# CHAPTER 9 ISSUING AND SHIPPING SUPPLIES AND EQUIPMENT

#### Section I

# **Planning Issue Shipping Activities**

#### RESPONSIBILITIES

The issue/shipping section is an important part of the DSU storage operation. Your personnel must carry out the issue/shipping activities efficiently if your customer units are to receive their supplies on time, in the quantity requested, and in usable condition. You must select an issue/shipping section supervisor to help you carry out your duties. Be sure to explain the supervisor's duties in the issue/shipping portion of your storage section SOP. Your duties are listed below.

- See that all necessary documents are received with the supplies.
- Make sure your personnel use these documents to verify the quantity, condition, and destination of the supplies.
- Report all discrepancies, and put all supplies in question in a holding area until your personnel are able to make the changes.
- Make sure your personnel put the supplies in the correct customer bin at the pickup point.

- Maintain the customer notification log.
- Consolidate and pack supplies for other DSUs.
- Make sure all issue documents are completed correctly and sent to the SCS daily.
- Process, protect, and store supplies held in the issue section until customers pick them up or until they are shipped.

#### ISSUE/SHIPPING SECTION

Personnel in the issue/shipping section are the only part of the storage section who deal with the customer on a face-to-face basis. They receive requested items from the warehouse with an MRO. They use the MRO to determine which unit ordered the supplies. After your personnel notify a unit that its supplies are ready to be picked up, they attach the MRO to the supplies. The MRO acts as an issue document to show the quantity and type of supplies a unit is to receive.

# Section II Issuing Items

#### **USING ISSUE DOCUMENTS**

The documents a DSU uses to issue supplies to customer units are described below. The documents are DA Forms 2765, 2765-1, and 3161, and DD Form 1348-1.

#### **DA Form 2765**

Units use this form to order PLL items, repair parts, or other expendable items. Only one line

item can be issued on this form at a time. The DA Form 2765 generally is used with ADPE. When ADPE is available, the DSU gives prepunched and preprinted cards to customer units. The units use these cards when they order PLL or other expendable items on a recurring basis. The DSU gives the unit a new card each time a replenishment quantity is ordered.

# **DA Form 2765-1**

This four-part carbon form is used for ordering nonexpendable items. Units can also use it to order expendable items in place of the DA Form 2765 if no ADPE is available or authorized. Your personnel give the bottom (hard) copy of the form to the customer as a receipt.

# **DD Form 1348-1**

This six-part carbon form is used to issue items your DSU orders from another supply source. Only one line item is ordered or issued at a time on this form.

### **DA Form 3161**

Your DSU uses DA Forms in the 3161 series instead of DA Forms in the 2765 series for special types of supplies. It uses DA Form 3161 when more than one item is to be ordered or issued at a time. Before your personnel can issue these special items, the installation commander must authorize the use of the form. Use DA Form 3161 to order and issue—

- Ten or more line items of supplies normally provided by SSSC. This is authorized only when no SSSC is available.
- Five or more line items of packaged Class III items.
- Expendable medical items within a medical facility or for issue to satellites.

#### ISSUING SUPPLIES

As storage supervisor, you must make sure your personnel issue the correct supplies on time and in good condition. Under your direction, the chief of the issue/shipping section is responsible for seeing that these actions are carried out. Steps personnel must follow in issuing supplies are described below.

- Check to see if the supplies have the correct documents with them and that the documents are filled out correctly.
- Check the documents for NSN, nomenclature, and quantity. Make sure you are issuing the correct item in the correct amount.
- Report any errors found in the supplies or on the issue documents to the chief of the issue/ shipping section. If you find errors in the supplies, move the supplies to a temporary holding area so personnel will not issue them by mistake. Make all corrections while the supplies are in this holding area.

- Place the supplies to be issued in the correct customer bin at the pickup point. Make sure that the DODAAC on the issue document matches the DODAAC on the unit bin.
- Notify the unit by telephone that the supplies are ready to be picked up. Enter the call in the customer unit notification log. Preparation and maintenance of the log are covered in this chapter.
- Before you issue the supplies to the unit representative, check the signature card file to see if he is authorized to pick up supplies for the unit. These subjects are covered in this chapter.
- When you issue the supplies, make sure the customer signs and dates all issue documents correctly as follows:
- $\ \square$  DA Form 2765. Customer enters the amount received in block S and the Julian date and his signature in block V.
- DD Form 1348-1. Customer enters Julian date and signature in block 7.
- DA Form 3161. Customer writes quantity received in the Supply Action column, then enters date and signature in block 15.
- Attach a copy of the issue document to the supplies. The unit needs this receipt for its property records.
- Send all completed documents through the chief of the issue/shipping section to the SCS each day.

#### PICKING UP SUPPLIES

The number of times a unit will pickup supplies from your DSU during a week depends on the distance the unit has to travel and how often it can arrange for transportation. Some nearby units will pick up supplies two or three times a day. Other units will pick up supplies once a week. To keep supplies from piling up in the customer's bins at the pickup point, you must set time frames for the pickup of supplies. Be sure to include these time limits in your storage SOP. It is also a good idea to make a handout that lists these time frames for each of your customer units. After putting the supplies in a unit's bin, your personnel should telephone personnel in the unit supply section to let them know they have supplies to be picked up. Your personnel will need to keep track of any calls they make to units in a customer unit notification log. Procedures for setting up and maintaining this log are discussed later in this chapter. If the unit does not pick up the supplies

within five days after the unit was first notified, call the unit supply officer or NCOIC. Try to set up a specific date for the pickup of the supplies. Be sure your personnel enter this information in the notification log also. If the unit has not picked up the supplies after three days have passed since the second call, send the supplies back to the storage warehouse with a copy of the issue document. Write on the document the reason you are sending the supplies back. Send the other copy of the document to the SCS. Telephone the unit to tell the supply officer or NCOIC that the supplies have been turned back to the storage section because the unit did not pick them up. If the unit still needs the supplies, it must reorder them. Be sure to enter the information from the last phone call in the notification log. The only time you should allow supplies to stay in the customer's bin past the eight-day time limit is when special arrangements have been made. If the unit will not be able to pick up the supplies on time, the unit supply officer or NCOIC should contact the chief of the issue/shipping section to make special arrangements to pickup the supplies at a later date. Be sure to put a note with the new pickup date in the customer's

bin so that the supplies will not be sent back to the storage section by mistake.

# PREPARING CUSTOMER UNIT NOTIFICATION LOG

You will need to setup a customer unit notification log to keep track of the calls your soldiers make when they contact units for supply pickup. Each time your personnel contact a unit, they should enter the call in the notification log. The log is your only record that shows the date the unit was contacted and who was notified. There is no required form you must use to make the customer unit notification log. However, the data in Figure 9-1 must be included.

# **★** CHECKING CUSTOMER IDENTIFICATION

Your issue/shipping section must keep a file of current PBOs and responsible officers for each unit your DSU supports. You must also keep a current file of DA Forms 1687 (Notice of Delegation of Authority--Receipt for Supplies) for each unit. This form lists those authorized to pickup supplies for a unit and their signatures. When unit representatives come to pickup supplies, your issue/shipping section soldiers must

| UNIT                | JULIAN<br>DATE<br>NOTIFIED | TIME<br>NOTIFIED | PERSON<br>NOTIFIED  | REMARKS   |
|---------------------|----------------------------|------------------|---------------------|---|
| 3/3 INF BN MECH     | 9325                       | 1400             | SPC ROBERT A. SHORT | PICKUP 9329   |
| WEEH                | 9325                       | 0900             | SFC ROBERT D. COLE  | TO BE PICKED UP 9332<br>PER TELECOM WITH<br>LT CARTER                     |
| INF BN<br>2/32 MECH | 9327                       | 0900             | SFC SAM E. VONES    | PIRKUP PAST DUE<br>NOTIFIED THAT SUPPLIES<br>WERE SENT BACK TO<br>STORAGE |
| 506 SPT TROOPS      | 9328                       | /000             | SFC VONN DOE        | CONTACTED LT VONNSON  |

Figure 9-1. Sample customer unit notification log

compare the unit's DA Form 1687 with the customer's identification form. They must check the expiration dates on both forms. The names and signatures should be the same. Figure 9-2 shows a sample of both forms and the entries that are to be checked. Customers may also present a DA Form 5977 (Authorization Card) when picking up supplies. This form is used in lieu of DA Form 1687 and is issued by the organization requesting and receiving supplies from the SSA or DSU. Details concerning the use of this form are in DA Pamphlet 710-2-1, Chapter 2. Do not use this form

to issue sensitive items such as weapons, ammunition, or COMSEC materiel. Your issue clerk is responsible for making sure only authorized personnel receive supplies. Be sure to include customer identification procedures in your storage SOP. Your issue/shipping section personnel should set up a filing system to protect the signature forms from wear and tear. A filing system also makes it easier to locate the correct signature form for the identification check. File these forms in DODAAC, numerical, or alphabetical order by unit name.

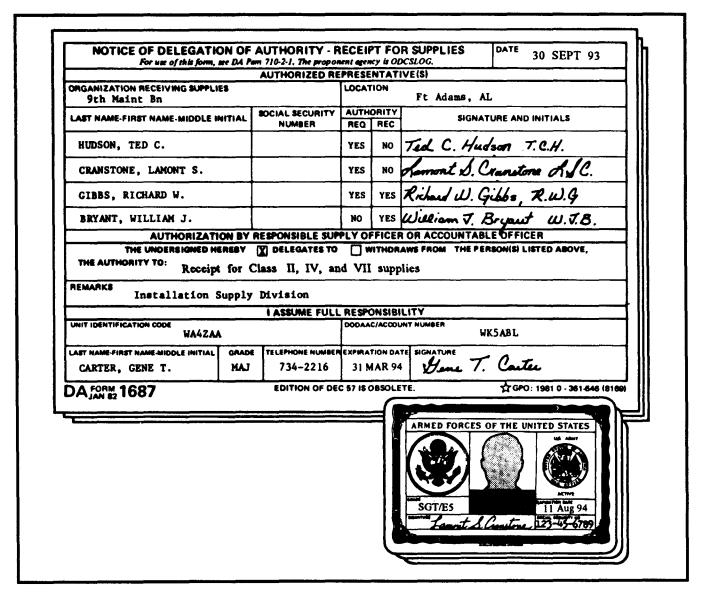


Figure 9-2. Customer identification forms

# Section III Shipping Materiel

#### SHIPPING SUPPLIES

To get items ready for shipment, your issue/ shipping and storage sections need to work together. You need to set up guidelines for each section. They should explain how these sections must work together to plan the shipment, process the documents, and select and prepare the supplies for loading. Some supplies, such as ammunition and classified items, require special handling and control procedures. Include these special procedures in your storage section SOP. Specific instructions for preparing and shipping ammunition and other hazardous or sensitive items are listed in DOD 4500.32-R, Volume 1; DOD 5100.76-M; and DOD 4145.19-R-1. Manuals in the TM 746 series give packing instructions for major and selected end items.

#### PREPARING RELEASE ORDERS

Your DSU ships items to other SSAs, Defense Reutilization and Marketing Offices, and between storage sites. You will not issue an item to a customer by shipping it. When an item is to be pulled from storage for shipping, your storage personnel will receive a release order from the SCS. The SCS prepares the release orders on DD Form 1348-1. Figure 9-3 shows completed DD Form 1348-1 as an MRO. Figure 9-4 shows DD Form 1348-1 issued as a disposal release order. An MRO is issued when the items are to be shipped to another supply support activity or if the item is being moved to another storage site. A disposal release order is issued when the item is to be transferred to the Defense Reutilization and Marketing Office that supports your DSU. When

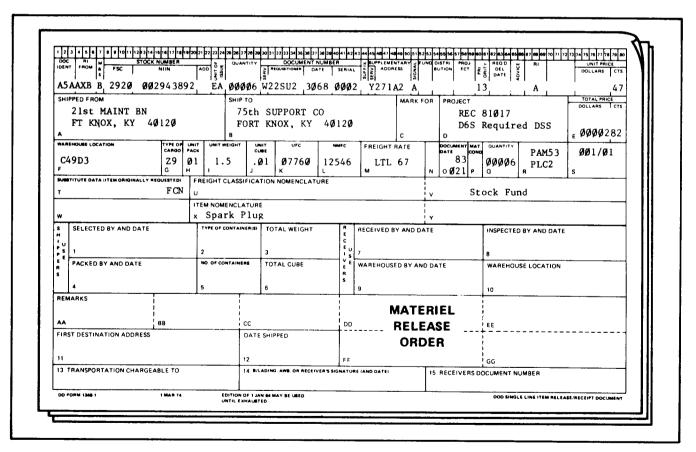


Figure 9-3. DD Form 1348-1 MRO

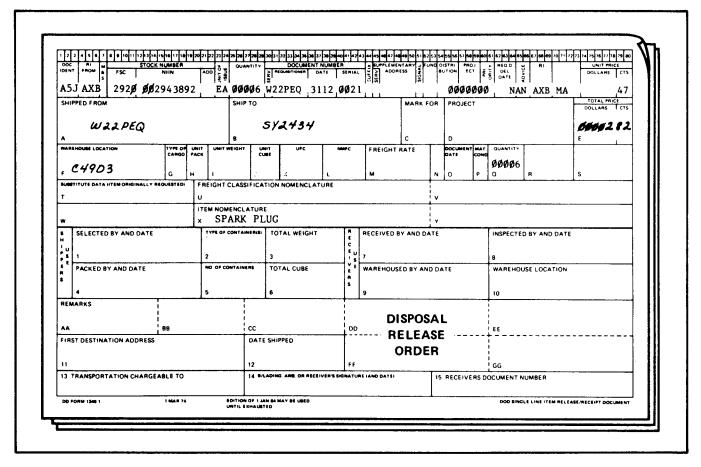


Figure 9-4. DD Form 1348-1 disposal release order

your storage personnel receive an MRO or a disposal release order, they select the item and quantity listed and send the item to the shipping section with a copy of the release order. The PD listed on the MRO or disposal release order determines how long your personnel have to process and prepare the items for shipping. Your storage and shipping personnel need to work together to meet the deadlines as given in Table 9-1.

#### PLANNING THE SHIPMENT

Planning shipments begins long before the storage section receives an MRO. You should set up the location of the receipt, storage, and issue/shipping sections so your personnel can withdraw stock and prepare items for shipping easily and quickly. You begin planning for an individual shipment when the storage section receives the release order. As storage supervisor, you must decide what shipping arrangements need to be made. Use the questions below to help you set up guidelines for handling the shipment:

- What is the quantity, weight, and cube of the items being shipped? (If the item weighs more than 10,000 pounds, check with the installation transportation officer that supports your DSU. You may need a special release authorization.)
- Will the item need any special security, packing, marking, or MHE?
- What is the PD? (The PD tells you how soon an item must be shipped.)
- Is the item to be shipped by air, truck, water, or rail or is it to be mailed?
- Where are the supplies being shipped? It is your responsibility to give the transportation office personnel all the information they will need to get a route order for the carrier.

Discuss any special problems with the supervisor of the warehouse and shipping sections before the items are pulled from the warehouse. The two sections will have to work together to get the items moved from the storage section to the packing section. When you set up guidelines for preparing shipments, try to keep your personnel from

Table 9-1. Release order processing times

| PRIORITY DESIGNATOR  | TIME LIMITATION   |
|--|---|
| O1 through O3 or not mission capable shipment (On a not mission capable shipment, 999 will be listed in the Req'd Del Date block of the DD Form 1348-1.) | Item must be ready to load within 24 hours after the storage section receives the MRO.              |
| 04 through 08  | Item must be ready to load within two regular workdays after the storage section receives the MRO.  |
| 09 through 15  | Item must be ready to load within four regular workdays after the storage section receives the MRO. |

handling and moving the items more than necessary. Try to plan the shipments in truckload lots. If you have more than one item going to another DSU, combine the items into one shipment. This will protect the items as well as save packing material, time, and transportation costs. Sometimes you will not be able to pack items in the same box or crate because of their weight, size, or type. Consider these items bulk items for shipping purposes and pack them according to the guidelines in TM 38-230-2. After you finish planning the shipment, send the MRO to the warehouse section.

#### PICKING THE STOCK

Once warehouse personnel locate the items listed on the release order, they must use either the progressive or selective method to pick the items from stock. These methods are described in Chapter 8. When selecting the items, the stock clerk should process the DD Form 1348-1 release document by—

- Comparing the NSN on the document (blocks 8 through 22) with that of the supplies.
- Comparing the unit of issue (blocks 23 and 24).
  - Comparing the nomenclature (block X).
- Comparing the quantity shown on the document in blocks 25 through 29 with the quantity of supplies selected.
- Writing the quantity pulled from stock in block Q.

- Signing and dating block 1 (Selected By And Date).
- Sending the supplies with all copies of the release document to the issue/shipping section.

Figure 9-5 shows release documents filled in by your stock clerk.

#### MAKING A RELEASE DENIAL

If the quantity of the item in stock is less than the amount to be shipped, your warehouse personnel must prepare a release denial. There are two kinds of release denials—MRDs and disposal release denials. To make an MRD for an item that is to be shipped, follow the directions in Chapter 8. Figure 9-6 shows two completed MRDs. As shown in the figure, make sure you enter A6A as the document identifier. You make a disposal release denial the same way you make the MRD. However, a DD Form 1348-1 generally is the only form used as a disposal release denial. Make sure you enter A6J in the Identifier Code block. This code shows that the document is for a disposal release denial and not an MRD. Figure 9-7 gives a sample of a completed disposal release denial. You should remember that a release denial is a supply failure. Anytime your section prepares a release denial, you must take a special inventory to find out why the supplies are not on hand. Chapter 8 gives the steps you must take as storage supervisor when a release denial is going to be issued.

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Figure 9-5. Release documents filled in by stock clerk

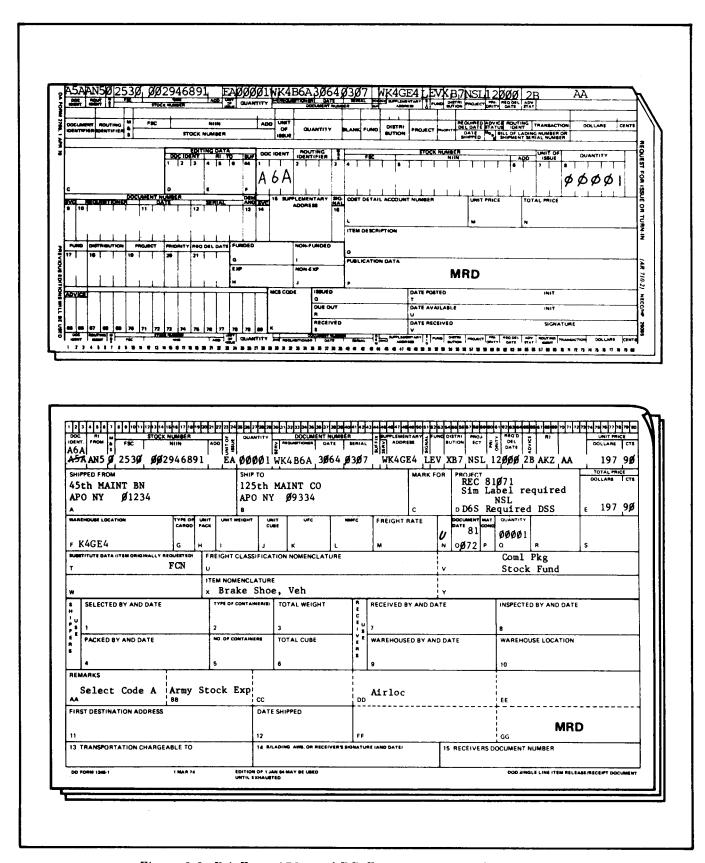


Figure 9-6. DA Form 2765 and DD Form 1348-1 completed as MRDs

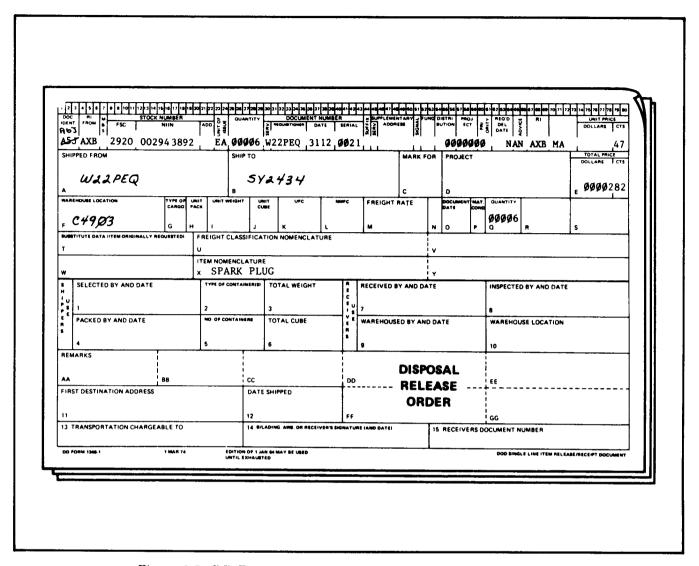


Figure 9-7. DD Form 1348-1 completed as a disposal release denial

#### PACKING THE SUPPLIES

Your issue/shipping section is responsible for packing, marking, and loading the supplies to be shipped. When the supplies arrive from the warehouse, have personnel move them to a central area where they can prepare and combine them before they are crated. As storage supervisor, you must set up controls to keep your personnel from doing any unnecessary preservation, packaging, or packing. They should try to consolidate shipments to save packing material and to reduce shipping costs. Combining shipments will also help protect the supplies. However, do not combine shipments that have high priorities or short due dates unless you can ensure that the supplies will arrive before the closest required delivery date. To

further reduce costs, your personnel should use reusable shipping containers, if possible. Refer to TM 38-230-2 for guidance in selecting the appropriate packing container. As storage supervisor, you will need to make arrangements with the receiving units to return these containers to your DSU.

#### PROCESSING THE RELEASE ORDER

In order for your DSU to ship items on time, you must fill out and process the release order correctly. It is your responsibility to make sure your storage and shipping personnel know how to process the DD Form 1348-1 release order. Before

packing the item, the packer should pull Copies 2 and 3 (first and second carbon copies) from the form. They must put these copies inside the shipping container with the item. After your personnel prepare, pack, and mark the supplies, they process the DD Form 1348-1 by taking the following actions:

- Write the type of shipping container used in the Type Of Container block (block 2).
- Write the total weight of the container in the Total Weight Container block (block 3).
- Write the number of containers in the shipment in the No. Of Containers block (block 5).
- Write the total cube in the Total Cube block (block 6).
- Sign and date the Packed By And Date block (block 4).
- Pull Copy 4 from the DD Form 1348-1 (third carbon copy). Put this copy in a water resistant (PPP-E-540) envelope, and attach the envelope to the outside of the shipping container.
- Keep the last copy (fifth carbon copy) of the form with the shipping container. Give this copy to the carrier when the supplies are loaded. The carrier will use it as a manifest. A manifest is a document that lists all the supplies in a shipment and their destination.
- Write the date shipped (released) in the Date Shipped block (block 12).
- Write one of the following control or shipment numbers in block 14:
  - □ Transportation control number.
  - □ Government bill of lading number.
  - □ Commercial bill of lading number.
  - □ Airway bill number.
  - Ensured or registered parcel post number.
  - □ Motor vehicle number.
- Send Copies 2 and 3 with the supplies. The original copy of the DD Form 1348-1 will be retained as the supply copy.
  - Mail Copy 5 to the address shown in block B.

Figure 9-8 is an example of a correctly prepared MRO and disposal release order your shipping clerk sends to the SCS.

# PREPARING TRANSPORTATION DOCUMENTS

The chief of your issue/shipping section arranges for the transportation of the supplies. The two kinds of transportation used to ship items from DSUs are organic and installation.

# **Organic Transportation**

The DSU or your supporting unit provides organic transportation. When you use organic transportation, your issue/shipping section will need no transportation documents. The only form needed to ship items by organic transportation is the release order. Your shipping clerk should pull Copy 6 from the DD Form 1348-1. The driver will use this copy as a listing of the items being transported and their destinations.

# **Installation Transportation**

The installation where your DSU is located provides installation transportation. You will need to coordinate the shipment with the installation transportation officer. There may be special packing or marking requirements for the type of item you are shipping. It is your duty to see that your personnel give the Transportation Office the information necessary to get the supplies shipped. Your issue\ shipping section is also responsible for filling out the address label, DD Form 1387 (Military Shipment Label), that goes on each container. Section personnel fill out this label differently for oversea shipments and for shipments within CONUS. Figure 9-9 shows samples of how this is done. Check DOD 4500.32-R, Volume 1 or STP 10-76V24-SM-TG for step-by-step guidelines on how to fill out the labels.

#### RETURNING RETROGRADE CARGO

Retrograde cargo is materiel that is being returned to the US from oversea commands because they cannot provide the proper level of maintenance support or repair parts. Retrograde items can include hazardous or dangerous items which might cause fires or damage to the environment if mishandled during shipment. In these cases, you will need special equipment (such as waterproof barriers, special cushioning, or blocking and bracing of items), special facilities for storage, and specially-trained personnel to process the supplies. These items may also require special inspection and shipping procedures. You must make sure your personnel know how to pack, mark, preserve, store, and transfer retrograde items. Not all retrograde materiel requires special packing and handling. However, for retrograde items such as repair parts, your personnel need to give the items enough packing protection to keep them from being damaged during shipment, handling, and storage. Instructions on processing and shipping retrograde cargo are in AR 700-93.

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Figure 9-8. MRO and disposal release order completed by shipping clerk

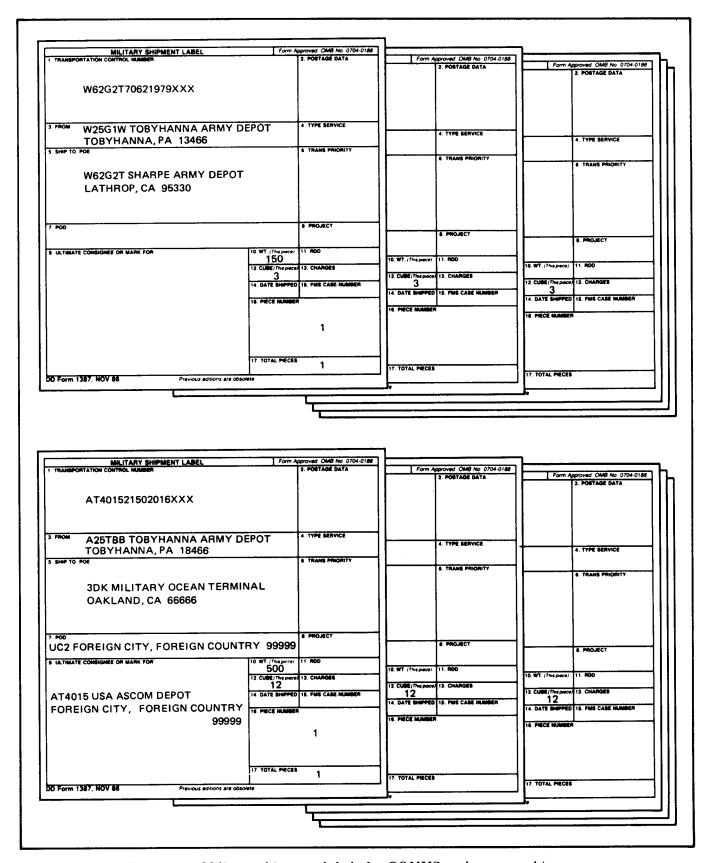


Figure 9-9. Military shipment labels for CONUS and oversea shipments

# Section IV Using Pallets

### **DESCRIPTION**

A pallet is a portable platform on which supplies are placed to facilitate handling and transportation. This platform is generally a two-deck structure which permits mechanical handling and tiering of unit loads of supplies and equipment.

### TYPES OF PALLETS

Pallets are classified as expendable and permanent. Permanent pallets are also classified as general purpose and special purpose.

### **Expendable Pallets**

Expendable pallets generally are designed for one shipment and are then discarded. They are usually constructed of wood, fiberboard, or a combination of the two. In order to be effective as one-trip pallets, they must be light in weight and low in cost. Figure 9-10 shows expendable pallets.

#### **Permanent Pallets**

Permanent pallets are termed general purpose or special purpose.

General purpose. General-purpose pallets, the most commonly used pallets, are constructed of hardwood and are normally 40 inches by 48 inches. They fit economically into railroad cars, motor vehicles, and trailers. Two general-purpose pallets are the four-way entry-post pallet and

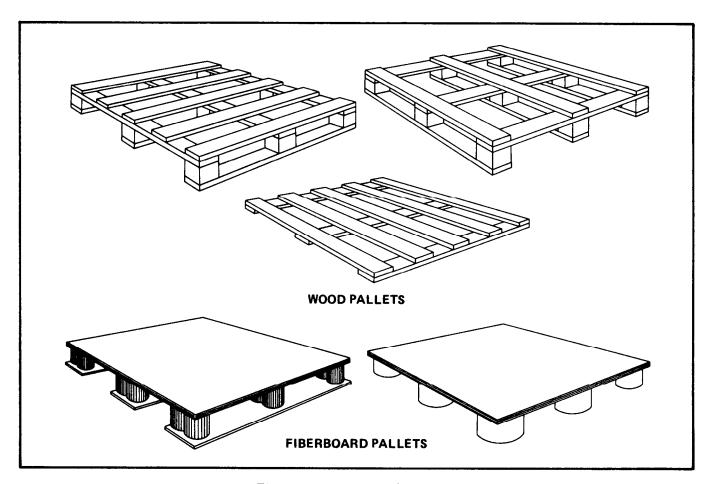


Figure 9-10. Expendable pallets

the four-way (partial) four-stringer pallet. See Figure 9-11.

**Special purpose.** Special-purpose pallets made of metal are suitable for heavy-duty use. They are more rugged and will withstand more abuse than wood pallets. There are no fasteners to work loose

and cause damage to flexible containers and their contents. The initial cost of metal pallets is high in comparison to pallets made of wood. Pallets made of aluminum that are light in weight are also available. The special-purpose pallets are designed on a case-by-case basis to conform to an item requiring special handling.

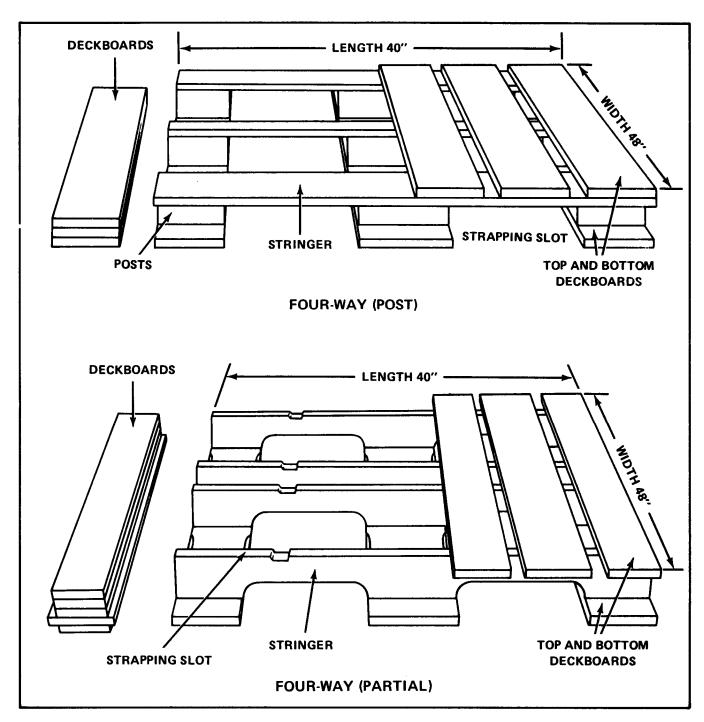


Figure 9-11. Construction of four-way pallets

#### Section V

# **Using Cargo Containers**

#### RESPONSIBILITIES

As a storage supervisor, you are responsible for ensuring that your shipping personnel make the best use of the space within the cargo containers. They must take extreme care to safeguard the equipment and supplies that are to be shipped and to load the container correctly so as not to exceed the loading limitations.

#### **DESCRIPTION**

Your shipping section will be provided with many different types of containers into which they will load equipment or supplies. The following are a few of the many types that will be available to them.

#### **MILVAN**

MILVANS are 231 inches long, 92 inches wide, and 87 inches high. The gross weight rating for each 20-foot container is 44,800 pounds. When the double doors are closed properly, the MILVAN affords waterproof protection.

# **SEAVAN**

SEAVANs vary from approximately 20 to 40 feet in length. The standard length used by the military is 40 feet. SEAVANs are 8 feet high and 8 feet wide. They have a maximum gross weight capacity of 67,200 pounds. SEAVANs can be moved by motor and rail and may be stored for shipment on specially containerized ships. They may be transported on a semitrailer chassis or railcar and are lifted easily, minus the chassis, by the 50,000-pound rough-terrain container handler or a commercial equivalent. The most common type you will see at your shipping section is the dry-cargo container. This container is weatherproof and designed to protect the cargo from water. It is ideally suited for shipping items packed in domestic packs and any other commodities that can be damaged by water. The dry-cargo container is completely enclosed and must be loaded and unloaded by hand or forklift truck.

#### **Breakbulk Semitrailers**

These semitrailers vary from 30 to 40 feet in length and from 22 to 40 tons in weight capacity. Check the data plate on the trailer for specifications prior to loading. The breakbulk semitrailers have varying styles of side bracing and corner posts. A semitrailer is designed to carry high-density and oddly shaped cargo. The canvas cover that normally comes with the trailer can provide protection from water as long as the height of the load does not exceed the top of the side racks by more than 12 inches.

#### **Railcars**

Refer to DOD 4145.19-R-1 for detailed descriptions and loading guidelines for railcars.

#### PREPARATION FOR LOADING

It is the joint responsibility of the shipper and the carrier to ensure safety of the cargo, equipment, and personnel during loading, while in transit, and on arrival at the destination. You or someone you designate must inspect the cargo. See Table 9-2 for a checklist. This paragraph describes some other factors you must consider.

# **Importance of Proper Loading**

The delivery of shipments in good condition depends to a large extent on the manner in which the truck or trailer was loaded and on the care which was taken in preparing it for loading.

# **Tight Loading**

The most important way you can prevent damage in truck and trailer loading is tight loading. Rarely do the items to be shipped fit a closed truck, van, or trailer without side slack or end slack. In most instances, you can take up slack with bulkheads or dunnage. Refer to DOD

4145.19-R-1 for guidance in using bulkheads and dunnage.

# **Difficulty of Tie-down**

The construction of closed trucks, vans, and trailers makes tight loading, blocking, or bracing more difficult. The shells of most commercial closed trucks, vans, and trailer bodies are made of

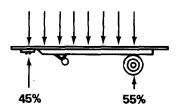
aluminum, plywood, or other thin metal shells designed to protect the items from the weather. Your personnel must use good judgment in loading items in closed trucks, vans, and trailers.

# **Balanced Load**

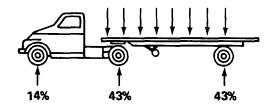
Figures 9-12 and 9-13 show methods of distributing weight correctly.

#### Table 9-2. Loading checklist

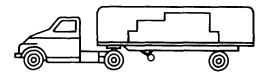
| ☐ Are sideboards and floorboards present, and are they serviceable?  |
|--|
| ☐ Do doors close properly, providing a waterproof seal?  |
| Is the container large enough for the cargo or equipment to be shipped (length, height, width, and load limitations)?  |
| ☐ Are there enough tie-downs, and are they serviceable?  |
| ☐ Is the roof leakproof, or is a serviceable canvas cover available?   |
| ☐ Are tires serviceable? Is there a spare?   |
| ☐ Do all brakes work properly?   |
| ☐ Are all brake lights and running lights present and operable?  |
| The above checklist is by no means complete. You should have a section of your SOP dedicated to inspecting cargo containers. Check with your local TMO for further guidance. |
|  |



Trailers are also designed for uniform load distribution, as shown by the above sketches. The fundamental difference between loading trailers and trucks is: in the case of trucks, the average design provides for about 90% of the payload on the rear

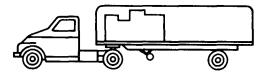


tires and 10% on the front tires. In the case of trailers, the payload should be distributed equally between the rear tires and the fifth wheel which transfers its load to the truck-tractor.



#### **WRONG**

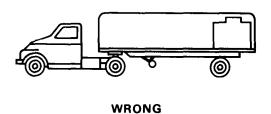
With a part load or with a very heavy load having little bulk, it is common practice to put it at the front end of the trailer to get traction on truck-tractor rear tires. This overloads the truck tires and shortens their mileage life. It can also cause bending of the truck



#### RIGHT

rear axle housing. Application of trailer brakes may lock wheels, cause tire flat spots, skidding, or both.

This load should be distributed over the full length of the trailer floor or platform.



This example is obviously wrong. In the case of the first trailer, the heavy load at the rear is overloading the rear trailer tires. There is practically no load on the fifth wheel, and the truck-tractor rear tires would certainly slip and wear away rubber. Braking distribution would also be very uneven.

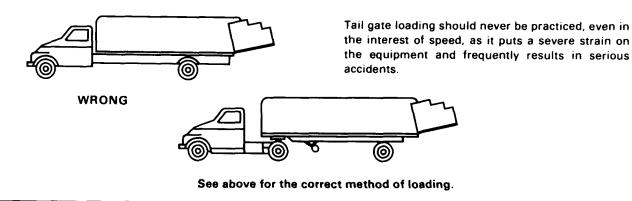
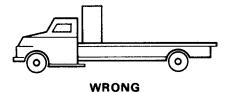
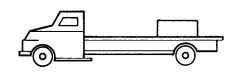


Figure 9-12. Correct and incorrect weight distribution



A heavy load, like a big piece of machinery or a safe, should not be loaded against the cab. This loading will bend the frame, perhaps permanently. It will also overload the front tires, may even cause a blowout on a worn tire. Hard steering will also result, and the load may be top-heavy.



#### RIGHT

A heavy concentrated load should be placed near the rear and on its long side if at all possible. Most of the load should be over the rear axle to get proper tire loading and eliminate bending of the frame.



#### **WRONG**

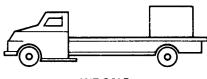
A very heavy load should not be loaded at one side. This overloads one spring and the tires at that side. This loading could be bad enough to allow the brakes to lock on the wheels at the light side and cause flat spots on the tires or a skid on a wet surface.



#### RIGHT

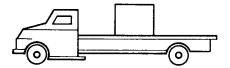
This loading has equal loads on rear tires and eliminates twisting of the frame, which might loosen rivets of cross members or frame brackets. Uniform loading crosswise prevents axle housing and wheel bearing overloading.

This above example applies to trucks and trailers alike.



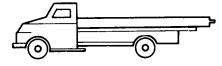
#### **WRONG**

This loading should never be permitted. The frame bends, the rear tires are very much overloaded, and enough weight is taken from the front tires to make steering almost impossible.



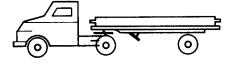
#### RIGHT

Again, the proper place for a concentrated load like this is just ahead of the rear axle, with the longest side on the floor.



#### **WRONG**

This type of loading results from the use of the wrong vehicle for the job. Such loading can result, on rough roads, in an actual pivoting of the truck on its rear wheel and taking the front wheels entirely off the road.



#### RIGHT

A tractor-trailer combination is the proper vehicle for use in service like this. By using the proper vehicle, damage to the truck and tires, and even serious accidents, may be avoided.

Figure 9-13. Correct and incorrect loading