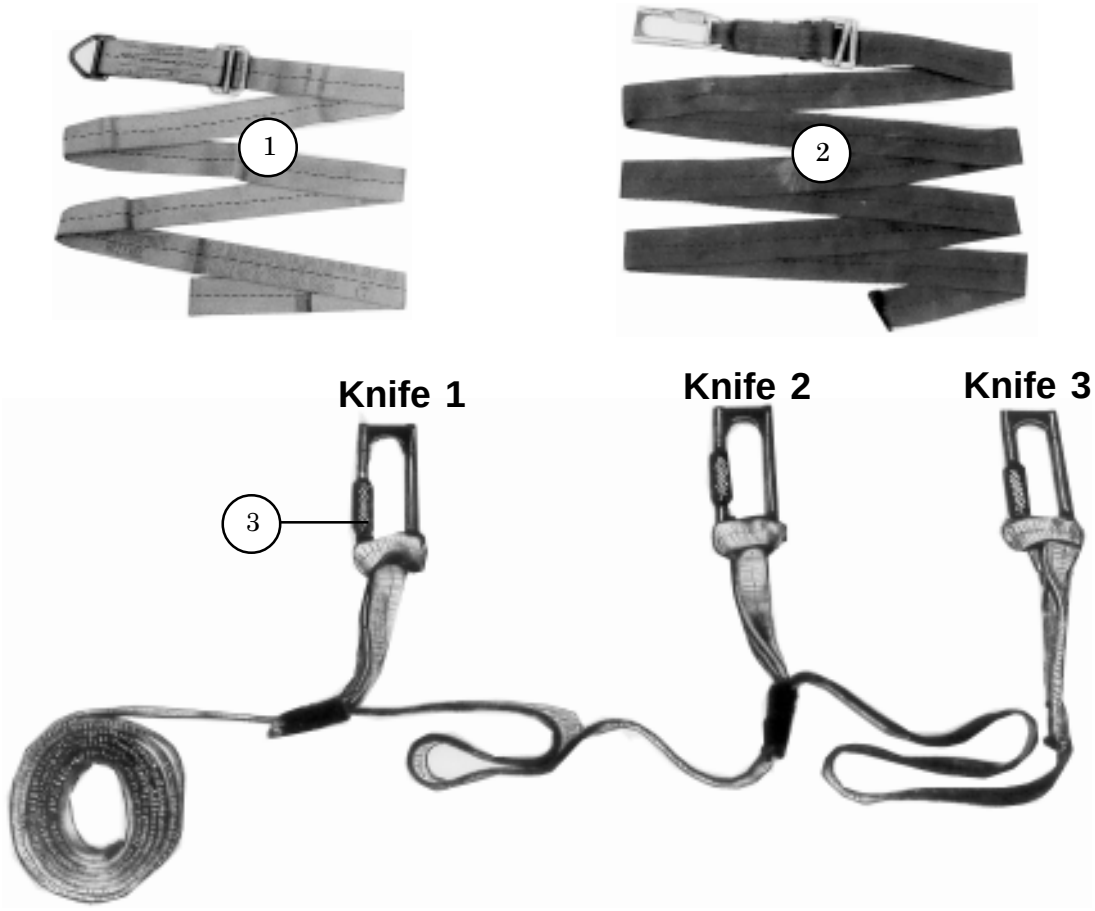
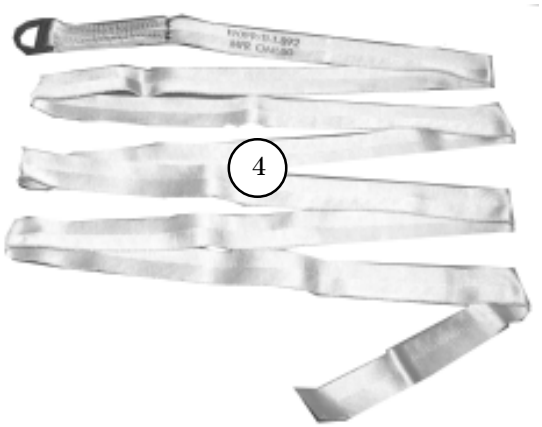


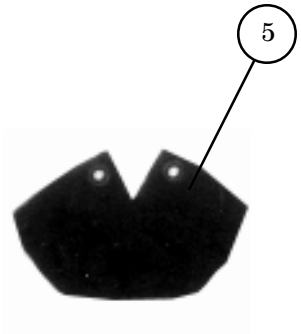
1 The V-knife parachute release strap is used to cut one parachute restraint strap on a low-velocity airdrop load.

2 The guillotine-knife parachute release strap is used to cut one parachute restraint strap on a low-velocity airdrop load.

3 The multicut parachute release strap is used to cut one to three parachute restraint straps on a platform load rigged for low-velocity airdrop. The strap comes with three guillotine-type release knives. Knives that are not being used are removed. This release strap is always used in pairs.

Figure 2-3. Straps and Canvas Items Used for Rigging Platform Loads





4 The 15-foot dacron tiedown strap is used to lash an airdrop load to the platform. Other uses of this strap are covered in the specific rigging manual.

5 The large clevis cover is used on the large and medium suspension clevis when the clevis is used to join the risers of a cargo parachute to a riser extension.

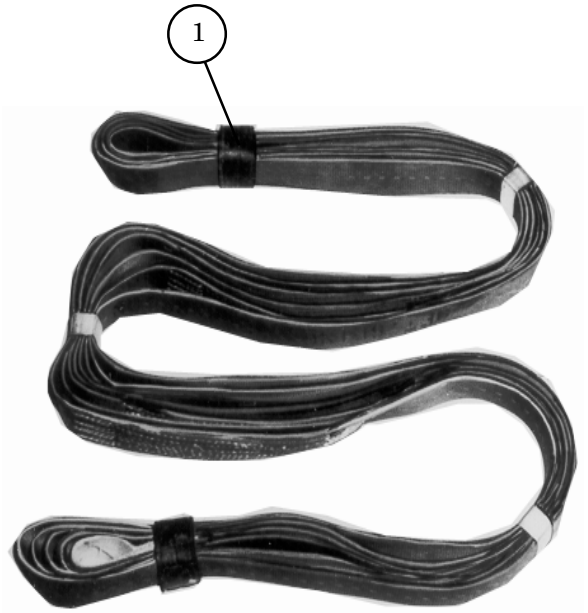
Figure 2-3. Straps and Canvas Items Used for Rigging Platform Loads (continued)

Section III

Suspension Slings

CARGO SLINGS

2-5. Cargo slings (Figure 2-4) are used as suspension slings on platform loads rigged for low-velocity airdrop. These slings suspend the load under the cargo parachute during descent. Suspension slings connect the cargo parachute to the load using a parachute release assembly. Cargo slings may also be used as deployment lines and to extend the risers of cargo parachutes or to group the bridles of a multiparachute load.



1 Each sling is made with continuous loops. The loops are 1 3/4-inch-wide, type XXVI nylon webbing. They are held together with keepers of 1-inch, nylon reinforced tape. Each sling has a sliding webbing keeper and a cotton or nylon buffer at each end.

Note: The keeper at each end of the sling must be drawn snugly against the object on which the sling is fitted.

Figure 2-4. Cargo Slings

REQUIREMENTS

2-6. The size and number of suspension slings needed to rig an airdrop platform load for low-velocity airdrop depend on the suspended weight of the load. The size and number of cargo slings needed at each suspension point are listed in Table 2-2. The types and lengths of suspension slings authorized for use when a platform load is rigged for low-velocity airdrop are listed in Table 2-3. Each specific rigging manual lists the slings used on a specific load.

Table 2-2. Size and Number of Cargo Slings Required for Airdrop Platform Loads

Weight of Rigged Load Without Cargo Parachutes (pounds)	Type XXVI Nylon Webbing Cargo Slings at Each Suspension Point
2270 to 14,000	1 each (2-loop)
14,001 to 40,000	1 each (4-loop)

Table 2-3. Suspension Slings for Low-Velocity Airdrop

National Stock Number	Length (feet)	Number of Loops	Type of Nylon Webbing
1670-01-062-6301	3	2	XXVI
1670-01-062-6306	3	4	XXVI
1670-01-062-6304	9	2	XXVI
1670-01-062-6305	9	4	XXVI
1670-01-063-7760	11	2	XXVI
1670-01-062-6310	11	4	XXVI
1670-01-062-6303	12	2	XXVI
1670-01-062-6307	12	4	XXVI
1670-01-063-7761	16	2	XXVI
1670-01-062-6308	16	4	XXVI
1670-01-062-6302	20	2	XXVI
1670-01-064-4453	20	4	XXVI

Section IV

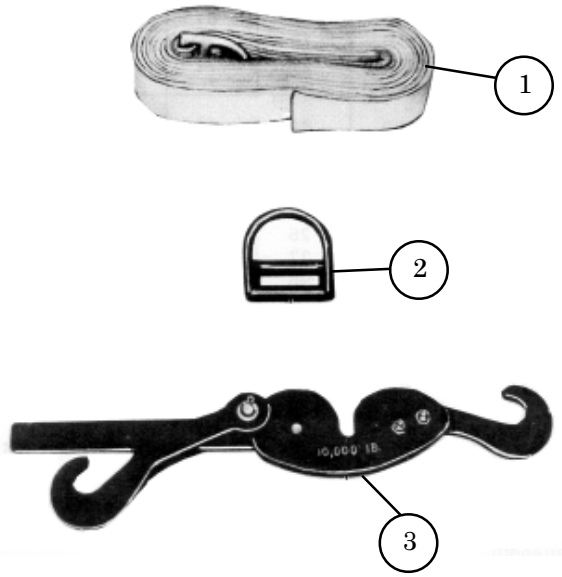
Lashings

USE

2-7. The drop item and the accompanying load are lashed to the platform to prevent damage to the load or to the aircraft during airdrop. The accompanying load is lashed to the platform to withstand the same force as the drop item.

COMPONENTS AND STRENGTHS

2-8. The components of the lashings used on airdrop loads are shown in Figure 2-5. The effective strength of a lashing is determined by the angle of lashing to the plane of thrust. Table 2-4 illustrates a method of determining lashing effectiveness forward, aft, lateral, and vertical thrusts. The maximum strengths of the various formsof lashings are given in Figure 2-6.



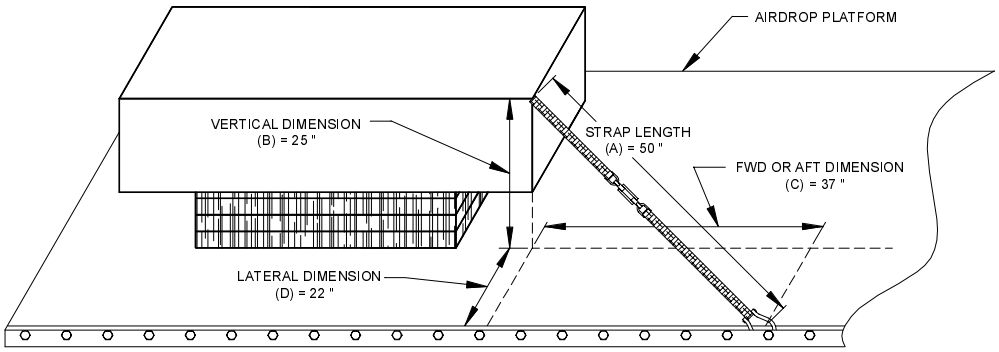
1 15-foot dacron tiedown strap.

2 Heavy-duty D-ring.

3 10,000-pound-capacity load binder.

Figure 2-5. Components of a Tiedown Assembly

Table 2-4. Lashing Effectiveness



THIS FIGURE ILLUSTRATES A METHOD OF DETERMINING RESTRAINT PROVIDED BY A GIVEN AIRDROP TIEDOWN. AS ILLUSTRATED, TIEDOWN RATIOS CAN BE DETERMINED BY DIVIDING THE DIRECTIONAL DISTANCE IN WHICH RESTRAINT IS REQUIRED BY THE STRAP LENGTH. THIS RATIO IS THEN MULTIPLIED BY THE STRENGTH OF THE TIEDOWN STRAP OR ATTACHMENT POINT, WHICHEVER IS LESS, TO FIND THE EFFECTIVE RESTRAINT RECEIVED FROM THE TIEDOWN PATTERN USED.

EXAMPLE: (Note: Quantities used are from the example above)

1) FIRST, MEASURE THE TIEDOWN STRAP LENGTH (A) FROM THE ATTACHMENT POINT ON THE AIRDROP LOAD TO THE TIEDOWN FITTING ON THE AIRDROP PLATFORM (50 INCHES). YOU WILL USE THIS MEASUREMENT IN EACH CALCULATION.

2) **CALCULATING THE VERTICAL RESTRAINT**:

   a) FOR DETERMINING VERTICAL RESTRAINT, MEASURE THE VERTICAL DIMENSION (B) FROM THE ATTACHMENT POINT ON THE AIRDROP LOAD TO A POINT DIRECTLY BENEATH IT ON THE AIRDROP PLATFORM SURFACE (25 INCHES).

   b) DIVIDE THE VERTICAL DIMENSION (B) BY THE TIEDOWN STRAP LENGTH (A) TO DETERMINE A RATIO:
   $$\frac{25}{50} = 0.50 RATIO$$

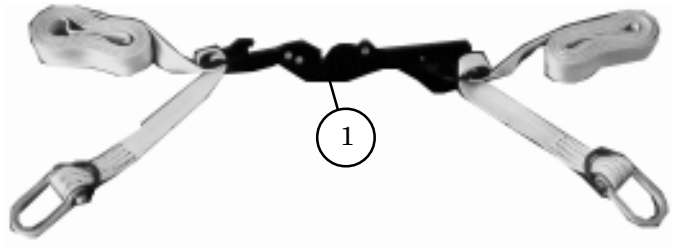
   c) MULTIPLY THIS RATIO BY THE RATED STRENGTH OF THE TIEDOWN STRAP OR THE RATED STRENGTH OF THE TIEDOWN FITTING ON THE LOAD OR ON THE PLATFORM, WHICHEVER IS LESS:
   $$0.50 \times 10{,}000^{*} = 5{,}000 POUNDS$$ ← **VERTICAL RESTRAINT RECEIVED FROM STRAP**

3) **CALCULATING THE FORWARD OR AFT RESTRAINT**:

   a) FOR DETERMINING FORWARD OR AFT RESTRAINT, OBTAIN A FORWARD OR AFT DIMENSION (C) BY MEASURING FROM A POINT DIRECTLY BENEATH THE ATTACHMENT POINT ON THE AIRDROP LOAD ALONG A LONGITUDINAL AXIS TO A POINT LATERAL TO THE TIEDOWN FITTING BEING USED ON THE AIRDROP PLATFORM (37 INCHES).

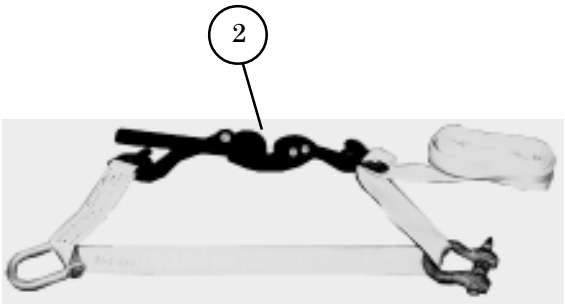
   b) DIVIDE THE FORWARD OR AFT DIMENSION (C) BY THE TIEDOWN STRAP LENGTH (A) TO DETERMINE A RATIO:
   $$\frac{37}{50} = 0.74 RATIO$$

   c) MULTIPLY THIS RATIO BY THE RATED STRENGTH OF THE TIEDOWN STRAP OR PLATFORM SIDERAIL TIEDOWN CLEVIS, 10,000 OR TYPE V PLATFORM PANEL TIEDOWN RING, 4,000, WHICHEVER IS LESS:
   $$0.74 \times 10{,}000^{*} = 7{,}400 POUNDS$$ ← **FWD OR AFT RESTRAINT RECEIVED FROM STRAP**



Platform **Platform**

1 **Single line configuration.**
A dacron lashing routed in a single line configuration has a maximum strength of 6000 pounds when attached to a type V platform side rail and a tiedown clevis. It has a maximum strength of 4000 pounds when attached to a panel tiedown ring.



Platform **Item**

2 **Double line (floating binder) configuration.**
A dacron lashing routed in a double line configuration has a maximum strength of 10,000 pounds when attached to a type V platform side rail and a tiedown clevis. It has a maximum strength of 4,000 pounds when attached to a panel tiedown ring.

Figure 2-6. Strengths of Dacron Lashings

Section V

Cargo Parachutes

USE

2-9. Cargo parachutes, also called recovery parachutes, are used to slow the descent of a low-velocity platform load. Table 2-5 lists the weight limitations for cargo parachutes used with airdrop platform loads.

TYPES

2-10. The following cargo parachutes are used when loads are rigged for low-velocity airdrop.

a. G-11B Cargo Parachute. The parachute has a 100-foot-diameter canopy. It has 120 suspension lines (35-foot, type III nylon cord). The apex vent lines have been pulled down with a type V nylon webbing center line. The parachute has four 2-second cutters. When packed, the assembly weighs 250 pounds.

b. G-11C Cargo Parachute. This is the same parachute as the G-11B except this parachute has two 2-second cutters with two reusable reefing lines.

c. G-12E Cargo Parachute. This parachute has a 64-foot-diameter canopy. It has sixty-four 51-foot, type IV braided nylon cord suspension lines. The bridle loop has been pulled down with a type V nylon webbing center line. When packed, the assembly weighs 125 pounds.

Table 2-5. General Weight Limitations for Cargo Parachutes

*Suspended Weight in Pounds

Parachutes	Minimum	Maximum
G-11B		
1	2,270	5,000
2	5,001	10,000
3	10,001	15,000
4	15,001	20,000
G-11C		
5	20,001	25,000
6	25,001	30,000
7	30,001	35,000
8	35,001	40,000
G-12E*		
1	501	2200
2	2,270	3,500

*** Suspended weight in pounds is the total rigged weight less the weight of the cargo parachutes.**