The tally-in is returned to the storehouse office where it is checked against the triplicate copy of the tally-in and corrections are made if necessary. The items are posted to the locator card of the storehouse office from the tally-in. The duplicate shipping ticket and tally-in are sent to the shipping ticket section of the property office where the tally-in is checked against the original shipping ticket, and if there is a discrepancy, an over, short, and damaged report is prepared. The original shipping ticket is prepared for the signature of the property officer. The stock record section posts the items to the stock record cards upon receipt of the shipping tickets (pars. 80 and 131). The original shipping ticket is signed by the property officer and forwarded

to the consignor (par. 80). The duplicate copy of the shipping ticket is filed (par. 80).

b. Issues.—The requisition from an organization is recorded in the requisition register of the property office (pars. 82 and 130) and forwarded to the storehouse office. The storehouse office prepares the pertinent tally-out (pars. 82 and 142) and marks the locations of items thereon from the locator card file (par. 146). The tally-out is turned over to the storehouse group chief who assembles and tags the items (pars. 82, 96, and 97). He turns the assembled material over to the shipping section of the service platoon for shipment (par. 102). The tally-out is returned to the storehouse office. Here the locator cards are posted from the checked tally-out (par. 82). It is then forwarded to the shipping ticket section of the property office where the shipping ticket is prepared from the tally-out (pars. 82, 83, and 136) and recorded in the voucher register (par. 140). The stock record section posts the stock record cards from the shipping ticket (par. 83). The shipping ticket is forwarded to the consignee for his signature (par. 83).

c. Company headquarters.—Performs all operations connected with the military administration of the company. This includes the preparation of personnel records, mess management, supervision of transportation, supply of organizational equipment, preparation of training programs and schedules.

d. Property office.—Performs all operations necessary to maintain the property records and files of the depot. These operations include preparation of requisitions and shipping tickets, maintenance of the stock record cards, preparation of depot reports and correspondence, and inventory of depot property.

e. Storehouse office.—Acts as the coordinating agency between the property office and the storehouse. This office supervises the receiving, storing, maintaining, and issuing of ordnance matériel. It will prepare and maintain location charts, make periodic inspections of items stored in warehouses, prepare tally-in's and tally-out's, and maintain the locator card file.

f. Storehouse platoon.—This platoon prepares, organizes, and operates the storage areas and storehouses in accordance with the storage plan of the property office. Other operations include the storage of material received, maintenance of items in storage, preparation of items for issue and storage, assembling items for issue, and preparation of signs for stacks, bins, and storage areas.

g. Service platoon.—This platoon performs the operations connected with the receiving, checking, packing, crating, and issuing of depot property. It also transports materials within the depot.

h. Guard and labor platoon.—This platoon furnishes the necessary guard for the protection of the depot and assists the other sections whenever extra laborers are needed. It also unloads and loads shipments.

■ 23. POLICY BOOK.—*a. Description.*—A policy book is a notebook, or folder, in which is recorded for the future reference of interested personnel—

(1) Policies of the officer in charge of the echelon to which the book pertains, on problems the solutions of which are discretionary with such officer.

(2) Procedures adopted for handling matters not covered by authorized publications.

b. Uses.—(1) The policy book serves as a set of "company standing orders" for the guidance and information of subordinate and of successors in command.

(2) Well-kept policy books will provide the Chief of Ordnance with valuable information concerning the operations they govern.

c. Posting.—The subjects covered should be arranged within the framework of a simple outline under such headings as "Leaves of absence," "Promotions," etc. Each enunciation or change of policy should be fully identified, as for example, "Co. order No. —, date," "Depot order No. —, date," or "VOCO, date." Indexing must be kept up to date. A loose leaf notebook is ideal for use as a policy book.

■ 24. CHECKING SHIPMENTS.—*a. Procedure.*—Checking, as applied to storehouses, is the process of comparing the quan-

tity and quality of supplies as shown on a statement, such as an invoice, shipping ticket, packing list, etc., with the supplies involved. After supplies are received and stored, the identity of each individual shipment is lost. It is essential, therefore, that the checking of such shipment be done immediately upon receipt and before storing. In the case of an outgoing shipment, the reverse is true. Checking of such a shipment is accomplished at the last possible moment before the supplies are crated for delivery to the carrier. The check of an outgoing shipment made too far in advance of the time such shipment leaves the warehouse loses much of its value because of the possibility of changes in the quality or quantity of such supplies subsequent to the time of the check. An invoice specifies a certain quantity or quality of an item, and the goods when received are checked against the invoice. The time and place of occurrence of loss or damage are readily fixed by efficient checking. If, however, a considerable delay is allowed to occur before the shipment is checked, and if at the time of this check some of the articles are noted to be in a damaged condition, it is difficult to fix definitely the time and manner of occurrence of such damage and the responsibility therefor.

b. Triple check.—To be of value a check must be accurate. In order to assure such accuracy, it is often necessary to make a double or even a triple check of the supplies. The triple check serves a definite purpose:

(1) Check at the railroad car or auto truck to insure that the carrier is delivering according to the bill of lading or invoice.

(2) Check upon arrival at warehouse (not necessary if material is unloaded from truck or car directly into warehouse) to insure that the intermediate carrier is completing delivery properly.

(3) Check in warehouse when packages are stacked or opened to determine whether or not the detailed inventory of contents as listed on shipping ticket is correct. Sealed packages bearing a list of the contents stenciled on outside may be accepted as listed. The contents of sealed packages must be inventoried at the time of opening. (See par. 58.)

c. In time of war.—It is obvious that detailed checking

which is necessary in time of peace must not be allowed to hamper or delay operations in time of war.

■ 25. DEPOT POLICE.—Every effort should be made to maintain a high degree of cleanliness and order in the depot. To assist in attaining this end, there should be provided a number of cans or deep pits in which all scraps and storehouse refuse may be deposited. Cans should be emptied daily; pits may be burned out when the fire or smoke will not be objectionable.

■ 26. POLICY GOVERNING HANDLING OF KEYS.—The property office chief clerk should prepare and post a roster of the noncommissioned officers who will be responsible for the custody of the keys for the storehouses and offices. Each man should serve for a definite period. He should be responsible for opening the principal offices and warehouses in the morning, and checking to determine that they are locked in the evening. He should also remain in the depot vicinity after duty hours in case of an emergency. The duplicate set of the depot keys should be kept in a key box in the property office. All keys borrowed from the key box will be signed for on a list provided, and returned as soon as the need for them has passed. All persons charged with the security of buildings will assure themselves that such places are secure before leaving them.

SECTION V

DUTIES OF INDIVIDUALS

■ 27. GENERAL.—The duties of individuals, as outlined herein for various individuals, are intended merely as a guide to the company commander. He should make such reassignments of duties and responsibilities, and assignments of additional duties and responsibilities, as the situation may demand. It will be found that certain duties within the company, such as recorder of the company fund, have not been assigned. There will be many odd duties in connection with company administration which should be apportioned among the junior officers of the company. Since the operations performed by the members of the sections of the depot company are essential to the proper supply of the command, the per-

sonnel of the company should be exempt from all duty outside the organization. The following statement, extracted from AR 45–30, authorizes exemption of ordnance troops from other than ordnance work: "Detachments or units of the Ordnance Department are exempt from detail for any duty outside their own organization work and duties, except when, in the judgment of the commanding officer, the importance of the other duty will not permit exemption."

■ 28. DEPOT COMMANDER. — *a. Responsibilities.* — When the company is operating alone, the company commander is also the depot commander. When two or more companies are operating a depot, the senior company commander or some ordnance officer senior to all will be designated as depot commander. For the sake of brevity, however, a one-company depot will be assumed. The company commander is responsible for all the activities of his company and depot. Among his responsibilities are—

(1) Administration (see AR 245–5 and TM 12–250).

(2) Tactical and technical efficiency of the company.

(3) Preparation of all plans for operation and training of the company.

(4) The proper storage, care, maintenance, and issue of all supplies pertaining to the depot.

(5) Supervision of the loading and unloading of depot supplies.

(6) Necessary arrangements with transportation agencies for shipments.

(7) Proper marking of all shipments.

(8) Timely transmission, through prescribed channels, of information with respect to shipments.

(9) Maintenance of all records necessary in the operation of the depot.

(10) Maintenance of stock levels.

(11) Preparation of all official correspondence pertaining to the company.

(12) Preparation and maintenance of an officer of the day roster for the depot guard when necessary.

(13) Security of his command against enemy action.

(14) Ultimate responsibility for all phases of operation of the company.

b. Delegation of responsibility to subordinates.—(1) *General.*—He should, without unduly interfering in the internal administration of subordinate sections, establish the major policies governing the operation of the company or depot. The responsibility for the performance of specific duties should be delegated to the proper subordinate, and that subordinate held strictly accountable for the results. With every such responsibility, however, there should be apportioned a corresponding measure of authority and other means for the execution of the responsibility. Although the company commander cannot delegate his authority for the administration of punishment under the 104th article of war, nor his power of promotion, the recommendations in these matters of a responsible subordinate concerning a member of his section should be given great weight. The company commander should require all section leaders to keep him fully informed as to the status of matters pertaining to their respective sections.

(2) *Property accountability.*—Accountability for the property of the company or depot lies with the commander thereof and cannot be delegated.

c. Planning and supervision.—Planning and supervision are two very important functions of the company commander. He should be alert at all times for improvements in methods of operation. He should make the fullest use of the experience and imagination of his subordinates, and should, whenever possible, be accessible to them for consultation. In general, major changes of policy should not be made until after all interested parties have been consulted and all phases of the subject considered.

(1) *Planning for future requirements.*—At all times he should consider the probable future demands on the depot, and prepare plans and take such steps as may be necessary to meet future requirements. The preparation of specific plans for the various sections of the company should be delegated to the responsible persons.

(2) *Inspecting camp and depot.*—He should move about in the camp and depot, observing the manner in which duties

are being performed and orders and policies carried out. Periodic formal inspections should be held of both men and equipment. The highest state of efficiency consistent with conditions of service and state of training should be required. Neatness, orderliness, and cleanliness should be stressed at all times.

d. Personnel management.—(1) *General.*—In matters pertaining to personnel, the company commander should be tolerant, fair, and cool-headed. He should endeavor to know as well as possible all the men in the company. He should have an estimate of the personality and capabilities of every man.

(2) *Changes in assignments of personnel.*—He should, from time to time, reassign the officer and noncommissioned officer personnel in the company to different sections or duties. Such a practice will assist in the preparation of the company to meet emergencies. (See par. 21.)

e. Maintaining policy books.—He should endeavor to insure continuity of policy within the company by requiring the maintenance of policy books by each section. (See par. 23.)

■ 29. PROPERTY OFFICER.—The company commander is also the property officer. All official communications and property papers are prepared for his signature. Although he cannot delegate accountability for depot property to another officer, he may delegate responsibility for the operation of the property office to a subordinate officer, who will act as the assistant property officer.

■ 30. ASSISTANT PROPERTY OFFICER (fig. 5).—The assistant property officer is responsible to the company commander for the efficient operation of the depot property office. He will exercise immediate supervision over the property office through the chief clerk. He must be thoroughly familiar with the operations of all sections of the office. The assistant property officer is responsible for compliance with the provisions of AR 45–30 pertaining to the issue, loan, lease, storage, care, preservation, loss or damage, safekeeping, shipment, expenditure, and other disposition of depot ordnance

property. All such transactions and the accounting for army supplies or property will be accomplished by authority of law, regulations, or special instructions of the War Department. He will, in case of sickness, absence on leave, etc., of the property officer, assume the duties of acting depot property officer, and in such capacity will sign papers "For the depot property officer." (See AR 210–10.) He will keep the company commander informed of matters pertaining to the operation of the depot. He will hold the noncommissioned officers in charge of sections responsible for the efficiency of their sections.

■ 31. STOREHOUSE OFFICER (fig. 12).—*a. Functions.*—The storehouse officer is responsible to the property officer for the operation of the storehouse office and of all storage facilities. He will exercise immediate supervision over the storehouse office, through the storehouse chief clerk. He is responsible for the detailed storage plans for each storehouse and storage area, including the floor plan, dimensions, storage capacity, and the location of the items stored therein. He will inspect the storehouses and storage areas to see that the materials are properly stored and maintained. He will maintain the necessary files and records incident to the operation of his office.

b. Planning.—He should plan constantly far enough into the future to meet the probable future storage requirements. He should be prepared to submit, when necessary, a plan for the movement of his stores to a new depot location.

■ 32. STOREHOUSE PLATOON COMMANDER (fig. 14).—The storehouse platoon commander is responsible to the storehouse officer for the efficient operation of his platoon and the training of his personnel. He exercises immediate supervision over the storehouse platoon through the storehouse superintendent. He will see that all material is properly stored and that the instructions relative to safekeeping and preservation of all small arms and other weapons, including artillery stored in the open, are complied with. He is responsible for seeing that the regulations for the storage of grease, oil, paint, and other inflammable items are com-

plied with; that fire aisles in storehouses are not blocked; and that delicate parts and equipment are properly protected and stored. He will exercise vigilance to prevent the accumulation of stocks over and above the requirements of the depot, and will inform the storehouse officer of such items of stocks as appear to be moving slowly. He will institute a reminder or information system in all warehouses, whereby warehouse personnel will keep him informed concerning any items the stock of which is growing low, and he will relay all such information to the storehouse officer. He will make such scheduled and unscheduled inspections as may be necessary to insure the readiness of all sections to function efficiently. He will determine the size and number of storehouse groups and will coordinate the activities of such parties. (See par. 96.)

■ 33. SERVICE PLATOON COMMANDER (fig. 16).—The service platoon commander is responsible to the storehouse officer for the efficient operation of his platoon. He will personally assume active direction and supervision of the preparation, loading, and forwarding of all outgoing shipments and of the unloading of all incoming shipments. He will hold the noncommissioned officers in charge of the sections responsible for the efficiency of the sections.

■ 34. GUARD AND LABOR PLATOON OFFICER (fig. 18).—*a. Functions.*—This officer is responsible to the storehouse officer for the operation of his platoon. Normally, he will also function as the mess officer, supply officer, personnel officer, and transportation officer of the company. He will be prepared to submit a recommendation to the company commander concerning the strength of the guard needed to protect depot property. He will assign depot police duties to his personnel. He will furnish labor, on request, to the storehouse superintendent.

b. Inspections.—He will make such scheduled and unscheduled inspections of the guard as may be necessary or prescribed to insure the proper performance of guard duty.

SECTION VI

DOWN TIME

■ 35. DOWN TIME IN DEPOT COMPANIES.—The mission of the ordnance company includes the issue to the troops of the quantities and types of ordnance stores which they require at the time they require them. Ordnance depot companies must be trained to accomplish this mission with the minimum of lost time or down time. Down time, to a depot company, means the time lag between the receipt of a request for materials from the troops and the moment when such materials are ready for issue.

■ 36. FACTORS AFFECTING DOWN TIME.—In order to reduce down time, methods must be devised to eliminate time lost—

a. In the preparation of papers incident to issues.

b. In securing the matériel from the storage space and delivering it to the shipment assembly area.

c. In boxing or packaging the matériel for issue.

d. Due to improper or careless binning or storage procedure.

e. Through failure to maintain adequate stocks on hand to meet the requirements of the units served.

f. Hunting for matériel which is not adequately marked or which is not stacked so that the markings are discernible.

g. In unloading or loading freight cars or vehicles.

■ 37. REDUCING DOWN TIME.—Down time may be reduced by careful planning and by continuous well-directed activity on the part of office and storehouse personnel. This time may be saved by—

a. Having storehouse personnel collect the matériel requisitioned while necessary papers are being drawn up in the depot office.

b. Retaining boxes, crates, and blocking materials from previous shipments so that packing may be expedited.

c. Properly training and selecting personnel to do certain types of work.

d. Maintaining accurate records and requesting replenishments as minimum levels are reached.

e. Plainly marking the correct nomenclature of the items on bin tags and stacks so that errors in storing will be kept to a minimum.

f. Stacking packages or crates so that the markings can be easily read from the aisles.

g. Training labor platoon personnel to unload and load heavy equipment safely and quickly.

h. Training all personnel in the various sections in the duties of other members of the section, in order that casualties or other losses will not unduly hinder depot operation.

i. Training storehouse personnel in the ready recognition of all types of ordnance matériel.

SECTION VII

PROPERTY ACCOUNTABILITY AND RESPONSIBILITY

■ 38. GENERAL.—All public property, whether acquired by the War Department or the Army at large, by purchase or by transfer from other agencies of the Government, and whether paid for or not, must be accounted for on an appropriate property account (see AR 35–6520, and Circular No. 147, War Department, 1940).

■ 39. IN TIME OF PEACE.—In time of peace, and also within the zone of the interior in time of war, property records must be diligently and properly maintained in strict accordance with the applicable Army Regulations.

■ 40. ACCOUNTABILITY IN COMMUNICATIONS ZONE.—The commander of the theater of operations will prescribe the type of accountability records, based on policies announced by the War Department, which must be maintained to account for property issued by supply establishments of the communications zone, or transferred from one service to another within the communications zone.

■ 41. ACCOUNTABILITY IN COMBAT ZONE.—In the combat zone no formal accounting for supplies is required. When supplies are issued to troops or are transferred from one service to another, the receiving officer receipts for the supplies with a notation showing the organization or work for which the

supplies are required. Property officers must honor authorized requests for supplies made in any manner by those responsible for filling supply needs of troops engaged in active operations. However, the normal method of requisitioning supplies is used whenever practicable. The same care is taken of all equipment, supplies, and matériel, and the same economy in their use is observed as in cases where a formal accounting is required. All commanders are charged with insuring that neither men nor organizations of their commands waste or misuse supplies, matériel, and equipment furnished to them, or accumulate an unauthorized surplus thereof. Organizations or individuals demanding quantities much in excess of the average amounts required by other like units under similar conditions will be reported to the army ordnance officer.

■ 42. CHANGES IN ACCOUNTABILITY.—Pursuant to AR 35–6520, and paragraphs 520, 521, and 522, FM 100–10, accounting for property will change as the organization responsible for the property moves into or out of the zone of the interior and the theater of operations.

■ 43. DROPPING NONEXPENDABLE ORGANIZATIONAL ITEMS.—When serving at a post, camp, or station in the zone of the interior, the property officer may drop from accountability certain minor items, if necessary. Certain restrictions are made, dealing with total cost of items, serially numbered items, etc. Information on this matter may be found in current War Department Circulars and Army Regulations.

■ 44. RESPONSIBILITY.—*a. Company commander.*—All company property, of whatever nature, is charged to the accountability of the company commander. It is the duty of the company commander and of all subordinate personnel at all times to safeguard such property against loss or destruction.

b. Suballotment.—Since it is impracticable for one person to exercise immediate supervision over property as widely distributed as that of the depot company, this responsibility is suballotted to the section chiefs and the persons actually

receiving, storing, and issuing equipment and ordnance general supplies.

c. *Section chiefs and personnel.*—Section chiefs will sign for and be responsible for all tools and equipment assigned to the section and not signed for by the personnel of the section. The personnel of a section will sign for and be responsible for the tools or equipment assigned specifically to them and necessary in their work. This responsibility extends to payment by the individual (in the zone of the interior) for such tools and equipment as he may not be able to produce when he is separated from the organization or particular assignment or goes on leave.

d. Provision for safeguarding assigned property.—Each person signing for property should be provided with a means for securing such property. No one may take or borrow property or break into or enter the container or place where property is stored, without the knowledge and consent of the person responsibile for such property. An immediate report should be made to the property officer or assistant property officer whenever there exists evidence of such breaking and entering.

e. Property lost or stolen.—In time of peace or in the zone of the interior, property lost or stolen, whether in garrison or in the field, must be replaced or paid for, on a statement of charges, by the individual responsible for the same, or the loss may be made the subject of a report of survey. The decision of the surveying officer that the property was lost through the fault and neglect of an individual is proper authority for compelling that individual to pay for the property in question.

f. Memorandum receipts.—Each soldier signing for property will receive a duplicate copy of the debit memorandum receipt, which he will keep for use in checking his property, so that he may know what he has signed for. Whenever he turns in any item of equipment, he will be given a credit memorandum receipt signed by the property officer.

SECTION VIII

ADMINISTRATIVE PROCEDURES IN POSTS, CAMPS, AND STATIONS

■ 45. REQUISITIONS (see pars. 79 and 129).—*a. To whom addressed.*—(1) When serving at a post, camp, or station (not under immediate control of army), the depot company will prepare requisitions in the same manner as prescribed for any other type of unit. The requisition will be addressed to the commanding general of the service command, Services of Supply, in which the company is serving, and will be transmitted through post headquarters. Sufficient copies must be prepared to meet the requirements of all offices through which it will pass.

(2) If the depot company is in the field or serving as an integral part of an army, the requisition will be addressed to the army ordnance officer. This officer, in turn, will forward the requisition to the proper supply point with a letter attached either in the form of a wrapper indorsement or by other means. Requisitions prepared in the field for the army ordnance officer must be in sufficient number of copies to provide one for each interested agency. This will usually include a copy for the file of both the army ordnance officer and the regulating officer and a copy for the proper communications zone depot. The actual number of copies required will usually be prescribed by the army ordnance officer.

(3) Figures 21 and 22 are tentative distribution charts of property papers for the guidance of depot personnel. The actual distribution of papers must be prescribed by proper authority in each case.

b. Expediting items.—All personnel in the supply system must be alert to the fact that any item on a requisition bearing a notation W/O No. ——— is needed at once for current work now in a shop, and the supply of the material must be made as expeditiously as possible.

■ 46. STOCK RECORD.—*a. Definition.*—Wherever property is stored for issue to the army, a uniform, complete, and accurate record showing quantities on hand, received, and issued will be maintained on W. D., Q. M. C. Form No. 423 (Stock

Record Card) or its equivalent, and will be known as the stock record account. The stock record account is the written compilation of all property for which the depot commander or unit supply officer is accountable. (See par. 131.)

b. Purpose.—The stock record account serves as the written record from which the property officer is able to determine the status of depot stock as to quantities on hand, amounts received and issued in any given period of time, and the requirements for replenishment.

c. Preparation of form.—(1) Entries on stock record cards will be complete in that the date, voucher number, quantities received or issued, and the balance on hand will always be shown in the appropriate columns.

(2) Only one card will be prepared for each item of stock, and the exact nomenclature of the item as shown in the pertinent Standard Nomenclature List will appear on the card in the appropriate space. It is desirable that only the descriptive noun be listed on the line marked "Article." In the blank space labeled "Description" shall be entered the actual description of the article or material. In the space marked "Unit" is entered the unit of measurement, for example, "each," "quarts," "ounces," etc. The cost is the price as indicated in the Standard Nomenclature List. The maximum requirement is that imposed by the stock level prescribed by the army commander. The minimum requirement is that below which the stock should not be permitted to drop. This is controlled by the rate of consumption and the time required to obtain replacement. The "Stock No." blank will contain the drawing number or stock number shown in the Standard Nomenclature List. It is customary to enter the applicable Standard Nomenclature List number in a place on the card where it will be readily visible.

d. Accounts maintained.—(1) One stock record account will be kept for general ordnance supplies other than organizational equipment, that is, depot stockage.

(2) A second stock record account will be kept for all organizational equipment, that is, for the actual company property.

(3) A third stock record account may be kept for all property normally issued on memorandum receipt to units and

individuals. This is usually maintained only during time of peace and in the zone of interior during time of war.

(4) A fourth stock record account will be kept for the so-called "true surplus" property. True surplus is that material which has been declared by the Secretary of War to be surplus to the needs of all Government agencies. This is usually necessary only during time of peace.

(5) Fifth and sixth stock record accounts possibly might be kept at a depot for C. M. T. C. and R. O. T. C. property. This is usually necessary only during time of peace.

e. Vouchers affecting stock record account.—(1) A valid voucher may be defined as any instrument that authorizes an accountable officer to pick up or drop property from his stock record account. Each entry made in the stock record account must be supported by a valid voucher. The shipping ticket is the voucher most frequently encountered in the maintenance of stock record accounts.

(2) Other vouchers affecting the stock record account are—

(*a*) Receiving report (par. 135).

(*b*) Report of survey (par. 132).

(*c*) Statement of charges (par. 133).

(*d*) Inspection and inventory report (par. 134).

(*e*) Over, short, and damaged report (par. 137).

(3) Each of the above-mentioned vouchers will affect the balance of the stock record account. The issuing of property on memorandum receipt does not in any way affect the balances of the stock record account.

(4) All vouchers should be reviewed by the commanding officer of the depot company, who is the accountable officer for the property in the depot. He must sign all vouchers for incoming property. (See par. 28.)

■ 47. AUDIT OF STOCK RECORD ACCOUNT.—*a. General.*—Army Regulations provide that all property accounts be audited at least once each fiscal year, under the supervision of the Finance Department. Property officers will habitually be notified in advance of the scheduled audit in order that they may bring all records up to date for audit. A property auditor checks his file of vouchers against the entries in

the stock record account, verifies all entries and supporting vouchers, and physically checks certain stock items.

b. Purpose.—AR 35–6740 states: "The general purpose of an audit is to determine—

"(1) Whether regulations governing property accountability have been observed;

"(2) Whether any irregularities in vouchers, postings, or handling of property with fraudulent intentions have occurred; and

"(3) Whether the stock record account reflects a true accounting of all property."

c. Inventory.—It is essential that the continuous inventory to be maintained by the depot be complete and accurate if the property account is to meet the requirements of AR 35–6740, with reference to auditing of property accounts. Careless and incomplete inventories will result in discrepancies in the property account, which will be reported by the property auditor in accordance with AR 35–6740.

d. Certificate of audit.—A certificate of audit, discussed in detail in AR 35–6740, is furnished for the files of the accountable officer after completion of the audit and adjustment of all discrepancies noted. In the event that an accountable officer fails to make satisfactory adjustments of discrepancies after having been afforded a reasonable opportunity therefor, he will be required to pay for any property not accounted for.

e. Disposition of old property records.—After the audit, all stock record cards completely filled and all vouchers up to the date of the audit are filed in a dead file. Final disposition is effected as shown in AR 35–6700.

■ 48. INVENTORIES.—*a. Regulations governing.*—Under the provisions of AR 35–6520, it is required that an accurate, complete, and detailed inventory be taken of all property carried on the stock record accounts at least once each fiscal year. In the case of the depot company, the inventory section maintains a continuous and progressive inventory of all property. This answers the requirements of the Army Regulations if every item on all stock record accounts is inventoried during the fiscal year. This inventory will be made under the supervision of the property officer. In time of war

this requirement may be relaxed by order of a proper commander or the War Department.

b. Posting to stock record account.—The actual balance on hand, as determined by inventory after deducting therefrom any quantities that may have been dropped from the stock record account but not actually shipped prior to the physical inventory, will be entered on the stock record card in red ink immediately after inventory. The inventory balance will be entered regardless of whether or not it agrees with the stock record balance. On the same line in the "Received and issued" columns, there will be written the notation "as per inventory," and in the "Date" column the date of the inventory. If the inventory balance does not agree with the stock record balance, the red ink entry will also be given a serial voucher number. (See *c* below.) No other entries will thereafter be made on the stock record to balance the inventory figures.

c. Adjusting discrepancies.—In each case where the inventory balance does not agree with the stock record balance, the necessary vouchers to adjust the discrepancy, such as over, short, and damaged reports and reports of survey, will be prepared as soon as practicable. The vouchers required to adjust such a discrepancy in full, whether one or several, will all be given the serial number assigned to the red ink entry and will be filed together, in proper serial number order, along with the other vouchers to the account. In certain cases it may be desirable to adjust the discrepancies of several items on one over, short, and damaged report or on one report of survey, in which case the red ink inventory entries on the stock record cards will be given the same serial number. Thus all refer to the one adjusting voucher.

d. Taking inventory.—(1) In taking the actual inventory, it is not necessary to open original packages or packages that have been assembled, verified, and sealed locally if there is no evidence indicating that they have been tampered with. Sometimes it is sufficient for inventory purposes to compare the total weight of all such articles on hand with the ascertained weight of one or of a definite number of such articles; a similar system may be employed on cubic dimensions. In case the balance determined by weight differs not more than

2 percent from the balance shown on the stock record cards, the latter will be considered as the true balance on hand.

(2) The inventory sheets (OFM Form 402) or memoranda of the actual physical count, which will be prepared in ink or indelible pencil, and from which are taken the red ink inventory figures entered on the stock record cards as described in paragraph 46, will be signed by the person or persons who made the count of the articles listed thereon. These sheets will be held until all entries have been made on stock record cards. They may then be destroyed unless a discrepancy exists, in which case they will be filed and kept available for examination by the inspector and property auditor. (See fig. 10.)

■ 49. PROCEDURE GOVERNING ISSUES TO TROOPS.—See AR 35–6520, AR 35–6540, AR 35–6560, AR 35–6620, AR 35–6720, AR 45–80, and AR 310–60.

a. Publications showing allowances.—(1) Tables of Basic Allowances prescribe the authorized allowances of equipment for units and individuals, with exceptions as listed in AR 310–60. Property listed in these tables is carried on the property account of the unit supply officers.

(2) The Table of Allowances for posts, camps, and stations list post, camp, or station equipment. This property is usually carried on the stock record account of the post property officer, is issued on memorandum receipt, and is not ordinarily taken with a unit into the field or on change of station. (See AR 310–60.)

b. Organizational equipment.—The initial requirements of organizations newly activated, or to be activated, are furnished, in the Ordnance Department, by means of shipping orders issued by the Chief of Ordnance. The War Department will have established a list of priorities on which is indicated the organization, the date of activation, and the station to which the initial equipment should be shipped.

c. Replenishment of supplies.—When the depot officer also functions as post property officer, the units being served by the depot may obtain replenishment of their supplies in accordance with the provisions of AR 35–6540. Nonexpendable items are issued under different restrictions from ex-

pendable items, and care must be exercised by the depot officer that the proper procedure is followed in each case.

■ 50. PROPERTY ON MEMORANDUM RECEIPT.—*a. Records kept.*—All post, camp, and station Table of Allowance property is carried on the stock record account of the depot officer when he is acting as post ordnance property officer. It is issued on memorandum receipt to the units being served. A record of all property so issued will be maintained on W. D., Q. M. C. Form No. 488 (Abstract of Memorandum Receipt) if a separate stock record is not maintained for the Table of Allowance property. New consolidated memorandum receipts will be compiled periodically, as required by Army Regulations, and also whenever the responsible officer is changed. A consolidated memorandum receipt will be prepared for and sent to each unit which has any of this type of property. It will include every item the unit has drawn up to date and, after being signed and returned to the property officer, will supersede all the previously dated individual memorandum receipts held by him against that unit. The property officer may either destroy the superseded individual memorandum receipts or return them to the unit. (See par. 138.)

b. Exchange of property.—Under normal conditions, unserviceable property held on memorandum receipt will not be exchanged except by the action of a report of survey. If, however, an item is of minor value, it may be exchanged directly upon presentation to the accountable officer. It must be accompanied by the responsible officer's certificate that the item was worn out through fair wear and tear while in the public service. (See AR 35–6540.)

■ 51. EXPENDABLE PROPERTY.—*a. Definition.*—As shown in AR 35–6620, property which is consumed, such as cleaning and preserving material, fuel, forage, etc., and all spare parts which lose their identity when issued and installed, are classed as expendable property. Other types of expendable property are materials used in manufacturing or issued for experimental uses. Expendable ordnance items are indicated in the Standard Nomenclature Lists.

b. Issues on requisition.—Issues of expendable property authorized in Tables of Basic Allowances will be made on

requisitions submitted by the unit and approved by the commanding officer of the unit and by the ordnance officer. If the depot company is issuing direct to the unit, the requisition will be receipted thereon by the officer to whom issue is made, the receipted requisition acting as a valid voucher authorizing the depot officer to drop the property from his stock record account. In the case of a unit receiving expendable property where the allowances are fixed by War Department publications, the officer receipting for the property will certify on the requisition that the articles receipted for, added to those previously drawn during the period, do not exceed prescribed allowances. (See AR 35–6560.)

c. Issues for local use.—In the case of a depot or post supply officer issuing expendable supplies to and for use by activities for which he is responsible, it is unnecessary for him to receipt to himself for the supplies so issued. Instead he may certify, on the requisition or the shipping ticket on which issues are made, that the property was expended in the public service. He will have the paper approved by the commanding officer and will use it as a voucher to drop the property from the stock record account. In lieu of using the above system for each item, the work orders or memorandum lists of materials used, properly signed by a responsible person connected with the activity, may at the end of the month be abstracted on a shipping ticket to which the work orders or memoranda are attached as supporting vouchers. This shipping ticket is then taken to the commanding officer for his approval after which it may be used as a valid voucher to drop the property from the stock record account. The shipping ticket will be consigned to certificate of expenditure.

d. Receiving for immediate use.—In a case of this nature, the officer concerned does not have to pick up the property on the stock record account, but instead he may place a certificate on the shipping ticket or receiving report, as follows: "I certify that the expendable supplies listed hereon are procured for immediate use in current service and will not be taken up on the stock record account; that the unused residue thereof, if any, will be taken up and accounted for as prescribed in paragraph 3, AR 35–6520." The receiving re-

port or shipping ticket will be assigned a serial number and filed as a valid voucher.

■ 52. NONEXPENDABLE PROPERTY.—*a. Definition.*—Property other than expendable property is classed as nonexpendable property.

b. Issues.—Within a post, camp, or station, nonexpendable property is issued on a shipping ticket, prepared in quadruplicate. The original and one copy are sent to the consignee, who will receipt for the property on the original and return it within a reasonable time to the shipping officer to act as a valid voucher to the latter's stock record account. The third copy of the shipping ticket will be sent by the shipping officer to the service command, Services of Supply, auditor and the fourth copy will be retained in the voucher file pending return of the original. For shipments outside post, camp, or station, see paragraph 53.

■ 53. PROCEDURE GOVERNING SHIPMENTS FROM DEPOT.—See AR 30–955, AR 35–6560, OFSB 2–1, and OFSB 2–2.

a. General.—Separate shipping tickets are prepared if property being shipped is from different branches of the service, as Ordnance, Quartermaster, Signal Corps, etc. Ordnance property will be consigned to the depot ordnance officer or the post ordnance officer. If the property is meant for reissue to a specific organization, a statement to this effect will be included. When unserviceable or excess property is shipped, the shipping ticket must show the authority for such shipment, for example, "Approved inventory and inspection report," "Report of survey," "Statement of charges," etc. The authority must be shown in a statement on the face of the voucher.

b. Local shipments.—Shipments of any kind are usually made as the result of an approved requisition or instructions from higher headquarters, the transfer of accountability ordinarily being accomplished by means of a shipping ticket. Upon receipt of an approved requisition a tally-out is prepared in quadruplicate by the storehouse office clerk and signed by the checker, packer, or shipper. The consignee, upon calling for the property, signs one copy of the tally-out and leaves it with the depot officer, retaining one copy himself. In the meantime, the shipping ticket is prepared from

the office copy of the tally-out. (See par. 136.) The necessary entries are obtained from the tally-out, and the voucher number from the voucher register. The shipping ticket is then sent to the consignee for signature; when returned, it acts as a valid voucher authorizing the accountable officer to drop the property from his stock record account. For details of procedure see paragraphs 82 and 83.

c. Shipments outside post, camp, or station.—(1) The same general procedure in the preparation of the property for shipment as that described in *b* above will be used for shipments outside a post, camp, or station.

(2) The primary difference in the two cases cited above starts with the actual shipment. In the former case, a regular shipping ticket is prepared from the copy of the tally-out sheet; in the latter case, the tally-out is used to prepare a memorandum shipping ticket in quadruplicate, three copies being sent to the quartermaster who actually ships the property. The memorandum shipping ticket is nothing more than a regular Shipping Ticket (W. D., Q. M. C. Form No. 434) with the word "Memorandum" typed in front of the two words on the heading. It shows the number and type of containers instead of the standard nomenclature of the items which appears on a normal shipping ticket. In addition, the memorandum shipping ticket will show the total weight and will include a request to the quartermaster to accomplish the shipment.

(3) The quartermaster will determine the cost of shipment and the routing, will prepare the bill of lading, and will deliver the shipment to the carrier. He will also complete the original copy of the memorandum shipping ticket, showing the bill of lading number, the routing, and the cost of transportation, and send it back to the ordnance officer who requested the shipment. He will attach one copy of the memorandum shipping ticket to a copy of the bill of lading and forward them to the quartermaster at the station where the consignee is located. The third copy of the memorandum shipping ticket will be retained by the local quartermaster for his files.

(4) Upon receipt of the original copy of the memorandum shipping ticket, the ordnance officer (shipper) will prepare

a regular shipping ticket with the necessary number of copies, normally an original and six copies. One additional copy is required if serial numbered items make necessary a copy for the Chief of Ordnance. The shipping ticket * prepared will show the bill of lading number, routing, and cost of transportation. Also, if the property has been in service previously, a certificate, signed by the ordnance officer making the shipment, must be placed on the shipping ticket, stating that the property is in serviceable condition and ready for immediate use. The normal distribution will be as follows (see fig. 22):

(*a*) Original and one copy to the receiving officer, who will sign and return the original copy to shipping officer.

(*b*) One copy to file pending receipt of signed original.

(*c*) Two copies to the service command auditor.

(*d*) One copy to the receiver's service command ordnance officers.

(*e*) One copy to the shipper's service command ordnance officer.

■ 54. SHIPMENTS BY FREIGHT.—The usual method of shipping supplies, especially those of great bulk and weight, is by freight. Most items need only be crated solidly and packed tightly within the freight cars to meet railroad requirements. Items such as artillery carriages and vehicles of all types require great care in their preparation for shipment. This matter is covered completely and in detail in paragraphs 40 to 45, inclusive, FM 101–10. Local railroad officials should be contacted regarding local policies on all types of freight shipments. For shipping data see Ordnance Storage and Shipping Charts (OSSC's).

■ 55. SHIPMENTS BY EXPRESS.—*a. Procedure.*—An officer desiring to ship property by express must make application to The Quartermaster General on W.D., Q.M.C. Form No. 149, stating the necessity for making the shipment by express. If The Quartermaster General approves the shipment, he will provide the shipping officer with a transportation order. This order will be furnished the local quartermaster along with

* The requirement for the recording of serial numbers on shipping tickets has been suspended by Circular No. 202, War Department, 1942.

the property that is to be shipped. Memorandum shipping tickets will also be prepared, one copy to be signed by the quartermaster and retained by the shipping officer as a receipt for the property. The quartermaster will make the arrangements for the shipment.

b. Exceptions.—As indicated in AR 30–955, there are a number of instances where express shipments may be made without specific approval by The Quartermaster General, such as the shipment of valuable supplies, delicate instruments, and small packages. Economy and emergency will often justify express shipments. When an ordnance machinist is traveling from one station to another in the performance of his duties, his hand tools are usually shipped by express, since they are ordinarily too heavy for him to carry, and shipment by freight is too slow.

■ 56. SHIPMENTS BY PARCEL POST.—The Post Office Department authorizes the shipment of Government property or material, when it weighs 4 pounds or less, without the payment of parcel post charges. For this reason, the parcel post system should be used to the fullest extent possible in making shipments of small and comparatively inexpensive items. If any item exceeds 4 pounds in weight, the full parcel post rate must be paid for the shipment of the property. The parcel post system will not handle any parcels exceeding 70 pounds in weight. The limitations in size are a total of 100 inches in girth and length combined.

■ 57. GENERAL RULES GOVERNING PACKING AND MARKETING SHIPMENTS.—See AR 30–955, AR 45–80, and OFSB 2–1, OSSC's.

a. Packing.—An officer making a shipment is responsible for seeing that the material is properly packed to prevent damage en route, that the material is properly cleaned or oiled to prevent deterioration in storage, and that salvaged ammunition components shipped contain no live rounds or other extraneous matter. Weapons must be shipped unloaded. They must be properly reported to the Chief of Ordnance. The most economical system for freight rates must be used for vehicles and tanks. Whenever possible, two or more vehicles are shipped in the same car. Tools should be separately secured in the same car as the vehicle to which they

pertain, the vehicles should be listed on the shipping tickets and bills of lading as complete, and the tools and parts carried on separate lists. Weapons from open vehicles as compared to closed vehicles such as tanks are packed separately and shipped as first class freight. Ordnance officers doing considerable shipping may obtain from the Interstate Commerce Commission a catalog of shipping terms and instructions. Normally the physical shipment of the property is the responsibility of the local quartermaster.

b. Marking.—Each package to be shipped must bear the name and station of the consignee, the name and station of the consignor, the consignor's shipping ticket number and bill of lading number, the serial number of the package, weight, cubical contents if the shipment is to be made overseas, and the list of contents, which is placed on a packing list in an oiled envelope on the outside of the package. (See introduction to the OSSC's.)

■ 58. PROCEDURE GOVERNING RECEIPT OF SHIPMENT.—*a. Duties of receiving officer* (AR 35–6560).—The officer receiving a shipment is responsible for the following (see par. 125):

(1) Supervision of the checking of the shipment for quantity and quality.

(2) Covering of shortages by means of an over, short, and damaged report, or by a report of survey.

(3) Preparation of an over, short, and damaged report in the event that no shipping ticket is received in a reasonable length of time.

(4) Collection of evidence to support a report of survey in the event that a report of survey is required.

(5) Assumption of accountability and responsibility for the property if the shipment is correct in every way. This he does by accomplishing the shipping ticket and returning it to the shipping officer. Army Regulations prohibit the signing of any receiving report, shipping ticket, etc., in blank. (See AR 35–6560.)

b. Original package.—A package in the original sealed container as made up by a manufacturing establishment or by a permanently established ordnance depot is known as an "original package." This type of package should have stenciled on the outside the name of the manufacturer or arsenal,

the total weight, and the contents of the package. Original packages must contain only one kind of article. If the package, upon receipt, shows no signs of tampering or damage, the only check necessary is the weight. If it checks within 5 pounds of the listed weight, no further check need be made, and the package may be accepted at its face value.

c. Receiving shipments intended for specific organizations (AR 35–6560).—(1) Nonexpendable property that is not listed in Tables of Basic Allowances will be picked up on the stock record account of the depot and issued on memorandum receipt to the organization which requested it.

(2) Expendable property will not be picked up on the stock record account, but, instead, will be issued to the organization by certificate on the original shipping ticket on which it was received at the depot.

(3) Property listed in the Tables of Basic Allowances that is nonexpendable will be issued to the organization on a new shipping ticket prepared by the depot. These two shipping tickets will be assigned voucher numbers, and will be cross referenced and filed as valid vouchers. It is not necessary to make any entries in the stock record account, as there will be no change in the balance shown.

d. Receiving reconditioned and/or reclaimed property.— Normally, property that has been turned over to a reclamation or salvage officer for reclamation of component parts will have those serviceable parts removed by the salvage officer and shipped to the depot officer on a shipping ticket to be picked up on the stock record account.

e. Receiving property purchased locally (AR 35–6560).— The receiving report is prepared in quadruplicate as soon as the normal procedure of checking in the property has been completed. By means of this receiving report, which acts as a valid voucher, the property is picked up on the stock record account. (See par. 135 and fig. 29.)

f. Receiving property purchased from manufacturer (AR 35–6560).—The Ordnance Department often makes purchases from manufacturers for direct delivery to the ultimate consignee. There are two methods of operation used:

(1) If the shipment is made at Government expense the authorized commissioned representative will inspect and ac-

cept for the Government at destination. The receiving officer will prepare a receiving report in quadruplicate, signing the certificate as to inspection, receipt, and acceptance on the original only. He will then forward the signed original and one copy to the disbursing officer designated to make payment, will forward one copy to the contracting officer for his files, and will retain the other copy as his debit voucher.

(2) If the purchased property is to be forwarded at the vendor's expense, the technical inspection may be made at the plant by a Government inspector. This inspector will then prepare the receiving report in quadruplicate, listing the correct nomenclature, ink out the words "and accepted" in the inspection certificate, sign the modified certificate on the original copy, and forward all four copies to the depot. Upon receipt of the material and the receiving report, the accountable officer will cause an inspection to be made for quantity and condition and will accomplish the accountable officer's certificate on the original copy, adding the words "and accepted" after "received" in the second line thereof. He will then file one copy as his debit voucher and forward the original and two copies to the contracting officer. The contracting officer will retain one copy for his files and forward the original and one copy to the disbursing officer designated to make payment.

g. Ammunition.—In the event that the depot company is required to handle ammunition, the method of accounting and handling of the property is similar to that used for general supplies. (See FM 9–20.)

■ 59. PROCEDURE GOVERNING PROCUREMENT OF PROPERTY BY LOCAL PURCHASE (fig. 3.)—Information on this subject may be found in the 5-series of Army Regulations.

a. Maker of actual purchase.—The actual purchase of the property required is made by the local quartermaster.

b. Obtaining funds.—The depot ordnance officer must write the service command ordnance officer requesting the authority and funds for making the purchase. The letter must include—

(1) Reasons why it is necessary to purchase the items specified.

(2) Bids by three commercial concerns on the items, as obtained by the ordnance officer.

c. Granting authority.—The service command ordnance officer will review the request submitted by the depot ordnance officer. If it is approved, the service command ordnance officer will issue a W. D. Form No. 23 (War Department Procurement Authority) in duplicate and send it to the depot ordnance officer.

d. Subsequent action of depot ordnance officer.—(1) Upon receipt of the procurement authority, the depot ordnance officer will furnish the local quartermaster with complete specifications of the items and the quantity to be purchased. He will quote the procurement authority, whether by letter or by a new subprocurement authority on W. D. Form No. 23, repeating the information shown in the body of the procurement authority as received from the service command ordnance officer. (See par. 143.)

(2) After making the purchase, the local quartermaster notifies the depot ordnance officer of the actual amount of funds expended, either by indorsement on the letter or by completion of the reverse side of the subprocurement authority.

(3) Upon receiving the necessary information from the quartermaster, the depot ordnance officer will complete the Form No. 23 he received from the service command ordnance officer and return it to that officer. The service command ordnance officer will post this information to his allotment ledgers to show the amount of funds that are still available for apportionment to stations for future purchases of similar supplies.

■ 60. PROCEDURE GOVERNING DISPOSITION OF UNSERVICEABLE PROPERTY.—See AR 20–35, AR 30–2145, AR 35–6540, AR 35–6640, and AR 345–300.

a. Classes of unserviceable property.—All unserviceable property is placed in one of two classes:

(1) *Class I.*—Property which has become unserviceable through fair wear and tear, or declared obsolete by competent authority, is known as class I property, and may be disposed of by means of an inventory and inspection report.

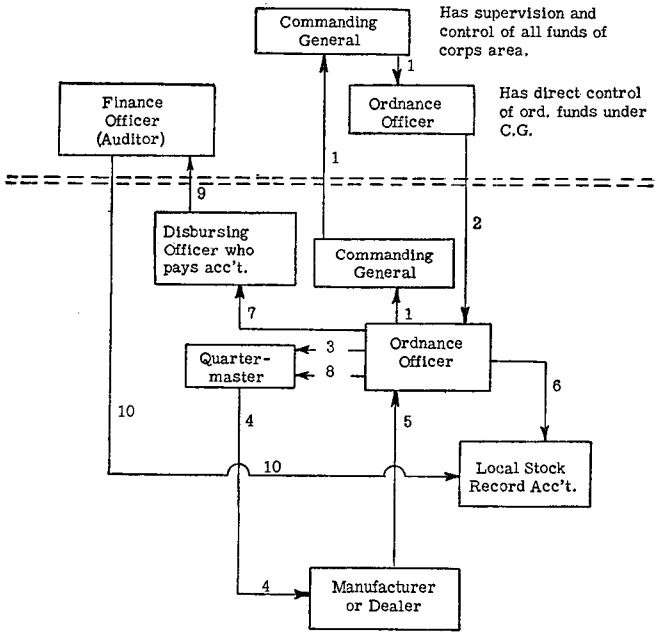

FIGURE 3.—Local purchases.

1. Ordnance officer initiates request through channels.
2. Service command ordnance officer allots funds on War Department Form No. 23 (Procurement Authority).
3. Requests quartermaster to make purchase.
4. Quartermaster makes purchase order and sends to local dealer who has given lowest informal bid.
5. Dealer sends supplies to ordnance officer. NOTE.—Here ordnance officer prepares receiving report in quadruplicate, certifying the original only.
6. Triplicate copy to stock record account as voucher on which to pick up the property.
7. Two copies, original and duplicate, sent to disbursing officer who will pay the bill.
8. Copy to quartermaster who purchased items to file with his purchase accounts.
9. Disbursing officer pays the account, uses original as voucher to his money accounts, and sends duplicate to Service command finance officer for auditor's file.
10. Auditor uses copy in auditing ordnance officer's accounts.

(2) *Class II.*—All other unserviceable property is known as class II property, and must be disposed of by means of either a report of survey or a statement of charges.

b. Inventory and inspection reports.—(1) Relief from accountability for class I property is accomplished by means of the inventory and inspection report. This matter is discussed fully and in detail in AR 20–35. Every officer having property accountability must be thoroughly familiar with the provisions of this regulation. (See figs. 21, 22, and 25.)

(2) Only two official copies of the report are required, but good practice dictates the making of four by the responsible officer. The third copy is given to the inspecting officer for use as a work sheet during the physical inspection of the property, and the fourth copy is retained by the accountable officer pending return of the original. In most cases, the action of the inspecting officer is final, and the original copy of the report is turned over to the accountable officer for use as a property voucher. In certain cases, as indicated in AR 20–35, both official copies must be sent forward by the inspecting officer, and the copy retained by the accountable officer is then a temporary voucher. The retained copy should be made to conform in every way with the official copies as forwarded by the inspecting officer. No action toward the actual disposal of the property is to be taken by the accountable officer until the original copy of the report has been returned to him with the proper dispositions indicated thereon.

c. Statement of charges.—A statement of charges is the means whereby an enlisted man is compelled to reimburse the Government for property which he admits having lost or damaged. It is discussed fully and in detail in AR 345–300 and AR 35–6640. (See fig. 28.)

d. Report of survey.—(1) A report of survey determines the responsibility for loss, damage to, or unserviceability of property when due to causes other than fair wear and tear, and recommends the disposition to be made of the property. Reports of survey are discussed fully and in detail in AR 35–6640. Every officer having property accountability must be thoroughly familiar with the provisions of this regulation. (See fig. 27.)

(2) A study of AR 35–6640, covering the duties of surveying officers, will be of material assistance to a property officer in preparing a report of survey. Clear and conclusive evidence is required to substantiate all claims made regarding losses or damages, and it is very desirable that written statements from all witnesses and interested parties be obtained as soon as possible after the loss or damage occurs.

(3) An officer or an enlisted man may be required, by the recommendation of an approved report of survey, to reimburse the Government for lost or damaged property. An enlisted man reimburses the Government on a statement of charges, an officer by direct payment to the local disbursing officer. Should the officer fail to make the required payment, the amount will be obtained through a stoppage against his pay.

e. Unserviceable expendable property.—(1) Unserviceable expendable property which has become unserviceable through fair wear and tear will be disposed of by a certificate of expenditure. Such property will be mutilated to prevent resubmission for exchange, and will be turned over to the salvage officer on a shipping ticket.

(2) Unserviceable expendable property not worn out through fair wear and tear will be dropped on a report of survey or a statement of charges.

CHAPTER 3

COMPANY HEADQUARTERS

		Paragraphs
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II.	Operations and duties	63–67

SECTION I

ORGANIZATION AND EQUIPMENT

■ 61. ORGANIZATION.—The company headquarters is provided for the military administration of the company. This in-

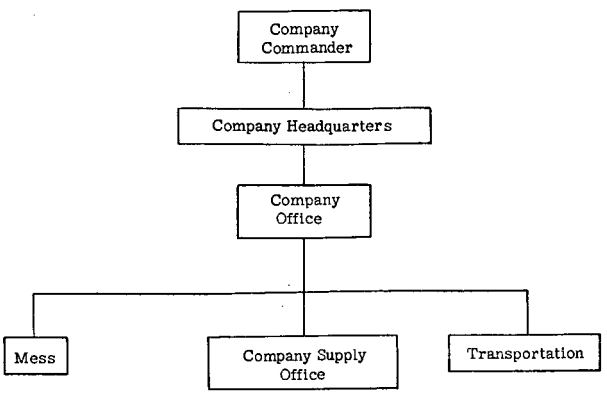


FIGURE 4.—Organization of the company headquarters.

cludes the preparation of personnel records and company reports, supervision of transportation, mess management, and the supply of organizational equipment. The disposition of personnel and equipment discussed in this chapter must be adjusted as changes in the Table of Organization and Table of Basic Allowances take place. The organizational chart shown in figure 4 may be used as a guide.

■ 62. EQUIPMENT.—A detailed list of the equipment assigned to the depot company will be found in T/BA No. 9 and SNL N–11. The company commander may assign vehicles to the company headquarters for the following purposes: trailer, 1-ton, water, for the transportation of water; trailer, 1-ton, cargo, for carrying rations; truck, ¼-ton, for general messenger and utility service; two or three trucks, cargo, 2½-ton, to carry office equipment and company impedimenta; one truck, cargo, 2½-ton, to be used as the kitchen truck; and one truck, ¾-ton, command, for his use.

SECTION II

OPERATIONS AND DUTIES

■ 63. RESPONSIBILITIES OF SUBSECTIONS.—The responsibilities governing the operations of the various subsections of the headquarters section and the duties of the personnel in these subsections are listed under the proper headings in paragraphs below.

■ 64. COMPANY OFFICE.—*a. Responsibilities.*—This section is responsible for the training and administration of the company (see TM 12–250), including—

(1) Preparation of training programs and schedules for the military training of the company.

(2) Preparation of training programs and schedules, in conjunction with the property office, for the technical training of the company.

(3) Maintenance of personnel records, including service records, morning reports, sick reports, duty rosters, and routine reports when this function is not performed by a higher headquarters.

(4) Maintenance of the company council book.

(5) Maintenance of correspondence files and of the correspondence book.

(6) Preparation of plans in connection with changes in the location of the company. Such plans will be initiated by the battalion headquarters at the direction of the army ordnance officer, who will specify the principal requirements and arrange for the necessary additional facilities. (Some

of these arrangements may be delegated to the battalion commander.) Much detailed planning will devolve upon the company headquarters, such as messing arrangements, truck loading schedules, police of old bivouac, selection and preparation of exact location of new bivouac, conduct of motor march, etc. Such plans will be coordinated, where necessary, with the property office.

(7) Conduct of scheduled and unscheduled inspections of all phases of the activities of the company.

b. First sergeant.—The first sergeant is responsible for the efficient operation of the company office, and, as such, is the company commander's senior enlisted representative in matters pertaining to company administration. The relationship between the company commander and the first sergeant should be one of mutual understanding and confidence. For maximum efficiency they must work as a closely coordinated team. The first sergeant should make a point of understanding and carrying out the policies of the company commander in all matters over which he has direct supervision.

(1) *Responsibilities.*—The first sergeant is responsible to the company commander for the efficient operation of the company office, including—

(*a*) Enforcement of discipline.

(*b*) Preparation and issuing of company orders as directed by the company commander.

(*c*) Preparation of collection sheets for the company fund.

(*d*) Preparation of routine correspondence.

(*e*) Preparation of daily strength, ration, gasoline, and oil returns.

(*f*) Supervision of all formations.

(2) *Functions.*—The first sergeant should be thoroughly familiar with all matters pertaining to company administration, including, whenever possible, matters concerning mess and supply. He should be thoroughly familiar with all drills which the company is required to perform. He should conduct himself with dignity, fairness, and force. Whenever conflicts appear in matters pertaining to both the depot and company administration, he should confer with the chief clerk with a view to arriving at a solution suitable to both depot and company requirements.

c. Company clerk.—The company clerk is responsible to the first sergeant for the typing of all necessary correspondence for the company office and the maintenance of the necessary files and records kept by that office. He will, when necessary, assist in the unit personnel section of battalion headquarters in the maintenance of the personnel records of the company.

■ 65. COMPANY SUPPLY OFFICE.—*a. Responsibilities.*—This section is responsible for—

(1) Maintenance of the stock record covering all organizational property including voucher files and registers.

(2) Maintenance of all records of individual equipment and of files of memorandum receipts of property held by members of the company.

(3) Preparation of all property forms, such as reports of survey, statements of charges, inventory and inspection reports, over, short, and damaged reports, etc., required in the property administration of the company.

(4) Preparation of requisitions for organizational equipment required by the company.

b. Supply sergeant.—The supply sergeant is directly responsible for the security, serviceability, and proper storage of many thousands of dollars' worth of company equipment. He should understand thoroughly all property regulations, the use of Standard Nomenclature Lists, equipment charts, and all form papers pertaining to property. He must keep accurate and complete records and inventories. He must keep abreast of, and thoroughly familiar with, all changes in matters pertaining to the handling of property. He should be a congenial, enterprising, industrious person with energy, initiative, and imagination. The supply sergeant is responsible to the supply officer for—

(1) Maintenance of the stock record account for organization property.

(2) Maintenance of the abstract of memorandum receipts.

(3) Maintenance of memorandum receipts on all property (not belonging to the storehouse) in the hands of the members of the company.

(4) Security of all company property not issued to the personnel of the company.

(5) Completeness of the organizational and individual equipment of the company.

(6) Serviceability of all equipment under his charge.

(7) Preparation of requisitions for organizational and individual equipment.

(8) Preparation of reports of survey, certificates of unserviceability, inventory and inspection reports, statements of charges, shipping tickets, receiving reports, over, short, and damaged reports, debit and credit memorandum receipts, individual clothing and equipment forms, lists of balances, and other miscellaneous property and supply forms and records.

(9) Exchange of unserviceable property for serviceable property.

(10) Neatness, cleanliness, preservation, and accessibility of all property for which he is responsible.

(11) Completeness of, and preparation for, all inventories of property for which he is responsible.

(12) Preparation of property location charts, where necessary and desirable, for property in his possession.

(13) Preparation of statements of clothing settlements when required.

■ 66. MESS.—*a. Responsibilities.*—This section is responsible for securing, transporting, preparing, and serving of rations, including those for attached personnel and visitors. Some consideration of messing arrangements will be required in the event company personnel are operating several subdepots. The method utilized will depend upon the circumstances. The following methods of procedure are suggested. Any combination of the four methods may be utilized.

(1) All subdepots may be rationed from a central field kitchen by transporting hot food in insulated food containers. The availability of transportation, distances to be covered, and difficulties of the journey should be taken into consideration.

(2) The units of the field range and proportionate shares of kitchen personnel and equipment may be divided among the subdepots for use at the subdepot locations. The delivery

of rations and fuel to the subdepots will require consideration of factors similar to those given in (1) above.

(3) The personnel of the subdepots may be attached for rationing to some nearby organization which is operating a mess. The probable permanency of the messing organization should be considered, as well as transportation requirements.

(4) The personnel of the subdepots may be fed in relays at the parent depot kitchen by using motor transportation. The availability of time for making the journey should be considered, as well as transportation requirements.

b. Mess sergeant.—The mess sergeant is responsible to the mess officer for the efficient operation of the company mess, including—

(1) Preparation of all menus.

(2) Preparation and serving of all meals.

(3) Operation of all mess personnel.

(4) Drawing, storing, and transportation of all rations.

(5) Issuance of all rations, cooked or uncooked.

(6) Maintenance of ration accounts, including records of boarders.

(7) Maintenance of the Inventory of Rations (Form No. 86).

(8) Police and maintenance of sanitary conditions in all matters pertaining to personnel, equipment, and service of the mess.

(9) Care and maintenance of all mess equipment.

(10) Preparation of rations for inventory whenever required.

■ 67. TRANSPORTATION SECTION.—*a. Responsibilities.*—This section is responsible for—

(1) Maintenance of all records and motor books pertaining to the motor vehicles of the company including, when desirable, the trip or dispatch record.

(2) Transportation of baggage and nontechnical company equipment whenever necessary.

(3) Coordination of transportation requirements between the various depot sections.

(4) Dispatch of all organic vehicles from the company bivouac area.

(5) Repair and maintenance of the automotive vehicles assigned to the company to the limit of the tools, time, labor, and skill available. Such repairs will consist primarily of first and second echelon maintenance, though some small jobs may fall into the third echelon category.

b. Truckmaster.—(1) *Responsibilities and duties.*—The truckmaster is responsible to the transportation officer for the efficient operation of the transportation section. In the execution of his duties, he will—

(*a*) Maintain all the motor vehicle records for organic transportation, except the small notebook kept in each vehicle.

(*b*) Periodically check the condition of these latter books to determine that drivers are properly recording the mileages and the gas and oil consumed.

(*c*) Prepare monthly consolidations of data in the motor books for signature by the transportation officer.

(*d*) Act as dispatcher for all organic transportation.

(2) *Further responsibilities.*—He is directly responsible to the transportation officer for the good order and readiness to function of the transportation assigned to the headquarters and supply section. He is responsible for the training of motor vehicle operators.

(3) *March inspections and supervision.*—(*a*) During halts when the company is on a march, the truckmaster will check with all vehicle operators to determine whether or not any difficulties are being experienced, and will take appropriate action to correct such difficulties.

(*b*) The truckmaster will supervise gassing operations and the issue of oil as necessary. At the end of each day's march, he will supervise the checking of oil levels, battery water levels, and tire pressures. He will check the operation of all lights and horns and, in general, insure that all necessary steps have been taken to prepare the vehicles of the company for the continuation of the march. He will familiarize himself with the pertinent parts of FM 25–10, which he will use as a guide in performing his duties.

CHAPTER 4

PROPERTY OFFICE

	Paragraphs
SECTION I. Organization and equipment	68–69
II. Operations and duties	70–78
III. Administrative details	79–89

SECTION I

ORGANIZATION AND EQUIPMENT

■ 68. ORGANIZATION.—The property office is organized to handle all clerical work incident to the maintenance of property records and files, and to prepare any reports and correspondence required in the operation of the depot. It is the central coordinating agency of the depot.

■ 69. EQUIPMENT.—The office equipment will consist of such tables, chairs, files, typewriters, computing machines, and miscellaneous office equipment as may be required. (See T/BA No. 9.)

SECTION II

OPERATIONS AND DUTIES

■ 70. GENERAL.—In order for the property office to perform efficiently the administrative details related to property records, it is necessary to divide the office personnel into sections which are responsible for the performance of certain tasks. This office is under the supervision of the assistant property officer, who is responsible through the chief clerk for coordinating and correlating the work of the sections. The sections and their tasks are listed in the paragraphs below.

■ 71. PROPERTY OFFICE CHIEF CLERK.—The chief clerk is responsible to the property officer for—

a. Enforcement of all policies governing operation of the property office.

b. Bringing to the attention of the property officer all matters requiring his personal attention.

c. Supervision and coordination of the activities of all sections of the property office.

d. Maintenance of discipline in the property office.

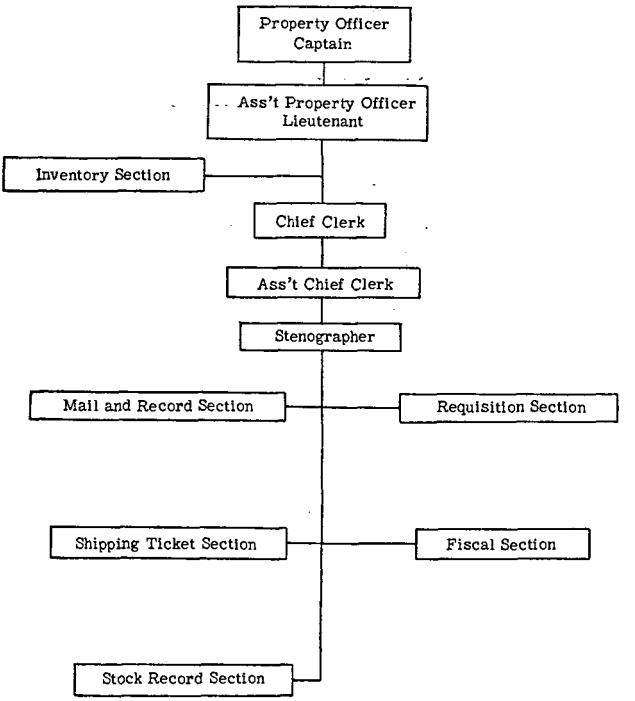


FIGURE 5.—Organization of the property office.

e. Maintenance of the property office policy book under the immediate supervision of the assistant property officer. (See par. 23.)

f. Maintenance of all property office records and files.

g. Checking of all papers which are to be submitted to the property officer for his signature. He authenticates second copy with his initials.

h. Disposition of all routine correspondence.

i. Preparation and maintenance of the roster of noncommissioned officers in charge of keys. (See par. 26.)

j. Approval of all depot issues and the initialing of requisitions before turning them over to the storehouse office.

■ 72. MAIL AND RECORD SECTION.—The mail and record section will receive, record, and distribute all depot mail. In order to perform the above, it will be necessary for the section to—

a. Open all incoming mail (except personal) and record the time and date thereon.

b. Prepare additional copies of correspondence when necessary.

c. Index correspondence (except that which pertains to requisitions or shipping tickets) according to the Dewey decimal system, and maintain the correspondence file.

d. Dispatch outgoing mail, telegrams, etc.

e. Provide an intradepot messenger service.

f. Attach Routing Slips (OFM Form 401) to all incoming correspondence and indicate for whom it is intended. (See fig. 9.)

g. Prepare and maintain the serial number file when required. (See par. 86 and figs. 42 and 43.)

h. Maintain a card index file of all correspondence sent or received.

■ 73. REQUISITION SECTION.—*a. Operations.*—The requisition section will receive, register, edit, distribute, and file all requisitions. It will prepare periodic requisitions for the replenishment of the depot stocks whenever the stock levels approach the established minimum, or at other times when directed by the property officer or the chief clerk. To perform the above general operations, it will be necessary for the section to—

(1) Record requisitions received in the incoming requisition register. (See par. 82.)

(2) Record the property office serial number on incoming or outgoing requisitions. (See par. 130.)

(3) Audit the requisition in order to determine—

(*a*) That the nomenclature is correct as listed in the Standard Nomenclature List, and make necessary corrections in ink.

(*b*) That the items have been properly grouped in accordance with the Ordnance Catalog.

(*c*) That the piece marks or drawing numbers, and the model numbers, are correctly given whenever such numbers exist and are available. In the absence of proper identification symbols, an adequate description showing the application of the part or material must be given.

(*d*) That the amounts being requisitioned are within prescribed allowances as provided in appropriate tables.

(*e*) That, when the amount appears to be excessive, the amount authorized is entered in the column "approved" in red pencil.

NOTE.—In an emergency, (*b*), (*d*), and (*e*) above are eliminated.

(4) Scrutinize carefully all requisitions from maintenance units for any item bearing the notation W/O No. ____. Such work orders require immediate action and should be placed in the course of supply without delay.

(5) Prepare outgoing requisitions from stock replenishment sheets after receiving these from the chief of the stock record section, or when instructed to do so by the property officer. (See pars. 88 and 129.)

(6) Record requisitions originating in the property office in the outgoing requisition register. (See par. 130.)

(7) Forward copy of audited incoming requisition to the storehouse office, and file original, if any, in the suspense file.

(8) File completed requisitions.

(9) Place partly filed requisitions in a suspense file with attached notation of any pertinent information.

(10) Handle all correspondence pertaining to requisitions.

(11) Check requisitions originating in the depot against incoming tallies.

b. Chief of requisition section.—The chief of the requisition section is responsible to the chief clerk for the efficient opera-

tion of his section. In addition to the requirements imposed by *a* above, he will—

(1) Maintain the files of requisitions, filled and unfilled.

(2) Devise and operate a system for the follow-up of all requisitions, to insure as far as possible that they are receiving proper attention and action.

(3) Assign to the members of the section the work required to be performed by the section.

(4) Prepare routing of requisitions.

(5) Place special requisitions only on approval of the property officer through the property office chief clerk.

■ 74. REQUESTS FOR CLEANING AND PRESERVING MATERIALS.—It must be remembered that although allowances of cleaning and preserving materials for organizations are prescribed in the SNL, the allowances are not for a prescribed period. They merely indicate the maximum permissible quantities in the hands of troops. All requisitions for such materials must be filled within the quantities available for issue to the army as a whole. The use of excessive quantities by particular units should be reported to the army ordnance officer for his action.

■ 75. STOCK RECORD SECTION.—*a. Operations.*—This section is under the direct supervision of the chief of the stock record section. It is the bookkeeping section of the depot. The operations of the stock record section include the following:

(1) Preparation of stock record cards for all property stocked by the depot. (See par. 131.)

(2) Posting stock record cards from shipping tickets, receiving reports, inventory sheets, expenditure reports, over, short and damaged reports, statement of charges, reports of survey, and other valid vouchers.

(3) Preparation of stock replenishment requests. (See par. 88.)

(4) Preparation and maintenance of separate stock record accounts for all property which is carried for issue on memorandum receipt. (See par. 139.)

b. Chief of stock record section.—The chief of the stock record section is responsible to the chief clerk for the efficient

operation of the stock record section. In addition to the requirements imposed by *a* above, he will—

(1) Institute and operate a system for the follow-up of all dues-in and the checking of dues-out. (See par. 131 and fig. 26.)

(2) Edit all vouchers for correct nomenclature.

(3) Insure that all vouchers posted to the stock record account are stamped with a rubber stamp bearing the following information:

Posted to S/R
Date _____
Initials _____

and complete the entries required by the stamp.

(4) Post completed inventory sheets to stock record accounts and call discrepancies to the attention of the chief clerk. Such notices should usually be in the form of memoranda and should only include notations of matters not within the province of the stock record chief to correct, or which indicate the necessity for action on the part of the chief clerk or the property officer.

■ 76. SHIPPING TICKET SECTION.—*a. Operations.*—This section is charged with all activities pertaining to vouchers. It is therefore required to—

(1) Prepare shipping tickets from tally-outs received from the storehouse office; initial second copy to indicate it is ready for property officer's signature; prepare memorandum shipping tickets for items being shipped by commercial carriers. (See pars. 53*c* and 136.)

(2) Maintain the voucher register. (See par. 140 and fig. 35.)

(3) Prepare over, short, and damaged reports, reports of survey, inventory and inspection reports, receiving reports, certificates of expenditure, memorandum receipts, and the necessary certificates on any requisitions which are used as vouchers to the account. (See pars. 46, and 132 to 138 incl.)

(4) Check incoming shipping ticket against tally-in.

(5) Maintain the voucher file and the tally file. (See pars. 140 to 142, incl.)

b. Chief of shipping ticket section.—The chief of the shipping ticket section is responsible to the chief clerk for the efficient operation of his section. In addition to the requirements imposed by *a* above, he will—

(1) Properly cross-refer shipping tickets and tallies.

(2) Assign various duties to the members of the section in accomplishing the above.

■ 77. FISCAL SECTION.—The fiscal section initiates purchases for commercial and other items in compliance with War Department instructions and locally approved requests for purchases. It prepares and makes proper distribution of purchase orders. This section maintains records of the allotment of funds to the depot officer. (See par. 59.)

■ 78. INVENTORY SECTION.—This section is under the direct control of the property officer. It is responsible for—

a. Continuous running inventory of all depot property. (See fig. 10 and par. 48.)

b. Inspection of items as they are inventoried, and the reporting of items showing deterioration to the storehouse superintendent.

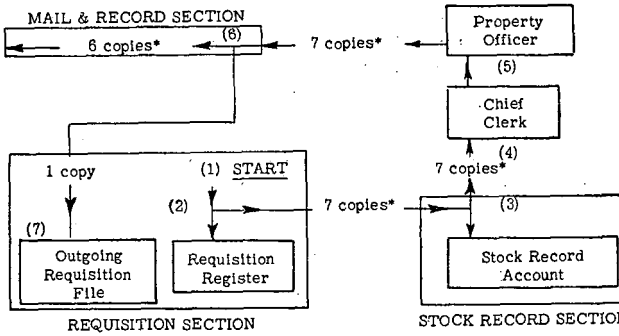
c. Return of completed Inventory Sheets (OFM Form 402) to the storehouse location card section.

SECTION III

ADMINISTRATIVE DETAILS

■ 79. STEP-BY-STEP PROCEDURE APPLYING TO OUTGOING REQUISITION.—The chief of the requisition section will prepare all periodic requisitions for the replenishment of depot stocks basing the requirements on stock replenishment requests or instructions of the chief clerk or property officer. On all requisitions for items pertaining to groups A to M inclusive, a separate requisition will be prepared for each group; that is, all group A items will be entered on one requisition; all group B on another, etc. The correct nomenclature, piece mark, drawing number, or model number, and the proper grouping will be adhered to in the preparation of all requisitions. In the absence of proper identification symbols, an

adequate description, showing the application of the part or material, must be given. The following steps are necessary to prepare requisitions originating in the depot office:



*--Original copy of requisition included.

KEY TO DIAGRAM

1. Seven copies of the requisition are drawn up by the requisition section.
2. The requisition is given a number and is posted opposite this number in the requisition register.
3. The stock record section enters the pertinent data from the requisition as dues-in on the stock record card. The chief of the stock record section stamps the duplicate copy of the requisition with the "Posted to dues-in" rubber stamp, initials, and dates it.
4. The property office chief clerk checks the requisition, and then gives it to the property officer.
5. The property officer signs the original copy of the requisition and initials the duplicate copy.
6. The mail and record section returns the duplicate requisition to the requisition section. The original and the other copies are mailed to the proper offices.
7. The duplicate copy of the requisition is filed in the outgoing requisition file of the property office.

FIGURE 6.—Route of outgoing requisition.

a. Step 1.—The requisition section will prepare requisitions according to the directions listed above. The depot requisition serial number, which is obtained from the requisition register, is placed on all copies of the requisition. The requisition is entered in the requisition register. A routing

slip is attached to the requisition, which is forwarded to the stock record section (see fig. 9).

b. Step 2.—The stock record section enters the pertinent data from the requisition as dues-in on the stock record card. The chief of the stock record section stamps the duplicate copy of the requisition with the "Posted to dues-in" rubber stamp, initials, and dates it. All copies of the requisition are then sent to property office chief clerk.

c. *Step 3.*—The property office chief clerk peruses the requisition, initials the duplicate copy if he finds the requisition in order, and gives the requisition to the property officer.

d. Step 4.—The property officer signs the original copy of the requisition, initials the duplicate copy, and sends the requisition to the mail and record section.

e. Step 5.—The mail and record section pulls the duplicate copy of the requisition and delivers it to the requisition section. The original and other copies are mailed to the proper offices. For distribution charts see figures 21 and 22.

f. Step 6.—The requisition section files the duplicate copy of the requisition in the outgoing requisition file.

■ 80. STEP-BY-STEP PROCEDURE APPLYING TO INCOMING SHIPPING TICKET.—The following steps are taken by the depot personnel when shipping tickets are received:

a. Step 1.—The mail and record section records on the incoming shipping ticket the date of receipt. The shipping ticket, with a routing slip attached, is forwarded to the chief clerk for his perusal.

b. Step 2.—The property office chief clerk reviews the shipping ticket and will, if necessary, indicate any particular action he may require to be taken on it. He initials the duplicate copy and forwards the papers to the shipping ticket section chief.

c. Step 3.—The chief of the shipping ticket section records the next voucher number obtained from the voucher register on the original and duplicate copies of the shipping ticket. The shipping ticket is then registered in the voucher register. The original shipping ticket is pulled and put in the hold file awaiting the completed tally-in. The duplicate copy is initialed and forwarded to the storehouse chief clerk.

d. Step 4.—The storehouse chief clerk has the tally section prepare the tally-in in triplicate from the shipping ticket and assigns the tally-in a number from the tally register. The tally-in number is posted to shipping ticket. (See par. 81 for tally-in procedure.) Two copies of the tally-in are forwarded to the receiving section of the service platoon. After the shipment has been received and checked against the tally-in, a signed copy of the tally-in is returned to the storehouse chief clerk. The chief clerk checks this copy against the retained copy of the tally-in and makes any necessary changes thereon in ink, marking these with his initials. The tally section forwards signed tally-in with the duplicate copy of shipping ticket to the shipping ticket section.

e. Step 5.—The chief of the shipping ticket section checks the tally-in against the shipping ticket and indicates in pencil on the duplicate copy of the shipping ticket any differences noted on the tally-in. He will immediately prepare an over, short, and damaged report in quadruplicate for any obvious discrepancies (see par. 137 for preparation). The "Receipt" space on the original ticket is prepared for the signature of the property officer. The original and duplicate copies of the shipping ticket, and copies of the report, if necessary, are sent to the chief of the stock record section. The tally-in is placed in the hold file.

f. Step 6.—The chief of the stock record section posts the shipping ticket to the stock record account, making sure that all entries are made in the proper columns. Entries required by the over, short, and damaged report will be made on the stock record card in pencil (see par. 131). The duplicate copy of the shipping ticket will be initialed, dated, and stamped "Posted." These papers are then sent to the property office chief clerk.

g. Step 7.—The property office chief clerk checks over the shipping tickets to see that they are in order. He initials the duplicate copy and gives the papers to the property officer.

h. Step 8.—The property officer signs the original copy of the shipping ticket and initials the duplicate copy. He will also sign the original copy of the over, short, and damaged re-

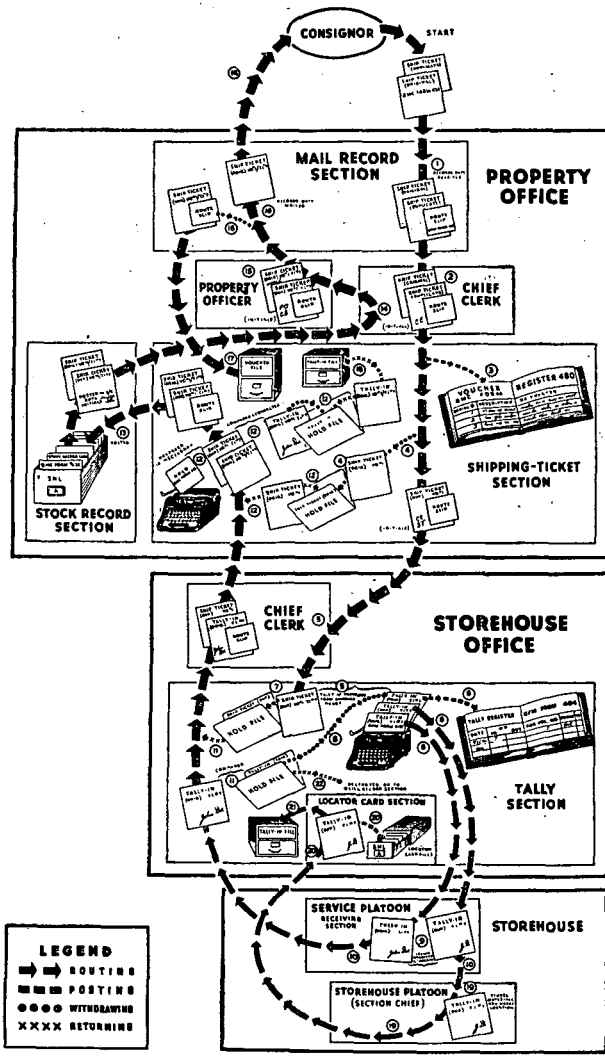


FIGURE 7.—Route of incoming shipping ticket and tally-in.

KEY TO DIAGRAM

1. Original and duplicate copies of shipping ticket arrive at mail and record section of property office. Date of receipt is recorded thereon, and a routing slip is attached.
2. Chief clerk initials duplicate copy of shipping ticket.
3. Voucher number is placed on both copies of the shipping ticket, and the voucher is posted to the voucher register.
4. Original shipping ticket placed in hold file. Duplicate shipping ticket initialed and sent to storehouse office.
5. Storehouse chief clerk has the tally section prepare a tally-in in triplicate from the shipping ticket.
6. Tally-in receives a number, and is posted to the tally register.
7. Tally-in number is posted to the duplicate shipping ticket which is placed in the hold file. Shipping ticket number is posted to tally-in.
8. Original and duplicate tally-in are sent to the receiving section of the storehouse. Triplicate copy is placed in storehouse office hold file.
9. Receiving section checks shipment, correcting tally-in in ink where necessary. Original tally-in is signed and the duplicate tally-in is initialed by the officer receiving the shipment.
10. The signed original tally-in is sent to the storehouse tally section, and the duplicate copy is sent to the proper storehouse section chief.
11. The tally section makes any changes on the triplicate tally-in in the hold file necessary to make it agree with the signed original tally-in. The original tally-in is attached to the duplicate shipping ticket and sent to the shipping ticket section of the property office.
12. The original shipping ticket is taken from the hold file. "Receipt" space of the original shipping ticket is prepared for the property officer's signature. The tally-in is checked against the shipping ticket, and an over, short, and damaged report is prepared if required. The tally-in is placed in the hold file.
13. The shipping ticket is posted to the stock record account. The duplicate shipping ticket is initialed, dated, and stamped "Posted."
14. Chief clerk checks the shipping tickets to see that proper action has been taken.
15. Original shipping ticket and over, short, and damaged report, if any, signed; duplicate shipping ticket is initialed.
16. Mailing date is recorded on shipping tickets. Original shipping ticket sent to consignor; duplicate shipping ticket sent to the shipping ticket section. Original over, short, and damaged report, if any, sent to consignor; duplicate copy sent to shipping ticket section.
17. Duplicate shipping ticket and copy of over, short, and damaged report, if any, are filed in the voucher file.
18. Original tally-in is extracted from the hold file and placed in the tally-in file of the property office.
19. Proper storehouse section chief stores material and notes the location after the items on the duplicate tally-in.
20. Quantities and locations posted to the locator card file from the duplicate tally-in.
21. Duplicate tally-in is placed in the tally-in file of the storehouse office.

22. Triplicate copy of tally-in is extracted from the hold file is forwarded to the mail and record section if it bears serially numbered items; otherwise it may be destroyed.

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port, if any. All papers are then sent to the mail and record section for distribution.

i. Step 9.—The mail and record section stamps the mailing date thereon, pulls the duplicate copy of the shipping ticket, and a copy of the over, short, and damaged report if there is one, and forwards them to the shipping ticket section. The original shipping ticket and two copies of the over, short, and damaged report are sent to the consignor.

j. Step 10.—The shipping ticket section files the duplicate copy of the shipping ticket in the voucher file along with a copy of the over, short, and damaged report adjusting any discrepancies. The related tally-in is taken from the suspense file and put in the tally-in file.

■ 81. STEP-BY-STEP PROCEDURE APPLYING TO TALLY-IN.—*a. Step 1.*—Tally-in's are prepared in triplicate by the storehouse office from one of the following sources:

(1) Packing lists. (Normally received with the material.)

(2) Shipping tickets. (Normally received from the property office.)

(3) Invoices. (Normally received with the material.)

(4) Physical inventory for material not otherwise listed. Storehouse personnel perform this task under the direct supervision of an officer.

b. Step 2.—A tally number from the tally register is assigned to the prepared tally sheets by the tally clerk in the storehouse office. The tally-in number is posted to the duplicate copy of the shipping ticket and the shipping ticket number is posted to the tally-in's. The tally-in's are distributed as follows:

(1) The original and duplicate are sent to the service platoon receiving section.

(2) The triplicate is placed in the hold file.

c. Step 3.—On receipt of material, the receiving section checks actual quantities received against the tally-in and makes changes in ink to indicate true quantities. Such

changes should be initialed by the service platoon officer in ink. The original tally-in is signed and the duplicate initialed by the officer receiving the shipment.

d. Step 4.—The signed original tally-in is then sent to the storehouse office.

e. Step 5.—The storehouse office makes the necessary changes on the retained copy, and sends the signed copy of the tally-in along with duplicate shipping ticket to the shipping ticket section of the property office.

f. Step 6.—The receiving section gives the duplicate copy of the tally-in to the proper storehouse section chief, who then stores the material and notes the location after the items on the tally-in.

g. Step 7.—The duplicate tally-in is sent to the storehouse office and used as the basis for posting quantities and locations to the locator card file (see par. 146).

h. Step 8.—The duplicate is then placed in the storehouse office tally file.

i. Step 9.—The retained or triplicate copy of the tally-in is sent to the mail and record section if it bears serially numbered items; otherwise it may be destroyed.

j. Step 10.—The original or signed copy of the tally-in sent to the property office is used to check against the incoming shipping ticket. An over, short, and damaged report is prepared if necessary.

k. Step 11.—The tally-in is now placed in the property office hold file, pending the receipt of the completed shipping ticket.

■ 82. STEP-BY-STEP PROCEDURE APPLYING TO INCOMING REQUISITION.—*a. Step 1.*—Mail and record section attaches a route slip to the incoming requisition, after recording the date of receipt thereon. The requisition is then sent to the property office chief clerk.

b. Step 2.—Chief clerk examines the requisition and turns it over to the chief of the requisition section.

c. Step 3.—The requisition section records the requisition in the requisition register and assigns it a depot requisition number (see par. 130). One copy of the requisition is placed in a suspense file. The other copy is sent to the storehouse office.

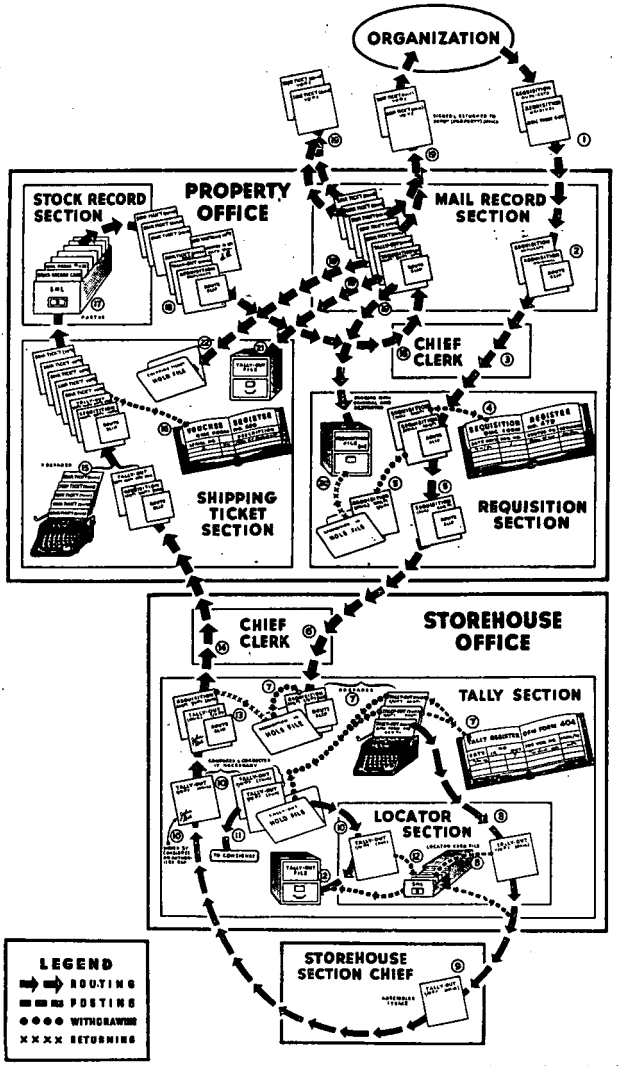

FIGURE 8.—Route of incoming requisition, tally-out, and outgoing shipping ticket.

KEY TO DIAGRAM

1. Original and duplicate copies of incoming requisition arrive at mail and record section of the property office.
2. Date of receipt is recorded thereon. Routing slip attached to requisition.
3. Chief clerk examines requisition and forwards it to the requisition section.
4. Requisition receives depot requisition number, and posted to the requisition register.
5. Duplicate copy of requisition is sent to the storehouse office. Original copy placed in hold file.
6. Storehouse chief clerk peruses papers and forwards them to tally section.
7. Tally section prepares a tally-out in triplicate from the requisition. Tally-out receives tally-out number and is posted to the tally-out register. Tally-out number is posted to duplicate copy of requisition which is then placed in the hold file.
8. Original tally-out is sent to the locator card section. Duplicate and triplicate tally-out placed in the hold file. The location and the availability of the item is posted on the tally-out from the locator card file. Number of items to be issued is posted in pencil on the locator card.
9. Original tally-out is sent to proper storehouse section chief who assembles the material and corrects tally-out as to the number issued if necessary.
10. Original tally-out is sent to the tally section where it is checked against the duplicate and triplicate tally-out in the hold file. These copies are changed, if necessary, to agree with the original tally-out. Date of issue is entered on all three copies, and the original is signed by the consignee or his authorized representative. Duplicate tally-out is sent to the locator card section.
11. Triplicate copy of the tally-out is sent to the consignee.
12. Any changes made necessary are accomplished. Discrepancies are adjusted. Duplicate tally-out is placed in the tally-out file of the storehouse office.
13. Original copy of tally-out is attached to the duplicate requisition (taken from hold file) and sent to the storehouse office chief clerk.
14. Chief clerk peruses papers and forwards them to the shipping ticket section of the property office.
15. Shipping ticket section draws up five copies of a shipping ticket from the information on the tally-out.
16. The shipping ticket receives a voucher number and is posted to the voucher register. The shipping ticket number is recorded on both the requisition and the tally-out, and the requisition and tally-out numbers are placed on the shipping ticket. The five copies of the shipping ticket, the original tally-out, and the duplicate requisition are attached together.
17. The stock record section posts the items shown on the shipping ticket to the stock record account; then the duplicate copy of the shipping ticket is initialed, dated, and stamped "Posted".

18. The chief clerk examines the shipping ticket and initials the duplicate copy. He forwards the papers to the mail and record section.
19. The mail and record section sends the original and one copy of the shipping ticket to the consignee. The duplicate copy of the shipping ticket and the original tally-out are returned to the shipping ticket section. The duplicate copy of the incoming requisition is returned to the requisition section. The remaining two copies of the shipping ticket are sent to the finance officer of the consignor's service command. If the shipping ticket bears serially numbered items, the mail and record section will post them to the serial number file.
20. The original requisition is taken from the hold file and the tally-out number is posted. It is placed in the incoming requisition file.
21. The original tally-out is placed in the tally-out file of the shipping ticket section.
22. The duplicate copy of the shipping ticket is placed in the voucher file pending the receipt of the signed original from the consignee. This copy may be destroyed when the signed copy is returned.

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d. Step 4.—The storehouse office tally section prepares a tally-out in triplicate from the incoming requisition and makes the following distribution:

(1) One to the storehouse section chief concerned.

(2) Two to the hold file.

(3) The tally-out number is placed on the requisition, and the requisition is placed in the hold file.

e. Step 5.—The storehouse section chief uses his copy of the tally-out to—

(1) Check off total items as the material is assembled.

(2) Indicate thereon the actual quantity issued, in case the amount required is not on hand.

f. Step 6.—The storehouse section chief forwards this copy to the storehouse office.

g. Step 7.—The tally section of the storehouse office checks these amounts against the retained copies and changes items or amounts in ink whenever necessary. The storehouse officer or his authorized representative will initial such changes.

h. Step 8.—All tally-outs are held in the storehouse office until the issue is made, in order that the date of issue may be entered on all copies of the tally-out and in order that one copy may be signed by the consignee or his authorized representative.

i. Step 9.—Distribution of tally-outs:

(1) The signed copy, together with the retained copy of the requisition, is sent to the shipping ticket section of the property office.

(2) One copy is kept in the storehouse office.

(3) One copy is sent to the consignee.

j. Step 10.—The storehouse office copy is used to correct the locator card file, if necessary, and then filed in the tally-out file.

k. Step 11.—The property office copy of the tally-out is used as a basis for the preparation of the shipping ticket.

(1) The tally-out and requisition numbers are placed on the shipping ticket.

(2) The stock record section posts the stock record card from the shipping ticket.

(3) The shipping ticket voucher number is placed on the tally-out and the requisition.

(4) The tally-out is placed in the tally-out file, and the requisition in the proper requisition file. The copy of the requisition in the hold file may be destroyed.

■ 83. STEP-BY-STEP PROCEDURE APPLYING TO OUTGOING SHIPPING TICKET.—The following steps are taken by the property office in the preparation of the shipping ticket:

a. Step 1.—On receipt of the copy of the signed tally-out from the storehouse office, the shipping ticket section will prepare five copies of a shipping ticket from the signed tally-out (see par. 136). The shipping ticket is registered in the voucher register and given a voucher number.

b. Step 2.—The shipping ticket is sent to the stock record section for posting the items shipped to the stock record account. The chief of this section will initial, date, and stamp "Posted" on the duplicate copy of the shipping ticket. These papers are then sent to the property office chief clerk.

c. Step 3.—The property office chief clerk examines the shipping ticket to see that everything is in order and turns the papers over to the mail and record section.

d. Step 4.—The mail and record section makes the following distribution of the shipping tickets (see also distribution charts, figs. 21 and 22):

(1) Duplicate copy is returned to the shipping ticket section of the property office.

(2) Original and one copy are sent to receiving officer.

(3) Two copies are sent to the finance officer of the consignor's service command.

NOTE.—This latter requirement may be modified by the service command or field army in which the depot is operating.

e. Step 5.—The shipping ticket section places the copy of the shipping ticket in its proper place in the voucher file awaiting the signed copy of the shipping ticket from the receiving officer.

f. Step 6.—When the signed shipping ticket arrives, it is placed in the shipping ticket file, and the retained copy is destroyed.

NOTE.—Shipping tickets are not required in the combat zone, since tally-outs, properly signed, act as valid vouchers to stock record accounts.

■ 84. TALLY-OUT PROCEDURE.—*a. In the zone of the interior.*—See paragraph 82 for procedure in the zone of the interior.

b. In theater of operations.—The procedure is the same as that listed in paragraph 82, except that the signed copy of the tally-out sent to the property office is used as a voucher to the stock record account and is assigned a voucher number. (See par. 114.)

c. Personnel.—Personnel may be shifted from the property office to the storehouse office to assist the tally section prepare tally-outs.

■ 85. ROUTING SLIP (OFM FORM 401) (fig. 9).—The mail and record section will attach a routing slip to all incoming papers. The date and hour will be recorded on it, and the sections for which the correspondence is intended are also checked. If papers are to go to several sections in a certain order, the mail and record section will number the sections in the desired order. As each section finishes its require-

ments, a line will be run through its name. The entire depot will use this slip in the transmittal of papers.

■ 86. SERIAL NUMBER FILE.—The serial number file is maintained by the mail and record section. The purpose of this file is to keep the serial number record of the major items of ordnance general supplies, in compliance with AR 45–80. The data for this record will be furnished on copies of tally-ins, tally-outs, and Vehicle Serial Number Sheets (OFM Form 406). The debit and credit voucher numbers must be obtained from the voucher register of the shipping section. A 3 x 5 card (see OFM Form 409 for vehicles, and OFM Form 408 for other items) will be filled out for each item received, showing the serial number, model, manufacturer, date received, voucher number, and from whom received. It will also show the complete data concerning subsequent transfers of accountability for the item. (See figs. 42 and 43.) In time of war the requirement for serial number files may be relaxed by the proper headquarters.

■ 87. INVENTORY SHEET (OFM FORM 402) (fig. 10).—*a. Description and use.*—This sheet is used by the inventory section to record the results of their inventory. There are two methods by which the sheet may be kept: The items may be listed from the locator cards of the storehouse office before the inventory is begun, or the personnel making the inventory may list the items as they are inventoried. In either case, the correct nomenclature of the items must be listed. Preferably, each sheet should have listed on it items belonging to the same group. The inventory section will mark the location of the item and the actual count opposite the item. This sheet will serve as a check against the items as listed on the locator cards and the stock record cards.

b. Locator card check.—Inventory sheets are turned over to the locator card section as they are completed. The locator card section checks the actual count against the locator card balance. In case of a discrepancy, the chief clerk of the storehouse office will write in red on the inventory sheet, by the side of the actual count, the total shown on the locator card.

OFM Form 401

DEPOT COMPANY
ROUTING SLIP

	MONTH	DAY	HOUR	
TO				FROM

	Company Headquarters	
	Property Office	
	Storehouse Office	
	Company Commander	
	Ass't Property Office	
	Storehouse Office Officer	
	Storehouse Platoon Officer	
	Service Platoon Officer	
	Guard and Labor Platoon Officer	
	Property Office Chief Clerk	
	Mail and Record Section	
	Requisition Section	
	Stock Record Section	
	Shipping Ticket Section	
	Fiscal Section	
	Storehouse Supt.	
	Storehouse Chief Clerk	
	Locator Card Section	
	Tally Section	
	Receiving Section	
	Shipping Section	
	Transportation Section	
	Guard Section	
	Labor Section	
	Mess	
	Supply	
	Transportation	

FOR:

Necessary Action	Your Information
Inves. and Report	Recommendation
Remark	File
Prepare Report	Prepare Ind.
Prep. Ltr. Co. Commander's Sig.	Prep. Ltr. Asst. P. O.'s Sig.
Rtd. Contents Noted	To Note and Return
For Signature	See me about this

FIGURE 9.—Routing Slip (OFM Form 401).

c. Posting inventory.—The storehouse office then turns the inventory sheets over to the stock record section. The stock

OFM Form 402

INVENTORY SHEET

Storehouse No. _____ Date of inventory _____

Recorder _____ Counter _____

Double space between items. Use indelible pencil or ink.

Location	Item Description	Count	Out on Memo. Rec.	Total	Stock Record	Short	Over

FIGURE 10.—Inventory Sheets (OFM Form 402).

OFM Form 403

STOCK REPLENISHMENT REQUEST

S. N. L.	Quantity Required	ITEM	Piece Mark or Drawing No.	On hand	Due in	Consumed	Due out	Min. Stock	Max. Stock

ORGANIZATION _____ REQUISITION NO. _____

DATE OF REQUISITION _____

FIGURE 11.—Stock Replenishment Request (OFM Form 403).

record section personnel enter on the stock record card, in red ink, the actual balance on hand as determined by inven-

tory. (See par. 48 for details of posting inventory to the stock record card.)

■ 88. STOCK REPLENISHMENT REQUEST (OFM FORM 403) (fig. 11).—Clerks responsible for the maintenance of the stock record will use the stock replenishment request as a notice to the chief of the stock record section that replenishment is required. This will normally be when stocks on hand are approaching the minimum level. In filling out the form, care must be exercised to use the correct nomenclature as listed in the standard nomenclature list and to enter items by groups. The chief of the stock record section will review the replenishment requests for accuracy and completeness before sending them to the chief of the requisition section for preparation of the required requisitions.

■ 89. PROPERTY OFFICE FILES.—The following files of the property office are maintained by the sections indicated below:

a. Mail and record section.—(1) Serial number file.
(2) Correspondence file.
b. Requisition section.—(1) Requisition register.
(2) Requisition file.
c. Stock record section.—(1) Stock record card file.
(2) Memorandum receipt file.
d. Shipping ticket section.—(1) Voucher register.
(2) Voucher file.
(3) Tally file.

CHAPTER 5

STOREHOUSE OFFICE

	Paragraphs
SECTION I. Organization and equipment	90–91
II. Operations and duties	92
III. Files and records	93

SECTION I

ORGANIZATION AND EQUIPMENT

■ 90. ORGANIZATION.—The storehouse office is the coordinating agency between the property office and the storehouse. This office supervises the receiving, storing, maintaining, and issuing of ordnance matériel. The chart shown in figure 12 may be used as a guide by the company commander in organizing the office.

■ 91. EQUIPMENT.—The office equipment will consist of such tables, chairs, files, typewriters, and miscellaneous office equipment as may be required.

SECTION II

OPERATIONS AND DUTIES

■ 92. GENERAL.—*a. Scope of operations.*—The operations of the storehouse office include the following:

(1) Preparation and maintenance of location charts and the marking of the location of items on the locator cards (see par. 146).

(2) Marking the location of items on tally-outs before distributing them to the proper storehouse section chief or chiefs for preparation of the material for issue. This will usually be necessary only in the early phases of operation of a new depot, or with new personnel.

(3) Preparation of tally-out sheets from incoming requests received from the property office. (See pars. 84 and 142.)

(4) Maintenance of the storehouse office tally file and register.

(5) Supervision of the receipt and issue of supplies.

(6) Issuing instructions concerning the proper preservation of items on hand, and the conduct of periodic inspections to determine the effectiveness of the maintenance procedures.

(7) Issuing verbal orders or memoranda to the storehouse section chiefs for the preparation of rush order shipments. Tally-outs are prepared while the storehouse sections are preparing the shipments.

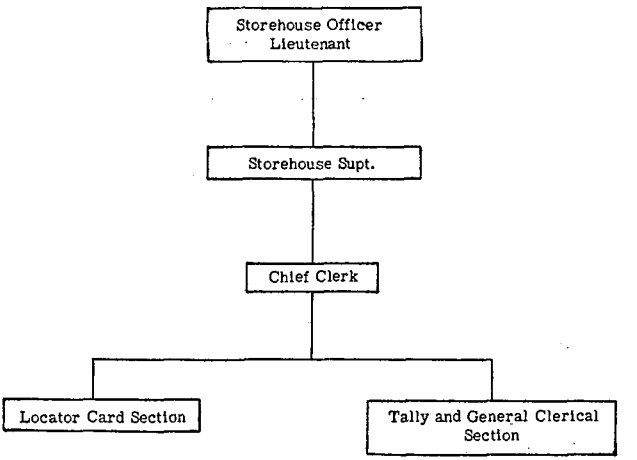


FIGURE 12.—Organization of the storehouse office.

(8) Notifying organizations when shipments are ready, or requesting other transportation when necessary.

(9) Preparation of memorandum shipping tickets for shipments requiring commercial carriers.

(10) Preparation of tally-ins (see par. 81).

(11) Maintenance of locator card balances by posting from tally-ins and tally-outs.

b. Duties of storehouse officer.—The duties of the storehouse officer are discussed in paragraph 31.

c. *Duties of storehouse superintendent.*—The storehouse superintendent is responsible to the storehouse officer for—

(1) Enforcement of all policies governing the operation of the storehouses.

(2) Maintenance of items in storage.

(3) Security of items stored in the "strong room" of the depot. (See fig. 44 for depot lay-out.)

(4) Insuring that the safe floor load of the building is not exceeded. (See par. 164.)

(5) Keeping down time to a minimum. (See par. 37.)

(6) Supervision of receiving and issuing operations.

(7) Issuing instructions and orders for fire prevention and control.

(8) Storage plans to meet emergencies.

d. Duties of storehouse chief clerk.—The chief clerk is responsible to the storehouse superintendent for—

(1) Preparation of tally-ins and tally-outs. (See pars. 81 and 84.)

(2) Preparation and completeness of location charts and locator card file. (See par. 93.)

(3) Maintenance of the tally file.

(4) Preparation of memorandum shipping tickets.

(5) Supervision of the recording of locations on tallies.

(6) Distribution of tallies to proper storehouse section chiefs.

(7) Notification of organizations or transportation agency when shipment is ready.

(8) Forwarding completed tallies to the shipping section of the property office.

(9) Assigning duties to the clerical section personnel.

(10) Posting quantities received or issued from depot stock to locator cards from tally-ins and tally-outs.

SECTION III

FILES AND RECORDS

■ 93. FILES MAINTAINED.—The storehouse office maintains the following files:

a. Locator card file.—The SNL group number, the nomenclature, and the location in the storehouse is recorded on a

locator card for each item stored in the depot. (See par. 146.) Charts are also prepared showing the location of open area storage and storehouses and the SNL groups stored therein. The locator card file is indexed according to the SNL's. Storehouse office clerks look up the location of items requested and record this information on requisition or tally-outs for the use of the storehouse section chiefs. The locator card shows the actual quantity on hand.

OFM Form 404 DATE	NUMBER OF TALLY		FOR VOUCHER NUMBER	FROM OR TO
	IN	OUT		

FIGURE 13.—Tally Register (OFM Form 404).

b. Tally file.—A copy of each tally-in or tally-out prepared by the storehouse office is filed in numerical order in accordance with the register. (See pars. 81 and 84 for preparation of tallies.)

c. Tally register (OFM Form 404) (fig. 13).—A register is kept in which tallies are listed in numerical sequence as they are required. There will be only one series of numbers for both tally-ins and tally-outs. The number series should usually be started at the beginning of the fiscal year and should consist of two numbers, separated by a dash. The first number should be the serial number of the tally, the last should be the number of the fiscal year.

CHAPTER 6

STOREHOUSE PLATOON

	Paragraphs
SECTION I. Organization and equipment	94–95
II. Operations and duties	96–97

SECTION I

ORGANIZATION AND EQUIPMENT

■ 94. ORGANIZATION.—*a. General.*—The chart shown in figure 14 may be used as a guide by the company commander in organizing the platoon.

b. Sections.—The storehouse platoon is composed of four sections. In some cases four sections will not be needed, whereas in other cases this number will be insufficient. The number of sections needed should be left to the discretion of the storehouse officer.

■ 95. EQUIPMENT.—The equipment of the storehouse platoon will consist of the general tools and equipment listed in SNL N–11, T/BA No. 9, and T/O 9–57.

SECTION II

OPERATIONS AND DUTIES

■ 96. GENERAL.—*a. Scope of operations.*—This platoon must prepare, organize, and operate storage areas and storehouses in accordance with the storage plan of the property officer. This plan is normally prepared by the storehouse officer from information furnished by the property officer concerning the quantities and types of material to be stocked. Other operations of this platoon include—

(1) Storage of all material received from the service platoon. (See par. 101.)

(2) Maintenance of items in storage. (See chs. 11 and 12.)

(3) Preparation of Material Tags (OFM Form 405) to be

attached to bins and stacks. These tags will give the SNL group, nomenclature, and location symbol. (See fig. 15.)

(4) Preparation of stack number signs, bin numbers, and open area signs.

(5) Tagging at least one item of each group with a material tag.

(6) Preparation of items for issue or storage.

(7) Checking items on tally-out as the material is assembled or making notations thereon if the total quantity requested is not on hand.

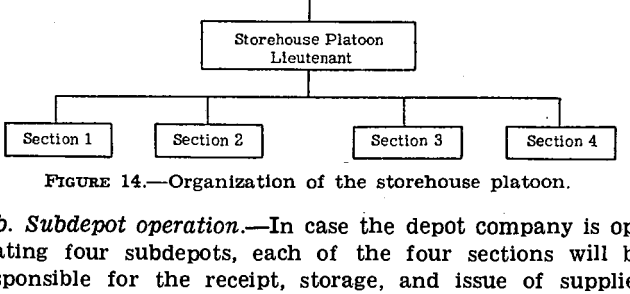


FIGURE 14.—Organization of the storehouse platoon.

b. Subdepot operation.—In case the depot company is operating four subdepots, each of the four sections will be responsible for the receipt, storage, and issue of supplies for the subdepot to which it is assigned. (See ch. 9.)

c. Duties of storehouse platoon commander.—The duties of the storehouse platoon commander are discussed in paragraph 32.

d. Duties of section chief.—The section chief is responsible to the platoon commander for the efficient operation of his section. In the discharge of this responsibility, he will—

(1) Designate various members of the section as group chiefs and assign their respective helpers. (An SNL group or groups will be assigned to each group chief.)

(2) See that floor loads are not exceeded.

(3) Prepare bin tags for all materials stored.

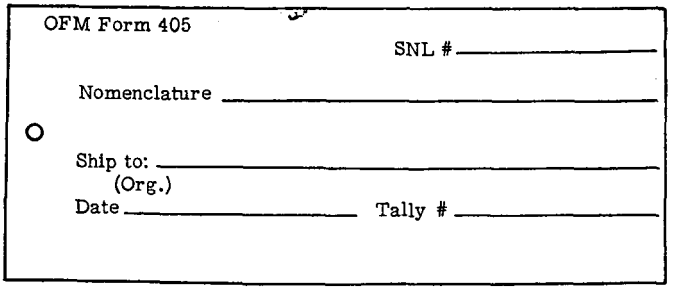
(4) See that fire aisles and main aisles are not blocked (see par. 168).

(5) Forward tallies to the proper group chiefs.

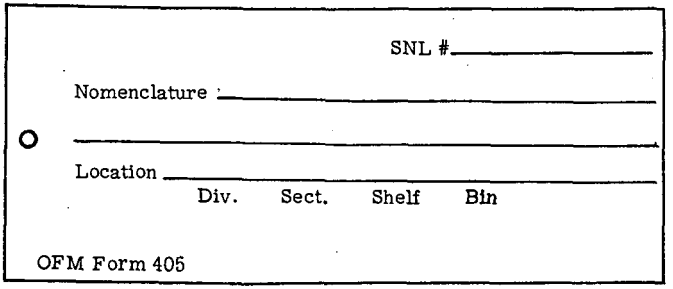
(6) Require old stock of items which deteriorate when stored for some time to be issued first.

(7) Allow only authorized personnel to enter the storehouse.

(8) Issue maintenance instructions to the group chiefs. (See ch. 11.)



(Obverse)



(Reverse)

FIGURE 15.—Material Tag (OFM Form 405).

(9) Police the storehouse or storage area for which he is responsible.

(10) Notify the service platoon when items for issue are assembled, or deliver them to the shipping section.

(11) Return completed tallies to the storehouse office placing his initials on the duplicate copy. The completed tally will show the items actually issued, and any corrections in the amount called for and the amount actually issued will be made in ink and supported by his initials.

■ 97. MATERIAL TAG (OFM FORM 405) (fig. 15).—As material is assembled and laid out for issue by the storehouse platoon, at least one item of each group should be tagged with a Material Tag (OFM Form 405), which shows the SNL number, nomenclature, name of organization for which intended, and the tally number. This will not only assist the service platoon in keeping items belonging to various sections from being mixed, but will also assist the consignee to identify the item.

CHAPTER 7

SERVICE PLATOON

	Paragraphs
SECTION I. Organization and equipment	98–99
II. Operations and duties	100–103

SECTION I

ORGANIZATION AND EQUIPMENT

■ 98. ORGANIZATION.—The chart shown in figure 16 may be used as a guide by the company commander in organizing the platoon.

■ 99. EQUIPMENT.—The equipment of the service platoon will consist of such items contained in T/BA No. 9 and SNL N–11 as are assigned to it by the company commander. In general this will include some vehicles and such general tools as bits, braces, chisels, files, grinders, hammers, saws, screw drivers, squares, vises, wrecking bars, and wrenches.

SECTION II

OPERATIONS AND DUTIES

■ 100. GENERAL.—The platoon is charged with receiving,

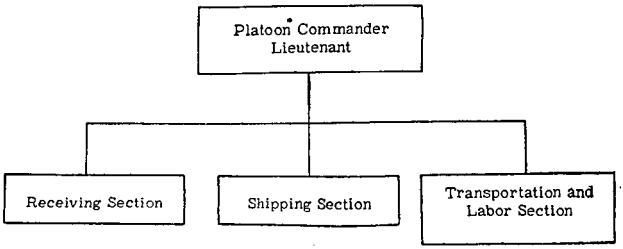


FIGURE 16.—Organization of the service platoon.

checking, packing, crating, and issuing depot property. It will also transport material within the depot. In order that

these operations may be performed efficiently, specific operations are assigned to each subsection of the platoon.

■ 101. RECEIVING SECTION.—*a. Scope of operations.*—The receiving section is responsible for the following operations:

(1) Checking and recording on suitable memoranda the serial numbers of vehicles, artillery, etc., received. Vehicle serial numbers are recorded on the Vehicle Serial Number Report (OFM Form 406). (See fig. 17.) Completed forms are sent to the storehouse office.

(2) Checking items against tally-ins or packing lists. Original packages need not be broken to verify contents, provided the contents are plainly marked on the package, and the package appears not to have been tampered with. (See par. 58.)

(3) Spotting railroad cars or truck trains at the storehouse or area where material is to be received.

(4) Turning items received over to the proper storehouse section chiefs for storage. It may be necessary to call on the transportation and labor section to move items from the receiving point to the proper storehouse or storage area. When vehicles are received, the transportation section will furnish drivers to take the vehicles to the open storage area. (See par. 115.)

b. Duties of foreman.—The section foreman is responsible to the storehouse superintendent for the efficient functioning of the receiving section. In the discharge of this responsibility, he will—

(1) Make inspections of incoming shipments of material to see if they have been damaged in shipment.

(2) Check railroad car seals to see if they have been broken, and immediately report any signs of tampering to the assistant property officer.

(3) Determine the method of unloading shipments and be alert to enforce safety rules.

(4) Submit his request to the storehouse superintendent for laborers to assist in the unloading of material.

(5) Designate certain members of the section as checkers.

■ 102. SHIPPING SECTION.—*a. Scope of operations.*—The shipping section is responsible for the following operations:

(1) Receipt and check of items assembled by the storehouse sections for issue and shipment.

(2) Packing or crating items preparatory to shipment.

(3) Including packing list (tally-out) with all shipments.

(4) Having tally-out signed by person in charge of the organizational train calling for the items. The signed copy is sent to storehouse office.

b. Duties of foreman.—The foreman is responsible to the platoon commander for the performance of the following duties:

(1) Inspecting materials to determine their condition prior to shipment, and seeing that at least one item of each group is tagged. The tag should show the proper nomenclature and the name of organization for which it is intended.

(2) Supervising the loading of materials and seeing that the provisions of the Ordnance Safety Manual and the regulations of the Interstate Commerce Commission are complied with. (See TM 9–1900 for safety precautions in handling ammunition.)

(3) Checking packages and crates for marking to see that the name of the organization for which it is intended, the contents, and the weight (also the volume when necessary) are clearly stenciled on the outside. (See par. 57.)

(4) Obtaining bills of lading from the quartermaster for shipments being transported by commercial carriers.

(5) Submitting labor requirement request to the storehouse superintendent.

(6) Notifying the storehouse office when a shipment is ready.

(7) Securing assistance from the transportation section to operate the portable crane and the wrecker for loading whenever necessary.

■ 103. TRANSPORTATION AND LABOR SECTION.—*a. Scope of operations.*—This section is responsible for the following operations:

(1) Delivering items from the receiving point to the proper storehouse or open area section chief.

(2) Collecting items from the various storehouses and delivering them to the shipping section.

(3) Driving vehicles from the receiving point to the storage area.

(4) Drawing necessary equipment from the storehouse platoon for loading or unloading shipments, and operating the portable crane or wrecker if and when required.

OFM Form 406
ORDNANCE VEHICLE SERIAL NUMBER REPORT
Recorder's Name: Date:

Type of Vehicle	U.S. Reg. Number	Ordnance Serial Number	Engine Number	Manufacturer's Number	Railroad Car Number

FIGURE 17.—Ordnance Vehicle Serial Number Report (OFM Form 406).

b. Duties of foreman.—The foreman of this section is responsible to the platoon commander for the functioning of his section. He will maintain control over the members of the section when they are not working under the supervision of the foreman of other sections.

CHAPTER 8

GUARD AND LABOR PLATOON

		Paragraph
SECTION I.	Organization	104
II.	Operations and duties	105–107

SECTION I

ORGANIZATION

■ 104. ORGANIZATION.—The chart shown in figure 18 may be used by the company commander as a guide in organizing this platoon.

SECTION II

OPERATIONS AND DUTIES

■ 105. GENERAL.—*a. Scope of operations.*—This platoon performs the heavy labor tasks which may be required. Other operations of this platoon include—

(1) Unloading or loading all incoming or outgoing shipments.

(2) Assisting the service platoon in the checking of items received or issued.

(3) Assisting the storehouse platoon in the stacking of materials.

(4) Furnishing the necessary guard details for the protection of depot property. (This may not be necessary if a guard is otherwise provided.)

(5) Operating the visiting vehicle booth at the depot entrance. (See par. 107.)

(6) Assisting the shipping section in packing and crating.

(7) Providing a detail to police the depot offices.

b. Duties of sections foreman.—The sections foreman is responsible to the platoon commander for the efficient operation of the sections. In the discharge of this responsibility, he will—

(1) Upon request assign members of the platoon to sections requiring laborers in order to accomplish specific tasks.

(2) Maintain the guard roster and the office police roster.

(3) Inspect the guard detail, and see that full instructions are issued as to the proper protection of the depot property.

(4) Act as supervisor when large groups of laborers are used to load or unload freight cars.

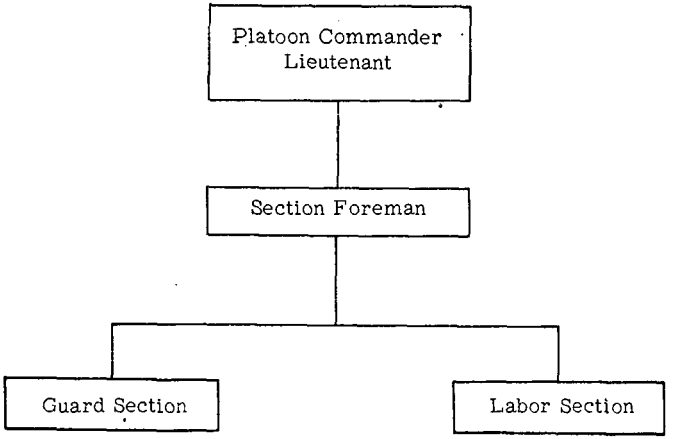


FIGURE 18.—Organization of the guard and labor platoon.

■ 106. LABOR.—For planning purposes labor requirements for handling supplies are computed on the average of ½ ton per man per hour for 10 hours each day. The maximum number of men that can be employed advantageously in loading or unloading one freight car is 11 (1 foreman and 10 laborers). In the field or at a depot, trucks can be loaded or unloaded at the rate of 20 minutes per truck, regardless of tonnage, if sufficient labor is available. The number of trucks that can be loaded or unloaded simultaneously is dependent upon the amount of labor available and the conditions existing at the loading or unloading point. Experience tables on this subject may be developed as operations progress. (See par. 101, FM 101–10.)

■ 107. VISITING VEHICLE BOOTH.—This is a booth or small office established at or near the depot entrance to check on

the movements of transportation into and out of the depot area and to provide any necessary information to visiting personnel. Truck trains will halt at this booth and present their requests. The guard on duty will record on the Daily Report of Visiting Vehicles (OFM Form 407) the vehicle registration number, the organization, the driver's name, the destination, and the clearance papers (see fig. 19). When the depot covers

OFM Form 407

DAILY REPORT OF VISITING VEHICLES

Recorder's Name: Date:

Vehicle Reg. Number	Organization	Driver's Name	Destination	Clearance Papers	
				In	Out

FIGURE 19.—Daily Report of Visiting Vehicles (OFM Form 407).

quite a large area, guides from the transportation section of the service platoon will be assigned to this booth to direct vehicles to the proper storehouse. The train commander will present a tally-out sheet to the guard at the booth, as a pass to permit him to proceed with the property. At the close of the day, the daily reports (OFM Form 407) are turned over to the assistant property officer.

CHAPTER 9

DEPOT COMPANY OPERATING SUBDEPOTS

■ 108. GENERAL.—In the combat zone, under certain conditions, such as a rapidly moving situation, a broad front, and intensive bombardment, the depot company may be required to operate several subdepots which are disposed laterally and in depth. This will necessitate the subdivision of the company into several groups, each group being responsible for the operation of the subdepot assigned to it. These groups will usually be subdivided into a storehouse platoon, a service platoon, and a guard and labor platoon, each performing the same functions as outlined in paragraphs 94 to 105, inclusive. The stocks of these depots will be determined by the nature of the units served and other pertinent considerations. The parent depot will be responsible for the maintenance of their stock levels. Units operating in the vicinity of a particular subdepot will usually draw their supplies from that depot. Subdepots are not permanently established at certain points, but may be required to move into new positions on short notice. The lieutenant in charge of a subdepot must know the condition of his stock at all times and be prepared to give quickly an accurate estimate of the truck tons required to move his stock. He should have definite loading plans so that the time required for loading and unloading will be kept to a minimum. The material may frequently have to be stored in the open, and it will be necessary to make as much use of natural shelter as possible. Dunnage should be used to keep the items off the ground, and tarpaulins should be thrown over materials which deteriorate when exposed to moisture. (See pars. 173 to 176, incl.)

■ 109. ORGANIZATION.—See figure 20 for a chart of the organization of the depot company when operating subdepots. This chart is intended merely as a guide and should be modified as required to solve specific problems.

■ 110. TRANSPORTATION.—Since the transportation facilities of the depot company are rather limited, it will frequently be necessary for the parent depot to secure quartermaster transportation when vehicles are needed to replenish subdepot stocks. When possible, a ¼-ton truck should be allotted to each subdepot.

■ 111. TRAFFIC.—Traffic through the depot area should be one-way whenever possible. Roads which pass warehouses or storage areas should be wide enough for trucks to back up and park across one side of the road without blocking the flow of traffic. A guide should be placed at the depot entrance to direct trucks to the proper area. (See par. 107.) See FM 21–45 for suggestions on traffic flow.

■ 112. SUBDEPOT MARKERS.—Subdepots should be adequately posted with signs for both day and night operation. When lighted signs are used, due regard to blackout restrictions must be observed.

■ 113. MESS.—The personnel operating subdepots may be rationed in any one of several ways. The method utilized will depend upon the circumstances. See paragraph 66 for suggested methods of procedure.

■ 114. ISSUE OF ITEMS.—*a. General.*—Subdepots will issue items as called for, underlining those items not available, or, in case they cannot furnish the number requested on the requisition, the original figure will be lined out. The quantity actually issued will be entered beside the first amount. The responsible party calling for the material will be required to sign a copy of the requisition as a receipt for the material. He will be given one copy of the request, which he will deliver to his commander. The other copy is retained by the depot. From it the locator card file is posted and tally-outs are prepared. It is then filed in the requisition file. The tally-outs are forwarded to the parent depot, so that the master stock record card file may be posted. In case the unit calling for items does not have a formal requisition prepared, the subdepot personnel will prepare a tally-out and follow the same procedure as though it were a requisition. Signature for the property will be secured on the tally-out.

b. Helpful suggestions.—Experience has indicated that the following suggestions are useful:

(1) Issues of stores "over the counter" by base installa-

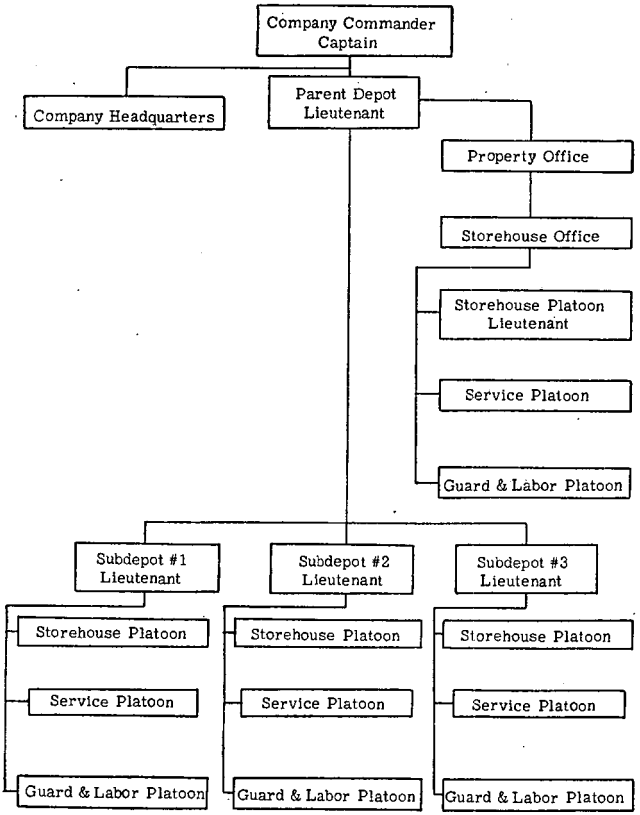


FIGURE 20.—Organization of the ordnance company, depot (operating subdepots).

tions should be reduced to the minimum. It gives preference to nonfighting units and interferes with the forward flow.

(2) Wherever possible, associated parts and equipment

pertaining to major items should be packaged with the major item, in order that the major item may arrive complete.

(3) Where materials require priority in handling and shipment, they should be specially marked with some such marking as "Urgent combat matériel" and marked with distinctive color bands of a prescribed nature.

(4) Where night operations make it difficult to distinguish particular materials which it is desired to segregate from other materials, the use of large distinctive markings, such as different colored crosses may prove useful.

■ 115. PROTECTION OF STORES.—*a.* Wherever possible, underground protection should be provided for essential items such as small arms, optical instruments, and spare parts for same.

b. The front part of vehicles may be run into shallow pits, especially if there is a convenient rise in the ground. If vehicles are stored nose downward in protective pits the angle on which the vehicle is parked should not exceed 10° from the horizontal. If this angle is exceeded, the level of the oil in the sump may be below the oil pump, and the cold motor will be damaged when started due to oil starvation.

c. New vehicles may be mixed with old in small groups to simulate a derelict dump.

d. Vehicles should be dispersed, different types being mixed in the area of dispersion.

e. Areas which have been bombed should as far as possible be left with the appearance of being derelict. Craters should not be filled unless absolutely necessary.

f. Miscellaneous stores can be protected in both forward and rear areas by—

(1) Many small dumps, partially buried.

(2) For valuable major items by distribution to corners of buildings with sandbag protection.

(3) Separation of bulk packings from broken packages.

(4) Careful consideration of shadow, that is, low wide pyramid style of stacking and irregularity of design.

(5) Low tunnel-like brick constructions for storage of arms and machine guns.

■ 116. REPLENISHMENT OF SUBDEPOT STOCKS.—The personnel in charge of the locator card file will make out replenishment

request on OFM Form 403. (See par. 88.) The chief clerk of the subdepot will consolidate these requests and will prepare a requisition or consolidated request, which is submitted to the parent depot. The parent depot will issue items requested by the subdepot on tally-outs prepared in duplicate. The officer in charge of the subdepot will receipt for the items by signing one copy of the tally-out and returning it to the parent depot. The retained copy of the tally-out is marked "tally-in" and the items thereon are posted to the locator card file of the subdepot. It is then placed in the tally-in file. If items are received without the usual tally-out, the subdepot personnel will prepare a tally-in in duplicate. One copy of this tally-in will be signed by the officer in charge of the subdepot and forwarded to the parent depot.

■ 117. COMPANY COMMANDER.—The company commander will establish himself at a centrally located depot where he may easily be located. He will visit each of the other depots at frequent intervals so as to be personally acquainted with the problems encountered by all. He should make such adjustments in organizations as may be necessary to solve his problems.

■ 118. PARENT DEPOT PERSONNEL OPERATIONS AND DUTIES.—The property office personnel will prepare requisitions (see pars. 81 and 84), and will maintain the master stock record card file (see pars. 46 and 114). The storehouse office personnel will be mainly concerned with the preparation of tallies (see pars. 81 and 84) and the maintenance of the tally file (see par. 93) and the locator card file (see par. 93).

CHAPTER 10

PROPERTY ACCOUNTABILITY AND PROPERTY PAPERS

		Paragraphs
SECTION I.	General	119–123
II.	Origin of accountability (gains)	124–125
III.	Cessation of accountability (losses)	126–127
IV.	Property papers and their use	28–148

SECTION I

GENERAL

■ 119. PURPOSE.—This chapter is intended for use as a guide in connection with all transactions involving custody of ordnance supplies and equipment in peace and war, insofar as accountability and responsibility are concerned.

■ 120. DEFINITIONS.—*a. Accountability.*—AR 35–6520 states: "Accountability devolves upon any person to whom public property is intrusted and who is required to maintain a property account thereof. * * * Property 'accountability' will be checked by a property auditor." Thus, accountability directly applies to the depot ordnance officer, since all the property intrusted to him must be properly recorded on a stock record account which is periodically audited by a representative of the Finance Department. Descriptions of the various forms by which this stock record account is kept are given in paragraphs 128 to 148, inclusive.

b. Responsibility.—Responsibility devolves upon all persons who have public property in their possession. It is evident that accountability may also involve responsibility, as in the case of the ordnance officer who has in his possession public property which is kept in storage pending issue and consumption, or for personal use or use of agencies under his direct control. But responsibility does not necessarily involve accountability, as most army supplies and equipment are used by persons and organizations that are not required to keep a stock record account. Their only responsibility is proper care and use of supplies and equipment in their possession.

■ 121. CLASSES OF PROPERTY.—For the purposes of this manual property may be considered to be in two categories, as follows:

a. Historical record property.—This is property of a permanent nature and fixed location, such as real property, permanent exhibits and Army museums, and permanently installed machinery, appliances, and apparatus as listed in AR 35–6520. Real property is taken up on property accounting records only when held awaiting sale, salvage, or other disposition. Permanent property is dropped from property accounting records and taken up on permanent historical record when permanently installed for current use.

b. Supplies.—This includes all raw materials, commodities, manufactured articles, means of transportation, unit assemblages, and units of equipment procured, stored, or issued for the Army. Unless permanently installed as indicated in *a* above, this property is accounted for on property accounting records. In respect to accountability, supplies are classified as expendable and nonexpendable. AR 35–6620 defines expendable property and prescribes when and how it will be dropped from accountability. Accountability for nonexpendable property is retained until the property is transferred, worn out, or otherwise disposed of. The manner in which accountability is terminated is described in paragraph 51.

■ 122. MEMORANDUM RECEIPT ACCOUNT.—*a. Account.*—The depot ordnance officer is responsible for all expendable and nonexpendable property recorded on the stock record account, with the exception of that for which he has memorandum receipts. He is accountable for Table of Allowance property issued on memorandum receipt by the depot to individuals or organizations. When such property is issued, it is listed on the proper forms in duplicate (par. 138). The original, signed by the responsible officer, is retained by the accountable officer, and the duplicate is given to the responsible officer.

b. Balancing the account.—From the account of property on memorandum receipt, Q. M. C. Form No. 488 (fig. 33), the accountable officer knows at all times not only the location of property which is not in his warehouses or other storage and for which he is accountable, but also who has it. By adding

the total of whatever articles are out on memorandum receipt to the quantity of that article in storage, and by comparing this gross total with the quantity shown on his stock record account, the accountable officer determines whether or not the account is in balance.

■ 123. GAINS AND LOSSES.—In referring to the different transactions which increase or decrease the sum total of the ordnance officer's accountability, those that increase it, including his original receipts from his predecessor, on turn-over, are termed "gains"; those which decrease it are termed "losses." In this manual, each class of transaction is numbered serially, for example, "Gains No. 1" or "Losses No. 1." In this chapter each class of transaction will be treated separately.

SECTION II

ORIGIN OF ACCOUNTABILITY (GAINS)

■ 124. LIST OF TRANSACTIONS.—Increases in accountability will result from the receipt of property by any of the following transactions:

a. Turn-over from predecessor.

b. Shipment from another depot.

c. Shipment from dealer on purchase by another depot; inspection and acceptance at destination.

d. Shipment from dealer on depot purchase; inspection and acceptance at point of origin or manufacture.

e. Shipment from dealer on depot purchase; inspection at point of origin or manufacture; shipment on Government bill of lading; final inspection and acceptance at destination.

f. Receipt from a newly-arrived organization that has changed station with some Table of Allowances ordnance matériel in its possession.

g. Receipt from a newly arrived enlisted man who has changed station individually with some ordnance property in his possession.

h. Receipt for specific organizations or individuals.

i. Receipt after being reconditioned or reclaimed.

j. Receipt as a result of local manufacture.

k. Found at the depot.

l. Purchased locally.
m. Purchased on the march.
n. Miscellaneous transactions not listed above.

■ 125. DETAILS OF TRANSACTIONS RESULTING IN ACCOUNTABILITY GAIN.—*a. Gains No. 1, turn-over from predecessor.*—(1) *Procedure for transaction.*—Normally, the original list of supplies for which a depot ordnance officer becomes accountable is the "list of balances" on which he receipts to his predecessor when first assuming duty as depot ordnance officer. The list of balances should include only the property actually transferred. The report of survey or other adjustment of any shortage is the responsibility of the officer being relieved. It should be the last voucher of the old officer's file. (See AR 35–6680, for details covering this transaction.)

(2) *Examination of condition of warehouse.*—The new depot ordnance officer should carefully examine the entire system of warehousing and accounting followed by his predecessor, so as to determine the extent to which he can rely on the stock record account for evidence of the condition and amount of the property. He should satisfy himself as to whether or not all the vouchers are posted; whether or not the voucher register is posted to date; and whether the man in charge of the stock record account is competent. In a properly operated depot, the man in charge of the stock record account should be able to produce the true balances on any items without delay, the warehouse should be in good order, the supplies should be properly stored, there should be ample safeguards to protect the stocks, and the men in charge of the warehouse should be well acquainted with their stock. If all these details are satisfactory, then the warehouse and warehousing may be considered as properly conducted; if not, the spot inventory which he takes must be more thorough and must include many items.

(3) *Spot inventory.*—Decision as to how much of an inventory is to be taken depends largely on the general impression received during inspection of the stock records and the warehouses. The responsibility for a sufficient inventory lies directly with the officer assuming accountability. He may decide what and how many different items are to be

counted, basing his decision on the time available. Such a selection should include a majority of the serially numbered items and a number of those items having a rapid turn-over. If these items check out satisfactorily, it may be assumed that the remainder is correct. The importance of making a careful inventory check cannot be overemphasized.

(4) *Spot check of memorandum receipt account.*—A spot check of the memorandum receipt account should be made. A check of two or three items of this account should be sufficient if the items on the individual accounts balance with the total on the consolidated record. (See par. 139.) If they do not, the entire memorandum receipt account is under suspicion and requires an extensive if not a complete check.

(5) *Procedure if considerable discrepancies exist.*—If such discrepancies exist as to cause the new ordnance officer to conclude that only a total check would be satisfactory, and if the time needed for that check is not available, the new ordnance officer makes a written report to the commanding officer for action as provided in AR 35–6680.

b. Gains No. 2, shipment from other depots.—Supplies requisitioned from another depot may be shipped to the requisitioner either from depot stock or as a result of depot purchase. When by purchase, shipment may be by direct delivery on commercial bill of lading at dealer's expense, with inspection and acceptance at destination, or by direct delivery on a government bill of lading, after inspection and acceptance at point of origin, or by the latter method, after inspection for quality at point of origin, and with inspection for quantity and condition at destination. This section treats only of deliveries from depot stock. Explanation of accounting procedure for the two methods of purchase and delivery noted above is given in *c* and *d* below. (See AR 35–6560.)

(1) *Normal procedure.*—When another depot ships public property by common carrier, the property officer of the receiving depot will receive advance notice of its arrival by receipt of the original and one copy of the shipping ticket, listing the bill of lading number, routing, and cost of transportation. When the shipment arrives, it is turned over to

the property officer by the local quartermaster, after the former has properly receipted and returned the quartermaster's original copy of the bill of lading for the shipment. The property officer or his authorized representative then tallies in the shipment as it is unloaded into the warehouse, using OFM Form 410 (Tally Sheet, incoming) (fig. 37). This check may be made by the service platoon officer and one other person, or by any two parties designated by the property officer, one of whom must be a commissioned officer. If any irregularities exist, written statements must be prepared by both parties. In the event that the quantity, quality, and condition of the property as tallied into the warehouse is in complete agreement with the shipping ticket, it is the duty of the property officer to accomplish the shipping ticket, thereby assuming the accountability and responsibility for the shipment. (See par. 58.)

(2) *Property lost or damaged in transit.*—Whenever the quantity of property delivered by a common carrier does not agree with the quantity listed on the corresponding shipping ticket, or whenever the property is received in damaged condition, the property officer, after making appropriate notations on the bill of lading at the local quartermaster's office, takes such further action in the particular circumstances as is indicated in paragraph 58. Upon the completion of the required action, he assumes responsibility and accountability only for those articles which he is authorized to post to his stock record account.

c. Gains No. 3, property received as a result of purchase by another depot, inspection and acceptance at destination.—Contracts covering property received as the result of purchases of this nature may provide for either complete inspection and acceptance at destination; or inspection at point of origin for conformity to technical contract requirements only, with inspection as to quantity and condition at destination. The procedure covering this case is described in AR 35–6560.

d. Gains No. 4, property received as result of purchase by another depot, inspection and acceptance at point of origin or place of manufacture.—Supplies purchased subject to these conditions arrive on Government bill of lading. The receiv-

ing officer's advance notice will be a copy of the purchase order or schedule of supplies (W. D., Q. M. C. Form No. 309). The procedure for this transaction is covered in AR 35–6560.

e. Gains No. 5, supplies purchased by another depot, f. o. b. place of manufacture or point of origin, to move on Government bill of lading, but with inspection and acceptance at destination.—This form of purchase is the same as under gains No. 3, except that the supplies become the property of the Government when delivered to the carrier properly packed. However, inspection and acceptance, which includes the right of rejection if such property does not conform to specification, are completed at destination. (See AR 35–6560.)

f. Gains No. 6, property received when newly arrived organization has changed stations with some Table of Allowance ordnance property in its possession.—In this case, the ordnance officer at the new station receives from the ordnance officer at the old station a shipping ticket in duplicate, accompanied by a signed memorandum receipt from the organization commander. He receipts one copy of the shipping ticket and returns it to the shipping officer as his voucher, uses the other copy as his voucher for picking up the property, and sends a new memorandum debit voucher to the commander of the newly arrived organization. (See AR 35–6680.)

g. Gains No. 7, receiving property as result of arrival of enlisted man who has changed station individually with items of ordnance property in his possession.—The depot ordnance officer receives the triplicate copy of an individual shipping ticket from the enlisted man's local commanding officer, to whom it was forwarded by the commanding officer of the enlisted man's last station. This form will list the ordnance property in the possession of the enlisted man, and will be receipted by him and signed by the organization commander at the old station as witnessing officer. The ordnance officer uses this triplicate copy as a debit voucher and takes up the property on his stock record account. He then transfers responsibility for those articles on memorandum receipt to the enlisted man's organization commander. This is appli-

cable only when the depot property officer is also the unit supply officer, usual only at small stations.

h. Gains No. 8, property received intended for organizations or individuals.—While such shipments will be invoiced to the receiving ordnance officer, they will be identified by notation placed on the shipping ticket and by markings on the packages indicating the individual or organization for whom they are intended. (See par. 58c.)

i. Gains No. 9, reconditioned and reclaimed property.—Property which has been reconditioned in local shops and is again serviceable should be listed on a shipping ticket which contains sufficient remarks to identify the source from which it was received, and then should be posted to the stock record account. Likewise, reclaimed usable parts are to be posted to the stock record account in a similar manner. Articles already on the stock record account that are sent to the shops for repairs need no additional voucher when returned. (See AR 35–6560.)

j. Gains No. 10, property received as result of local manufacture.—Whenever any articles that properly may be classified as nonexpendable are manufactured locally, they are to be taken up and accounted for in the same manner as articles that have been reconditioned. Manufacturing depots have a regular procedure and blank forms for this purpose, but for ordinary depots a shipping ticket will suffice on the few occasions when such action is required.

k. Gains No. 11, property found at post (see par. 137).—All public property unaccounted for when discovered by an accountable officer will be taken up and accounted for by him. When discovered by officers not accountable for that class of property, or by enlisted men, or by civilian employees, it will be reported as soon as possible to an accountable officer, who will take up the property and account for it. In the absence of such an accountable officer the senior officer, enlisted man, or civilian employee present will take charge of such property and report it to higher authority with a view to its proper disposition. Whenever it appears that there is property on hand that should be taken up as "found", a careful check of the stock record cards should first be made

in order to avoid the necessity of later executing a drop voucher to correct the original error of taking up supplies whose apparent shortage was due to improper balances. If, despite precautionary checks, it develops that property has been erroneously taken up, the necessary corrective action prescribed in AR 35–6640 may be taken.

l. Gains No. 12, supplies received as result of local purchase.—The dealer, upon receiving the purchase order from the local quartermaster, delivers the required supplies direct to the depot, with inspection and acceptance at the depot. The supplies are carefully tallied in, and receiving reports prepared in quadruplicate. The original is certified by the officer or duly accredited inspector who inspects and accepts the property for the Government. The triplicate copy is used to post the articles received to the stock record account. Two copies, original and duplicate, are sent to the disbursing officer who will pay the bill. The quadruplicate copy is sent to the local quartermaster, who purchased the items, to file with his purchase accounts. (See par. 135.)

m. Gains No. 13, property received by purchases made by organizations on march.—A depot property officer may be required to assume accountability for property purchased on the march by an organization for which his depot is the point of supply. This is required in those rare cases when a marching organization purchases articles of ordnance property that are nonexpendable. In these cases, funds having been drawn from the finance officer by the officer designated to act as agent officer for the organization making the march, purchases are made by him and payments made in cash. The third copy of the invoice covering the transaction, properly certified by the vendor and the agent officer (AR 35–6300), is forwarded to the ordnance property officer whenever the invoices include items of nonexpendable property. Upon receipt of the third copy of vendor's bill or invoice, the ordnance officer will originate a receiving report in triplicate covering the nonexpendable items. He will take these items up on his stock record account and issue them to the detachment or organization in the regular manner on memorandum receipt if Table of Allowance property is involved, or by ship-

ping ticket to the proper organization supply officer if the articles comprise organization or individual equipment listed in the Tables of Basic Allowances. Two copies of the accomplished receiving report will be forwarded promptly by the ordnance officer to the finance officer designated in the certificate on the vendor's bill or invoice. (See par. 135.)

n. Gains No. 14, miscellaneous.—In addition to the foregoing means by which a depot property officer may become accountable for property, there are others of such minor importance or rarity that they are listed below with pertinent Army Regulations but without explanation.

(1) Property abandoned by deserters, (AR 615–40).

(2) Property left by deceased personnel (AR 600–550).

(3) Action upon death, insanity, or transfer during absence or confinement of an accountable or responsible officer (AR 35–6680).

(4) Samples and experimental articles (AR 35–6680).

SECTION III

CESSATION OF ACCOUNTABILITY (LOSSES)

■ 126. LIST OF TRANSACTIONS.—Any one of the following transactions will result in a loss of accountability to the depot property officer:

a. Complete turn-over of all property to successor.

b. Property shipped to another depot.

c. Property shipped to a depot for repair or reclamation.

d. Nonexpendable property issued to organizations.

e. Expendable property issued to organizations.

f. Table of Allowance property taken with organizations on change of station.

g. Property taken by enlisted men individually changing station.

h. Property destroyed.

i. Property turned in for salvage.

j. Property to be sold.

k. Property lost as the result of theft or fraud.

l. Property lost as the result of errors of issue or bookkeeping.

m. Property lost due to errors in the memorandum receipt account.

n. Miscellaneous shortages.

■ 127. DETAILED EXPLANATION OF TRANSACTIONS RESULTING IN LOSSES.—*a. Losses No. 1, complete turn-over of accountability to successor.*—This occurs when the officer having accountability is relieved and a complete transfer of accountability to a successor is effected. It is accomplished as outlined in paragraph 125. Generally the turn-over is occasioned by the officer being relieved and assigned to other duties, which, in most cases, involves a change of station. For this reason he should make a special effort to have all discrepancies cleared up before he departs, so that his receipted list of balances will constitute a complete clearance of his entire accountability. If discrepancies which require action of a surveying officer or a board of officers have been disclosed in the joint inventory taken by himself and his successor, he should endeavor to clear up all these before he departs. If time is limited, he should at least supervise preparation of all certificates and affidavits upon which he intends to rely for clearance.

b. Losses No. 2, property shipped to another depot.—The shipment of property from one depot to another depot is not a common occurrence, since the depot is generally the point of issue to the troops. Such shipments are made as a result of an approved requisition or instructions from higher headquarters. A shipment of this kind requires nine or ten copies of the shipping ticket, which are disposed of as follows:

(1) Three memorandum shipping tickets to the local quartermaster, who will prepare the required bills of lading and deliver the shipment to the carrier. The original copy of the memorandum shipping ticket, showing the bill of lading, routing, and cost of transportation, will then be returned by the quartermaster to the ordnance officer who requested the shipment. (See par. 53.)

(2) The original shipping ticket and one copy are sent to the receiving officer, who will sign and return the original copy to the shipping officer. One copy is sent to file pending receipt of the signed original. Two copies are sent to the

service command auditor, and one copy is sent to each of the service command ordnance officers concerned. When the property officer receives the signed shipping ticket from the receiving officer, he is authorized to drop the shipped articles from his stock record account, thereby decreasing his accountability.

c. Losses No. 3, property shipped to depot for repair or reclamation.—Accountability for property of this class may not be dropped on the report of survey or inventory and inspection report directing this kind of disposition. The supplies are handled by invoicing them on shipping tickets just as if they were serviceable supplies, with the following additional information indorsed on the shipping tickets: the final approved disposition of the property, designation of the accountable officer, date, and other data sufficient to identify the inventory and inspection reports or report of survey. (See AR 35–6560.) The property is then handled in the same manner as outlined under losses No. 2, the shipping tickets constituting the drop voucher.

d. Losses No. 4, nonexpendable property issued to organizations.—Only so much of the nonexpendable property issued to organizations as is dropped from the depot property officer's accountability is considered here. This restricts consideration to individual and organization equipment issued by the Ordnance Department as listed in the various Tables of Basic Allowances.

(1) *Initial issues.*—Initial issues constitute the original equipment of an organization. They will be necessary only when a unit is first organized or when the Table of Organization or Table of Basic Allowances of a particular organization already in existence is changed so as to require equipment not previously issued. The depot ordnance officer should have available Tables of Basic Allowances for all the different arms and services which he may be called upon to supply. When requisitions are received, they should be carefully examined, if not previously edited by a superior ordnance officer, to determine if they call for more equipment than the Table of Basic Allowances prescribes. A mere error or misunderstanding may be corrected by direct contact with the supply officer concerned. When the requisition calls for more

than prescribed in the Tables of Basic Allowances, the issue must be approved by higher authority. The receipted requisition is the voucher authorizing the ordnance officer to drop the supplied items from his stock record account. Two additional copies of the requisition must be made; one for the unit supply officer who receives the property, the other for the finance officer of the service command in which the post, camp, or station is located.

(2) *Replacement.*—Issues of articles in exchange for like articles turned in in an unserviceable condition or as replacements for articles lost or totally destroyed, will be made as follows:

(*a*) On presentation to the station supply officer of a complete voucher covering the article or articles, such as a statement of charges, inventory and inspection report, or approved survey report.

(*b*) By direct exchange for unserviceable articles or component parts accompanied by a certificate that the unserviceable condition is due to fair wear and tear. If the station supply officer is not satisfied that the unserviceable condition is due to fair wear and tear, he may require that the certificate be approved by the commanding officer.

(*c*) The transactions contemplated in (*a*) and (*b*) above will not ordinarily require an entry in the organization property records, and no record thereof will be made by the unit supply officer unless necessary.

(*d*) For property turned in under (*a*) above, the voucher presented will be the ordnance officer's voucher for the serviceable supplies issued in exchange; the unserviceable property will be disposed of as directed in the report of survey or inventory and inspection report concerned.

(*e*) For property turned in under (*b*) above, his voucher will be the report of survey or inventory and inspection report subsequently prepared, which, when completed, will also direct the disposition to be made.

e. Losses No. 5, expendable property issued to an organization.—When issued by a property officer, expendable property, which is defined by AR 35–6620, will be dropped from the stock record account upon receiving the requisition or shipping ticket receipted by the officer to whom the property

was issued. For initial issue and replenishment of expendable articles of equipment authorized in Tables of Basic Allowances, see paragraphs 49, 51, and 52.

f. Losses No. 6, depot property taken with organizations on change of station.—This applies to the property listed in Tables of Allowances, Posts, Camps, and Stations, which is issued to organizations on memorandum receipt by the depot ordnance officer. Normally, this equipment is not taken by troops upon change of station, but in rare cases this does occur. To transfer accountability, the ordnance officer, after settling the general memorandum receipt account of the organization concerned, should obtain new memorandum receipts for post property taken along. Transfer is made by shipping ticket to the ordnance officer at the organization's new station. The receipted debit memorandum receipt will be attached to this shipping ticket and will be the new ordnance officer's authority for receipting the shipping ticket from the old station and obtaining a memorandum receipt to his own account from the organization having the property. The receipted shipping ticket is the old ordnance officer's authority to drop the property from his stock record and memorandum receipt account.

g. Losses No. 7, depot property taken by enlisted men individually changing station.—When an enlisted man changes station individually and takes with him items of depot property held on memorandum receipt to the depot ordnance officer, this property is listed on an individual shipping ticket prepared in quadruplicate by his company commander. The several copies are marked, respectively, original, duplicate, triplicate, and quadruplicate. All copies are receipted by the soldier and signed by the company commander or his commissioned assistant as witnessing officer. The original copy is presented to the depot property officer, who in turn gives the organization commander credit on his memorandum receipt account for the property taken. He also uses the shipping ticket as his voucher for dropping the property from his stock record account. One copy is sent to the ordnance property officer at the new station, and the remaining two copies are sent to the auditors of the service commands involved.

h. Losses No. 8, property destroyed.—The destruction of Government property may occur as the result of fire, floods, lightning, and other so-called acts of God. It occurs more commonly as final action on approved reports of survey or recommendations of an inspector general. When real property, such as buildings, etc., are destroyed, the steps to be taken by the post commander are given in AR 210–10, with which the depot property officer should be familiar. Permanent property and supplies in damaged buildings, or property completely unserviceable for other reasons, should be listed on a report of survey and disposed of according to the approved findings and recommendations. A transcript of the findings and recommendations of the board or a copy of the board proceedings will be attached to the report of survey as an exhibit. If these recommendations provide for destruction of any or all of the articles surveyed, the accountable officer's voucher would be the report of survey properly completed with the certificate of the officer who witnessed the destruction.

i. Losses No. 9, property turned in for salvage.—(1) The voucher authorizing the dropping of property turned in for salvage is either a completed inventory and inspection report, an approved report of survey, or a statement of charges receipted by the salvage officer.

(2) Strictly speaking, accountability ceases when property is turned over to the salvage officer, but in effect the regulations require informal vouchers stating the disposition of the property, which are subject to examination and check by inspectors general to an extent that amounts to an audit. For this reason, the record must show in orderly sequence the amount and kind of salvage material received and the manner of its dispositions.

j. Losses No. 10, property to be sold.—Property is ordered to be sold either by action of an inspector general or on approved recommendations of a survey officer. The class of property which may be disposed of in this manner is limited to unserviceable or obsolete articles having a sale value for use for their original purpose, or articles readily reparable for use for their original purpose. Articles which no longer

possess such original purpose sales value will not be indicated to be sold. (See AR 20–35.) Property to be sold is delivered on a shipping ticket in the normal manner, to the place directed by higher authority; the receipted shipping ticket acts as the voucher for the stock record account.

k. Losses No. 11, property lost as result of theft or fraud.—Boards of officers are generally appointed to consider substantial losses due to theft or frauds. Losses of lesser amounts may be handled by a report of survey. In either case, the burden of proof that all due precautions have been taken is on the responsible officer. He must be able to show that he has complied strictly with the regulations covering the protection and safeguarding of the property and that he has also taken such additional precautions as local conditions might require.

(1) *Fraudulent issue vouchers.*—Most losses as the result of theft or fraud involve collusion with some person or persons in the warehouse. Losses because of overissues are relatively small and, when they occur, are usually the result of oversight or errors of count. The heavy losses connected with issues are generally the result of fraudulent raising of quantities on otherwise bona fide issue vouchers and, occasionally, the use of vouchers entirely fraudulent, including the forgery of the officer's name to certificates of receipt. The purpose of either procedure is to enable the person or persons concerned to remove supplies for illegal disposal and yet keep the stock and stock cards in balance so that the theft will not be disclosed by sudden spot checks or regular inventories. As the purpose of the fraud is usually to obtain money, only those items which are readily salable are involved. Such items as tools of common use and relatively high-priced repair materials of small bulk (brass fittings, electrical equipment, etc.) should be carefully watched, and any suspicious appearances warrant a thorough investigation. Only constant supervision can prevent fraud.

(2) *Drop vouchers.*—Reports of survey approved by the Chief of Finance, or proceedings of a board of officers. Property which has become lost or damaged, may be dropped from W. D., Q. M. C. Form No. 425 upon the certificate of the

responsible officer when approved by the quartermaster and the commanding officer. Where a charge is made against an enlisted man, the statement of charges, to which the report of survey is a subvoucher, is used as a voucher.

l. Losses No. 12, property lost as result of errors of issue or bookkeeping.—Losses of this class are real when errors of issue have been made, but are not real losses when credit or debit vouchers have been posted on the wrong cards, or when incorrect quantities have been posted on the right cards, or when mistakes in calculation have been made in extending balances. The best protection against errors of posting is competent clerks, who must be carefully supervised until they have acquired sufficient skill to be entrusted with this duty. One of the best checks for errors in addition and subtraction is to balance each sheet or card, as it becomes full, by adding all receipts to the balances brought forward from the previous sheet and by comparing this with the sum of all issues or other losses plus the last balance shown on the full sheet. To check for wrong quantities on wrong cards, it is necessary to pick vouchers at random and compare them with the postings, basing further investigation on the errors found in the few vouchers checked.

m. Losses No. 13, property lost due to errors on memorandum receipt account.—Such losses occur when property on memorandum receipt is erroneously omitted from the new account furnished an organization or individual at the semiannual settlement. The omission may not be noticed by the organization commander or individual concerned, who signs the new account and receives in return the old with its accumulated credit and debit slips. A check of the general account would show a total in excess of the aggregate of all individual accounts, and the article or articles can only be located and the account proved by a laborious check of warehouse tally sheets and the general account. Since a large amount of property is carried on this account, it is essential that it is maintained only by the best qualified and most trustworthy clerks.

n. Losses No. 14, miscellaneous.—In addition to the foregoing means by which a depot property officer may lose ac-

countability for property, there are others of such minor importance or rarity that they are listed below with pertinent Army Regulations but without explanation:

(1) Property taken by a deserter (AR 615–360).

(2) Property found short upon the death of a soldier (AR 600–550).

SECTION IV

PROPERTY PAPERS AND THEIR USE

■ 128. GENERAL.—The paragraphs below are devoted to the property papers used by the depot company under *normal and peacetime conditions.* Distribution charts of the more important property papers are shown in figures 21 and 22.

■ 129. REQUISITION (WHITE) (W. D., Q. M. C. FORM No. 400) (fig. 23).—See AR 35–6540, AR 700–10, OFSB 2–1, OFSB 2–2, TM 9–2011, TM 10–310, and pertinent Standard Nomenclature Lists.

a. Preparation.—(1) Separate requisitions are prepared for—

(*a*) Quantities of authorized supplies and equipment within established allowances.

(*b*) Quantities of authorized articles in excess of established allowances.

(*c*) Articles for which there is no established allowance.

(*d*) Each supply arm or service from which it is desired to draw property.

(*e*) Each source of supply for articles when the source of supply is known, as indicated in OFSB 2–1.

(*f*) Each group within the Standard Nomenclature Lists.

(2) Requisitions submitted under (1) above will show for each item the basis of authority for the issue and, when appropriate, the activity for which it is required.

(3) Requisitions submitted under (1)(*b*) and (*c*) above, will state fully the necessity for the articles requisitioned.

(4) All requisitions must be complete in every detail, to permit intelligent action by the approving authority.

(5) Requisitions will be prepared in seven copies, the seventh copy retained for file and the original and five copies forwarded. (See figs. 21 and 22.)

(6) All requisitions must be double spaced between items.

(7) The complete nomenclature as used in the SNL will be strictly adhered to. This will include piece mark or drawing number when available. (See par. 73.)

(8) Requisitions will be prepared for each quarter within the fiscal year. Special or emergency requisitions will normally be honored only under exceptional circumstances, and, when such a case arises, the reason for the requisition will be stated thereon.

b. Factors governing quantity of items requisitioned for.—(1) In the column "On hand and due," only the quantity of items actually on the stock record, plus the quantity approved on previous requisitions but not yet received, will be shown.

(2) In the column "Consumed," only the quantity which appears on the stock record as having been actually consumed during the previous quarter of the fiscal year will be shown. For this purpose, "Consumed" should include all items expended, lost, destroyed, or otherwise disposed of so as to be dropped from accountability. It should not include issues on memorandum receipts.

(3) In the column "Required," only the quantity requisitioned will be shown.

c. Authority for requisitioning.—A basis must be shown, on the face of the requisition form if there is sufficient room, otherwise on the reverse side of the form. The basis will normally consist of—

(1) Reference to Table of Allowances, Table of Basic Allowances, or Table of Organization.

(2) Strength of command.

(3) Number of items such as weapons, trucks, etc., on hand, if property being requisitioned is of this nature.

(4) A statement that the property is to be used for depot stockage, if such is the case.

d. Engine parts requisitions.—When ordering engine parts, it is necessary to place the following information on requisitions:

(1) Engine model (example, R975–EC2).

(2) Engine serial number, if possible.

(3) Piece mark or drawing number.

(4) Piece name.

(5) Quantity desired.
(6) Date of delivery desired.
(7) Destination desired for shipment.

■ 130. REQUISITION REGISTER (W. D., Q. M. C. FORM No. 479) (fig. 24).—See AR 35–6720.

a. Purpose.—The requisition register is used to keep a record of requisitions submitted and to provide a reference register of such requisitions in the suspense file. In general, it is a record of all requisitions received or issued by a supply office and of the action taken thereon.

b. Preparation.—(1) Separate registers are kept for all incoming requisitions and for all outgoing ones. The same form is used, but the column "Date received" is changed to read "Date forwarded."

(2) New requisition registers are started for each fiscal year.

(3) In the various columns of the form, the register shows the date received (or date forwarded), the requisition number, the office to which forwarded, and a brief description of the requisition. After the requisition has been acted upon and the supplies received, the "Completed" column of the requisition register is filled in with the date of completion.

(4) If the supplies requisitioned are received in several partial shipments, a separate entry should be made, in the "Completed" column, of the date of receipt of the various partial shipments.

■ 131. STOCK RECORD CARDS (Q. M. C. FORM No. 423) (fig. 26).—See AR 35–6520.

a. Purpose.—This form is used to maintain a uniform, complete, and accurate account of the status of property in the depot.

b. Records.—This record will be kept on W. D., Q. M. C. Form No. 423, or a similar approved form.

c. Grouping.—The cards will be grouped as listed in the Ordnance Catalog and Standard Nomenclature Lists.

d. Posting.—They will be posted from—

(1) Shipping tickets (debit and credit).
(2) Receiving reports.
(3) Expenditure reports.

NAME OF PROPERTY PAPER	Number of copies to be prepared	OFFICE														
		Consignee (Receiver)	Ordnance Officer ..... Army	Finance Officer ..... Army	Finance Officer of Consignee's Corps A.	Finance Officer of Consignor's Corps A.	Ord. Officer of Consignee's Corps A.	Ord. Officer of Consignor's Corps A.	Army Commander or Commanding Officer	Division or Post Commander	Consignor (Shipper)	Quartermaster	Chief of Ordnance	Disbursing Officer	Retain
Requisitions (Local)	3		2												1
Requisitions (Foreign)	7		6												1
Shipping Tickets (Local)	5	2[b]		2[a]		2[a]									1
Shipping Tickets (Foreign)	8-9	2[b]	1	1	2		1	1				1	1[c]		1
Receiving Report	4[d]												2[e]		1
O S & D Reports (Local)	2					1									1
O S & D Reports (Foreign)	3										2[i]				1
Report of Survey	4								3[g]	3[g]					1
I & I Report (Supervised)	4[f]								2[h]	2[h]					1
I & I Report (Unsupervised)	4[f]								2[h]	2[h]					1

a. To either one or the other. Only a total of five copies required for local shipments.
b. The original copy to be signed and returned to consignor. The retained copy to be destroyed upon receipt of the signed copy.
c. This copy is only necessary when the shipment contains items listed in paragraph 62, OFSB 2–1. In all other cases, a total of eight copies is necessary.
d. One copy to be sent to the office making contract with the civilian concern.
e. Only original copy to be signed.
f. One copy to be given to the inspector as a work sheet.
g. To either one or the other. Only a total of three copies really required, but a fourth copy is prepared and retained pending return of the approved copy.
h. To either one or the other.
i. The original to be returned when approved. The retained copy is then sent to the finance officer of the consignor's service command, Services of Supply.

FIGURE 21.—Property paper distribution chart (depot an integral part of the field army).

(4) Over, short, and damaged reports.
(5) Statements of charges.
(6) Reports of survey.
(7) Inventory and inspection reports.

NAME OF PROPERTY PAPER	Number of copies to be prepared	OFFICE										
		Consignee (Receiver)	Finance Officer of Consignee's Corps A.	Finance Officer of Consignor's Corps A.	Ordnance Officer of Consignee's Corps A.	Ordnance Officer of Consignor's Corps A.	Local Post Commander	Consignor (Shipper)	Quartermaster	Chief of Ordnance	Disbursing Officer	Retain
Requisitions (local)	3						2					1
Requisitions (Foreign)	6				5							1
Shipping Tickets (Local)	5	2_a		2								1
Shipping Tickets (Foreign)	7-8	2_a	2		1	1			3_b*	1_g		1
Receiving Report	4								1_c		2_d	1
O S & D Reports (Local)	2			1								1
O S & D Reports (Foreign)	3							2_e				1
Report of survey	4						3					1
I & I Report (Supervised)	4_f						2					1
I & I Report (Unsupervised)	4_f						2					1

a. The original copy to be signed and returned to consignor. The retained copy is then destroyed.
*b. These copies are only necessary when commercial transportation is required. The three copies are marked "memo. shipping ticket."
c. If the quartermaster is the contracting officer.
d. Only original copy to be signed.
e. The original to be returned. The retained copy is then sent to the finance officer of the consignor's corps area.
f. One copy to be given to the inspector as a work sheet.
g. This copy is only necessary when the shipment contains items listed in paragraph 62, OFSB 2–1.

FIGURE 22.—Property paper distribution chart (depot in zone of interior).

e. Dues-out, dues-in record.—The dues-out, dues-in record will be kept on the reverse side of the form.

WAR DEPARTMENT
Q.M.C. Form #400
Revised Apr. 6, 1931

REQUISITION

To: _____ No. of Sheets _____ Sheet No. _____

Requisition No. _____ Date _____ Period _____

SHIP TO _____

Requisitioned by (show signature, Rank, Organization, Destination. If different from "SHIP TO", include address)	Approved By:

Stock No.	Articles	Unit	On Hand and Due	Consumed	Required	Approved

(OBVERSE)

INSTRUCTIONS FOR PREPARATION OF REQUISITION

Space "TO" -- To show the approving office to which requisition is submitted.
Space "PERIOD" -- Show period for which the supplies are required.

* *

THIS SPACE FOR ACTION OF APPROVING OFFICER

(REVERSE)
(QMC Form #400)

WAR DEPARTMENT
Q.M.C. Form #401
Revised Apr. 6, 1931

REQUISITION
(Extra Sheet)

No. _____
Sheet No. ___

Stock No.	Articles	Unit	On Hand and Due	Consumed	Required	Approved

(Extra Sheet)

FIGURE 23.—Requisition.

■ 132. REPORT OF SURVEY (fig. 27).—See AR 35–6640 and paragraph 60*d*.

■ 133. STATEMENT OF CHARGES (fig. 28).—See paragraph 60*c*, AR 345–300, AR 35–6620, and AR 35–6640.

■ 134. INVENTORY AND INSPECTION REPORT (fig. 25).—See AR 20–35 and paragraph 60*d*.

■ 135. RECEIVING REPORT (W. D., Q. M. C. FORM NO. 431) (fig. 29 ① and ②).—See AR 35–6560.

a. General.—The receiving report acts as a valid voucher, and all property listed thereon will be posted to the stock record amount and other applicable records. (See par. 58*e*.)

b. Purpose.—The receiving report is the voucher by which the disbursing officer is assured that the property listed thereon has actually been received from an outside civilian concern by an authorized Government agency.

c. Use.—When property is received as the result of a local purchase, a receiving report will be prepared in quadruplicate. The original only is certified to by the officer who inspects and accepts the property for the Government. The disposition of the reports is as follows:

(1) The certified original and one copy are forwarded to the disbursing officer (finance officer) designated to make payment.

(2) One copy is retained and filed as a voucher to the stock record account.

(3) One copy is sent to the office making the purchase.

■ 136. SHIPPING TICKET (W. D., Q. M. C. Form No. 434) (fig. 30).—See AR 35–6560.

a. Purpose.—Primarily, the shipping ticket is used as an instrument for transferring accountability for public property from one accountable officer to another.

b. Uses.—(1) *Receiving supplies.*—Supplies received in response to a requisition are accompanied by two copies of the shipping ticket. One copy (original), properly receipted, is returned to the shipping officer. The other copy, properly receipted and the items posted to the stock record account, is filed as a voucher to the account.

War Department
Q.M.C. Form No. 479 (old No. 68)
Revised August 9, 1924

REQUISITION REGISTER

Station _____ Fiscal year _____

Date Received	Requisition Number	Routed to	Remarks	Completed

FIGURE 24.—Requisition Register (W. D., Q. M. C. Form No. 479).

Page _____ INVENTORY AND INSPECTION REPORT

(These articles are / are not listed as expensive)

Of _____ Property Pertaining to _____ (Station or organization)

Accountable Officer _____ Inspected at _____

On _____ By _____

Inventory by Responsible Officer				Report by the Inspector						
1	2	3	4	5	To Be Dropped			9	10	11
					6	To be Turned In				
						7	8			
Articles	Quantity	Total cost price. If not known, estimate it.	Is condition due to fair wear and tear? If not, attach copy of survey report.	To be continued in service	To be destroyed	For reclamation of component parts	To salvage	To be sold	To be turned in to depot or arsenal	Remarks If special inspector, state authority and date here.

FIGURE 25.—Inventory and Inspection Report.

Q.M.C. Form No. 423

STOCK RECORD CARD

Stock No.___

Maximum Stock_____
Minimum Stock_____
Location_____

Quantity per Package_____
Cubic Contents_____
Shipping Weight_____

Article_____
Description_____
Unit_____ Unit Cost_____

Date	Voucher No.	Received	Issued	Balance	Date	Voucher No.	Received	Issued	Balance

① Obverse.

RECORD OF DUES OUT AND DUES IN

DUES IN					MEMORANDA	DUES OUT		
Date	Order No.	Ordered	Received	Due in		Date	Authority	Quantity

② Reverse.

FIGURE 26.—Stock Record Card (W. D., Q. M. C. Form No. 423).

REPORT OF SURVEY

Property _____
(Class of prop., ord., med., etc.) (Stock record account and station)

Accountable officer _____ Date _____

Stock No.	Articles	Quantity	Total Cost	Disposition		
				Destroy	Salvage	Other
		Grand total				

Date and Circumstances

AFFIDAVIT	CERTIFICATE	
I do solemnly swear** **********	I certify that the * **********	Property Voucher No. ----------

W.D., A.G.O. Form No. 15

FIGURE 27.—Report of Survey (W. D., A. G. O. Form No. 15).

STATEMENT OF CHARGES against enlisted men for _____ Property
(Arm or Service)

On final statements of _____ or
on pay roll of _____ for month of _____, 19____

	Articles Charged					Total Value		Cause of Charge
Enter on this line size of articles								
Enter on this line price of articles						$	c	
A. Total charge						C. _____ (Name)		
B. Not replaced						_____ (Grade)		

I certify that the statements hereon are complete and correct, and that the charges have been made for the reasons stated.

_____
_____, Commanding

The articles listed as damaged, under the heading "Cause of charge" above, have been received by me for salvage.

.....

.....

Voucher to Stock Record Account of _____ *Debit *Credit Voucher No.

The accountable officer _____ (Name) (Grade)
(Organization or agency)
(Station)

W.D., A.G.O. Form No. 36

FIGURE 28.—Statement of Charges (W. D., A. G. O. Form No. 36).

War Department
Q.M.C. Form No. 431
Revised April 6, 1931

RECEIVING REPORT

Voucher No._____
Stock Record Account
No. Sheets_____
Sheet No._____

Received_____ (Date) by_____ (Consignee)

Received from_____ (Consignor) (Location)

Delivered by / Delivered to _____ Car No._____ Seal No._____ P.O. or Contract No._____

How purchased: F.O.B.— Origin Destination (Delete one)

Govt. B/L No._____ Date_____ Contracting office_____

F.O.B. point_____ (Stated in contract) Shipping point_____ (Shown on B/L) P/A No._____

Shipped to_____

Shipment No._____ {Final / Partial | Payment by Finance Officer at_____

Articles Inspected, Accepted, and Received

Number Pkgs.	Quantity	Stock No.	Articles	Unit	Unit Cost	Total Cost

I certify that the articles listed on this report were inspected and accepted by me, and that they conform to the contract requirements; that the articles listed on the back of this report were rejected for the reasons stated, and that the foregoing report is correct.

_____ (Inspector's signature)

Date_____ _____ (Rank of inspector)

Approved: Date_____

_____ (Signature of officer in charge of inspection at receiving point indicating approval of inspection)

_____ (Rank)

I certify that the articles listed on this report were received by me in the quantity and condition stated, and that the same have been taken up on the stock record cards of this station.

_____ (Signature of accountable officer)

_____ (Rank and designation)

Date_____

Indicate Distribution by Check Opposite Proper Designation

1. Voucher to Stock Record Account. 2. Finance Officer Who Pays Account. 3. File with Purchase Board.

① Obverse.

FIGURE 29.—Receiving Report (W. D., Q. M. C. Form No. 431).

REPORT OF REJECTIONS

Articles	Quantity	Reason for Rejection and Disposition

For Subsistence Commodities —— Question 1 to 10, inclusive, must be filled in by the Inspector.

1. Grade of product _____
2. Condition _____
3. Container: Dom. _____; Ex. _____
4. Description of container _____
5. Condition of container _____
6. Condition of car _____
7. Result of special inspection _____
8. Samples drawn _____
9. Samples forwarded to _____
10. Inspection made at _____

Receiving clerk _____ Stowed by _____

(Station) (Date)

Entry on Stock Card
Postings
By _____
Date _____

Paid on Voucher No. ____, money accounts of

(Name and Rank of Finance Officer)

② Reverse.

FIGURE 29.—Receiving Report (W. D., Q. M. C. Form No. 431)—Continued.

War Department
Q. M. C. Form No. 434
Revised Jan. 3, 1935

SHIPPING TICKET

Consignor's Vou. No._____
Consignee's Vou. No._____
Number of Sheets_____

CONSIGNOR:

DATE SHIPPED OR DELIVERED

Ship To

Authority or Req. No.

Transportation cost of $_____ Chargeable To
P/A No._____

Quantity		Stock No.	Article	Unit	Unit Cost	Total Cost
Ordered	Shipped					

Articles Listed in Column "Ordered" Have Been Received Unless Otherwise Noted in Column "Shipped."

_____ (Name) _____ (Rank) _____ (Organization)

War Department
Q. M. C. Form No. 435
Revised April 6, 1931

SHIPPING TICKET
(Extra Sheet)

Sheet No._____
Consignor's Vou._____

CONSIGNOR:

Quantity		Stock No.	Article	Unit	Unit Cost	Total Cost
Ordered	Shipped					

FIGURE 30.—Shipping Ticket (W. D., Q. M. C. Form No. 434).

(2) *Issuing expendable supplies.*—When expendable property has been issued for the repair and maintenance of ordnance matériel, all property so issued during the month is listed on a shipping ticket and dropped from the stock record and accountability. The shipping ticket will have its items grouped according to the Ordnance Catalog and will show:

(*a*) Voucher number.
(*b*) Articles issued.
(*c*) Unit cost.
(*d*) Total cost for each group.
(*e*) Grand total cost for all groups listed thereon.

The accountable officer will make on this voucher a certificate to the effect that the supplies entered thereon have been expended in connection with the repair and maintenance of ordnance matériel. When expendable property is issued to organizations on requisition, this same certificate is placed on the requisition, which then becomes a voucher and is used in lieu of a shipping ticket. (See AR 35–6560.)

(3) *Shipment of property.*—As explained in *a* above, the shipping ticket is used as the instrument to transfer supplies from one accountable officer to another. Sufficient copies will be prepared to permit a proper distribution. (See figs. 21 and 22.)

(4) *Procedure.*—See paragraphs 53 to 57, inclusive, and 58.

■ 137. OVER, SHORT, AND DAMAGED REPORT (W. D., Q. M. C. FORM NO. 445) (fig. 31).—See AR 35–6640.

a. General.—(1) In the event of loss or damage in shipment and when the common carrier, if any, refuses to accept the full financial responsibility, the over, short, and damaged report will be prepared in triplicate by the receiving officer and disposed of as follows (see figs. 21 and 22):

(*a*) The original and one copy are sent to the shipping officer, who will retain the copy and return the original, indicating his approval or disapproval thereon. If he disapproves the report, he will submit evidence in the form of affidavits or certificates to show the reason for his disapproval.

War Department
Q.M.C. Form No. 445
Revised Oct. 21, 1935

Voucher No. _____
Stock Record Account

OVER, SHORT, AND DAMAGED REPORT

Pur. Cont. No. _____ Pur. Order No. _____ Ship. Ticket No. _____ Date _____
Shipped by _____ From _____
Shipped to _____ At _____
Inspected by _____ Rec. Report No. _____ Date _____
Received by _____ Rec. Report No. _____ Date _____
Car No. _____ Car seal Nos.: Original _____ Arrival _____
Were car seals broken? _____ Was discrepancy notation made on B/L? _____
Shipment made by truck No. _____ Mail _____ Com. B/L _____ Gov't B/L _____
Total packages billed _____ Numbered from _____ to _____
Total packages received _____ Numbers of missing packages _____
Number of damaged packages _____ Packages referred to below _____

Stock No.	Article	Quantity					
		Unit	Billed	Over	Short	Damaged	Accepted

Report By _____ Approved By _____

(Rank) (Rank)

(Date) (Date)

Use Other Side for Special Notations and Remarks

FIGURE 31.—Over, Short, and Damaged Report (W. D., Q. M. C. Form No. 445)

(*b*) The other copy of the report is retained by the officer who initiated the report as a file copy pending return of the original.

(2) In the case of property found on the post, the property will be picked up on the accountable officer's stock record account by means of an over, short, and damaged report. The property may be picked up by listing it as "over" on the report and having the report approved by the post commander. Any property for which an officer does not have accountability will be turned over by him to the officer who does maintain the stock record for that property. The report will be prepared in triplicate, one copy being retained, one copy being sent to the auditor of the service command, Services of Supply, and the original being sent to the post commander for his approval and returned for use as a valid voucher to authorize the picking up of the property on the stock record account.

(3) In the case of a change in nomenclature, the report will be prepared in triplicate, the distribution being the same as in (2) above. The property incorrectly listed on the stock record account will be listed on the report as "short", and will be listed under the correct nomenclature as "over."

b. Purpose.—This form is used whenever there is any discrepancy in the quantity or condition of property received in shipment from another agency, and when the common carrier, if any, will not accept the full financial responsibility in the event of a shortage or damage. This form is also used for the purpose of picking up any property found on the post, adjusting discrepancies found on inventory, and making necessary changes in the nomenclature of property.

■ 138. MEMORANDUM RECEIPT (W. D., Q. M. C. Form No. 487) (fig. 32).—See AR 35–6520.

a. General.—(1) All nonexpendable property issued to units is accounted for on memorandum receipts.

(2) A complete record of property issued on memorandum receipts will be maintained by every officer accountable for property.

b. Purpose.—The purpose of the memorandum receipt is to provide an accurate record of property loaned to each individual, organization, or utility.

c. Preparation.—On the issue of property, the memorandum receipt is prepared in triplicate. The original and one copy are given to the unit commander receiving the property. The triplicate is retained in the depot office files. The original is signed by the unit commander and filed in the depot office files, replacing the triplicate.

d. Posting.—Whenever a memorandum receipt, debit or credit, is issued, it will be posted to—

(1) Abstract of Memorandum Receipts (Q. M. C. Form No. 488). (See fig. 33.)

(2) Serial Number Card (OFM Form 408) if it is a serially numbered item. (See fig. 41.)

■ 139. ACCOUNT OF PROPERTY ON MEMORANDUM RECEIPT (ABSTRACT OF MEMORANDUM RECEIPTS) (W. D., Q. M. C. FORM NO. 488) (fig. 33).—See AR 35–6520.

a. General.—(1) This form will be posted when the memorandum receipt is made out.

(2) The general account will show the total quantity of each article that has been issued to individuals, organizations, etc.

(3) This form is seldom used in large depots, etc.; instead, a separate stock record account is kept for memorandum receipt property. (See pars. 49 to 53, inclusive.)

b. Purpose.—(1) To keep at all times a record of the quantities of each item on memorandum receipt. All items on memorandum receipt are abstracted by item on this form.

(2) To provide a current abstract of all individual accounts, so that at all times information will be accessible as to the stock on hand available for issue, thus indicating quantities that should be replenished.

■ 140. VOUCHER REGISTER TO STOCK ACCOUNT (W. D., Q. M. C. FORM NO. 480) (fig. 35).—See AR 35–6700.

a. General.—(1) The various papers (requisitions, shipping tickets, receiving reports, reports of survey, inventory and inspection reports, etc.) on which property is taken up or dropped from the stock record account will be numbered con-

secutively, in a single series, a new series being started at the beginning of each fiscal year.

(2) The voucher number is placed on the form in the space provided, or, if none is provided, in some conspicuous place on the form, usually at the bottom.

(3) After the voucher has been recorded in the voucher register, it is posted to the stock record account and placed in the voucher file.

b. Purpose.—This form is used for keeping a record of the serial numbers assigned to vouchers to the stock record account and to provide a reference register of such vouchers.

■ 141. TALLY SHEET, INCOMING (OFM FORM 410) (fig. 36).—Tally-ins are worksheets, prepared by the storehouse office personnel from packing lists, shipping tickets, invoices, and physical inventory, and used to check items actually received against amounts recorded on shipping tickets. (See par. 81 for tally-in procedure.)

■ 142. TALLY-SHEET, OUTGOING (OFM FORM 410) (Fig. 36).—This form will be prepared by the storehouse office personnel from incoming requests for property which is to be issued or loaded by the depot company, and will be filed as a record of the property shipped or issued. The tally-out is the hand receipt which the supplying agency obtains at the time of issue, before the regular shipping ticket is prepared. The party receiving the articles checks over the property and signs for it as received. See paragraphs 53 to 57, inclusive, for procedure governing shipments from a depot.

■ 143. PURCHASE REQUESTS (fig. 37 and par. 59).—The purchase request is the form used by an agency requiring supplies to request a purchasing and contracting officer to purchase the supplies.

a. Each agency or individual will number purchase requests serially. The number will be placed on the first line in the upper right-hand corner and will include an identification mark, such as MT–401 (Motor Transport Purchase Request No. 401), or POO–36 (Post Ordnance Officer Purchase Request No. 36). On the line "Requested by" will be shown the designation of the agency making the request. In the

MEMORANDUM RECEIPT

*Credit *Debit Slip

*Issued to
*Turned in by

Place Date 19

Property

(Name of Supply Branch)

No.	Stock No.	Articles

Received the above-named articles.

(Signature with rank and org.)

No.

Official Designation

QMC Form 487

*Strike out words not applicable.

FIGURE 32.—Memorandum Receipt (W. D., Q. M. C. Form No. 487).

Account of Property
(Q.M., Ord., etc., or Organization Equipment)

ON MEMORANDUM RECEIPT

(Post, Station, etc., or Organization)

Property Officer

Note: One line may be used for individuals. A block of three lines will be used for each organization. (See par. 5c, AR 35-6520.)

Organization or Individual	Balance Last Settlement	Debit	Credit	Bal.

Article

Unit

Stock No.

QMC Form 488

FIGURE 33.—Account of Property on Memorandum Receipt (W.D., Q. M. C. Form No. 488).

OFM Form 411

Whse Div Sect Shelf Bin

Group

No. Unit

Nomenclature:

Date	Amount Rec'd	Amount Issued	Bal.	Charge to	Issue Clerk

FIGURE 34.—Locator Card (OFM Form 411).

War Department
Q.M.C. Form 480
Revised Sept. 15, 1922

REGISTER OF

Debit / Credit } Vouchers to Stock Account of _____

Serial No.	Brief Description of Voucher	Serial No.	Brief Description of Voucher

FIGURE 35.—Voucher Register (W. D., Q. M. C. Form No. 480).

OFM Form 410

TALLY SHEET
*IN *OUT

Tally No. _____
Req. No. _____
S.T. No. _____
Sheet No. ____ of ____ Sheets

Station _____

Storehouse# _____ Date _____

*Consignor
*Consignee _____

*Car No.
*Truck No. _____

Car Seals No. _____ Carrier _____ B/L No. _____
(Rail, Truck, Boat, Mail, Parcel Post)

(*Strike out words not applicable)

QUANTITY		ITEM	SNL	REMARKS
Ordered	*Rec'd. *Shipped			

Checker _____ Date *Received *Issued _____

Consignee _____
Name Rank Org.

FIGURE 36.—Tally Sheet (OFM Form 410).

main body, in the column marked "Item No.," will be entered the SNL Group No., piece mark, or other identifying mark. In the column "Article" will be entered the nomenclature of the item, along with any further information which would aid the purchasing officer in setting up specifications for the supplies. The proper procurement authority will also be given here, as well as the requisitioner's estimate of the cost of the items.

b. In the case of a subordinate agency making the request through a higher echelon, the latter, in the space provided therefor, will indicate his approval or disapproval and whether or not the material called for is in stock.

■ 144. SHIPPING ORDER (OO FORM 2997) (fig. 38).—See Ordnance Provision System Regulation, section II, paragraph 14.

a. General.—(1) The preparation of this form is of no particular concern to the depot and need not be explained here.

(2) This form is used in ordering issues in three general classes: normal replenishment issues made under specific authority, issues which require reimbursement, and issues to insular possessions.

b. Purpose.—The shipping order form is designed for the exclusive use of the Chief of the Field Service in ordering material sent from depots to field organizations or depots located in the insular possessions, and in transferring field service stores to manufacturing depots or arsenals for use in manufacturing projects. It may also be used in shipments from manufacturers to depots.

■ 145. REPORT OF PRINCIPAL ITEMS OF ORDNANCE SUPPLY (OO FORM 87) (fig. 40).—See OFSB1–6.

a. General.—This form is submitted in two sections: OO Form 87, General Supplies, and OO Form 87, Ammunition, the former being filed as of November 1, and the latter as of December 31, each year.

(1) The general supply form, the only one normally used by the depot company, will indicate the number of major items on hand, in storage, and in the hands of troops.

WAR DEPARTMENT
Quartermaster
PURCHASE REQUEST NUMBER_____

Requested by_____ Date_____

For Delivery to_____ Not later than_____

Item No.*	Quantity	Unit	Article	Procurement Authority

Estimated Cost $_____

Funds Obligated:

I certify that these articles are required for immediate use in the _____ Department and cannot be obtained from local stock.

Recommended for purchase, material not being available_____

Approved for purchase:

_____
Purchasing Officer.

1st Ind.

From Purchasing Officer to_____ Date_____

Action being taken on above request as follows:

PURCHASING OFFICER

FIGURE 37.—Purchase Request.

O.O. Form 2997

WAR DEPARTMENT
Office of the Chief of Ordnance
Washington, D.C.

SHIPPING ORDER

No.

To: Date

Ship to:

Routing: Basis:

Quantity	Item

Cost of transportation chargeable to:

By order of the Chief of Ordnance:

Ord. Dept., Ass't.

FIGURE 38.—Shipping Order (OO Form 2997).

7004-A

Ordnance Department, U.S. Army
Field Service
TRANSFER ORDER

Washington, D.C.

To Commanding Officer
Ship to Commanding Officer
Authority

Transfer No.

Quantity	Articles Required

Signed: Approved:

(Group Head) (C.O.P.O.)

NOTE: The consignee should address all inquiries concerning the date of shipment of material covered by this Transfer Order to the Consignor.

FIGURE 39.—Transfer Order.

O.O. Form No. 87 REPORT OF THE PRINCIPAL ITEMS OF ORDNANCE SUPPLY

Pertaining to the _____, as of November 1, 19___

S.N.L. No.	Item Nomenclature	Item No.	Regular Army		National Guard	Organized Reserves	R.O.T.C.	Other Institutions	Total	
			With Troops	In Post Storage						
	GROUP A									
A-26	Cart, M2	1								1
A-26	Cart, M2A1	2								2
A-8	Cart, ammu., machine gun, M1917	3								3
A-8	Cart, ammu., machine gun, M1917A1	4								4
A-8	Cart, gun, machine, M1917	5								5
		6								6
A-42	Cart, hand, M3A4	7								7
A-42	Cart, hand, M3	8								8
A-42	Cart, hand, M4A1	9								9
A-42	Cart, hand, M4	10								10
A-42	Cart, hand, M5A1	11								11
A-42	Cart, hand, M5	12								12
A-42	Cart, hand, M6A1	13								13
A-42	Cart, hand, M6	14								14
		15								15
A-30	Mount, wheeled, machine gun, M1	16								16
		17								17
		18								18
A-5	Gun, mach., cal. .30 Browning, M1917	19								19

Sample Sheet

(Part of Sheet 1 of 27 sheets)

FIGURE 40.—Report of the Principal Items of Ordnance Supply (OO Form No. 87).

(*a*) Serial numbers of all major items, indicated in paragraph 61 of OFSB 2–1, as changed, will be furnished at the time the report is submitted.

(*b*) Any and all differences in amounts reported yearly will be adequately explained.

(*c*) This form will be submitted by the depot commander to the ordnance officer of the service command, Services of Supply, who will consolidate all reports from all the various depots and stations and submit the consolidated report to the Chief of Ordnance.

(2) The ammunition form as mentioned above will not normally be submitted by a depot company unless through unusual circumstances it is required to handle ammunition for the area in which it is stationed.

b. Purpose.—In order that a comprehensive record of the status and condition of all ordnance property may be available in the office of the Chief of Ordnance, periodic reports are required. One of the most important of these is rendered annually on OO Form No. 87. These reports indicate the location and condition of all ordnance property. This information, when consolidated, is used for war planning, procurement planning, budget estimates, and staff studies, and is the basis for reports of stocks as required by AR 45–80.

■ 146. LOCATOR CARD (OFM FORM 411) (see fig. 34 and par. 93*a*).—*a. Purpose.*—A locator card is prepared by the storehouse office personnel for each item stored in the depot. The cards are kept in the locator card file in the storehouse office, and any movement of an item is recorded on its card by the storehouse office personnel. The locator card file will always indicate the true balance of items on hand.

b. Preparation.—The following procedure should be used in preparing the locator card:

(1) On the first line should be entered the designations of the warehouse, division, section, shelf, and bin in which the item is kept, these designations being in accordance with those on the stock record card.

(2) The SNL designation should be entered opposite the word "Group."

ITEM _____ SERIAL # _____
(SNL NOMENCLATURE)
MODEL # _____ MFR. _____

RECEIVED FROM	DATE	VOU. NO.

REMARKS:

ISSUED TO	M/R #	DATE	TURNED IN

OFM FORM 408

① Obverse.

ISSUED TO	DATE	TURNED IN

RECORD OF REPAIRS & ALTERATIONS:

② Reverse.

FIGURE 41.—Serial Number Record Card (OFM Form 408).

VEHICLE _____ U. S. REG. # _____
(SNL Nomenclature)
ENGINE # _____ ORD. # _____ MFR. # _____

RECEIVED FROM	DATE	VOU. NO.
REMARKS:		

ISSUED TO	M/R #	DATE	TURNED IN

OFM Form 409

① Obverse.

ISSUED TO	DATE	TURNED IN

RECORD OF REPAIRS & ALTERATIONS:

② Reverse.

FIGURE 42.—Vehicle Serial Number Record Card (OFM Form 409).

(3) In the space headed "No." should be entered the piece mark or drawing number of the item.

(4) In the space headed "Unit" should be entered the commercial unit used for the item, such as *each, pounds, feet, etc.*

(5) The correct nomeclature of the item should be entered in the space headed "Nomenclature."

(6) When an issue is made, the storehouse office records, under the proper headings, the date of issue, the quantity issued, the tally-out "charge to" number, and the initials of the recorder; the quantity issued is subtracted from the previous balance on hand and the new balance entered on the same line of the new entry.

(7) When a quantity of an item is received, the date, quantity received, the tally-in ("Charge to") number or receiving report number, and the initials of the recorder are entered. The quantity received should be added to the previous balance, and the sum entered on the same line of the new entry.

(8) When an item is inventoried the locator card balance and the inventory balance are verified. The date and quantity actually on hand are entered in red in the appropriate columns on the line below the last entry on the locator card. The initials of the person making the inventory are entered in the column headed "Charge to."

(9) When all spaces on the front and back of a locator card have been filled by entries, a new card will be prepared on which the date and quantity on hand will be entered in the spaces provided on the new form. The old card will be sent to stock record section, which will compare the balance on hand with the stock record card. If any discrepancy exists, it will be investigated and the necessary corrections made. The locator card should then be destroyed.

■ 147. SERIAL AND LOT NUMBER RECORD CARDS (see figs. 41 and 42).—See AR 45–80.

a. General.—(1) AR 45–80 requires that ordnance officers, depot, post, camp, or station, keep serial number cards. Although there is no specified form approved for this record, the depot may use forms OFM Form 408 (fig. 41) for vehicles

and OFM Form 409 (fig. 42) for other major items. In addition to the information shown on the sample forms, the following should appear thereon:

(*a*) Standard nomenclature.

(*b*) Location (present).

(c) Condition when received.

(*d*) Record of all inspections with date and condition at time of inspection.

(*e*) Record of all modifications.

(2) The serial number record cards are placed in a file of issued items at the time the item concerned leaves the hands of the supplying agency, after the person to whom the article was issued and the voucher used in making the transfer have been noted thereon.

b. Ammunition lot numbers.—In addition to the usual stock record of ammunition on hand, lot records will be maintained of each lot of ammunition on hand. This record may be maintained on W. D., Q. M. C. Form No. 424 and should consist of one card for each different lot. Each transaction involving a lot is posted to the lot record card in the same manner that postings are made to stock record cards.

■ 148. TRANSFER ORDER (OO FORM 7004) (fig. 39).—The transfer order form is used by the chief of field service for ordering the transferring of supplies from one depot to another. It involves only the movement of supplies between depots and does not authorize any issues to troops, as does the shipping order, discussed in paragraph 144. The preparation or distribution of the form is of no particular interest to the depot. Any further information desired on this form may be obtained from section II, paragraph 14, Ordnance Provision System Regulations.

CHAPTER 11

STORAGE AND PRESERVATION OF ORDNANCE MATÉRIEL

		Paragraphs
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III.	Preservative materials	155–159
IV.	Warehousing	160–172
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SECTION I

GENERAL

■ 149. GENERAL.—This chapter deals with the proper storage of raw materials, manufactured articles, replacement parts, means of transportation, unit assemblages, and units of equipment stored and issued by the Ordnance Department. For additional information on this subject see TM 10–250, and chapter 12 of this manual.

■ 150. SCOPE.—This chapter deals with the operation of storage facilities as applied to ordnance matériel. It covers the care of supplies and equipment, and their orderly arrangement in warehouses or other places of storage to expedite receipts and issues. The details of storage procedure are dependent to a large degree on the kind and amount of supplies and equipment and on local storage facilities. Each situation constitutes a separate problem and must be worked out locally in detail in accordance with the fundamentals outlined herein.

■ 151. MAINTENANCE IN STORAGE.—Maintenance in storage includes the maneuvering, exercising, operating, testing, and special inspections required for the proper preservation of the matériel. The effectiveness of the procedure followed must be checked by percentage inspections. Rearrangements in storage and application of paints, oil, grease, and rust-

preventive compound will be made where necessary to maintain the matériel in proper storage condition.

■ 152. RIGGING.—The depot personnel will frequently be required to move heavy and bulky objects, and the use of rigging and special tackle may often be necessary. Complete and detailed information on this subject is available in chapter 9, FM 5–10.

■ 153. RAIL MOVEMENTS.—For detailed information concerning dimensions and capacities of rail cars, maximum bulk-loading for freight cars, railway car space requirements for heavy ordnance matériel, and rules governing the loading of mechanized and motorized army equipment on open top cars, see chapter 2, FM 101–10 and ordnance storage and shipment charts.

SECTION II

STORAGE PRECAUTIONS

■ 154. STORAGE OF MATÉRIEL REQUIRING SPECIAL CONSIDERATIONS.—In warehouse activities many articles placed in storage, because of their nature, require special considerations. The effect of light, heat, moisture, cold, or other conditions on supplies to be stored must always be taken into account. The following special considerations are useful in storing the articles listed:

a. Acetylene cylinders.—Cylinders of acetylene and other combustible gases should be protected against excessive rise of temperature and should not be exposed to continuous dampness. Cylinders may be stored in the open but should be protected in such cases against extremes of weather. During winter, cylinders stored in the open should be protected against accumulation of ice and snow. In summer, cylinders stored in the open should be screened from the continuous direct rays of the sun. They should always be separated as far as possible from oxygen cylinders and from highly inflammable substances, such as oil, gasoline, waste, etc. They should not be stored near gangways or in locations where heavy moving objects may strike or fall on them. The valves should be well greased at all times. The cylinders should be

painted frequently to prevent corrosion and possible leakage.

b. Batteries, storage.—See paragraph 179*a*(2)(*b*).

c. Canvas.—This material, oiled or waterproofed, is stowed in a cool, dry place, and a good circulation of air is allowed. It is located within easy reach in case of fire.

d. Charts, instruction.—Charts should be stowed in a dry place and protected from moisture, dust, dirt, and excessive sunlight.

e. Cooperage.—Wooden containers, such as barrels, crates, cases, etc., made of staves, hoops, headings, or boards, are kept dry at all times to avoid warping.

f. Cordage.—All twines, cord, rope, and cable made of textile material must be kept in a dry place to avoid rotting.

g. Drills.—These are wrapped in oiled paper and kept in a dry place.

h. Electrical equipment.—All small parts of electrical equipment should be wrapped in oiled, greased, or otherwise waterproofed paper and stored in a dry place. Any rubber electrical cord connected to the equipment should be wiped clean of all oil and grease before storage.

i. Files, metal.—These are stored in such a manner as to prevent contact with each other and are kept dry.

j. Fire-control equipment.—See paragraph 181*b*.

k. Gaskets, paper.—Thin paper gaskets and paper gasket material are kept impregnated with light oil to prevent shrinkage and drying.

l. Gun slings.—The following method of reconditioning and storing leather gun slings will preserve them and retard the formation of verdigris:

(1) Eliminate all defective parts, including leather which is dead.

(2) Remove verdigris from metal parts and from the junction of the metal part with the strap. This is best accomplished by the use of a wire brush of convenient size. Protect leather adjacent to the metal parts from the scratching effect of the wire brush by the use of a sheet metal guard.

(3) Wash leather with water and castile soap, using a bristle brush to remove dirt.

(4) Roll and recrease leather. These are important operations and aid materially in the preservation of the leather.

(5) Apply a light coat of neat's-foot oil to the leather with a soft cloth, taking care not to allow the oil to come in contact with the metal parts.

(6) Dip ends of sling to which metal parts are attached in melted paraffin, so that the paraffin will extend to a distance of about ¼ inch beyond the junction of the metal parts with the strap. Tie gun slings in bundles and pack in paper-lined wooden cases.

m. Hardware, light.—Shelves, racks, or pegs are utilized for storing such loose articles as saws, hammers, and other hand tools. Securely locked cabinets are used for the storing of smaller and more valuable articles. Such small loose articles as bolts, nuts, parts, etc., are stored in bins. Racks are provided for pipes, rods, and other articles of similar character. The use of racks conserves storage space and tends to prevent the warping or bending of the articles so stored.

n. Hose, fire.—All water is drained from the hose before it is stored. The hose is stretched once every 3 months and water run through it. If it is cotton-covered, the covering is dried before stowing. The hose is kept in a cool, dry place; to prevent kinks, it is coiled rather than folded. It is kept free from oil.

o. Hose, rubber.—This is stowed in a cool, dark place and kept free from all grease and oil.

p. Iron rods, pipes, and sheets.—These are stored in racks and protected from moisture.

q. Lampblack.—This is kept carefully wrapped and confined to prevent it from sifting through package and damaging other goods.

r. Leather.—This is stowed in a cool, dry place and inspected periodically, since it will be subject to mold and dryness. (See *l* above.)

s. Moth balls or naphthalene.—These are kept in airtight containers.

t. Nails and spikes.—Kegs containing nails and spikes are stowed on their sides with the heads facing the aisles so that various sizes may be easily located. A temporary ramp may be provided for the stowing of kegs containing heavy material such as nails, spikes, etc. The kegs are then rolled

up the ramp, thus saving a direct lift. Care is to be taken not to overload the floor.

u. Oils.—Where possible these are stored in an oil house provided for that purpose. If an oil house is not provided, special storerooms are set aside for this purpose. Oils will be protected from sparks and open flames. Care must be exercised to prevent leakage. Linseed oil is not stored on sawdust, as spontaneous ignition may result. All oils are isolated from rags, paper, etc.

v. Optical instruments.—Optical instruments are stored in a locked storeroom, and precautions taken to keep all optical parts dry and free from oil and grease. (See par. 181*b*.)

w. Oxygen cylinders.—These cylinders should be stored in a dry place. They should be protected from injury by objects striking them or falling on them. They should be well-separated from all combustible gas cylinders, papers, rags, waste, etc. Oxygen is a dangerous fire hazard.

x. Paints.—Where possible, these are stored in a separate building provided for the purpose, usually together with oils. If a separate building is not provided, special storerooms are set aside. Care must be exercised to prevent leakage. All paints in drums are stored under cover. Water should not be allowed to stand on the drums.

y. Recoil mechanisms.—See paragraph 181*a*.

z. Red lead.—This is issued and used as soon as practicable, and never held in stock longer than 6 months. See paragraph 58, TM 9–850 for details concerning the mixing of red lead.

aa. Rubber.—This is stored away from light and heat and kept from contact with metal, oil, or grease.

ab. Shellac.—This is stored together with paints. Clear shellac darkens if stored in metal containers. Colored shellac is not appreciably affected by metal containers. Either type keeps in earthenware or glass containers.

ac. Sighting equipment.—See paragraph 181*b*.

ad. Small arms.—See paragraph 180.

ae. Tires and tubes.—See paragraph 179*a*(2)(*c*).

af. Tools.—These are kept covered with a film of oil or wrapped in oiled paper and are inspected frequently to see that they are free from rust. Tools that have been used are thoroughly cleaned before storing, with a wire brush

or abrasive paper to remove rust, and all parts not covered with paint are slushed with a heavy oil.

ag. Tubing, copper.—This should be hung on pegs on the wall in locations where it may not be struck by heavy moving objects.

ah. Varnish.—This is stored together with paints, the same precautions being used.

ai. Wagons, carts, and other animal-drawn vehicles.—When received for storage, these are knocked down for economy of space before storing. Wheels are stored on edge, preferably in a rack. Beds and sideboards are laid flat, care being used to prevent warping. Poles, doubletrees, singletrees, reach poles, and axles may be placed in racks or stacked. In stacking any of these, care is taken to prevent warping of poles, reach poles, etc., and damage to metal parts caused by contact with other parts.

aj. Unserviceable items.—Unserviceable items should never be placed in storage unless it is impossible to get them repaired.

ak. Watches.—These are handled with special care and stored in the warehouse safe, or are wrapped in oiled paper and placed in a locked storeroom. Watches should be protected from extremes of heat and cold.

al. Webbing.—Webbing is sprinkled with flake naphthalene and stored in a dry place provided with good circulation. It should be inspected periodically for signs of moth activity and for repairing.

am. Wire.—This is stored in a dry place.

SECTION III

PRESERVATIVE MATERIALS

■ 155. GENERAL.—This section covers the subject of preservative materials in a general way. For more detailed and complete information on rust, corrosion, inspection for corrosion, rust preventives, preparation of metal surfaces for slushing, method of slushing, inspection of grease films, storage conditions, etc., see TM 9–850.

■ 156. PRESERVATIVE MATERIALS FOR LEATHER GOODS.—*a. Materials.*—Because of the value of leather equipment and its rapid deterioration if neglected, the proper care of this material is of utmost importance. Two agents are essential to the proper care of leather equipment—a cleaning agent and an oiling agent. The cleaning agent is white castile soap; the oiling agents are neat's-foot oil, neat's-foot substitute, saddle soap, and harness soap.

(1) Castile soap has coconut oil as one of its ingredients. This yields a free lathering soap with no harmful effect on leather. It removes dirt, sweat, and other matter which normally accumulate in the surface pores of the leather.

(2) Neat's-foot oil has been found by long experience to be the most satisfactory oiling agent for leather. It penetrates the pores and saturates the fibers, making them pliable and elastic. Dry leather is brittle; leather excessively oiled soils the clothing and accumulates dirt. Leather treated with sufficient oil to be soft and pliable, yet dry and clean, is desired.

b. Preserving russet leather.—(1) Nearly all ordnance leather equipment is russet leather. When it becomes soiled, it should be cleaned by carefully removing all hardened grease with a sliver of wood (not glass or sharp metal) and washing with a sponge saturated with a heavy lather of castile soap and clean tepid water. Rinse thoroughly and rub vigorously with a dry cloth until the leather is dry. Straps and other articles of unvarnished harness leather which become dry and brittle should be cleaned as described and, while the leather is still slightly moist, should be given an exceedingly light coat of neat's-foot oil by rubbing with a soft cloth moistened, though not saturated with the oil. (In cold weather, the oil may be heated lukewarm (never hot) before using.) The article, after being oiled, should be hung in a warm place. Shellacked sole leather cases do not require oiling.

(2) Russet leather, as manufactured, is stuffed with a dubbing of cod liver oil and tallow, which is absorbed enough to improve the quality of the leather and prolong its life, but not enough, if the equipment is properly cared for, to leave oil on the surface to soil the clothing. It should be noted that in the washing and oiling described above, if

more than a light coat of oil is given, the leather will be greatly darkened and will quickly soil the clothing. No method of cleaning will then restore the original light color of the leather nor remove stains from it.

c. Preserving black leather.—Articles of black leather may be cleaned with castile soap, rinsed, and, when nearly dry, lightly sponged with a mixture of one teaspoonful of lampblack in one pint of neat's-foot oil, the mixture first having been stirred until it has a smooth black appearance. The mixture should then be well rubbed into the leather. Leather equipment which has become wet should be dried in the shade. Wet leather exposed to the sun or to too high a heat from a stove or radiator becomes hard and brittle.

d. Inspecting leather equipment in storage.—Leather equipment should be inspected periodically for dampness, mold, excessive oil, and excessive dryness. If any of these conditions exist, they should be corrected (see TM 10–250) before the equipment is returned to storage.

■ 157. PAINT AND RELATED MATERIALS.—All metals must be protected against corrosion in storage. The protective coatings provided for this material are of two general types: paints or varnish, and rust-preventive compounds. The former is covered in this paragraph; the latter in paragraph 158. For more detailed information on this subject see TM 9–850.

a. Paints and enamels and their application.—Paints and enamels are used for preservation against rust, deterioration, and decay of metals and woods, as well as to improve the appearance and as an aid in camouflaging matériel. Some paints and enamels adhere to metal surfaces better than others, the liquids of the first or base coat seeming to penetrate very minute depressions or pits in the metal, or to etch themselves into the surface, and thus form a good bond for following coats. Paint and enamel stored in large containers should be well stirred before transfer to smaller containers. Ordnance matériel is well painted before issue, and one maintenance coat per year should be ample for protection.

(1) *Red lead.*—Red lead paint is used as a base coat on iron and steel nonbearing parts of ordnance matériel. It

has the effect of slightly etching the surface and thus secures a good bond for succeeding coats. It does not keep well and must be mixed as needed.

(2) *Enamel, red, water-resisting.*—Used around oil holes and fittings for lubricants to attract attention and furnish ready identification.

(3) *Enamel, synthetic, olive-drab, lusterless.*—Used for painting all types of ordnance matériel. This enamel, thinned 1:4 with thinner, may be used over old paint in good condition or may be applied to new matériel which has been suitably prepared with red lead.

b. Lacquer.—A rapidly drying and very transparent liquid, which sets to touch in 3 minutes. It is used on sandblasted metal surfaces of fire-control and sighting equipment, because of its transparency, to prevent tarnishing and deterioration. The lacquer, which must be thin enough to flow easily, is applied with a camel's-hair brush. Lacquer or thinner will not be issued to troops. (See par. 57, TM 9–850.)

c. White lead.—Used as an extra heavy rust-preventive coating on exposed metallic surfaces. Various materials have been used to reduce the stiff lead paste to a more plastic and workable material. Since freedom from corrosive elements is desired, rust-preventive compound is preferable to lubricating oil for this purpose. Melted tallow is sometimes used. The white lead coating may be used for the preservation of material in stand-by condition, since it is more adhesive under extremes of temperature than rust-preventive compound. It should not be used on intricate working surfaces where it can not be readily removed without damaging those surfaces.

d. Thinner, Specification No. ES–370.—Used as a thinner for lusterless synthetic olive-drab enamel.

e. Varnish, shellac, orange.—Used for finishing the inside of wooden chests.

f. Varnish, spar, water-resisting.—Metal and wood exposed to the weather are protected for several months when coated with good spar varnish. The life of the paint and varnish coatings when indoors and protected from the direct rays of the sun is very much longer than when exposed to the elements.

g. Care of brushes.—(1) *New brushes.*—At the conclusion of a painting job, the brushes must be carefully washed with dry-cleaning solvent and kept in water, except that camel's-hair brushes, after thorough cleaning, should be laid flat on a shelf or other convenient clean surface so that the hair will not be disturbed. Brushes in storage should be protected with naphthalene flakes, as the bristles of the brushes are subject to attack by moths. (See par. 68, TM 9–850.)

(2) *Worn brushes.*—Worn paint brushes should be retained for use in spreading rust-preventive compounds and slushing oils.

■ 158. RUST-PREVENTIVE COMPOUNDS.—For bearing surfaces and many other bright parts, paint and varnish are obviously unsuitable, and it is necessary to use materials that do not dry to hard films. For this purpose, rust-preventive compounds and slushing oils are used. The practical requirements for material of this class are that they can be applied easily to the surface to be protected, they furnish adherent continuous coatings which will remain on the surface, and they will protect that surface from corrosion. The material itself must not injure the metal surface. The coating should be easily removed by wiping with a cloth wet with kerosene. With valuable materials that are stored for a considerable time, it is desired that the coating furnished be sufficiently transparent to permit inspection without entirely cleaning the apparatus. In all cases surfaces to be slushed must be thoroughly cleaned and dried before rust-preventive compound is applied or rust will develop. (See pars. 34 to 47 inclusive, TM 9–850.)

a. Rust-preventive compound, grade A (heavy).—This compound is a heavy, dark-colored, and sticky grease. It melts at about 131° F. The base of this material is petrolatum. It is prepared for use by heating in a water bath to temperatures up to 180° F., the temperature depending on the thickness of the film desired. The hotter the material, the thinner the film which will adhere to the surface to be protected. This compound should not be exposed to a fire, or set on a stove, or exposed to any other source of heat with a temperature in excess of 180° F. For use in protection of material

for long-time storage, the grade A compound should never be thinned by grade B compound.

b. Rust-preventive compound, grade B (light).—This compound is a sluggish liquid which pours at 81° F. It is used primarily for short-time protection of finished surfaces of all classes. It should not be used on material put in permanent storage or for long-time protection. The best temperature for the application of rust-preventive compounds is that temperature at which the grease is fluid enough to form a uniform film of the maximum thickness which can be retained on the metal in storage. (See par. 180*a*(2) for preparation of surfaces before application of rust-preventive compounds.)

c. Slushing oils.—When rust-preventive compounds are not available, slushing oils may be used in their place. Slushing oils, when of thick consistency and applied in very thick coatings, give good protection. They are obtained from the following sources:

(1) Oil drained from engines.

(2) Oil drained from the axles and transmission, thinned down, if necessary, with oil drained from engines.

(3) Oil purchased under latest revision of United States Army specification.

■ 159. ADDITIONAL INFORMATION.—For more detailed information concerning this subject, see TM 9–850 and TM 10–250.

SECTION IV

WAREHOUSING

■ 160. LOCATION.—*a. Factors.*—The location of the storage warehouse depends primarily upon the location of the units dependent upon the warehouse for their supply. The selection of the actual warehouse within the chosen area of supply is affected by many factors, such as the kind and amount of supplies and equipment to be stored, the transportation network in the area, and the buildings available for storage. The conditions which should be fulfilled in the location of an army ordnance depot are given in paragraph 5.

b. Arrangements within the warehouse.—One important factor which must be considered in every phase of ware-

housing, from the location of the warehouse to the final arrangement of the supplies within the warehouse, is the necessity for smooth, rapid, and continuous movement of the supplies to, through, and from the warehouse. *There must be no bottlenecks.* Arrangements must be made so that ordnance matériel can be delivered to and from the warehouse at the same time without confusion. Handling of stock within the warehouse must be reduced to a minimum. Successful traffic arrangements can be achieved only by proper planning before the flow of materials begins.

■ 161. DOORWAYS.—The principal doorways of a large warehouse should preferably be at the sides. A clear space or spaces, of such size as to accommodate, without confusion, the receipts and issues at any one time, should be provided near a principal doorway. These spaces should be so located as to reduce labor to the minimum. The bulk of the supplies and equipment should be received and shipped through side doors. When a railroad sidetrack runs along one side of a warehouse the doors of the building should be so placed that cars can be spotted at the car doors of the warehouse. Blocked or superfluous doors existing in the warehouse should be closed, kept locked, and marked with a sign reading "CLOSED" in large letters. "OPEN" or "FIRE" doors should be plainly marked to indicate their purpose. Except when absolutely unavoidable, not more than one door of an insulated warehouse should be open at any time during freezing weather.

■ 162. PLATFORMS.—*a. Warehouse platforms.*—A very important factor in any scheme of warehousing is the construction of platforms for convenience in loading and unloading of supplies. When circumstances permit, covered platforms 10 feet in width are constructed along the side or sides of the warehouse fronting on the railroad spur or roads. Such platforms should be of the proper height from the ground to permit easy transfer between the warehouse and the transporting vehicle. Platforms facilitate the handling of incoming and outgoing supplies by eliminating much lifting, and by extending the usefulness of warehouse trucks. They also

provide space for the erection and operation of lifting equipment essential to handling heavy equipment.

b. Separate platforms.—Whenever there is no railroad spur direct to the warehouse, it is necessary to have a separate platform at the railhead supplying ordnance matériel to the warehouse. This platform will facilitate easy transfer of supplies from the railroad cars to the transporting vehicles. This type of platform should be wide enough and strong enough to hold sufficient supplies to unload the cars without interruption despite intermittent loading of the trucks.

■ 163. LOADING RAILROAD CARS.—*a. Use of ramps.*—Loading and unloading of wheel or tractor vehicles is best accomplished by the use of ramps. Such ramps may be permanently attached to the ends or sides of existing platforms or may be portable. Whenever they are used for unloading heavy equipment such as tanks, they should be suitably reinforced to prevent failure during the operation. The disadvantage of ramps of this type is in the steepness of the slope, which requires that vehicles being loaded be hauled up by block and tackle. Better results can be obtained by using railroad jacks, when they are available, to remove the rear truck from the last car, letting the end of the car down to the ground and bridging with a short, low ramp. In this way the whole rear car becomes a ramp and when all the cars in the train are loaded or unloaded, the lowered end can be jacked up on its truck. (See par. 172, FM 5–10.)

b. Loading of supplies.—Loading of heavy crates, boxes, motor vehicles, tanks, etc., may be direct to cars from platforms or by ramps as described in *a* above. In loading material on open top cars, consideration should be given to the proper placing and securing of the load. The load must not exceed the capacity of the car; it must be placed so that it will not interfere with train operation nor create an unnecessary hazard for railroad personnel; it must be securely fastened so that no shifting will occur in transit; and the loaded cars must be able to clear all obstructions, such as tunnels and bridges, along the line. Loads may be secured to the car by hardwood stakes, braces, or cleats, and by bolts, rods, wire, or steel bands. All vehicles must be held securely

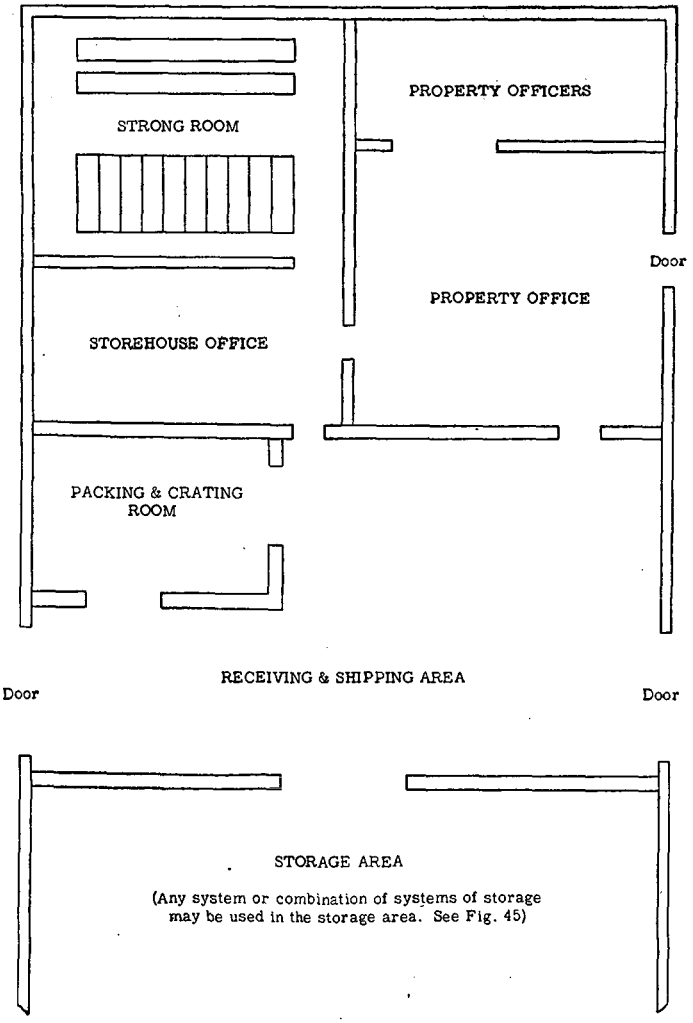

FIGURE 43.—Warehouse lay-out.

in place by blocking cleats or lashings. (For further precautions, see par. 174, FM 5–10.)

■ 164. STORAGE CONDITIONS.—In warehousing, the arrangement of supplies should be such that the following conditions are fulfilled:

a. Supplies are reasonably secure against theft, and protected from the deteriorating effects of weather, heat, light, and moisture and from the destructive effects of vermin.

b. Supplies can be easily removed for issue or shipment, and the labor of handling is reduced to the minimum.

c. Supplies can be readily inspected and checked for inventory purposes.

d. Waste space is reduced to the minimum consistent with efficient and economical operation.

e. Maximum permissible floor load is not exceeded. If the floor is the ground, care must be taken to arrange dunnage to prevent the settling of supplies into the ground.

f. Arrangement does not interfere with the functioning of the fire-extinguishing system or with the free and efficient use of fire-fighting apparatus.

g. Supplies are segregated by Standard Nomenclature List groups and any subdivisions of groups which may affect storage, issue, and inventory.

h. Inflammatory materials are segregated.

i. Adequate fire-fighting equipment is placed at logical points in the storehouses.

■ 165. SYSTEMATIC STORING.—The systematic storing of containers is one of the most important factors in warehousing. Inventory cannot be successfully accomplished, and stores cannot be properly cared for, unless systematically stored. There are three systems of storing in common use in warehouses: block, numeral, and unit. A combination of any two or of all three may be found necessary for the best application of the principles of warehousing. Where there is a large variety of items to be stored, and the facilities for storage are quite limited, it is usually necessary to use all three systems (fig. 44).

a. Block system.—This is used when the containers are uniform in shape and contain the same quantity of the same

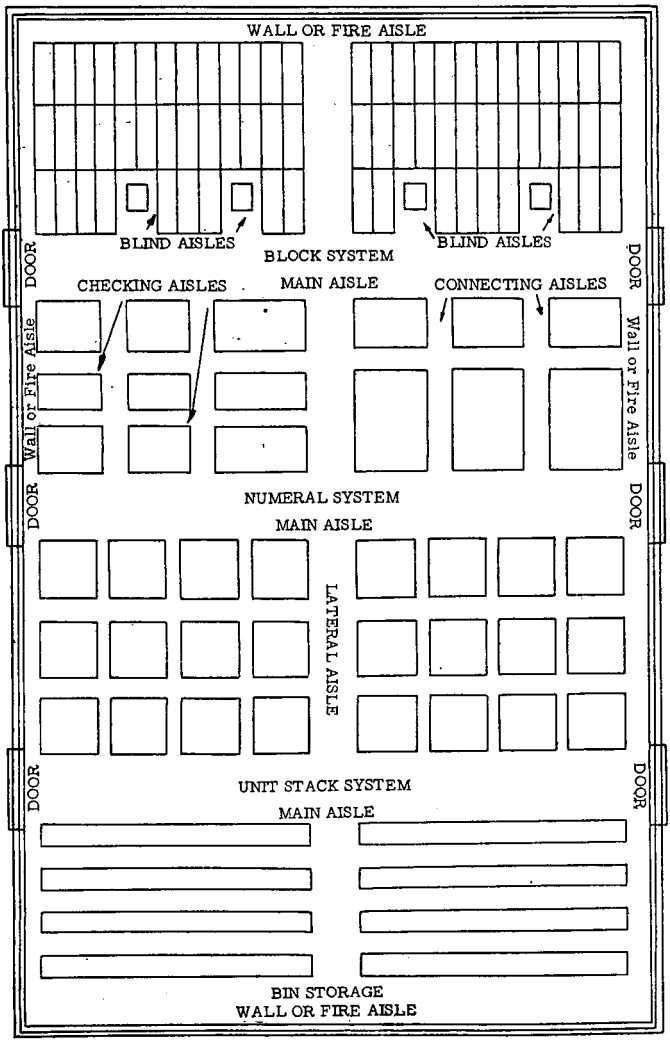

FIGURE 44.—Systems of storage.

item. The containers are arranged in solid blocks two or more containers wide, two or more deep, and two or more high, with the markings on all the containers in the block facing in the same direction toward an aisle. As successive stacks are removed, the markings on the containers of the remaining stacks come in view. When supplies are issued from a block, one end row in that block is fully removed before any containers are taken from the next row. In general a new shipment is never stacked in front of an old shipment of the same item, as this would hamper the issuing of old supplies first. In the case of materials which deteriorate rapidly, the old supplies are issued first, thereby maintaining a rotation of stock.

b. Numeral system.—This is used in storing containers of varying quantities of the same item. They are stored so that the markings on each container face an aisle, usually a checking aisle. The containers are stowed two deep, two or more wide, and two or more high, with the markings of the containers of each stack facing in opposite directions.

c. Unit stacks.—The unit stack is a method of stacking a large number of packages of large size containing the same type or kind of article, where the block system cannot be used. In this method, the packages are divided into small stacks, each stack containing the same number of packages. This facilitates the making of a rapid and accurate inventory. Materials should be piled singly up to ten in a column, or in multiples of five in columns as high as space will permit without exceeding the allowable live load per square foot. When issues are made, they are made from one stack until that stack is thoroughly exhausted, before being made from another stack.

■ 166. IMPORTANT STORAGE DETAILS.—*a. Clearing space.*—A clearing space (see fig. 43) should be provided near the principal doorway. It should be of such size as to accommodate, without confusion, receipts and issues taking place at the same time. In large depots, the clearing space may be large enough to hold a carload or more of supplies, but even in smaller warehouses it should afford room for a truck load, making it unnecessary to pile boxes on each other or to block the

doorway. If there is a roadway on the opposite side of the warehouse from the railroad siding, provisions should be made for a clearing space on that side also. The greater the demand for a particular article, or the heavier the article, the nearer, in general, should be its storage space to a clearing space.

b. Spacing.—Each lot of goods should be kept separated by a small but distinct break between lots. It is not necessary that any lot should front on more than one side. Issues should always be made from the oldest stock on hand if the items are likely to deteriorate while in storage. To accomplish this, dates of receipt may be marked on the bottom of the containers of each lot or block, and a record of this date kept in the storehouse office.

c. Maximum stack height.—The maximum height of a stack is governed by the following considerations:

(1) It must not cause a weight on the floor system in excess of the maximum safe load which the floor will sustain. In the case of ground floors, the amount of concentrated weight that the earth will support without sinking is the limiting factor.

(2) Sufficient space must be left between the top of the stack and the ceiling to permit easy removal of the top packages and, in the block system, to permit inspection of the top of the block for detection of pilfering.

(3) The stack must not exceed the height that permits the free and efficient use of the fire apparatus, and the lifting equipment. The stacks must be stable and danger of toppling should never exist.

d. Arrangement of containers.—Containers should be placed all one way, unless, for stability, it is necessary to reverse or cross-pile. Cross-piling, or laying containers in each tier or course at right angles to those just below, while it increases stability, decreases accessibility and sureness of count. As stability is generally less vital than accessibility and flexibility, cross-piling should be resorted to only in special cases. Sufficient stability can usually be obtained by the use of strip dunnage between layers of containers. The use of dunnage will also assist in ventilating the stacks.

e. Identification.—Each area in the warehouse should be given some type of identification letter or number, and the stacks, shelving, bins, and cabinets therein should be further indexed and tagged in order to facilitate the location of materials in storage. Each stack should bear a marker giving the contents by weight, or number of packages and contents of each package, or both.

■ 167. BIN STORAGE (fig. 44).—*a.* Bins, cabinets, or shelves furnish convenient places for storing small loose articles not packed in boxes. They should be well lighted. Articles likely to be stolen should be located in rooms which can be locked. If such rooms are not available, inclosures of heavy wire netting or other suitable material may be used to form spaces which can be locked.

b. Bins are formed by vertical partitions inserted between shelves. Several shelves are fastened together to form a section, and the sections are arranged so as to form a block. The shelves and partitions should be adjustable when made of metal. In order to find items easily, the blocks can be lettered according to the SNL group stored. The vertical sections can be lettered or numbered, and each bin space can be numbered.

c. Whenever an original package is opened and part of its contents removed, the remainder of the contents of the package should be placed in bins or on shelves.

d. At least one item in each bin should be tagged to show its correct nomenclature. (See Material Tag, OFM Form 405.) This item should be the last one removed.

■ 168. AISLE ARRANGEMENT.—An important consideration in good warehousing is an economical and efficient arrangement of aisles. In order properly to handle goods in a warehouse, it is necessary that a certain amount of space be given over for use as aisles. Such space is valuable for storage and must be reduced to the minimum. Aisles are given designations usually indicative of their use or nature.

a. Main aisles.—Main aisles are those aisles which bear the most traffic. They should, as a rule, run from a doorway to the opposite doorway or wall. They should be of sufficient width to permit the passage, without loss of speed, of loaded

warehouse trucks moving in opposite directions. When the ordinary hand truck (30 inches wide) is used, a main aisle 6½ to 7 feet wide is sufficient; 10 feet in width is considered the maximum for such an aisle The distance between main aisles should be less than 40 feet to prevent loss of time in handling packages.

b. Lateral aisles.—Lateral aisles are secondary aisles which cross the main aisles at right angles. They should ordinarily run from wall to wall. It is not usually necessary that they be of sufficient width for two-way traffic. The economical width of such an aisle where the hand truck only is used should seldom exceed 3½ feet, or, if the packages in the stacks are wider than the usual warehouse truck, the width of the aisle should only be sufficient to accommodate the package.

c. Connecting aisles.—Generally lateral and main aisles are mutually connecting to a degree which furnishes ample accessibility within the warehouse. Occasionally, however, it becomes necessary to provide additional, short connections. These may be obtained through the use of connecting aisles. Such aisles are often used to facilitate the handling of goods when it becomes necessary to store lots consisting of two or more distinct items in the area included between adjoining main and lateral aisles. These aisles should seldom exceed 3½ feet in width, and are economical only when placed between storage bins or racks.

d. Checking aisles.—Checking aisles are additional aisles provided for the purpose of inventorying items packed in various-sized containers, making necessary the viewing of each package. As it is unnecessary for goods to be handled through these aisles, the width is limited to that necessary for checking and should rarely exceed 2 feet. Checking aisles should be used as seldom as possible as they constitute a waste of space.

e. Wall or fire aisles.—Wall or fire aisles are aisles surrounding the warehouse just within the walls. Their purpose is to provide accessibility in case of fire and to protect walls from possible danger due to the side pressure exerted by material piled against them. Such aisles should not be more than 3½ feet wide. When economy in the use of storage space is secondary to the rotation of stock, the wall

aisle serves a further purpose. Loaded trucks may encircle the building within the walls, taking from more than one side of a pile at the same time. The wall aisle renders less difficult the task of keeping the warehouse free from vermin.

f. Blind aisle.—A blind aisle is an aisle having but one open end. It may be a checking aisle or may be provided for handling goods stored in the middle of a section between main and lateral aisles. Its width is governed by the use to which it is to be put.

g. Boundary lines.—Aisles should be straight and continuous. Boundary lines to outline the areas that are set aside for aisles and clearing spaces should be plainly marked upon the floor with paint or chalk, depending on the permanency of the method of storage within the warehouse and the possible change of types of supplies stored therein.

■ 169. LIGHTING.—Adequate lighting increases the volume of supplies that can be handled in a given time, by increasing the ease with which checking, sorting, and piling may be performed. It also is effective in reducing discrepancies which develop from incorrect checking and shipping, and damage from breakage or other causes. Ceiling lights, as a rule, give ample light for the handling of merchandise piled or stacked, while drop and extension cord lights are used where merchandise is stored in shelves or bins. The effectiveness of light sources is materially reduced by dirty globes and fixtures, hence such items should be cleaned regularly. Electric circuits and switches should be so arranged as to permit economy of power by selection of the lights required for proper illumination of the place at which work is being done. The use of pull-chain sockets effects large savings in current when operations are confined to single bays. Lighting plans must have due regard for blackout requirements.

■ 170. LAY-OUT OF STORAGE AREAS.—*a. Steps in planning.*—The importance of carefully prepared plans for storage areas cannot be overemphasized. By intelligent planning, wasted and poorly utilized space is avoided, and the necessity for future rearrangements of stock is minimized. Without adequate planning, it is practically impossible to handle large amounts of material without confusion and eventual con-

gestion. To lay out new areas or rearrange stock in old areas properly, the following steps are necessary:

(1) Classification and listing of items to be stored, according to SNL groups. In considering the quantity to be warehoused, the maximum on hand at any one time must be taken into account.

(2) Determination of a proper storage-space unit. As a standard rectangular storage space unit is the most practical for general storage, the size of the units depends on the dimensions of the storage floors, the location of aisles (main, lateral, connecting, checking, and wall or fire).

(3) Determination of proper aisle spaces. The general rule is that aisle space is reduced to the minimum required for working the stock, which includes handling and checking.

(4) Determination of proper lay-out of storage and aisle space with general location of the items and calculation of total space needed. Here must be considered the space required for the clearing area, for offices or other work, and for storage.

(5) In the planning of storage lay-outs, particular attention should be paid to the location of entrances, aisles, posts, platforms, windows and other similar features, so that they do not interfere with, but facilitate, the handling of stores. Stacks should not be built up in such a manner that a structural column is entirely surrounded by containers. A passage from an aisle to and around the columns should be provided to facilitate inspection.

b. Floor loads.—In the construction of bins and the arrangement of stock, consideration must be given to the allowable floor load of the available floor space. The allowable live load in pounds per square foot of space must be ascertained and plainly marked in each warehouse. Care must be exercised to see that the stores are so distributed that this load is not exceeded.

c. Space allotted.—The space allotted to any one item is sufficient at least to hold the maximum quantities expected to be on hand at any one time.

■ 171. LOCATION OF STOCK.—The arrangement of stock requires the most careful consideration and planning. Before

action is taken to place or rearrange stock, a lay-out plan is prepared in which definite space is allotted to each storage class. Normally all the articles in any SNL group are stored in the space allotted to that group. Local conditions, such as the presence of large quantities of excess stores or the probability of heavy enemy air activity, may make it desirable or necessary to allot two or more places for one Standard Nomenclature List group.

a. Arrangement of items.—The arrangement of items of stock within an SNL group is in alphabetical sequence. The nature of the item or storage conditions may make it necessary to deviate from this sequence.

b. Characteristics governing placement.—The placing of many items depends on the shape and character of the item and the character of the storage facilities. The location and segregation of special materials such as inflammable or expensive goods are governed by their physical characteristics and the need for special care in storage. Items which are carried in large quantities and frequently issued, and large heavy items which are difficult to handle, are placed in a convenient position to provide short hauls.

c. Preventing damage.—Stores are never located where they may easily be damaged. Placing articles so that they project from the edge of a bin or platform is to be avoided. In general, articles are kept off the floor or the ground. In placing items subject to deterioration from heat and dryness, or from cold and dampness, it should be remembered that the air near the ceiling is usually warmer and dryer than that near the floor.

(1) All property affected by water should be stacked on dunnage and protected from dripping or condensation. Stacks of property requiring free circulation of air for preservation should be built up with dunnage between horizontal layers.

(2) In warehousing stock adversely affected by sunlight and moisture, consideration should be given to the location of stacks with reference to windows, doorways, and other openings.

d. Reserved spaces.—Items should be stored only in spaces reserved for them. Tools or equipment in regular use in

storerooms should be provided with special places marked so as to show the purpose for which they are reserved.

■ 172. MODIFICATIONS TO BE EXPECTED IN SEMIPERMANENT LOCATIONS.—*a.* The principles of warehousing covered in this section are applicable to all storage in permanent warehouses. Modifications of these principles may be made to conform to local conditions in semipermanent installations. In such installations, the more usual type of warehouse will be either a wooden shed, having no sides or floor, or a wooden warehouse with sides but no floor.

b. In semipermanent locations, the following modifications in warehousing may be made:

(1) Sides are necessary only on buildings for storage of delicate items.

(2) In place of windows, the sides may be carried to within 12 to 18 inches of the roof, leaving a continuous opening protected by the eaves. Doors are not essential; canvas curtains are sufficient.

(3) In general, floors are not necessary. To preserve perishable supplies from water, dunnage consisting of wooden poles overlaid with rough plank may be used. Floors at car level are not constructed because of the scarcity of time, labor, and materials.

(4) If electricity is not available, portable illuminating sets will have to be set up and essential fixtures installed.

c. No matter how severe local conditions may be, the general principles of warehousing should be adhered to as closely as possible.

SECTION V

STORAGE METHODS FOR OPEN STORAGE

■ 173. GENERAL.—*a.* Medium and heavy field artillery, tanks, trucks, and all large equipment for which covered storage is not available, must be stored in the open. Whenever the lack of storage facilities makes it necessary, smaller equipment and supplies may also be stored in the open. In planning a storage area for open storage, the following precautions should be observed:

(1) Area should be properly protected against aerial observation and bombardment.

(2) Supplies and equipment should have adequate protection against the effects of the sun and the weather.

(3) Piles of supplies should be so arranged as to provide stability, speed in handling, and ease in making inspections or inventory count.

b. Whenever ordnance matériel is stored in the open in the theater of operations, the security of the supplies against aerial observation must be given primary consideration. Open storage in the zone of the interior, on the other hand, is based on storage methods that will facilitate speed in handling. The relative importance of these two factors depends upon the local situation, and both should be observed as far as practicable. (See par. 115.)

c. For complete details concerning the use of cleaning and preserving materials, see TM 9–850.

d. Preparation of particular items of material for storage is covered in the Field Manuals of the 23-series, and the Technical Manuals pertaining to particular items of equipment.

■ 174. PROTECTION AGAINST WEATHER.—*a. Foundation.*—In order to keep the bases of the piles of equipment dry at all times, a foundation is laid of sufficient height to protect the supplies against accumulations of surface water. Any available material, such as logs, stones, or cordwood, may be used, or a regular platform may be constructed. The foundation should always be laid in an area that is well drained.

b. Ventilation.—As the piling proceeds, necessary passages for ventilation purposes are made by the insertion of dunnage between the layers of the pile. Sufficient ventilation should be provided to prevent the accumulation of enough moisture to deteriorate the supplies. This will depend largely on the type of material being piled.

c. Paulins.—The tops and sides of the piles are protected against the direct rays of the sun and against rainfall by canvas paulins. These should be securely lashed in place, care being taken that the ropes do not touch the ground at any point. Ordinary untreated canvas will shed water if properly suspended so that pockets are not formed. In cases

where it is impossible to avoid water pockets, waterproofing is of great value. Deterioration of fabric is reduced by thorough impregnation with a water-repellent material. As some waterproofing materials contain solvents which are highly inflammable, it is advisable that the mixing of the compound and its application be carried on outdoors and remote from any danger of fire.

■ 175. METHODS OF PILING SUPPLIES.—*a. Arrangement.*—(1) The arrangement of containers within a pile, whether indoors or out, must be such as to facilitate counting and inspection. In building a pile, only containers of uniform dimensions should be used. Each pile should bear a marker giving the contents by weight, or number of containers and contents of each container, or both.

(2) Piles are placed throughout the storage area in irregular fashion whenever there is danger of aerial observation. A space of approximately 15 feet is left between piles for the free passage of vehicles.

(3) With the sides of the pile vertical, stability in piling may be achieved by the use of strip dunnage between layers or by alternate rows of headers and stretchers. The ratio between the length and width of the containers determines the minimum width of pile that may be used, since it is necessary that the width of the layers of stretchers and headers be the same. A pile built up in this way consists of a series of complete sections, each side of which is equal in length to the width of the pile, and has the convenience that sections can be cut away completely. Ventilation and stability in such an arrangement can be achieved at the same time by leaving a small space between adjacent containers in each row.

(4) A sloping roof is usually added to the pile to aid in shedding water from the canvas covers. Such a roof is formed by reducing the width of the layers alternately by one stretcher or two headers until a layer only one header wide is reached.

(5) A pile triangular in cross section may be made by placing all packages as headers. The number of containers in each layer is uniformly reduced by one. Such a pile

will throw no sharp shadows from the sides, making aerial detection difficult.

b. Height.—The most suitable height from the standpoint of the labor involved and convenience in the issue and receipt of stock is from 7 to 10 feet. At depots where large quantities must be kept in open storage, or where issues are infrequent, the height may be increased if necessary.

■ 176. PROTECTION AGAINST AERIAL OBSERVATION.—*a. General.*—When the depot makes use of existing buildings for warehouses, no attempt should be made to camouflage these structures. However every effort must be made to conceal the activity at the depot, and to prevent widening of roads at this point. Special care must be taken to camouflage properly all supplies and equipment that are stored in the open, since these may be easily photographed from the air. For a further discussion of camouflage, see FM 5–20 and FM 21–45.

b. Roads and paths.—Road and paths needed for access to the depot should not disclose its location. The following practices are to be followed:

(1) Choose routes which do not end at the position but go on past to a logical destination, such as a house, dummy position, or another road.

(2) Direct traffic so that access routes show uniform use throughout their length and not merely up to the depot warehouse.

(3) Prevent any widening of routes at or near the depot, such as is caused by vehicles parking or turning around on the shoulders of a road, or by personnel cutting corners at the mouth of a path.

(4) Use existing routes wherever possible; when new routes are necessary they should either be concealed or should appear to have been built for some reason other than access to a position, such as a shortcut between two existing routes.

c. Piles of supplies.—Piles of supplies in open storage may be protected by—

(1) Scattering the piles so that they fit in with the natural features of the terrain as far as possible.

(2) Covering the piles of material with sufficient screening to prevent the enemy from seeing the quantity of stores on hand.

d. Trucks and tanks.—(1) Trucks and tanks are best concealed under heavy natural cover, as in dense woods. They should always be parked in scattered, irregular formations. Where heavy cover is not available, they should be run into thin woods and either covered with brush, weeds, etc., or, preferably, draped with standard garnished fishnet. (See par. 115.)

(2) Except on hard roads, trucks and tanks make characteristic tracks which are quite visible to aerial observers. These tracks should be effaced, particularly at the entrance to woods or other localities where the trucks or tanks are halted.

(3) Both trucks and tanks should be painted a flat neutral color such as olive drab. Truck covers should be dark in color rather than light. When vehicles are not in use, all shiny parts such as headlights and windshields should be covered, or obscured by mud or other suitable material.

(4) After trucks or tanks have been camouflaged, care should be taken not to make any unconcealed paths leading to their locations.

e. Field artillery.—The precautions to be observed in the proper camouflaging of field artillery are the same as those listed in *d* above.

SECTION VI

STORAGE OF MOTOR VEHICLES

■ 177. TANKS.—*a. Types of coverage.*—All tanks which are not in actual use will be stored in closed, guarded buildings, in covered sheds, or in the open, and covered with tarpaulins. In each case, the floor must be solid and free from crushed rock, deep dust or oil surfacing. If such conditions cannot be avoided, the rubber tracks should be placed on planks. All matériel pertaining to these vehicles when stored separately, will be preserved in accordance with its composition and the atmospheric conditions prevailing. Inspections of these vehicles, their components and equipment, will be made at fre-

quent intervals according to the degree of protection and security under which they are stored, to assure that the matériel is not needlessly exposed to the elements and that no parts are being removed without proper authority.

b. Technical inspections.—All motor vehicle equipment will be inspected at the time it is placed in storage and at frequent intervals thereafter. A tag or tags, tied to the tank, will be kept up to date by the inspector, indicating the condition of the vehicle and the type of work to be done before it may again be placed in service. Minor work of surface preservation will be accomplished at the time of inspection. Work involving disassembling and the use of shop facilities will be accomplished at the earliest practicable date.

c. Repairs.—It is highly desirable that vehicles and their components, and equipment removed from vehicles, be overhauled before being placed in storage. Items such as batteries, seat cushions, lamps, etc., which may be removed for separate, protected storage, should be overhauled before being stored, and tagged to show the vehicle to which they belong. Repairs made and to be made, and notations as to parts removed, should be posted on the vehicle tag.

d. Types of storage.—(1) *General.*—There are two types of tank storage: limited storage and dead storage. The former is the status wherein a vehicle is stored in a "stand-by" condition, ready for immediate service. Such tanks are required to supplement regular combat facilities and to replace vehicles withdrawn from service for various reasons. Limited storage periods seldom exceed 30 days. Matériel is placed in dead storage when it will not be required for operation or issue without due notice and is presumably to remain inactive for prolonged periods of time.

(2) *Limited storage.*—Tanks stored under this heading will be ready for immediate service, and the fuel tanks will be kept filled. All batteries will be maintained in fully charged condition, either in place or in separate storage marked for the vehicle to which it belongs. The battery field switch and the radio feed switch will be open during the storage periods. The tanks must be thoroughly cleaned and completely lubricated before being placed in limited storage status, and it must be stored in a manner to protect the rubber

elements against extreme light or heat. Brakes will be off and the transmission in neutral gear, in order to facilitate the removal of vehicles in case of fire. Engines installed in tanks that are not operated for periods in excess of 1 week will be started at least once each week and run for at least 5 minutes. The following precautions should be followed at all times when starting or stopping the engine:

(*a*) If the engine has not been operated for periods exceeding 5 days, the spark plugs in the lower cylinders should be removed to check for the presence of oil before attempting to start the engine. The engine should then be turned over 4 or 5 times by hand with the ignition off before closing the starter switch.

(*b*) Before stopping the engine, the throttle should be closed, allowing the engine to come to idling speed before the ignition is turned off. If the ignition is turned off while the engine is running at high speed, there is a probability of washing down the cylinder walls with unburned fuel. This will lead to increased corrosion and excessive wear during the starting and warming-up period.

(3) *Dead storage.*—Vehicles should not be in a limited storage status for over 30 days. Vehicles not to be issued for periods of over 30 days are classed as being in dead storage. Engines should be started at weekly intervals, as described in (2) above. If space allows, the tank should be moved about 2 feet in order to distribute the weight of the vehicle to other portions of the tracks. Check the entire tank to insure that no parts have been removed and that no oil is on the bogie tires or rubber tracks. Any oil seepage must be traced, accounted for, and corrected. Tanks stored outdoors should not be allowed to stand for long periods in mud, oil, water, or snow, and the covering tarpaulins must be securely tied and kept off the ground and clear of snowdrifts. Inspecting personnel will manipulate the clutch and brake pedals, gear shift and brake levers, and gun mounts and doors, to assure their proper lubrication. The canvas muzzle covers should be securely placed over the muzzles of all the weapons. The tank must be left in neutral gear and with the brakes fully released. Clutches should be manipulated at each weekly inspection. Entries will be made on the tank tag and in the

motor book, showing unusual conditions, repairs to be made, and the date of the inspection, signed by the inspector.

e. Protection from aerial observation.—Tanks in both limited storage and dead storage will be adequately protected against hostile aerial observation and bombardment as described in paragraph 176*d*.

f. Preparation of tanks for oversea, or domestic shipment, and for storage.—See chapter 12.

■ 178. AUTOMOTIVE VEHICLES.—All motor vehicles which are not in use are stored, if practicable, in covered and closed storage. When covered and closed storage is not available, or cannot be made available, paulins for covering the vehicles are used. The following steps are taken to place wheeled and half-track vehicles in dead storage. (See par. 177.)

a. Overhauling.—Before being stored, motor vehicles intended for prolonged storage are, if possible, overhauled and placed in thoroughly serviceable condition. If for any reason it is impossible to overhaul these vehicles, a careful inspection of them is made, and each vehicle is carefully marked with a tag showing all spare parts and repairs needed to place it in a serviceable condition. These tags are attached to the vehicle, in the cab if possible, and are shellacked to protect them against oil and moisture.

b. Jacking and blocking.—All motor vehicles in prolonged storage in the open, under sheds, or in buildings, are jacked up and blocked. Using small locally-made wooden horses or blocking, the tires should be partially relieved of their load and partly deflated. Tires must not be kept under extreme light or heat conditions for long periods. Whenever possible, planks and boards should be placed under the tires so that they do not rest on the ground.

c. Removal of equipment.—All spark plugs should be removed, cleaned, wrapped in heavy paper, and placed in the tool box. The storage battery should be removed and placed in closed storage (see par. 179*a*(2)(*b*)). When secure, closed, and guarded storage is not available for the vehicles, the tools, magnetos, carburetors, lamps, and other easily removable parts must also be removed and stored separately. Motor vehicles equipped with solid tires are jacked up and blocked

to relieve the weight on the tires. In case of pneumatic-tired vehicles the tires and tubes are removed for storage under proper cover if the vehicles are to be stored for an indefinite period. Rims are protected from rust by a coating of graphite or other rim paint, or shellac, especially where rims have only a light galvanizing and have been in service.

d. Draining of system.—The gasoline tank is drained, and care is taken to prevent moisture from entering the tank and feed system. The cooling system is completely drained, irrespective of time of year when the vehicle is put in storage. All drain cocks, whether beneath the pump or at the lowest point in the cylinder jacket, are opened, and a wire or suitable instrument is pushed into them to insure that complete drainage has not been prevented by an accumulation of sediment.

e. Lubrication of engine.—A half pint of SAE 30 lubricating oil should be poured into each cylinder. The engine should then be turned over 10 or 12 times by hand to thoroughly lubricate the walls of the cylinders and the pistons. Tapered cork or softwood stoppers should then be placed in the spark plug holes in the cylinders. These stoppers can easily be removed for inspection purposes. The crankcase should be filled with clean oil.

f. Care of electrical equipment and carburetor.—Generators, starting motors, and ignition distributors left on the engine are slushed with rust-preventive compound, care being taken not to allow oil to enter internal mechanism or come in contact with rubber-covered wires or other insulation. Distributors in motor vehicles stored for an indefinite period should be covered with tar paper, building paper, heavy wrapping paper waterproofed with oil, or with oilcloth. If available, burlap or canvas is put over the paper to protect against any mechanical injury. Carburetors, if left in place, should have the float chambers and moving parts slushed with engine oil, which may be poured in if the tops of the float chamber are easily removable, or run in through the gasoline connection by means of rubber tubing.

g. Slushing of metal parts.—All metal parts of the running gear which are likely to rust, such as threaded ends, brake rods, radius rods, control rods, mechanism, etc., are sprayed or painted with rust-preventive compound. Valve cover

plates are removed, the exposed valve stems, seats, and springs slushed with light oil, and the cover plates then replaced. Oil drawn from the transmission or differential, thinned down if necessary with engine oil, is sprayed between the leaves of the springs to prevent rusting. Any metal parts which were originally painted, but on which the coating of paint is not in condition to afford adequate protection, are repainted if possible. If this is not possible, these parts are coated with rust-preventive compound. After all exposed metal surfaces of the engine are slushed with the proper rust-preventive compound, the engine is covered with tough waterproof paper, and the fan belt is slackened. The fan bearing is well lubricated.

h. Protection of bodies.—All metal hinges, joints, towing hooks, chains, and the interior of metal tank bodies are thoroughly slushed with rust-preventive compound. Emergency and discharge valves (water, gasoline, and sprinkler) on metal tank bodies are left open while in storage. Dump bodies are raised to drain water and are jacked up with a block. Cushions are wrapped or covered with tough waterproof paper and tied to the back of the seat. Canvas or duck covers, if left on vehicles, are drawn down firmly on the bows and covered with a protective coating. All exposed wood or metal surfaces are coated with paint or slushing oil.

i. Special type trucks.—Machine shop trucks, laboratories, dental trucks, fire engines, etc., are stored under cover wherever possible. If they are stored outdoors, all openings in the body are covered with tough waterproof paper or boards to protect the inside against the weather. All metal parts are thoroughly cleaned and coated with rust-preventive compound or slushing oil. The bodies on these special type trucks are blocked to relieve weight on the truck chassis springs.

j. Passenger cars.—All cars with closed bodies are kept under cover wherever possible. If they are placed in open storage, care is taken to protect the interior from rain and weather.

k. Tagging of engine.—Every engine should be tagged. The tag should be securely tied at a point as high and as close to the dash as possible. Spaces are provided for enter-

ing the initials of inspectors, the dates of inspection, and any pertinent engine information including storage location of engine components removed therefrom.

l. Motorcycles.—All motorcycles, solo and with side cars, are stored in buildings. They are placed on blocks. Gasoline is drained from the tanks. The tires and tubes are removed for storage under proper cover. All metal surfaces are thoroughly cleaned and slushed with rust-preventive compound. Wherever possible they are covered with a tough waterproof paper, burlap, canvas, or other suitable material to keep out dust and light.

m. Inspections.—A vehicle left in storage for any length of time should be inspected periodically to determine the extent of deterioration taking place. Necessary remedial action should be taken promptly. Every engine and vehicle stored in the open or under sheds should be inspected every 30 days. The wooden plugs in the spark plug holes will be removed, the engine will be cranked slowly by hand to make sure that the pistons are not stuck and to distribute the oil in the bearings and cylinders.

n. Limited storage.—Although the preparations for storage outlined herewith deal specifically with storage of motor vehicles for an indefinite period of time, they should be observed in all cases as far as the labor and time available warrant.

■ 179. COMPONENTS AND EQUIPMENT.—Components removed from vehicles due to selective storage requirements must be completely overhauled before being stored. These components, including batteries and fire extinguishers, need not be retained in storage for any particular vehicle, but should be considered as stock when issue becomes necessary. However, stock records must always bear a balance of an amount at least equal to the items *due vehicles in storage*, unless it is otherwise directed by competent authority. For additional information, see AR 850–18, TM 9–850, and the Technical Manual on the particular vehicle to be stored.

a. Components.—(1) *Engines.*—(*a*) *General.*—Engines will normally not be removed from vehicles in dead storage, but may be held in stock after overhaul until the vehicle is again

brought into the shop. Reserve engines will be mounted in suitable racks or carriers in closed storage in a manner which will permit turning the crankshaft for periodic cylinder wall slushing. Wooden or aluminum plugs are inserted into the spark plug holes; spark plugs and gaskets accompany the engine. Apertures to the engine crankcase or manifolds which may be exposed due to the removal of the carburetor, starter, generator, or other accessories should be closed to prevent entrance of foreign matter and moisture. Whenever possible, engines should be stored complete with all accessories and ready for installation.

(*b*) *Radial engines.*—Aircraft radial engines as installed in certain combat vehicles require special methods of storage and preservation. Due to the fact that lead deposits form in the cylinders, valve stems, and vale seats through the use of ethylized fuels, all such surfaces must be coated with rust-preventive compound or oil. Running the engine for a few minutes on common or low-test fuel will aid in eliminating this acid condition. The exterior of radial engines must not be painted but will be coated with rust-preventive compound. Cartridge starters must be entirely disassembled to remove powder-fouling and to prevent corrosion in the firing mechanism, cylinder, and piston.

(2) *Other items.*—All other items stored separately will be properly cared for while in storage, according to the nature of the item. Instruments will be carefully stored and wrapped in wax paper to exclude moisture. Track shoes, bogie wheels, and supporting rollers having solid rubber surfaces will be stored in a cool, dry, and dark location, after all oil or grease has been wiped off.

(*a*) *Electric units.*—Generators, starters, coils, voltage control units, magnetos, and distributors need little attention under normal storage conditions except that their exteriors are kept painted, their finished surfaces slushed with oil, and that they are identified by tags. Distributor interrupters and heads should be wrapped in waxed or greased paper when separately stored. Electric gages, compasses, and meters must be handled with care in order not to break the glass and jar the sensitive mechanisms. Regulator and relay units should be placed in waterproof paper containers.

(*b*) *Batteries.*—Batteries removed from vehicles should be cleaned, if dirty, by brushing the external parts and terminals with a soda or ammonia solution. A light coat of vaseline should be applied to the terminals. The batteries may be pooled with the general stock of issue batteries in a storage room which should be quite dry and whose temperature should never fall below 40° F. Batteries should be recharged at least every 60 days, or whenever the specific gravity reading is below 1.250 in winter or below 1.225 in summer. Hydrometer readings should be taken every 2 weeks, and proper water levels should be maintained. If water is added in very cold weather, the battery should be immediately charged to mix the water with the electrolyte. The battery will be tagged or marked with the United States vehicle number, and a log will be kept wherein will be recorded the date the battery is placed in storage and its maintenance data while in storage. When *new* batteries are to be stored for a period of from 9 to 12 months (preferably not over 9 months), they should be fully charged, the electrolyte poured out (it may be stored separately in closed glass containers and used again), the cells rinsed two or three times with water and drained for 15 minutes, and the vents closed and sealed with paraffin or sealing compound. Once stored in this manner, the batteries should not have their vent plugs disturbed until they are filled and charged. The hydrometer reading should be taken and recorded on the battery tag in case the original electrolyte is not saved which will necessitate the preparation of a new mixture whose specific gravity should be the same as the original electrolyte. *Caution.*—Never pour water into acid; pour the acid into the water, slowly, stirring the mixture gently but thoroughly while the acid is being added. Large quantities of acid may require hours for safe dilution. Always correct hydrometer readings for temperature when measuring specific gravity of the mixture (add 0.001 to the reading for every 2½° above 80° F.); otherwise the specific gravity will be too high when the mixture cools.

(*c*) *Tires and tubes.*—Pneumatic tires and tubes should be kept in a cool (50° to 60° F.), dark, dry place. Used casings should be repaired, cleaned, wrapped in burlap, paper, or

cloth, and stored vertically side by side. Tubes should be deflated, removed from the casing, cleaned, repaired, folded loosely, and stored in pasteboard cartons. Care should be taken that there are no sharp folds and that a small amount of air is left in the tube to keep creases from forming. Bullet sealing tubes to be stored should first be repaired by cold patching only and then inflated to round out the tube. Store them inflated and in a horizontal position.

b. Equipment.—(1) All equipment should be removed, properly preserved, and stored in a supply room or truck, and should receive a periodic check and attention to insure its completeness and serviceability.

(2) Leather equipment will be preserved in accordance with instructions contained in paragraph 156. Leather helmets should not be flattened or otherwise deformed to effect economical storage. Web equipment, felt washers, canvas waterbuckets, back rests, seat cushions, and other textiles will be sprinkled with flake naphthalene as a moth preventive. The recommended concentration is obtained with about 1 pound of naphthalene per 100 cubic feet of material.

(3) Thick paper gaskets and paper gasket material will be kept impregnated with light oil to prevent shrinkage and drying.

(4) Fire extinguishers must be stored full of liquid. If the liquid is below level, the washers and valve seats will deteriorate rapidly, and the extinguisher will become unserviceable. They should be operated about one stroke monthly. See TM 9–850 for recharging instructions.

(5) Flashlight batteries will be removed and stored separately when flashlights are to be stored for any length of time, as corrosion or sulphonation may occur to ruin the casing and contacts.

(6) All other tools and accessories will be repaired, repainted, or regreased, if necessary.

c. Armament.—All small-arms fire equipment such as automatic rifles, machine guns, etc., should be removed from the vehicles, coated with preservative, and stored in chests or on open racks. Driving springs should be removed from the bolts and stored with spare parts.

SECTION VII

STORAGE OF WEAPONS

■ 180. STORAGE OF SMALL ARMS.—All small arms should be stored in suitable packing chests in secured covered storage. The utmost care must be taken to protect these weapons from dirt and rust, in order to insure perfect functioning of the mechanism and continued accuracy of the barrels. All small arms weapons must be protected against theft.

a. Prevention of deterioration.—(1) *Preservatives.*—(*a*) Sperm oil or oil, lubricating, for aircraft instruments and machine guns is the most suitable oil for preserving the mechanism of small arms weapons. This oil is efficient for preserving the polished surfaces, the bore, and the chamber for a period of from 2 to 6 weeks, depending on the climatic and storage conditions.

(*b*) Compound, rust-preventive, light, is a semisolid material, and compound, rust-preventive, heavy, is a solid material at normal temperatures. This compound is efficient for preserving the polished surfaces, the bore, and the chamber for a period up to 1 year, depending on climatic and storage conditions. (See TM 9–850.)

(2) *Preparation for storage.*—The weapons should be cleaned and prepared with special care. The bore, all parts of the mechanism, and the exterior surfaces should be thoroughly cleaned and then dried completely with rags. In damp climates, particular care must be taken to see that the rags are dry. After a metal part is dried, the bare hands should not touch that part. All metal parts should then be coated with sperm oil or with rust-preventive compound, depending on the length of storage (see (1) above). Application of the rust-preventive compound to the bore of the piece is best done by dipping the end of the bore in a vat of warmed rust-preventive compound and pumping the compound into the bore with a ramrod. Small parts should be dipped into the rust-preventive compound. Paint the wooden supports with rust-preventive compound. Before placing rifles in the packing chests, see that the bolts are in the forward position and that the firing pins have been released. Place the weapon in the packing chest, handling it only by its wooden parts.

Under no circumstances should a weapon be placed in storage wrapped in a cloth or other cover, or with a plug in the bore. Such articles collect moisture which causes the weapon to rust.

b. Storage of chests.—Chests of arms should be stored with 2- or 3-inch dunnage on the floor and with packing strips about ½-inch thick between layers of chests. If possible, a space of about 1 inch should be left between chests and between rows in order that air may circulate on all sides of the packing chests. New matériel should not be stored in the same stack with cleaned and repaired matériel. Chests should be uniformly marked with the following symbols:

New—Never in service.
C & R—Reconditioned, repaired, and placed in serviceable condition.
Serv.—Used, but serviceable.
Unserv.—Used, and unserviceable.
Arsenal repair—Unserviceable, to be shipped to an arsenal for repair.

c. Prevention of theft.—(1) Small arms should be stored in a strong room in racks or arm lockers that are bolted to the floor. If it is impossible for them to be bolted to the floor, they should be chained together in such a large mass that it is impossible to move them.

(2) If the items are to be stored for a considerable length of time, it is advisable to remove an important part of each weapon and store it separately in some other place. Thus, if one of the weapons were stolen, it would be unserviceable.

■ 181. STORAGE OF FIELD ARTILLERY.—*a. Gun and carriage.*—Field artillery, especially light field artillery, should be stored in covered storage whenever possible. When open storage must be restored to, all guns and carriages should be completely covered with tarpaulins and placed in such a manner that they are protected from the weather and from hostile observation. General precautions for all field artillery that should be observed in preparation of all field artillery for storage are:

(1) The bore of the gun, breech mechanism, and all bright and unpainted surfaces should be thoroughly washed

with soda ash solution, dried, and cleaned with solvent, dry-cleaning. A thick coating of compound, rust-preventive, light, is then applied to the metal surfaces.

(2) The gun should be thoroughly overhauled before being placed in storage, and all necessary repairs made to insure perfect functioning of the mechanism. Repairs that have not been made should be noted on a tag securely attached to the gun and should be effected at the earliest possible time.

(3) Gun slides and all exposed parts of the axle and traversing and elevating gears should be protected by a coating of compound, rust-preventive, heavy, or light, depending on storage conditions.

(4) The surfaces of the quadrant seat and the leveling plates should be coated with a rust-preventive compound, and protected from injury.

(5) In case the carriage is to be stored or remain unused for any considerable length of time, all bright and unpainted surfaces should be protected with rust-preventive compound. The carriage should be jacked up high enough for the wheels to be relieved of most of the weight of the gun. The axle should be dismounted at least every 6 months to remove any water or condensed moisture which may have accumulated in the housing.

(6) Covers for the breech muzzle and miscellaneous parts should be securely attached in their proper places.

(7) Recoil mechanism may be stored either separately or mounted on carriages. They must be kept filled with the specified recoil oil (TM 9–850), and the nitrogen maintained at the pressure specified for service. When mounted, the recoil mechanism and gun will be securely fastened so that the gun cannot slide.

(8) All field artillery in storage should be inspected at periodic intervals, and the mechanism disassembled sufficiently to disclose any rust that may be forming.

b. Sighting and fire-control equipment.—(1) *Storage.*—Fire-control and sighting equipment should be overhauled, repaired, cleaned, and placed in packing boxes in a strong room within a warehouse. Such a room should be maintained at a uniform temperature of at least 50° F. Care should be taken to prevent grease from getting on the optical

parts. Dunnage should be placed on the floor to insure adequate air circulation.

(2) *Preparation for storage.*—After the equipment has been overhauled and thoroughly cleaned, the following steps should be taken to prepare it for storage:

(*a*) Instruments should be dried completely and then covered with a film of oil, care being taken that the oil does not come in contact with any glass or find its way into the interior of the instruments.

(*b*) After being oiled, the instruments should be wrapped in heavy brown paper. Large instruments should be stored in the packing cases provided for them, care being taken not to rub off the rust-preventive compound. The padding in the cases should be absolutely free from moisture, and the bearing surfaces should have a thin film of oil over them. Small instruments may be stored in closets or on shelving in the instrument storeroom at a uniform temperature of at least 50° F.

(*c*) All rubber attachments or component parts that can be removed without removing an integral part of the instrument or dismantling the instrument should be removed, cleaned with a mild soap solution, and thoroughly dried. Oil or grease should not come in contact with rubber parts. These may be stored separately in the instrument storage room and will be tagged with identification markers.

(3) *Inspection.*—Each 6 months several fire-control instruments, selected at random, will be removed from storage and inspected to ascertain how the matériel is keeping under the storage conditions.

■ 182. STORAGE OF ANTIAIRCRAFT ARTILLERY.—Antiaircraft artillery should be stored under the conditions specified in paragraph 181. The plugs and receptacles of the data transmission system should be kept covered with the covers provided so as to exclude moisture. Sights and all instruments should be covered with oil, care being taken that oil does not come in contact with the glass or rubber or find its way into the interior of the instruments.

CHAPTER 12

PREPARATION OF GASOLINE POWERED TANKS FOR OVERSEA OR DOMESTIC SHIPMENT, AND FOR STORAGE

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SECTION I

GENERAL

■ 183. PURPOSE.—The purpose of this chapter is to provide a procedure for preparing tanks to resist corrosion and deterioration during extended periods of shipment or storage, and especially all oversea shipments.

■ 184. SCOPE.—It is realized that routes of shipment and the flow of tanks from the tank arsenal or manufacturer to and from the combat zone, maneuvers, various locations of the using arms, overhaul depots and arsenals, ports of embarkation, domestic storage, oversea departments, etc., necessarily present problems and variables peculiar to the conditions and needs of the particular case involved. It is intended, whenever possible, that strict adherence to the exact procedures outlined herein, which are applicable to the case involved, shall be enforced.

■ 185. SUMMARY.—Tanks are precision built, composed of parts so interrelated that all must function satisfactorily for correct operation. Neglect, misuse, or incorrect care of any part will result in its rapid deterioration and will probably cause malfunctioning of the tank or a complete breakdown. It is imperative that every possible step be taken to guard

against destroying forces such as corrosion, abrasion, and general deterioration due to incorrect methods of shipment and storage, and lack of adequate protection in transit, in storage, and in use. The procedures outlined herein are necessary and are required to insure delivery of serviceable tanks at the combat zone.

■ 186. PRECAUTIONS.—*a. General.*—In all instances, precautions must be taken against sabotage, rust and corrosion, fire, rain, frost, sea mist, and sea water, hot sun, rough treatment and movements in transit and storage, hazards to the health and body of personnel, etc.

b. Spraying operations.—(1) During spraying operations of oils, preservative lubricants, greases, sealing compounds, shellac, Par–Al–Ketone–B, solvents, solvent, dry-cleaning, carbon tetrachloride, chemicals, paints, etc., the spray operator shall be instructed to wear an approved respirator. Present medical experience indicates that quantities of any type of mineral oil taken into the lungs through the respiratory system may constitute a definite health hazard.

(2) It should be recognized that during spraying operations with any material, irritation will be greater in the eyes than in other exterior portions of the body, and care should be exercised to avoid contacts. Ordinary precautions will be taken. Goggles must be worn, direct contact must be avoided, etc.

SECTION II

PREPARATION AT PORT OF EMBARKATION OR PROVING GROUND FOR OVERSEA SHIPMENT OR EXTENDED PERIODS OF STORAGE

■ 187. PURPOSE.—The purpose of this section is to give instructions in preparing tanks for shipment to insure delivery at fields of combat in serviceable condition, and to establish procedures for preventing corrosion and deterioration based on two principles:

a. Metallic surface protection with the use of active preservative lubricants and corrosion preventives to neutralize reactions which normally occur on metal surfaces when corroding.

b. A complete and thorough tank sealing job combined with a dehydrating agent necessary to maintain an atmosphere within the tank itself, relatively free from moisture and considerably below the dew point.

■ 188. SEALING.—Unless the tank is thoroughly sealed and properly dehydrated, the use of preservative lubricants alone will not prevent serious corrosion during oversea shipments or during extended periods of storage. Sealing, or partially sealing a tank without the use of a correct dehydrating agent will promote corrosion rather than prevent it, because air circulation and ventilation is decreased, and moisture condensation on all inside tank surfaces is increased. A correct dehydrating agent must be used in order to prevent corrosion due to the dehydrating agent itself.

■ 189. MATERIALS AND EQUIPMENT REQUIRED.—*a. Oil, lubricating, preservative, medium (corrosion-preventive lubricating oil).*—(1) *Specification.*—U. S. Army, Ordnance Department Specification No. AXS–674, oil, lubricating, preservative, medium.

(2) *Approved product.*—Penola AE 603 corrosion preventive, Penola, Inc., Pittsburgh, Pennsylvania.

b. Compound, rust-preventive, light.—(1) *Specification.*—U. S. Army Specification 2–84b, dated November 12, 1941, compound, rust-preventive, light.

(2) *Approved suppliers.*—(*a*) The Simonize Co., Chicago, Illinois.

(*b*) Standard Oil Co. of Indiana, Chicago, Illinois.

(*c*) Socony-Vacuum Oil Co., Inc., 26 Broadway, New York, New York.

(*d*) Standard Oil Co. of New Jersey, 26 Broadway, New York, New York.

(*e*) Alox Corp. Works, Niagara Falls, New York.

c. Compound, rust-preventive, lead base (Par–Al–Ketone–B).—(1) *Specification.*—U. S. Army, Ordnance Department Specification No. AXS–673, compound, rust-preventive, lead base (Par–Al–Ketone–B).

(2) *Approved product.*—Alox Corp. Works, Niagara Falls, N. Y., Par–Al–Ketone–B.

d. Oil spray gun nozzle with pressure tank and pump.—De Vilbiss Type CL 511 complete with all hose and connections.

e. Brushes for applying rust preventives and shellac.—One 4-inch and one ½-inch brush will be required.

f. Utilitape, 4-inch and 1-inch (any color).—Industrial Tape Corp., New Brunswick, New Jersey.

g. Silica gel of proper grade.—Protek Sorb. The Davison Chemical Corp., Baltimore, Maryland. (To be procured and kept sealed in cans or drums until used.)

h. Unleaded aviation gasoline.—This should not be less than 72 octane number.

i. Grain alcohol (denatured ethyl alcohol).—This is used for cutting shellac.

j. Shellac solution.

k. Oil cloth, No. 2 grade or better (any color).—Other materials are under consideration for simplification and saving of time during application. They are not yet approved.

l. Waterproof paper 60–30–60.—Other materials are under consideration for simplification and saving of time during application. They are not yet approved.

m. Waterproof paper 30–30–30.—Other materials are under consideration for simplificaton and saving of time during application. They are not yet approved.

n. Wiping rags.

o. Solvent, dry-cleaning.

p. Bailing wire.

q. Fiberboard.

r. Lead wire seals and punch.

s. Carbon tetrachloride.

t. Three empty 1-gallon syrup cans.

u. Two empty 10-gallon buckets.

■ 190. PREPARATION AT PORT OF EMBARKATION.—*a.* Remove over-all tarpaulin by removing baling wire fastenings and battens on car floor. This tarpaulin will be carefully folded and returned to the manufacturing plant or arsenal for use in Peddler Service.

b. Remove lead wire seal from the right side tank door.

c. Open all tank doors and ports.

d. Remove all plugs and canvas covers from gun muzzles, cupola openings, etc.

e. If tank is wet, thoroughly dry all accessible inside surfaces of crew and engine compartments with wiping rags. *Do not wipe the guns.*

f. Apply the brakes if not already applied, and see that gear levers are in neutral. Wire all brake levers in "full on" position.

g. Remove all material previously applied to close apertures, openings, ports, doors, guns, etc.

h. Clean all unpainted surfaces on inside of crew compartment with rags saturated with clean, unleaded aviation gasoline. *Do not clean the guns.* ***Caution.***—Care must be taken to prevent fire when using aviation gasoline. Keep away from sparks, open flames, hot surfaces, static electricity, etc. Use only a small quantity at one time.

i. Tape accessible electrical and instrument threaded connections, etc., with 1-inch Utilitape and brush over with shellac.

j. Tape over and seal with 1-inch Utilitape all detached instruments, threaded instrument connection openings, etc., and brush over tape with shellac.

k. Test all observation slides and ports, and coat operating mechanisms with compound, rust-preventive, light. Lock each in the closed position. Seal them externally with compound, rust-preventive, light.

l. Apply compound, rust-preventive, light, as follows:

(1) Press into door cracks, gun muzzles (place a lump in each gun muzzle, sealing the bore at that point), turret races, pistol ports, vision doors, sight doors, drain plugs (holes, plugs, etc., underneath the tank), recessed bolts, etc., around transmissions, differentials, final drives, etc.

(2) Take extreme care to keep oil, rust-preventive, and grease off the plastic in the vision ports, etc., both internally and externally. Protect these with folded fiberboard prior to sealing with compound, rust-preventive, light.

(3) Only the openings, seams, cracks, apertures, etc., which lead to the tank-crew and engine compartments are treated as described herewith.

m. If the engine has not been prepared for shipment and storage in accordance with sections III and IV, then the engine will be treated in accordance with the details of section IV.

n. If the tank engines are received at the port of embarkation already treated in accordance with the detailed requirements of sections III and IV, then the installed tank engines will not receive any attention at the port of embarkation.

o. A good layer of Par-Al-Ketone-B shall be applied by means of a brush over and on all screws (heads, threads, etc.), open seams, cracks, bolts, nuts, etc., which lead to the tank-crew and engine compartments. Brush or spray over clearance between outside spacer and hub of bogie wheels and idler wheels and into clearance on inside face of track-supporting rollers. Exposed threads on suspension parts should also be coated. *Do not brush or spray sprocket teeth. Do not permit material to deposit on rubber track. Do not apply any material to the track itself.*

p. All metal surfaces around nuts, bolts, turret races, ports, doors, filling caps, openings, etc., which were filled and/or covered with compound, rust-preventive, light, will then be cleaned free of excess rust preventive, grease, cinders, soot, dust, etc., by using clean unleaded aviation gasoline-soaked rags, or with rags saturated with carbon tetrachloride.

NOTE.—Stoddard solvent, kerosene, or other similar solvents cannot be used because they do not vaporize or dry rapidly enough and leave a greasy film on the metal surfaces, hindering adherence of the tape applied on the metal.

q. The seams will then be shellacked over with a brush.

NOTE.—This applies to the seams underneath and on the sides of the tank, as well as all other seams leading to the crew and engine compartments.

r. In cases where cupolas are removed and boxed separately, the cupola openings will be plugged with a two-segment ¾-inch plywood plug, extending into the opening and with top segment resting on cupola race seat. The plug will be fitted with a waterproof paper gasket (60–30–60), coated with compound, rust-preventive, light, on both surfaces. The cupola opening plywood plug will be bolted into position.

(1) A waterproof paper covering (30–30–30) will be cut

with its side approximately 2 inches greater than the diameter of the plywood plug. It will be centered over the cupola opening and plywood plug and sealed around the edges with Utilitape after the metal has been shellacked. The tape will then be shellacked over by brushing.

(2) An oilcloth covering (*k* above), with the side approximately 2 inches greater than that of the waterproof paper, will be cut and placed centered over the waterproof paper covering, tacked into place with short strips of 1-inch Utilitape, and then sealed around the edges with Utilitape. The tape will then be shellacked over by brushing.

(3) The entire surface of the oilcloth covering will then be taped over with 4-inch Utilitape laid in strips, each strip overlapping the previous one by approximately 1½ inches, and extending well onto the clean, shellacked tank metal surface.

(4) The entire taped metal surface will then be brushed over with shellac; then, after drying, brushed or sprayed with a continuous film of Par-Al-Ketone-B, extending well onto the metal of the tank.

s. Large openings, all doors, engine compartment air inlet and outlet gratings, gun rotors, gun ports, pistol ports, vision doors, sight doors, gasoline tank filling cap openings, etc., including every large opening into the crew and engine compartments, must be sealed as follows (see *aa* below):

(1) Cut rectangles of waterproof paper (60–30–60) and oilcloth to fit opening, overlapping edge approximately 1 and 2 inches respectively.

(2) Shellac tank metal surface and waterproof paper covering in place with short strips of 1-inch Utilitape.

(*a*) Seal edges of waterproof paper covering in place with Utilitape, when possible, and shellac over the tape.

(*b*) The oilcloth covering will then be placed and taped into position, sealing the edges. The tape will then be shellacked over.

(*c*) The entire surface of the oilcloth and edgetape will then be taped over with 4-inch Utilitape laid in strips, each strip overlapping the previous one by approximately 1½ inches and extending well onto the clean tank metal surface. These strips will be placed beginning at the bottom and working

upward in order that the laps will be similar to weatherboarding and shed water rather than trap it. This is important.

(*d*) The entire final taped surface will then be brushed over with shellac and, after drying, will be brushed or sprayed entirely over with Par-Al-Ketone-B, forming a complete bonding well onto the bare metal surface at the edges of the taped opening. (See *aa* below.)

t. Small openings, holes, etc., will be sealed exactly as outlined in *s* above for large openings, except 30–30–30 waterproof paper will be used in small squares instead of the heavier paper, combined with oilcloth; shellac and Par-Al-Ketone-B as outlined above.

u. Turret race openings will be carefully cleaned free of excess compound, rust-preventive, light, with aviation gasoline or carbon tetrachloride at the edges and at the base, then sealed over with 4-inch Utilitape brushed over with shellac. Both edges of this 4-inch tape will be sealed, using 1-inch Utilitape overlapping the edges of the 4-inch tape. The 1-inch tape will be brushed over with shellac and brushed or sprayed completely over with Par-Al-Ketone-B, forming a good continuous film from the tank metal on both sides of the tank and across the tape.

NOTE.—This is a place where rain and snow water frequently enter and an excellent job is essential. Cupola race openings will be likewise sealed.

v. Gun muzzles will be plugged at the muzzle opening with a lump of compound, rust-preventive, light. A disk of waterproof paper (60–30–60) will be cut to fit the end of the muzzle and placed over the gun barrel opening, being held temporarily in place by the rust preventive. The canvas muzzle covers will be put on the muzzles and completely taped over with 4-inch and 1-inch Utilitape, sealing it to the gun barrel. The tape will then be brushed over with shellac and Par-Al-Ketone-B.

w. (1) All installed guns will be wrapped with 30–30–30 waterproof paper (1½ layers) taking care that the seams of the paper are on one side or beneath the gun; the paper being taped in place with 1-inch Utilitape (short strips). The correct wrapping is necessary to shed water rather than trap it.

(2) The guns will then be similarly wrapped with oilcloth, taped in place with seams to side or underneath, and sealed with tape. The tape will be brushed over with shellac.

(3) The guns will then be taped completely over with 4-inch Utilitape, overlapping the tape about 1½ inches and making a good bond with the muzzle tape, using 1-inch Utilitape at the intersection. These tapings will be horizontal with the gun and the segments arranged to shed water.

(4) The tape will be shellacked and then brushed or sprayed over with Par-Al-Ketone-B.

x. (1) All gun rotors will be fitted with rectangular waterproof paper (60–30–60) and oilcloth coverings cut to properly lap across the rotor depression and with a hole to properly fit the gun at the rotor. These will be placed, taped, shellacked and coated with Par-Al-Ketone in accordance with the procedure for the tank doors, etc., outlined in *s* above. The rotor coverings must form a good adhering bond with the tank metal and onto the guns.

(2) Prior to the application of the Par-Al-Ketone-B, the edges of the taped surface will be sealed to the tank metal and to the taped gun with 4-inch and 1-inch Utilitape.

(3) The taped rotor covering and taped gun covering will then be completely covered with Par-Al-Ketone-B by brushing or spraying, making a good bond to the tank metal and at the rotor cover and gun covering intersections.

y. All auxiliary items (sirens, lights, etc.) will be boxed separately but if allowed to remain installed on the tank, they shall be taped completely over, shellacked and covered with Par-Al-Ketone-B.

z. Gasoline filling caps, exhaust muffler openings, etc., will be taped over, shellacked and brushed over with Par-Al-Ketone-B.

aa. Prior to sealing the right side and rear tank doors, the following steps must be taken (see *s* above):

(1) Lock the turret, guns, and other mechanisms.

(*a*) All guns are to be locked in position center forward and slightly depressed. This will be done prior to sealing the rotors, etc. The adjusting devices will be wired so they cannot turn.

(*b*) Check the brake again and see that it is "full-on", with gear levers in neutral. The brake levers will be wired in position.

(2) Lock from inside of tank all doors and flaps, with the exception of rear tank engine compartment doors and right side door.

(3) Secure the inside locking device on right side door by wiring handle of same to handle of adjacent pistol port to prevent door from accidentally locking, as this door is the only entrance to the tank.

(4) Disconnect the battery leads. Tape the leads with 1-inch Utilitape and apply by hand compound, rust-preventive, light, to the battery terminals. Check the equipment on the inside of the tank.

(5) Place small auxiliary boxed guns, sights, radio, etc., on inside of tank and secure them adequately by wooden bracings and/or wiring so they cannot move either horizontally or vertically. Place the fire extinguisher securely in its holder.

(6) Lightly spray oil, lubricating, preservative, medium, on all unpainted metal surfaces within the crew compartment, directing the spray directly to the exposed metal surfaces, along cracks, seams, joints of instruments, threaded areas, connections, etc.

(7) Lightly spray oil, lubricating, preservative, medium, on all unpainted surfaces of the engine compartment.

(8) Immediately after the spraying operations of (6) and (7) above hang bags of silica gel, well distributed, in the crew compartment and immediately thereafter close the right tank door and seal it in accordance with (*s*) above. (Secure the tank padlock with its keys, the inspector's seal, etc., to the hasp prior to sealing the door in accordance with (*s*) above.)

(*a*) Use twenty 1-pound bags of silica gel in the crew compartment of medium tanks. Use fifteen 1-pound bags of silica gel in crew compartment of light tanks, and twenty-five for the heavy tanks. (Secure a red tag on the door showing the number of bags of silica gel which were placed in this compartment.)

(*b*) Silica gel absorbs moisture rapidly and must always be kept in a closed metal can or drum prior to immediate use. Tanks must be sealed rapidly after hanging silica gel to pre-

vent absorption of moisture and deterioration of the gel's ability to dehydrate.

(c) Smear compound, rust-preventive, light, around edges of right door and wire-seal it in the closed position, using the standard lead seals and punch obtained from the inspection department.

(9) During the door sealing operation given in (8) (c) above, hang bags of silica gel, well distributed, in the engine compartment, close and lock the rear tank doors and seal them in accordance with the procedure outlined in (s) above, using waterproof paper, oilcloth, tape, shellac, and Par-Al-Ketone-B. (Secure a red tag on the door showing the number of bags of silica gel which were placed in this compartment.) Use nine 1-pound bags of silica gel in the engine compartment of medium tanks, six in the engine compartment of light tanks, and twelve in the engine compartment of heavy tanks.

(10) At the point where the axles or drive shafts emerge from the tank, seal cover plates and all openings by applying a heavy coating of Par-Al-Ketone-B with brush or spray, or by hand apply compound, rust-preventive, light, making a thorough seal.

(11) Spray or brush all unpainted exterior surfaces with Par-Al-Ketone-B, or apply compound, rust-preventive, light by hand. *Do not apply to track or sprocket teeth.*

(12) Complementary shipments of spare parts, guns, sighting equipment, tools, etc., will be handled, packed, and shipped, as directed. It is permissible to ship the towing cable, canvas covers, etc., inside the tank after securing to the floor in the crew compartment.

(13) If a thorough sealing job has been done on top, sides, ends, and bottom of the tank as outlined, and the silica gel is handled as outlined, then the tank is properly prepared for oversea shipment or storage for 6 to 12 months' duration, depending upon the humidity and storage conditions.

■ 191. PREPARATION AT PROVING GROUND.—*a.* Remove over-all tarpaulin by removing bailing wire fastenings and battens on car flooring.

b. Remove lead wire seal from the right side tank door.

c. Open all tank doors and ports.

d. Remove all plugs and/or canvas covers from gun muzzles, cupola openings, etc.

e. If tank is wet, thoroughly dry all accessible inside surfaces of crew and engine compartments.

f. If guns are to be installed, install them.

g. If guns are not proof-fired, prepare them for proof-firing and proof-fire them from the railroad car.

(1) Clean gun barrels with cotton waste swabs, using solvent, dry-cleaning, for oil and grease, etc., removal. If any indications of rust are present, they should be removed with a standard wire brush, followed by cleaning as outlined above.

(2) Make necessary adjustments.

(3) Switch car into proof-firing position.

(4) Proof-fire the guns, making necessary records.

(5) Clean gun barrels with solvent, dry-cleaning.

(6) Reapply compound, rust-preventive, light, to gun barrels and breeches after proof-firing.

(7) Cover gun muzzles by reinstalling gun muzzle canvas covers. Do not plug gun muzzles. Tape canvas covers onto the gun barrel with 1-inch Utilitape. (Apply shellac to gun barrel if necessary.)

h. Check all tank and gun mechanisms and make necessary adjustments when required and put tank into condition for service.

i. If it is apparent that the tank has not been lubricated, then lubricate it in accordance with its War Department Lubrication Guide (Chek-Chart), with the exception of its engine.

j. When tanks are received at the proving ground without having had their engines properly treated at the manufacturing plant or arsenal as prescribed in section III, it will be necessary to do this work at the proving ground, and in such cases the detailed procedure of section IV will be followed.

k. When tanks are to be completely sealed and dehydrated by the proving ground for oversea shipment or long-time domestic storage, and are not to be entered or altered at the port of embarkation, then the detailed procedure of para-

graph 190 will be followed. Otherwise, the tank will be handled as follows:

(1) See that battery is disconnected, leads are taped, and compound, rust-preventive, light, is applied to terminals.

(2) Check brake. Place it "full-on" with gear levers in neutral. Secure them in position with wire.

(3) Reinstall cupola opening plugs if previously removed.

(4) Remove cupola and box separately if required by shipping instructions.

(5) Provide cupola opening with plywood plug as outlined in paragraph 194*q*.

(6) Lock guns center forward, slightly depressed.

(7) Lock the turrets, guns, and other mechanisms that may vibrate or swing out of position.

(8) Close all doors and ports.

(9) Secure the inside locking device on right side door by wiring handle of same to handle of adjacent pistol port, to prevent door from accidentally locking, as this door is the only entrance to the tank.

(10) Check the equipment on inside of tank, then close the right side door. Wire-seal it in the closed position, using the standard lead seals and punch obtained from the inspection department.

(11) Cover the tank with the over-all tarpaulin, battening same down to car flooring, as it was when received by the proving ground, and secure it loosely with bailing wire, double-banded across tarpaulins and tank in accordance with procedures specified.

l. Complementary tank shipments of spare parts, tools, guns, sights, books, literature, etc., will be made in accordance with instructions specified.

SECTION III

PROCEDURE AT THE MANUFACTURING PLANT OR TANK ARSENAL FOR DOMESTIC SHIPMENT

■ 192. GENERAL.—The tank with accessories will be lubricated in accordance with its corresponding War Department Lubrication Guide (Chek-Chart), and will be tested for mechanical and electrical efficiency in accordance with existing pro-

cedures. All equipment, according to the latest schedule, will be complete and in serviceable condition. Whenever tanks are shipped with guns installed, the guns should be proof-fired prior to installation, if possible. Gun mountings and operating mechanisms will be complete and installed correctly. Further preparation should not be attempted until all final adjustments have been made, all parts cleaned, and all surfaces to be painted have been painted and are dry.

a. If required, the external surfaces of the tank engine will be cleaned in accordance with paragraph 198.

b. If the tank is equipped with a Homelite Heater and Generator Engine (or other motor-generator set), it will be treated in accordance with paragraph 200.

c. The tank engine will be treated in accordance with paragraphs 195, 196, 197, and 199. This can be accomplished on the ground, plant flooring, or on the railroad car.

(1) If ramps are used for loading, thereby requiring tank engine operation, the oil, lubricating, preservative, medium, treatment will be accomplished after loading on the car.

(2) If cranes and slings are used for loading, the oil, lubricating, preservative, medium, treatment will be accomplished where most convenient.

(3) *The engine must not be turned over or operated after this treatment.*

■ 193. OVERSEA SHIPMENT.—If the tank is to be completely prepared for oversea shipment at the manufacturing plant or tank manufacturing arsenal, the detailed procedure outlined in paragraph 190 will be followed, in addition to the procedures outlined herein which do not duplicate. In cases of confliction, the procedures of section II have priority.

■ 194. DOMESTIC SHIPMENT.—If the tank is to be prepared only for domestic shipment, the following procedure is applicable:

a. Battery master switch will be opened, leads disconnected and taped, and battery terminals will be coated with compound, rust-preventive, light, U. S. Army Specification No. 2–84b.

b. Battery is to remain "wet-charged."

c. Apply compound, rust-preventive, light, U. S. Army Specification 2–84b, to all guns, thoroughly coating the

interior surfaces of the bores and all surfaces of the breech mechanism. Lock the breeches.

d. Place the muzzle covers on the gun muzzles and tape them in position. Secure curtain on rotor housings.

e. Test all observation slides and ports, and coat operating mechanisms with oil, lubricating, preservative, medium (par. 189*a*), and lock in the closed positions.

f. Coat all unpainted steel, brass, and aluminum with oil, lubricating, preservative, medium (par. 189*a*).

g. Do not grease or oil tracks or sprocket teeth.

h. Check that all items of equipment are well protected with oil, lubricating, preservative, medium (par. 189*a*), and are safely stowed.

i. Brake will be left "full on", and the gear levers in neutral. They will be wired in position.

j. Remove from outside of tank all lamps, sirens, brackets, etc., which might easily be broken or stolen. Pack these in boxes in accordance with box specifications provided.

k. Lock the turret, guns, and other mechanisms that may vibrate or swing out of position. Guns will be locked (never wired) in position, center forward, and slightly depressed.

l. Gun breeches, engine carburetors, magnetos, starters, generators, etc., should be installed and without coverings.

m. All lifting shackles will be installed.

n. Tanks will be shipped with fuel tanks empty, in accordance with carrier regulations.

o. Cupolas will be removed except when specific instructions are issued to the contrary.

p. Cupolas, after removal, will be boxed separately in accordance with the boxing specifications provided and shipped on same car with the tank after compound, rust-preventive, light, U. S. Army Specification 2–84b, has been applied to all unpainted surfaces.

q. Cupola openings will be plugged with a two-segment ¾-inch plywood plug, extending into the opening and with top segment resting on cupola race seat, which is fitted with a tar paper gasket, using compound, rust-preventive, light, U. S. Army Specification 2–84b, applied to both surfaces of the gasket. The cupola opening plywood plug will be bolted into position.

r. Tanks will be shipped without any further sealing with tapes, coverings, cloths, etc.

s. Light and medium tanks will be shipped two per freight car, centered at ends of car over car trucks, fronting toward each end, with their rears facing each other.

(1) Medium tanks will always be shipped on flat cars.

(2) Light tanks will always be shipped in gondola cars when shipment is for a proving ground or for a port of embarkation equipped with an unloading crane.

t. Heavy tanks will always be shipped on flat cars, one tank per car.

u. All tanks for domestic shipment to destinations not equipped with unloading cranes will be shipped on flat cars.

v. Box cars will never be used because the necessity of engine operation during unloading operations will result in the destruction of the engine preservative lubricant treatment.

w. The blocking methods will be as specified.

x. Cars will be marked: "DO NOT HUMP".

y. Place the towing cable, after painting, in the tank pit on top of which are canvas covers, tarpaulins, etc., provided with the tank.

z. Lock from inside of tank all doors and flaps, with the exception of right side door.

aa. Prior to closing right side door, secure the inside locking device by wiring handle of same to handle of adjacent pistol port to prevent door from accidentally locking, as this door is the only means of entrance to the tank.

ab. Place a suitable bolt in the hasp and wire-seal the right side tank door in the closed position, using the standard lead seals and punch obtained from the inspection department.

ac. Tanks will be covered with tarpaulins in transit to protect them from rainfall, dust, cinders, dirt, etc. The tarpaulins will not shred or split if properly battened to car flooring and secured loosely with bailing wire, double banded across tarpaulins and tank in accordance with procedures specified.

ad. All boxed items (tools, parts, guns, sights, literature, gun books, instruction books, record of proofs of guns and mounts) will be shipped in proper packages after correct rust-preventive treatment, wrapping, etc., in accordance with instructions specified.

ae. Boxes will not be shipped beneath tanks, or in positions at the ends of tanks, where they prevent ready access to outside tank surfaces.

af. Tank serial numbers for each shipment will be as specified.

ag. Boxes will be shipped as specified.

ah. All tanks will be shipped without dehydrating agents (silica gel) either within the engine and crew compartment or within the engine itself.

ai. Tank tools and equipment will be shipped in accordance with lists, packing procedures and boxes, packages, and methods of shipment specified.

aj. Maintenance spares will be packaged, and shipped in accordance with packing lists, tagging, marking instructions, package, packing procedures, etc., specified.

SECTION IV

PREPARATION OF INSTALLED TANK ENGINES FOR EXTENDED PERIODS OF SHIPMENT OR STORAGE, AND FOR ALL OVERSEA SHIPMENTS

■ 195. PURPOSE.—The purpose of this section is to provide a procedure for preparing aircraft type tank engines to resist corrosion and deterioration during extended periods of shipment or storage, especially all oversea shipments. This also applies to engines which remain idle in tanks.

■ 196. TIME PERIODS.—*a.* All engines in tanks which are to remain idle for any period exceeding 72 hours will be cleaned and treated as herein specified, at the beginning of the inoperative period. The treatment will be applied immediately after stopping, prior to storage, shipment, or remaining idle.

b. Engines in tanks which are stored, shipped, or allowed to remain idle in tropical climates or near tidewater will be cleaned and treated as herein specified at periodic intervals

of 3 months following the initial treatment, unless the entire tank has been treated, sealed, and dehydrated in accordance with section II; in such event they will be cleaned and treated when the tank is unsealed.

c. Engines in tanks which are stored, shipped, or allowed to remain idle in temperate climates away from tidewater will be cleaned and treated as herein specified at periodic intervals of 6 months following the initial treatment, unless the entire tank has been treated, sealed, and dehydrated in accordance with section II; in such event they will be cleaned and treated when tank is unsealed.

d. Engines in tanks which are stored, shipped, or allowed to remain idle in exceedingly dry climates away from tidewater will be cleaned and treated as herein specified at periodic intervals of 1 year following the initial treatment.

e. Engines in tanks which are to be shipped to domestic or oversea destinations will be cleaned and treated as herein specified at the time of shipping, unless these engines have been so treated within one month prior to the time of shipping and have not been operated since that treatment.

f. All engines in tanks which have been cleaned and treated in accordance with the above, and have been shipped overseas, will be cleaned and re-treated as herein specified at the time of arrival at final routing destination unless the engines are to be operated within 72 hours after arrival, or are to be disassembled.

g. All engines in tanks which have been cleaned and treated as outlined above and which have been operated during any time period whatsoever, and which are to remain idle for any period exceeding 72 hours, will be re-treated as herein specified, at the beginning of the inoperative period. The treatment will be applied immediately after stopping, prior to storage, shipment, or remaining idle.

■ 197. MATÉRIEL AND EQUIPMENT.—*a. Oil, lubricating, preservative, medium (corrosion-preventive lubricating oil).*—(1) *Specification.*—U. S. Army Ordnance Department Tentative Specification No. AXS–674, oil, lubricating, preservative, medium.

(2) *Approved product.*—Penola AE 603 corrosion preventive, Penola Inc., Pittsburgh, Pennsylvania.

b. Compound, antiseize, mica base.—Army-Navy Aeronautical AN–VV–C–566.

c. Solvent, dry-cleaning.—Federal P–S–661 or Treasury General Schedule of Supplies, TPS, class 51, solvent, dry-cleaning, may be procured locally.

d. Oil spray gun nozzle with pressure tank and pump.—(1) *Spray gun.*—De Vilbiss type CL 511 complete with all hoses and connections.

(2) *Pressure tank.*

e. Small household type funnel.

f. Unleaded aviation gasoline (72 octane number minimum).

■ 198. CLEANING EXTERNAL ENGINE SURFACES.—*a.* The preparation of the external metal surface prior to the application of the oil, lubricating, preservative, medium (par. 197*a*) is most important. A very large percentage of corrosion is due to improper cleaning of the metal surfaces before the preservative lubricant is applied. The metal surface should be clean and dry and free of all traces of corrosion.

b. In the cleaning of metal and in handling clean metal surfaces, gloves should be worn to protect the metal from acid stains and corrosion resulting from body perspiration.

c. Grease and dirt may be removed by wiping with rags or with the use of a paint brush soaked in solvent, dry-cleaning, or by spraying with solvent, dry-cleaning, using an air spray (par. 197*d*) after completing the operations required under paragraph 199*a* and *d*.

d. Care should be taken to direct the spray or wash away from carburetor and magnetos.

■ 199. ENGINE TREATMENT.—The tank engine will be treated as follows (if the tank has to be driven onto a railroad car or vessel or into storage, many of the following steps cannot be carried out until the tank is in its final shipping or storage position):

a. Open rear doors of tank at engine compartment.

b. Remove tank floor plugs or circular plates beneath each vertical fuel tank.

c. Remove circular plate or plug located at rear and bottom of sponson, if present.

d. Remove rear tank floor plate beneath engine compartment.

e. Remove tank floor disk plates beneath drain plugs of lubrication oil tank.

f. If the engine has been operating on clear, unleaded fuel, the requirements of *g* below may be omitted.

g. If the engine has been operating on fuel containing tetraethyl lead, it is imperative that the following steps be taken:

(1) Drain all fuel tanks by removing respective drain plugs, now accessible through tank floor openings, or by pumping them out through their filling caps.

(2) Reinstall all fuel tank drain plugs and filling caps.

(3) Drain carburetor by removing its bottom drain plug. (If absent, remove plug gasoline strainer and strainer plug gasket.)

(4) Reinstall carburetor drain plug. (If absent, reinstall gasoline strainer plug and gasket, after cleaning the strainer.)

h. The engine will then be idled at approximately 1,200 rpm for at least 15 minutes, using fuel containing no tetraethyl lead.

i. Stop engine operation.

j. Drain lubricating oil tanks by removing their drain plugs.

k. Drain engine crankcase sump by removing oil sump drain plug. (This is not accessible on some models of light tanks and the operation in such cases can be omitted.)

l. Reinstall all lubricating oil tank drain plugs and crankcase oil sump drain plug.

m. Remove lubricating oil supply tank filler caps.

n. Pour 5 gallons of oil, lubricating, preservative, medium (par. 197*a*), in the lubricating oil supply tank.

o. Replace lubricating oil supply tank filler cap.

p. Prior to idling run (see *q* below), unclamp and remove one hose connector on carburetor air intake tubes.

(1) When tanks are equipped with air filters located externally, remove hose connector between external air filter and carburetor air intake tube, at the air filter connection.

(2) When tanks are equipped with air filters located within the tank itself, remove one hose connector at the Y-carburetor air intake tube manifold, accessible through the rear doors of the tank.

Caution.—During the removal of the hose connectors referred to in (1) and (2) above, extreme care should be taken to prevent nuts, bolts, dirt or foreign matter of any kind from falling into the carburetor air intake tubes.

q. The engine will then be idled at approximately 1,200 rpm for another 15-minute period, using fuel containing no tetraethyl lead.

r. During the last few minutes of operation (*q* above), while the engine is operating under its own power, gradually spray (par. 197*d*) approximately 1 pint of oil, lubricating, preservative, medium (par. 197*a*) into the carburetor air intake tube.

Caution.—Oil, lubricating, preservative, medium, will never be poured into the carburetor air intake tubes. It will always be sprayed.

s. Just prior to spraying the last half pint (approximately) of oil, lubricating, preservative, medium, into the carburetor air intake tubes, the engine will be speeded up to approximately 1,800 rpm, then immediately cut off, allowing the sprayed oil, lubricating, preservative, medium, to continue into the carburetor air intake tubes until the engine stops turning over.

t. Reinstall hose connector on carburetor air intake tube.

u. While the engine is still warm, the oil, lubricating, preservative, medium, will be drained from the engine lubricating oil tanks and engine crankcase lubricating oil sump, and the fuel drained from the fuel tanks and carburetor by the operations required in *g*(1), (2), (3), (4), *j*, *k*, and *l* above. (Allow carburetor and lines to drain thoroughly. The used oil, lubricating, preservative, medium, will be saved and used in successive engines until fully consumed.)

v. Disconnect carburetor fuel supply line at fuel pump connection.

w. By means of a small suitable funnel (par. 197*e*), pour enough oil, lubricating, preservative, medium (fresh and unused), into the carburetor fuel supply line held in a vertical

position to completely fill the carburetor and its fuel supply line.

x. Drain the carburetor by performing the operation provided in *g*(3) above.

y. Reinstall carburetor drain plug; or if absent, reinstall gasoline strainer.

z. Lightly spray all exterior engine surfaces with a fine mist of oil, lubricating, preservative, medium, with the spray gun (par. 197*a*), directing the spray away from the magnetos and carburetor. Only a very thin film of oil, lubricating, preservative, medium, is required on external surfaces.

aa. Reinstall plugs, disks, and tank floor plate removed by operations of paragraphs 198*a* and *c* and 199*d* and *e*.

ab. The engine has now been properly treated to prevent corrosion and deterioration of all interior and exterior surfaces. The tank rear doors to engine compartment may be closed.

ac. The engine crankcase and tank lubricating oil supply tanks will be filled with a full change of engine lubricating oil in accordance with its War Department Lubrication Guide (Chek-Charts Nos. 29, 30, 31, 32, etc.)

ad. Do not turn the crankshaft after the above operations are completed. If the crankcase is turned, the internal surface treatment will be destroyed by washing with engine oil, and the entire procedure must then be repeated.

ae. Do not fill the fuel tanks. Fuel will form gum on aging. Fuel allowed to reach the carburetor will destroy the internal carburetor surface treatment and the procedure must then be repeated.

■ 200. TREATMENT FOR HOMELITE HEATER AND GENERATOR ENGINE.—This equipment is located on sponson in crew compartment and is present in some models of tanks only.

a. Drain the fuel tank by removing strainer at filling cap and pumping dry, or by removing drain plug if present.

b. Open all tank doors and large openings.

c. Stir 1 pint oil, lubricating, preservative, medium, into 1 gallon of gasoline (clear, unleaded) and pour into fuel tank.

d. Reinstall fuel tank filling caps.

e. Operate the Homelite Heater and Generator Set for approximately ½ hour.

f. Discontinue engine operation.

g. Repeat operation of *a* above and save gasoline mixture for another heater treatment.

h. Do not turn over or operate the engine after the above operations are completed.

APPENDIX I

LIST OF REFERENCES

Accidents to ordnance matériel	AR 45–30
Accounting for Government property (guiding regulation).	AR 35–6520
Allowances, receipt, shipment, and issue.	AR 310–60; T/O; T/BA; T/A; SNL's
Ammunition supply	FM 9–6
Camouflage	FM 5–20; FM 21–45
Cleaning and preserving materials	TM 9–850
Equipment:	
Camp and garrison, issued on memorandum receipt.	AR 35–6520; T/A; AR 35–6540
Organizational	T/O; T/BA; AR 35–6540; AR 45–80; Introduction to the Ordnance Catalog; SNL's.
Replenishment of organizational	AR 35–6540
Fire prevention, traffic rules, and other hazards.	AR 30–1270; AR 30–1580; Ordnance Safety Manual
Indorsements, letter, etc., preparation of.	AR 340–15
Inventories	AR 35–6520
Inventory and inspection reports	AR 20–35; OFSB 1–5
Loss of arms report	AR 210–10
Loss or damage chargeable to officers or enlisted men.	AR 35–6640; AR 45–80
Memorandum receipt (W. D., Q. M. C. Form No. 487).	AR 35–6520
Nomenclature, changes in, of items on the stock record account.	AR 35–6560

Numbering, filing, and disposition of property records.	AR 35–6700
Obsolete equipment, serviceable	Sec. VII, OFSB 2–1; AR 45–75
Ordnance personnel for posts, camps, and stations, duties of.	AR 45–30; pars. 2, 3, and Sec. II, OFSB 1–3
Original packages, receipt of	AR 35–6560
Over, short, and damaged report	AR 35–6640 (changed by Circular No. 38, War Department 1941)
Principal items of ordnance supply, report of (OO Form No. 87).	OFSB 1–6
Procurement, interbranch	AR 35–860
Procurement, interdepartmental	AR 35–880
Procurement of property:	
By purchase (general provisions)	AR 5–100
By requisition	AR 35–6540; Sec. X, XI, OFSB 2–1; Sec. II, OFSB 2–2; AR 45–80
Property:	
Excess, disposition of	AR 45–30; Sec. VI, OFSB 2–1
Expendable and nonexpendable	AR 35–6620; SNL's; OFS Circular No. 192, May 17, 1941
Government, receipt, shipment, and issue (guiding regulation).	AR 35–6520
Marking, for shipment	AR 30–955; U. S. Army Specification No. 100–2D
Methods for issuing and transferring.	AR 35–6640; AR 35–6680; AR 700–10; pars. 13, 14, OFSB 2–8
Sale	AR 45–75
Surplus, disposition of	AR 35–6520; AR 45–80

Purchase:	
After advertising	Procurement Regulations
Open market	Do.
Receiving report (W. D., Q. M. C. Form No. 431).	AR 35–6560
Relief from responsibility	AR 35–6640
Report of survey (W. D., A. G. O. Form No. 15).	AR 35–6640
Requisitions	AR 700–10; Sec. II, OFSB 2–2; Sec. II, XI, OFSB 2–1; AR 35–6540
Requisitions for cleaning and preserving materials.	AR 35–6620
Requisitions not to exceed allowances	AR 35–6620; AR 775–10
Requisitions, quarterly	AR 35–6540
Requisition register (W. D., Q. M. C. Form No. 479).	AR 35–6720
Rigging	Ch. 9, FM 5–10
Serial and lot number cards	AR 45–80
Serial numbers of all small arms, artillery, fire-control, and optical equipment, tanks, etc.	AR 45–80; Sec. XIV, OFSB 2–1
Shipment by express	AR 30–955
Shipment, packing for	AR 45–80; Pars. 18, 19, 39, OFSB 2–1; Sec. I, III, AR 30–955; OSSC's
Shipments, postal	Par. 20, OFSB 2–1
Shipments, small	Par. 21, OFSB 2–1
Shipping order (OO Form No. 2997)	Sec. II, par. 14, Ordnance Provision System Regulations
Shipping tickets	AR 30–955; AR 35–6560; Sec. IV, OFSB 2–1; Sec. III, OFSB 2–2

Shipping tickets (W. D., Q. M. C. Form No. 434).	AR 35–6560
Shortage or damage in shipment	AR 35–6640; AR 30–955
Small arms, safekeeping of	AR 45–80
Statement of charges (W. D., A. G. O. Form No. 36).	AR 345–300; AR 35–6620; AR 35–6640
Stock record account	AR 35–6520
Storage of automotive equipment	Sec. VI, TM 10–250
Supplies used by depot personnel	AR 35–6620
Surveying officers	AR 35–6640
Tally sheet	AR 35–6720
Traffic rules, fire prevention, and other hazards.	AR 30–1270; AR 30–1580; Ordnance Safety Manual
Transfer order (OO Form No. 7004)	Sec. II, par. 14, OPSR
Transportation regulations, Interstate Commerce Commission, for transportation and the shipment of explosive and other dangerous materials.	I. C. C. Regulations
Voucher Register to the Stock Record (W. D., Q. M. C. Form No. 480).	AR 35–6700
Warehouse handling equipment	IOSSC, sec. (h)
Warehouse lay-out	IOSSC, sec. (g)

APPENDIX II

SUGGESTIONS FOR ARRANGING DEPOT STOCK

■ 1. LAY-OUT OF STORAGE AREAS.—*a. Procedure.*—The proper procedure in laying out new areas or rearranging stock in old areas is as follows:

(1) Classify and list items according to Standard Nomenclature Lists.

(2) Determine proper storage space unit.

(3) Determine proper aisle spaces.

(4) Determine proper lay-out of storage and aisle space, general location of items, and calculate total space required.

(5) Note structural features of warehouse, such as location of entrances, aisles, posts, platforms, lights, and windows.

The storage lay-out is planned so that these features help the storage of supplies.

b. Allowable floor load.—In the construction of bins and the arrangement of stock, consideration should be given to the structural strength of available floor space. The allowable live load in pounds per square foot of space should be ascertained and plainly marked in each warehouse, and care should be exercised to see that the materials are so distributed that the estimated weight which may be safely carried is not exceeded. See FM 5–35 for data on beams and loadings.

c. Space for distinct lots.—The space allotted to any one item should be sufficient at least to hold the maximum expected on hand at one time, with each lot distinct.

d. Posting stock location charts.—After the storage lay-out has been determined, charts showing lay-out and location of stocks should be prepared and posted at such places as the depot commander may direct.

■ 2. LOCATION OF STOCK.—*a. Storage according to group.*—The arrangement of stock requires the most careful consideration and planning. Before action is taken to place or rearrange stock, a lay-out plan should be prepared in which two places are allotted to each SNL group. Normally, all the items in any group should be stored in the space allotted to that group. The presence of large quantities and big major items may make it desirable or necessary to allot more than two places for some groups.

b. Arrangement within group.—The arrangement of items of stock within a group is in alphabetical-numerical sequence regardless of whether it is standard or nonstandard stock, unless the nature of the item or storage conditions make it necessary to deviate from this sequence. Standard items of ordnance matériel and supplies are listed in Standard Nomenclature Lists for each group and these lists are followed in arranging standard items in warehouses.

c. Placement of special items.—The placing of many items depends on the shape and character of the item and the character of the storage facilities. The location and segregation of special materials such as inflammables, fragiles, etc., are governed by their physical characteristics and the need for

special care in storage. Items which are carried in large quantities and are frequently issued, and large heavy items which are difficult to handle should be placed in a convenient location with a short haul to the point of issue.

d. Location to avoid damage.—Materials should never be located where they may be damaged by accidents due to handling or by improper storage. Placing articles so that they project from the edge of a bin or platform is to be avoided. In general, items should be kept off the floor or the ground. In placing items subject to deterioration from heat and dryness or from cold and dampness, it should be remembered that the air near the ceiling is usually warmer and dryer than that near the floor.

e. Tools or equipment.—Items should be stored only in the spaces reserved for the purpose. Tools or equipment in regular use in storerooms should be provided with special places marked to indicate the purpose for which they are reserved.

■ 3. STOWING.—*a. Block placement of items.*—After the storage space for the stock of a particular group has been determined, the bulk stock is placed, item by item, in blocks fronting on the aisles. The first block which is the first item listed in the group, will be placed in the left front portion of the space as the warehouseman faces it. The remainder of the group will then be placed, item by item, in alphabetical sequence, from left to right until the right side of the space is reached; the items are then placed around the corner and continued, always building from left to right as the warehouseman faces the stock.

b. Segregation of items.—Different items of bulk stock must never touch each other. This type of segregation is essential for accurate inventory. An intervening space of 2 or 3 inches will suffice, but the space must always be there.

c. Order of stowing in an area.—In any area to be filled, stowing should be commenced at the back left-hand corner and brought forward, each row of goods being completed to the front before a new row is started.

d. Height of tiering.—Tiering is carried as high as possible provided the following conditions are fulfilled:

(1) The stacks are solid and secure. If, at any time, stacks are noticed to be leaning or in a dangerous condition, the foreman of the warehouse will take immediate steps to correct this condition.

(2) The allowable live load per square foot is not exceeded.

(3) Uniformity of groups is preserved.

(4) The stack does not come too near the ceiling. Space must always be left for properly removing the items on the top tier.

e. Order of stowing in a cubic space.—In any cubic space to be filled, stowing is commenced at the back left-hand corner and carried on vertically in a single or double row of columns until such columns are brought to the front and completed. The second row of columns will commence as the first, in the farthest left-hand corner of the remaining available space, and will be built up and forward in the same manner.

f. Allotment of double space.—Where sufficient storage space is available, twice the amount of space necessary for an initial stockage of items received may be allotted. This insures accuracy and simplicity in handling the different lots, each shipment being kept separate and the old stock always being used first. It also results in less frequent need for locating quantities of the same item in different places.

g. Packages with defective wrappings.—Packages with defective wrappings should be stowed or placed last, in order that they may be issued first. Material will be rewrapped where necessary for its proper protection and issue.

■ 4. STACKS.—*a. Stability.*—Stacks are built up so that they are stable and do not tend to topple. Stack stability is increased by the following methods: dunnage, headers and stretchers, and cross-piling. A header is a container with its end parallel to a given face of the stack; a stretcher is a container with its side parallel to the same face of the stack; cross-piling is simply laying containers in each tier or course at right angles to those just below. Although stability is

greatly increased by cross-piling, ease of inventorying is decreased.

b. Accessibility.—Unless space is saved by different placement, containers are placed with the ends out toward the aisle into which the containers will be withdrawn. Containers may be so placed with stability by the use of dunnage which also affords ventilation. Accessibility and flexibility are aided by avoiding cross-piling, except where essential for stability.

c. Moisture and sunlight.—(1) *Dunnage.*—Items affected by water are put on dunnage. Stacks requiring free circulation of air for their preservation are built up with dunnage between horizontal layers.

(2) *Warehouse openings.*—Where stock is adversely affected by sunlight and moisture, consideration is given to the location of this stock with reference to windows, doorways, and other openings.

d. Arrangement of packages.—All serviceable articles of the same description are stored together. A separate location is reserved for unserviceable articles. Packages containing articles of the same size are kept together when practicable. This facilitates issues, inspections, and inventory.

e. Uniformity.—(1) *Tiers.*—Each tier of the same stack has the same number of packages, and each package has its markings exposed to view. Full columns, stacks, or blocks of any one item are uniform for that item. Only the last column, stack, or block, which contains odd quantities remains incomplete. Such uniformity adds to neatness, ease, and accuracy in counting.

(2) *Columns.*—Material is piled singly or in multiples of five. Packages may be piled singly in a column containing from one to ten articles. When a column is piled higher than ten, the packages are piled as high as the space will permit in whole groups of five, without exceeding the allowable live load per square foot. Thus, every column of articles small enough to be piled in groups of five will contain some multiple of five and will be uniform for that article. For instance,

if a space holds 24 packages snug to the top, the column will be made of 20 packages only; that is, four groups of five each.

f. Height.—The maximum height of a stack will—

(1) Not impose a load on the floor in excess of the maximum safe load which the floor will sustain.

(2) Leave sufficient space between the top of the stack and the ceiling to permit easy removal of the top packages and, in the block system, to permit inspection of the top of the block for detection of pilfering.

(3) Not exceed the height that will permit the free and efficient use of fire apparatus.

(4) Not be higher than a man can reach, provided that floor space is not at a premium.

g. Cubical or pyramidal stacks.—(1) Cubical stacks constitute the preferred method of piling because of the following:

(*a*) Less space is required.

(*b*) Uniformity and regularity are attained in piling.

(*c*) Inspection is made easy.

(*d*) Counting is made easy.

(*e*) Less damage is done by weather when articles are uncovered.

(2) Pyramidal stacks have these advantages:

(*a*) Stability for cylindrical articles. Pipe, for example, may be tiered stably in pyramids without bracing.

(*b*) Protection from weather when covered since the shape of a pyramidal stack is similar to a peaked roof.

■ 5. SMALL ITEMS.—*a. Standard bins and shelves.*—Bins and shelves for storing small items are of standard design, and may be readily procured as standard items from manufacturers of such equipment.

b. Locked areas for bins.—Locked rooms or inclosures are provided for bins and shelves. These inclosures are of heavy wire netting or other suitable material.

c. Placement of loose articles in bins.—Whenever an original container is opened and a part of its contents removed, the remaining contents of the container are placed in bins or on shelves.

d. Unit groups of loose items.—Arrangement of loose items in unit strings or bundles, each containing a convenient number of such articles, will facilitate the inventory count.

e. For further details on the arrangement of stock, see section (g) of the Introduction to Ordnance Storage and Shipment Charts.

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