

CHAPTER 12

UPLOADING AND STORING THE COMBAT ASL

Section I Overview

PURPOSE

As a storage supervisor, you are responsible for maintaining and uploading the combat ASL. This chapter will help you and your storage personnel carry out the storage functions involved in mobilization of the combat ASL.

COMBAT ASL ITEMS

A critical and basic mission of any DSU is to transport designated items of supply needed to sustain operations in a hostile environment for a given period of time. Those items designated by the command are known as the combat ASL. The combat ASL requires wartime transportation. It consists of repair parts which are essential in support of the MPDL end items. Specific elements of this component are—

- MPL items, to include provisioning items for force modernization equipment.
- Demand-supported, (EC C) parts applicable to MPDL end items.
- Command discretionary essential parts (EC C) applicable to MPDL end items.

Transport and storage space is limited to the vehicles that a unit is authorized under its TOE or MTOE. For this reason, you must compute usable space and use it wisely.

SPECIAL CONSIDERATIONS

The MPL portion of the combat ASL must have first priority of movement and storage. Some items such as end items, repair parts, petroleum products, and classified or sensitive items may need special handling or storage. Follow special storage requirements explained in DOD 4145.19-R-1 and FM 10-14.

LOCATION AND STORAGE AIDS

Make sure all bin items in the combat ASL are uploaded at all times. Review these items periodically to ensure storage space is being used properly. Do not store a small item, such as a 1-inch fuse, in an area the size of a footlocker. Consider size and quantity of items as you choose storage locations and storage aids. Also consider the quantity of a given ASL line. Use the RO quantity as a minimum when you choose a storage aid. Pallets, bins, shelving, frames, unit deployment storage containers, CONEXs, and forward logistics exchange pallets are readily available through normal supply channels. Many new aids are being developed and tested. Your choice of storage aids will depend on what is available or authorized for your organization. The storage aids discussed in this chapter are not the only aids that you might use for a particular vehicle.

LOCATION SYSTEM

Combat ASL is maintained in a mobile or load-ready configuration. Use the location system the same as in any other storage area. The system must allow identification of MPL stocks and command-essential items and their segregation from nonessential items. Normal storage functions such as rewarehousing and location updating must be performed. You must give particular attention to maintaining all combat ASL items readily accessible and mobile.

DEPLOYMENT

In the event of unit deployment, load all combat ASL items before any other ASL items. Upload all MPL lines before any other combat ASL items. Leave behind nonessential and excess items of supply for which there is no space.

Section II

Computation And Configuration Of Usable Storage Capacity

COMPUTATION

At times, you will need to compute and configure the usable storage capacity of a vehicle. The steps you must take are described below.

- Determine unusable length, and subtract unusable length from total vehicle length.
- Then determine unusable height, and subtract unusable height from total vehicle height.
- Determine unusable width, and subtract unusable width from total vehicle width.
- Compute total cubic feet available (usable length x width x height). (If aisle space is needed, aisle cubic feet must be subtracted from total usable cubic feet available.)
- Select an appropriate storage aid and compute its cubic feet.
- Compute number of storage aids required.

STORAGE AIDS

Storage aids can be standard wooden pallets, metal bins, cabinets, racks, shelving, frames, and CONEXs. Storage aids obtained through supply channels are normally of a uniform size. If the storage aids are unit-produced or manufactured, ensure that they do not become the bulk of the vehicle load. The number of individual combat ASL items to be carried on a vehicle and the size of the storage aid you choose will dictate the number of storage aids you need for that vehicle.

VEHICLES

You may use one or more of the following vehicles listed in Table 12-1 for storing and transporting combat ASL items. You are not limited to those listed. No matter which vehicle you use, you must be able to compute the usable cubic feet for both bulk and bin items. In computing storage space requirements, you must first decide whether you will use the vehicle for bin or for bulk storage. As a rule, vans are more suitable for bin storage. Stake and flatbed trucks are more suitable for bulk items. However, you may use both for bin and bulk storage. Three different types of vehicles are described below to show you how to make the best use of storage capacity with

Table 12-1. Vehicles for storing and transporting ASL items

VEHICLE	DESCRIPTION
M750	6-ton semitrailer van
M129-series	12-ton semitrailer van
M127-series	12-ton semitrailer
M871	22.5-ton flatbed semitrailer
MILVAN	MILVAN with chassis

storage aids. To make the best use of cargo capacity, you must select storage aids suited to the combat ASL items.

12-Ton M129A2C Semitrailer Van

This van is 29.72 feet long, 8 feet wide, and 6.3 feet high as shown in Figure 12-1. To determine the total usable storage capacity of the vehicle, multiply the length by the width by the height. For the vehicle shown in Figure 12-1, this would be 1,497.89 cubic feet. Subtract from this any unusable storage space. Next determine what type of storage aid would make the best use of this storage capacity. Use the procedures below to determine the number of storage aids you will need.

- For each type of aid that is used, you must determine its cubic feet.
- For the M129A2C van example, use aids 36 inches by 18 inches by 75 inches.
- To determine the capacity of this storage aid in cubic feet, multiply its length by its height by its width as shown below. For convenience, first convert inches to feet.

$$\text{Length} \times \text{Width} \times \text{Height} =$$

$$36 \text{ inches} \times 18 \text{ inches} \times 75 \text{ inches} =$$

$$3 \text{ feet} \times 1.5 \text{ feet} \times 6.25 \text{ feet} = 28.13 \text{ cubic feet}$$

- One bin has 28.13 cubic feet of storage capacity. To determine how many of these bins

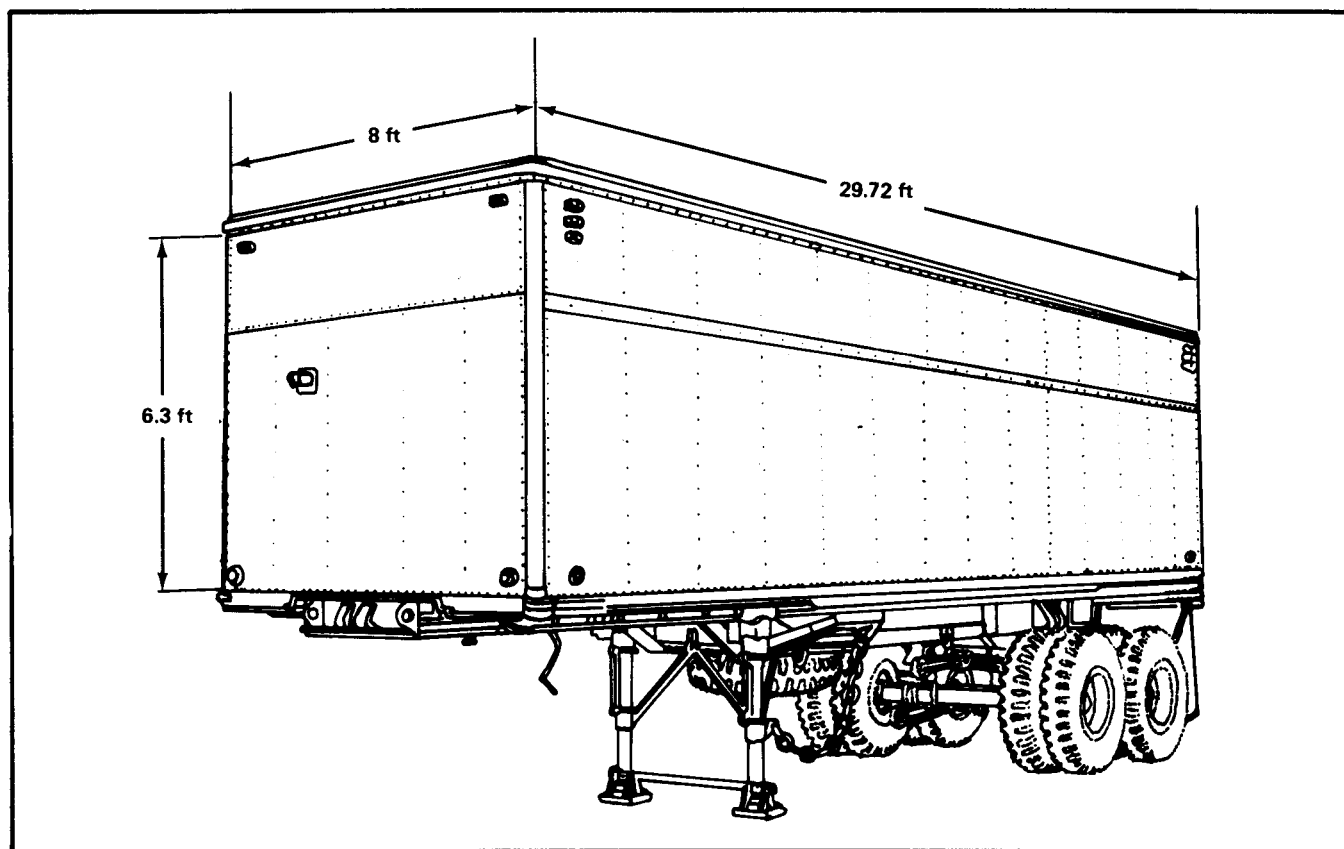


Figure 12-1. The 12-ton M129A2C semitrailer van

can be dated in one row in the M129A2C van, divide the length of the bin into the length or adjusted length of the van and round down as follows:

$$\frac{29.72 \text{ feet}}{3 \text{ feet}} = 9.9 = 9 \text{ aids (rounded down)}$$

• At least one row of nine aids will go into the van. Can two rows of nine aids fit into the van? Take the width of the storage aid, multiply it by two (the number of rows desired), and subtract this amount from the van width to determine if the remaining aisle width will permit two rows of bins. Remember, aisle width must allow access to load and unload items. For the M129A2C van example, two rows of bins will yield the following:

$$1.5 \text{ feet} \times 2 \text{ rows} = 3 \text{ feet}$$

8 feet (vehicle width) - 3 feet = 5 feet of aisle space

The M129A2C van can hold at least two rows of nine aids for 506.34 cubic feet of storage space (18 x 28.13 cubic feet). Two rows of aids provides an oversized aisle of 5 feet for loading and

unloading. As noted previously, aisle space is to be considered unusable for storage and is subtracted from the total usable cubic feet of the vehicle.

• To compute the usable cubic feet of storage capacity remaining with the use of two rows of storage aids, multiply aisle length by aisle width by aisle height and subtract the total from the total usable cubic feet of the vehicle. The computation is as follows:

$$29.72 \text{ feet} \times 5 \text{ feet} \times 6.3 \text{ feet} = 936.18 \text{ aisle cubic feet of aisle space}$$

$$1,497.89 \text{ cubic feet (vehicle)} - 936.18 \text{ aisle cubic feet (aisle space)}$$

$$= 561.71 \text{ usable cubic feet}$$

• Storage capacity could be increased further by adding another row of nine aids in the center of the van (see Figure 12-2). This would increase usable storage space to 759.24 cubic feet (253.08 + 506.16), but it would reduce aisle width. In this case, only small items could be moved through the narrow aisles and stored.

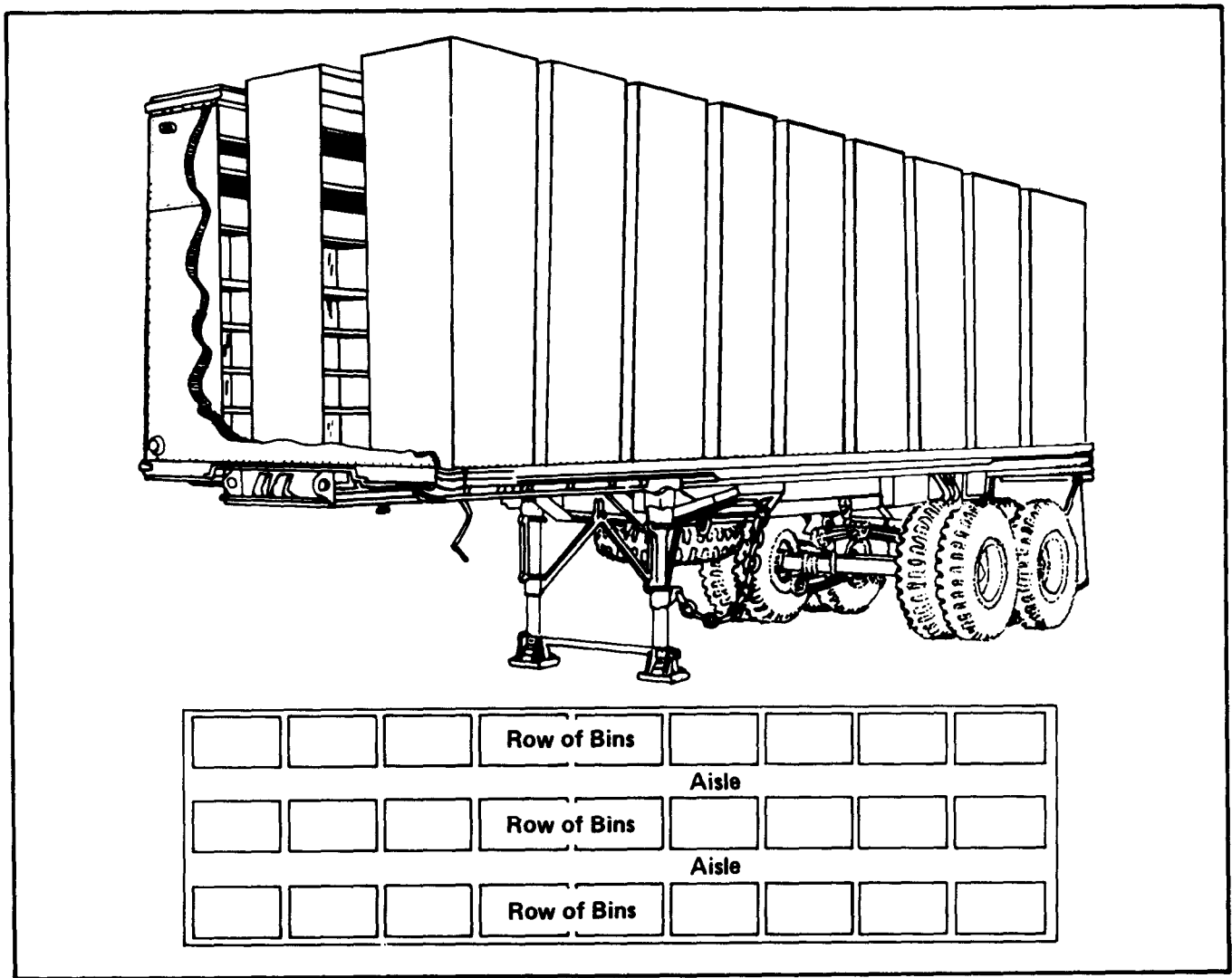


Figure 12-2. The 12-ton M129A2C semitrailer van with bins

22.5-Ton M871 Breakbulk Semitrailer

The M871 breakbulk semitrailer (Figures 12-3 and 12-4) is 29.83 feet long, 8 feet wide, and 4 feet high from the bed to the top of the sideboards. Stake-type vehicles adapt themselves more readily to bulk storage than to bin storage. Under normal conditions storage aids will be stacked no more than two high.

- Select a storage aid that will make the best use of the M871 storage capacity. This example uses FLEX pallets which can be used for both bin and bulk storage. The standard FLEX pallet is 48 inches long, 33 inches wide, and 38 inches high. Figure 12-5 shows the types of FLEX pallets. The unit cube requirements of the ASL can often assist in the selection of the proper storage aid. Each

type of FLEX pallet can support different types of line items depending on the unit cube of the ASL items, Table 12-2 shows the unit cube and average line capacities for each FLEX pallet shown in Figure 12-5. To determine the cubic feet available in the storage aid, follow the steps below.

- Multiply the length by the height by the width. For convenience, first convert inches to feet.

$$\text{Length} \times \text{Width} \times \text{Height} =$$

$$48 \text{ inches} \times 33 \text{ inches} \times 38 \text{ inches} =$$

$$4 \text{ feet} \times 2.75 \text{ feet} \times 3.17 \text{ feet} = 34.87 \text{ cubic feet}$$

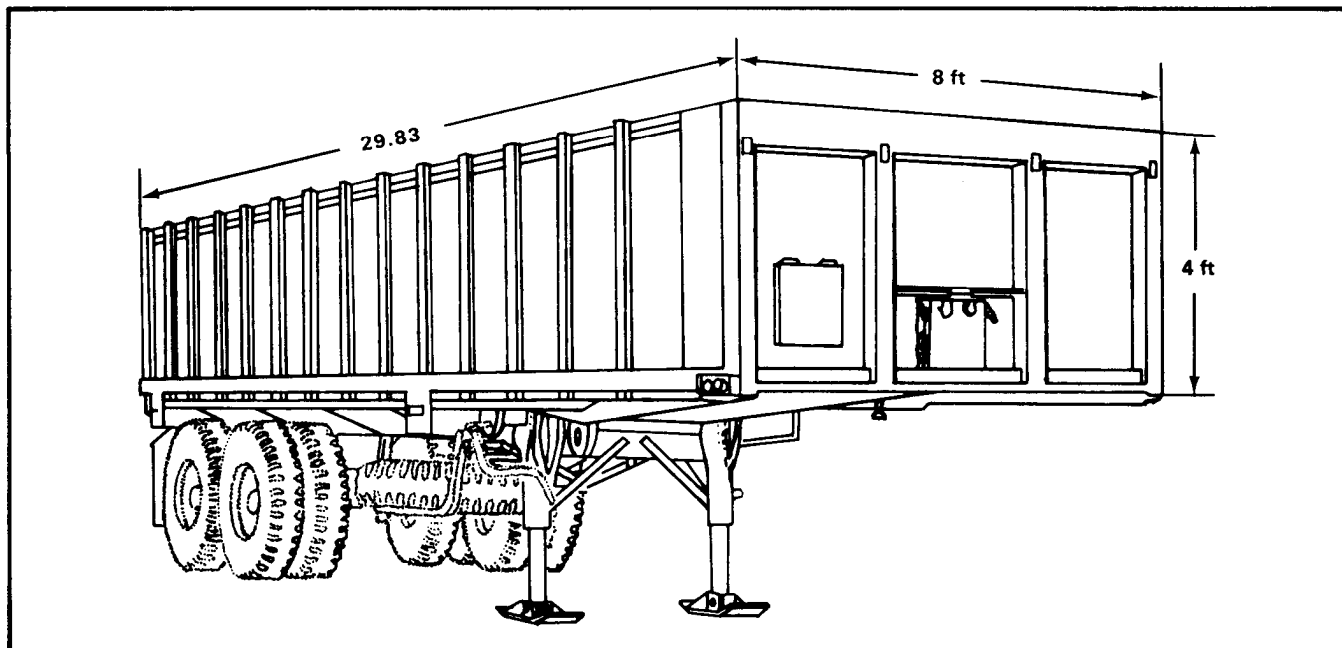


Figure 12-3. The 22.5-ton M871 breakbulk semitrailer

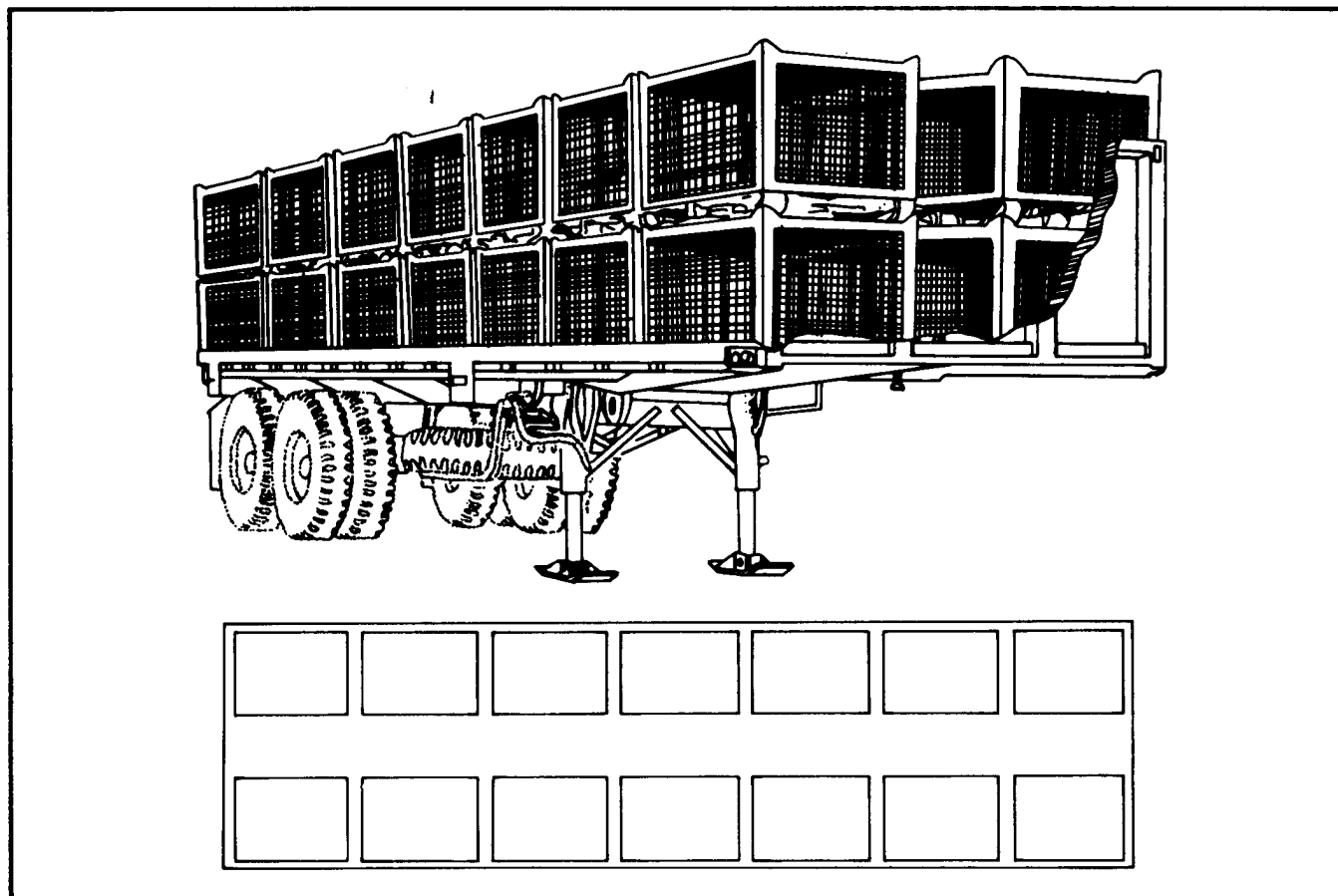


Figure 12-4. The 22.5-ton M871 breakbulk semitrailer with mesh FLEX pallets

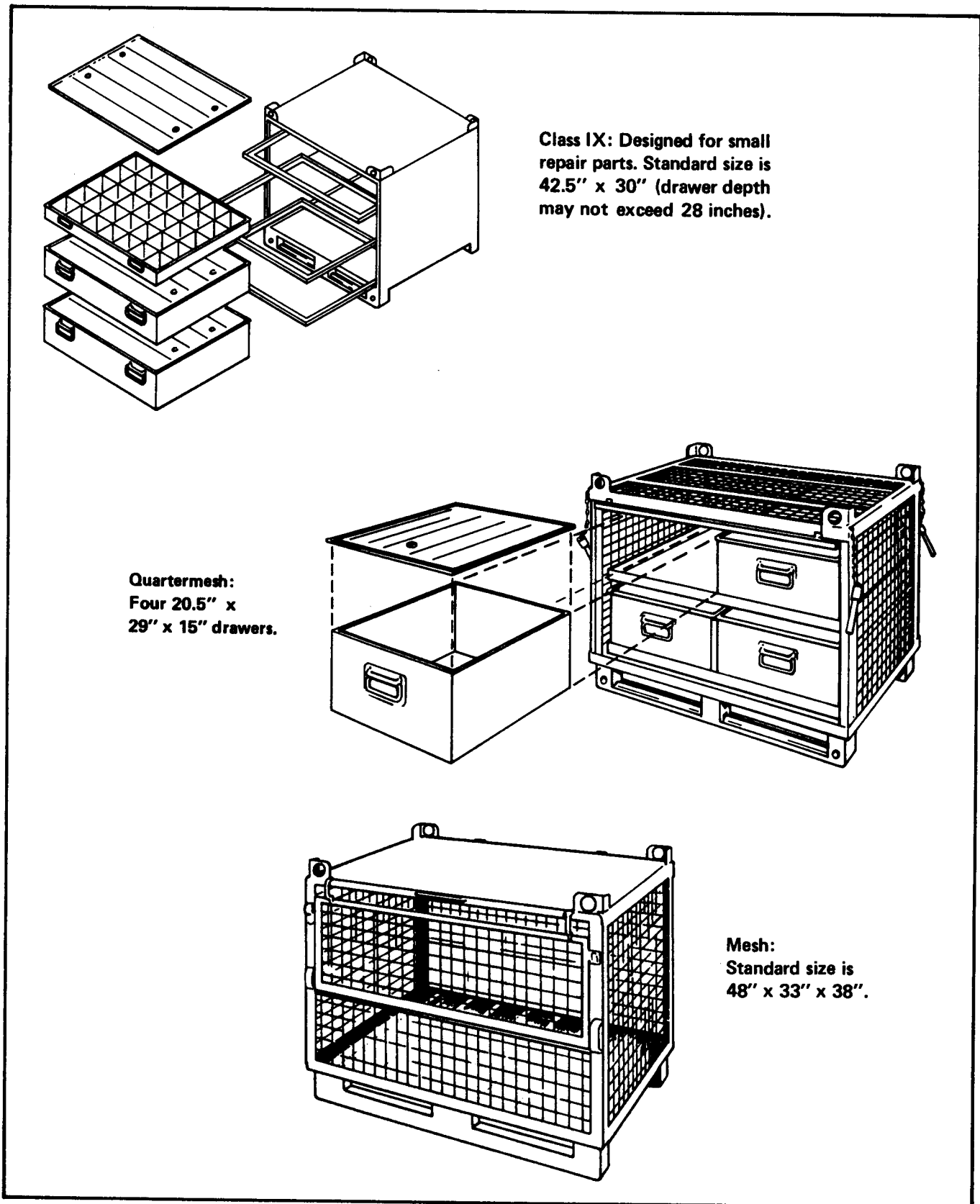


Figure 12-5. Types of FLEX pallets

Table 12-2. Flex pallet unit cube range

TYPE	UNIT CUBIC FEET	AVERAGE LINES
CLASS IX	0.001 to 0.5	30-35
QUARTERMESH	0.25 to 5.0	8-10
MESH	2.5 to 26.0	3-4

- You can store up to 34.87 cubic feet of supplies in the standard mesh FLEX pallet. To determine how many of these storage aids can be placed in one row of the vehicle (M871 semitrailer), divide the length of the storage aid into the length of the vehicle and round down.

$$\frac{29.83 \text{ feet}}{4 \text{ feet}} = 7.46 = 7 \text{ aids (rounded down)}$$

At least one row of seven FLEX pallets can be placed on this vehicle.

- Depending on the width of the storage aid used, you may add more rows. Take the width of the storage aid, multiply it by two (the number of rows desired), and subtract this amount from the vehicle width to determine if the remaining aisle width will permit two rows of pallets. For the M871 semitrailer, two rows of pallets will yield 2.5 feet of aisle space.

- For this example, the load height has been increased from 4 to 8 feet. Two FLEX pallets stored one on top of the other will give a total pallet height of 6.34 feet. Thus, stacking of the storage aids will be no problem.

- By stacking the FLEX pallets on this vehicle, you have two rows of 14 pallets for a total

of 28 FLEX pallets, This will yield a total usable storage space of 976.36 cubic feet.

- The aisle has approximately 596.60 unusable cubic feet which must be subtracted from the total usable cubic feet.

$$29.83 \text{ feet} \times 2.5 \text{ feet} \times 8 \text{ feet} = 596.60 \text{ unusable aisle cubic feet}$$

$$1,909.12 \text{ cubic feet (vehicle)} - 596.60 \text{ cubic feet} = 1,312.52 \text{ total usable cubic feet}$$

- When increasing storage height above the sideboards, you must make sure that the height of the storage aids is within safe limits.

6-Ton M750 Semitrailer Van

This van (used for repair parts storage) may be used in uploading the combat ASL. See Figure 12-6. The M750 van is a unique type of storage facility. It has certain design features that enhance its storage capabilities. It has foldout sides and integral bins and shelves with 400 cubic feet of storage space. The foldout sides form working platforms. The user stands on these when placing or removing stock.

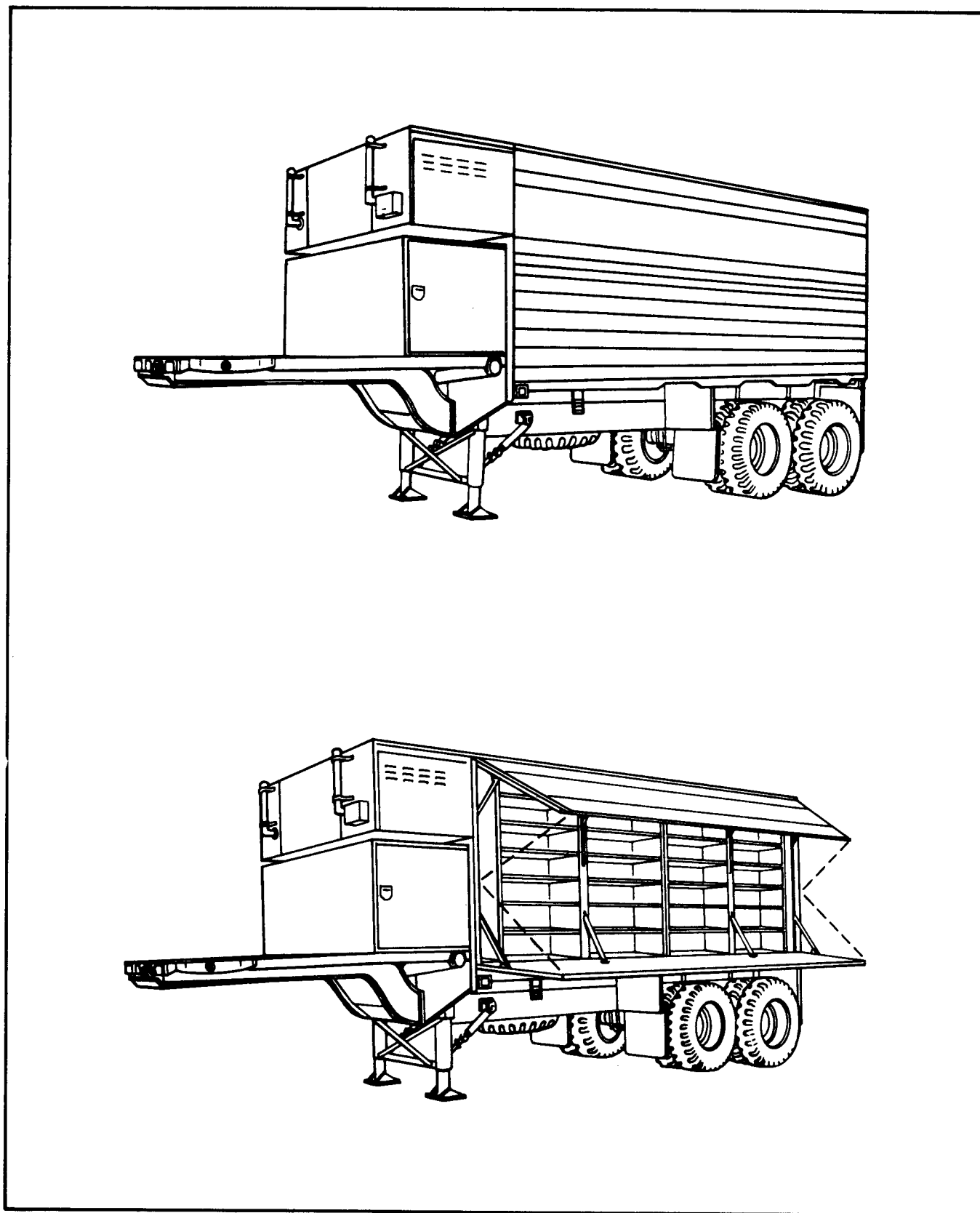


Figure 12-6. The 6-ton M750 semitrailer van with factory-issued storage aids