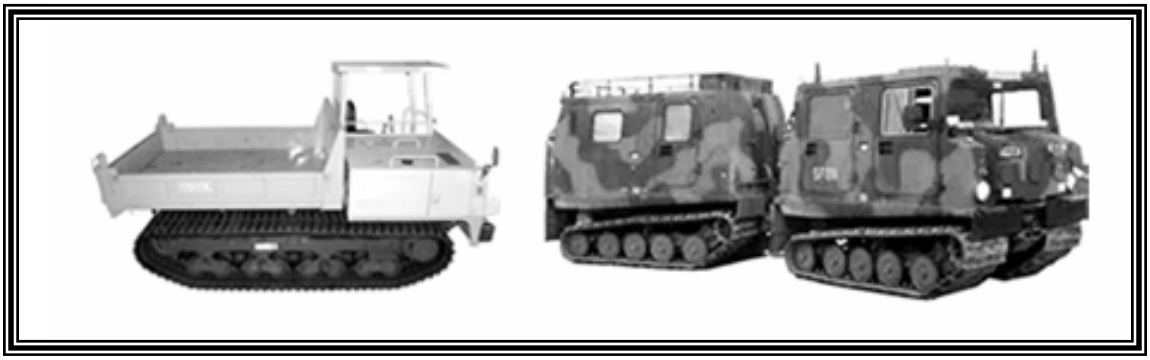
ARMY FM 4-20.167
AIR FORCE TO 13C7-16-171

Airdrop of Supplies and Equipment:

Rigging Tracked Personnel – Cargo Carriers



MAY 2005

HEADQUARTERS
DEPARTMENT OF THE ARMY
DEPARTMENT OF THE AIR FORCE

Field Manual
No 4-20.167
Technical Order
No 13C7-16-171

Headquarters
Department of the Army
and the Air Force
Washington, DC, 11 May 2005

Airdrop of Supplies and Equipment: Rigging Tracked Personnel - Cargo Carriers

Contents

*This publication supersedes FM 10-567, 29 June 1979.

Chapter 2 Rigging M973A, 1 1/2 Ton Cargo Carrier Small Unit Support Vehicle (SUSV) on a Type V Platform for Low-Velocity Airdrop

PREFACE

SCOPE

The purpose of this manual is to provide the latest approved procedures for rigging the IC45 crawler carrier and the M973A, 1 1/2-ton cargo carrier small unit support vehicle (SUSV) on the Type V platform for low-velocity airdrop from C-130 and C-17 aircraft. This manual is written for use by the parachute rigger.

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Introduction

DESCRIPTION OF LOAD

This manual tells and shows how to rig the tracked personnel - cargo carriers described below.

a. The IC45 crawler carrier is a small commercial off the shelf tracked dump truck. The IC45 crawler carrier is 98 1/2 inches high (reducible to 77 1/2 inches with the removal of the canopy cover), 174 1/2 inches long, 101 1/2 inches wide (reducible to 88 1/2 inches with removal of the side mirrors) and weighs 12,790 pounds.

b. The M973A, 1 1/2-ton cargo carrier small unit support vehicle (SUSV) is a tracked vehicle with a driver's compartment and a cargo-troop carrier compartment attached to the rear. The vehicle is 271 inches ling, 74 inches wide, 90 1/2 inches high, and weighs 10,000 pounds. The vehicle must be rigged with an accompanying load that weighs at least 2,000 pounds but not more than 2,100 pounds. The accompanying load shown in this manual is 105-millimeter ammunition rigged on the front end of the platform, however other equipment may be used.

SPECIAL CONSIDERATIONS

CAUTION

Only ammunition listed in FM 4-20.153/MCRP 4-11.3B/ TO13C7-18-41 may be airdropped.

The loads covered in this manual include hazardous material as defined in AFMAN(I) 24-204/ TM 38-250. The hazardous materials must be packaged, marked and labeled as required by AFMAN(I) 24-204/TM 38-250.

A copy of this manual must be available to the Joint Airdrop Inspectors during the before and after loading inspection.

Chapter 1

RIGGING IC45 CRAWLER CARRIER ON A TYPE V PLATFORM FOR LOW-VELOCITY AIRDROP

DESCRIPTION OF LOAD

1-1. The IC45 crawler carrier, Figure 1-1, is 98 1/2 inches high (reducible to 77 1/2 inches with the removal of the canopy cover), 174 1/2 inches long, 101 1/2 inches wide (reducible to 88 1/2 inches with removal of the side mirrors) and weighs 12,790 pounds.. The IC45 crawler carrier is rigged on a 16-foot, type V airdrop platform. The total rigged weight of the load is 17,480 pounds and requires four G-11B cargo parchutes.

PREPARING PLATFORM

1-2. Prepare a 16-foot, type V airdrop platform according to TM 10-1670-268-20&P/TO 13C7-52-22. Install two tandem links, four suspension brackets and 32 tiedown clevis assemblies as shown in Figure 1-2.

Notes: 1. The nose bumper may or may not be installed.
2. Measurements given in this chapter are from the front edge of the platform, NOT from the front edge of the nose bumper.

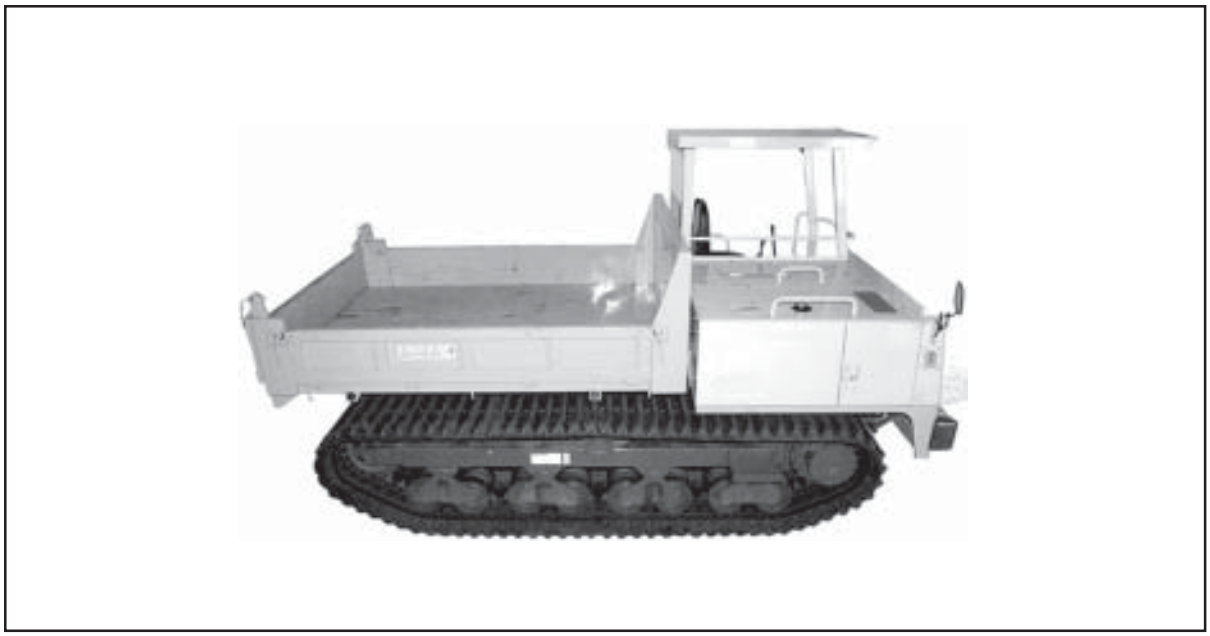
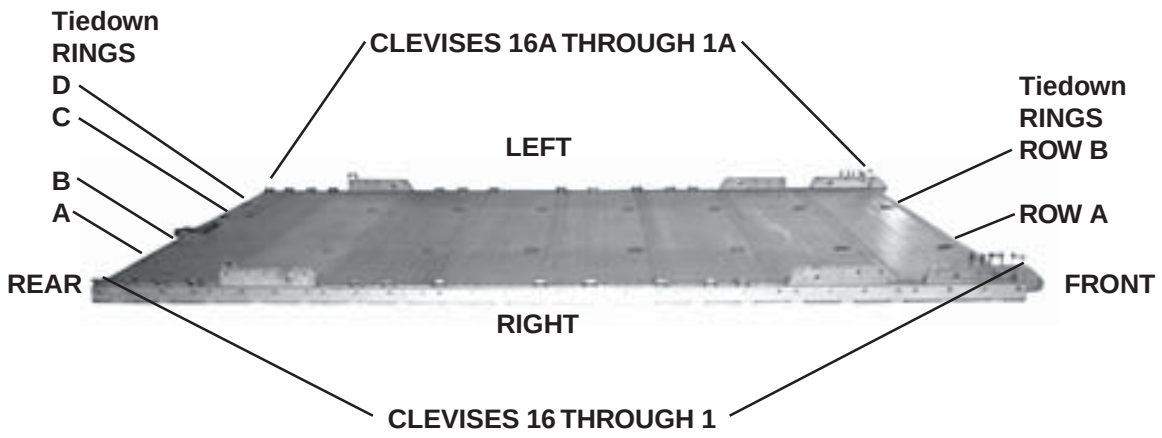


Figure 1-1. IC45 Crawler Carrier



Steps:

1. Inspect, or assemble and inspect, the platform according to TM 10-1670-268-20&P/TO 13C7-52-22.
2. Install a tandem link on each platform side rail holes 1, 2, and 3.
3. Install a suspension bracket in holes 6, 7, and 8 on each platform side rail. Face the flat part of the link to the front of the rail.
4. Install a suspension bracket in holes 25, 26, and 27 on each platform side rail. Face the flat part of the link to the rear of the rail.
5. Install a clevis on bushings 1, 2 and 3 on each front tandem link.
6. Install a clevis on bushing 4 on each rear suspension bracket.
7. Starting at the front of each platform side rail, install clevises on each platform side rail using bushings bolted on holes 10, 11,13, 15, 17, 20, 22, 23, 29, 30, 31, and 32.
8. Starting at the front of each platform side rail, number the clevises bolted to the right side from 1 through 16 and those bolted to the left side from 1A through 16A.
9. Label the tiedown rings according to FM 4.20-102/NAVSEA SS400-AB-MM0-010/TO 13C7-1-5.

Figure 1-2. Platform Prepared

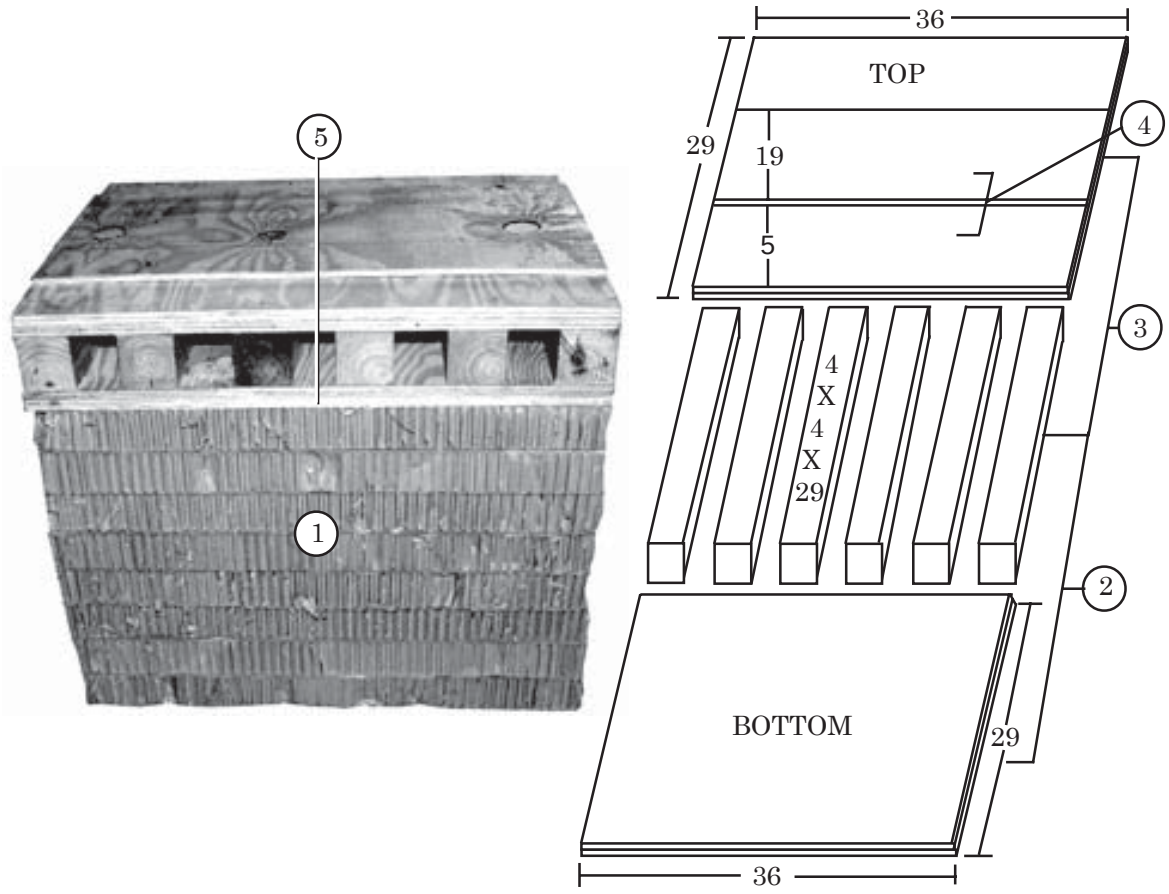
BUILDING AND POSITIONING HONEYCOMB STACKS

1-3. Build five honeycomb stacks as shown in Figures 1-3 through 1-5 using the materials listed in Table 1-1. Position the honeycomb stacks on the platform as shown in Figure 1-6.

Table 1-1. Materials Needed to Prepare Honecycomb Stacks

Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1	8	36	26	Honeycomb	See Figure 1-3
	2	36	29	3/4" Plywood	
	6	4 X 4	29	Lumber	
	2	36	29	3/4" Plywood	
	1	36	19	1/2" Plywood	
2	8	36	19	Honeycomb	See Figure 1-4
	1	36	19	3/4" Plywood	
	6	4 X 4	19	Lumber	
	3	36	19	3/4" Plywood	
	2	2 X 4	19	Lumber	
	2	2 X 6	19	Lumber	
3	8	36	19	Honeycomb	See Figure 1-5
	1	36	19	3/4" Plywood	
	6	4 X 4	19	Lumber	
	2	36	19	3/4" Plywood	
	1	36	19	1/2" Plywood	
	2	2 X 8	19	Lumber	
	1	21	19	1/2" Plywood	
	1	21	19	3/4" Plywood	
4 and 5	8	18	96	Honeycomb	See Figure 1-5

Notes: 1. Not drawn to scale.
2. All dimensions are given in inches.



1. Glue eight 29- by 36-inch pieces of honeycomb together to form a base.

2. Place and nail six 4 -by 4- by 29-inch pieces of lumber on top of two 29- by 36- by 3/4-inch pieces of plywood. Place the 4 by 4's flush with sides, front, back and evenly spaced.

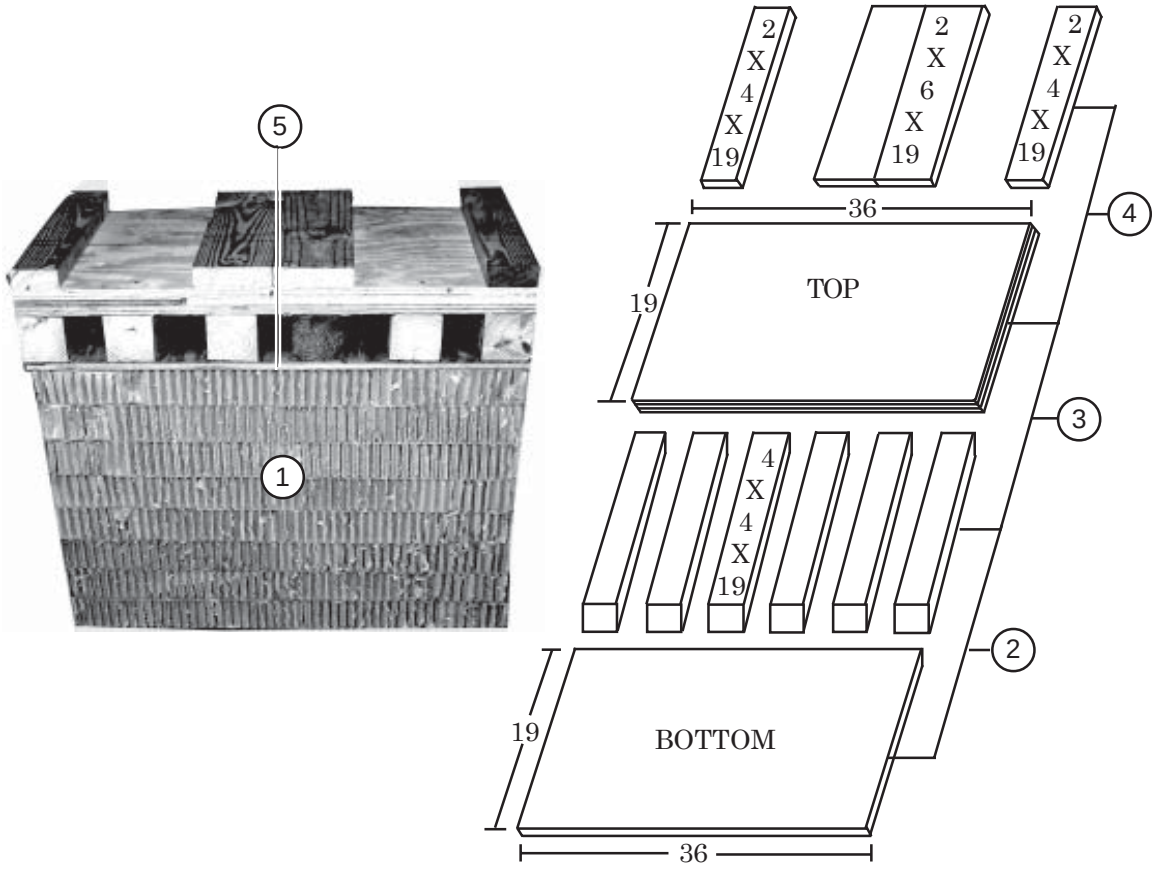
3. Nail two 29- by 36- by 3/4-inch pieces of plywood flush on top of the six 4- by 4-inch pieces of lumber.

4. Place and nail a 19- by 36- by 1/2-inch piece of plywood flush with the sides and 5 inches from the front on top of the plywood placed in step 3.

5. Glue the wood stack on the honeycomb stack made in step 1.

Figure 1-3. Honeycomb Stack 1 Prepared

Notes: 1. Not drawn to scale.
2. All dimensions are given in inches.



1. Glue eight pieces of 19- by 36-inch honeycomb together to form a base.

2. Place and nail six 4- by 4- by 19-inch pieces of lumber on top of one 19- by 36- by 3/4-inch piece of plywood. Place the 4 by 4's flush with sides, front, back and evenly spaced.

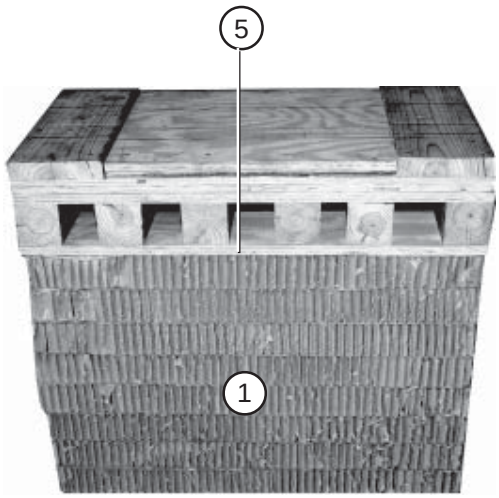
3. Nail three 19- by 36- by- 3/4-inch pieces of plywood flush on top of the six 4- by 4-inch pieces of lumber.

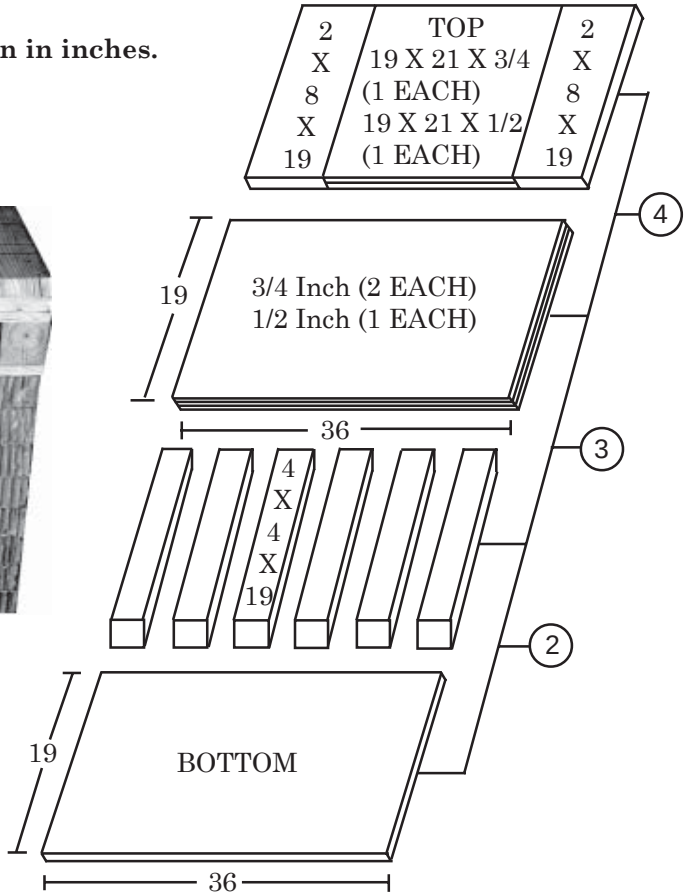
4. Place and nail one 2- by 4- by 19-inch piece of lumber on the left and right edge, flush with the front and back. Place and nail two 2- by 6- by 19-inch pieces of lumber side by side in the center on top of the 19- by 36- by 3/4-inch piece of plywood placed in step 3.

5. Glue and place wood stack on honeycomb stack made in step 1.

Figure 1-4. Honeycomb Stack 2 Prepared

Notes: 1. Not drawn to scale.
2. All dimensions are given in inches.





(1) Glue eight pieces of 19- by 36-inch honeycomb together to form a base.

(2) Place and nail six 4- by 4- by 19-inch pieces of lumber on top of one 19- by 36- by 3/4 -inch piece of plywood. Place the 4 by 4's flush with sides, front, back and evenly spaced.

(3) Nail two 19- by 36- by 3/4-inch pieces and one 19- by 36- by 1/2-inch piece of plywood flush on top of the six 4- by 4-inch pieces of lumber.

(4) Place and nail one 2- by 8- by 19-inch piece of lumber on the left and right edge, flush with the front and back on top of the plywood positioned in step 3. Place and nail one piece of 19- by 21- by 1/2-inch and one piece of 19- by 21- by 3/4-inch plywood on top of the 19-by 36- by 3/4-inch piece of plywood in step 3 and in between the lumber in step 4 flush with the front and back.

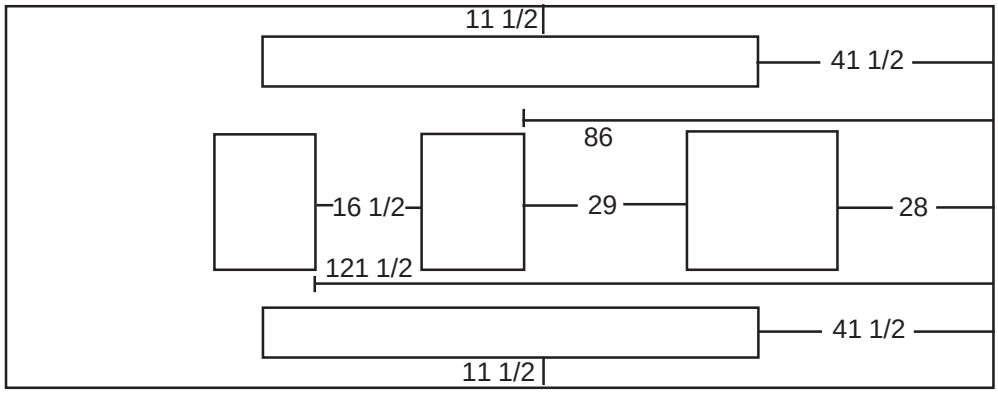
(5) Glue and place wood stack on top of the honeycomb stack made in step 1.

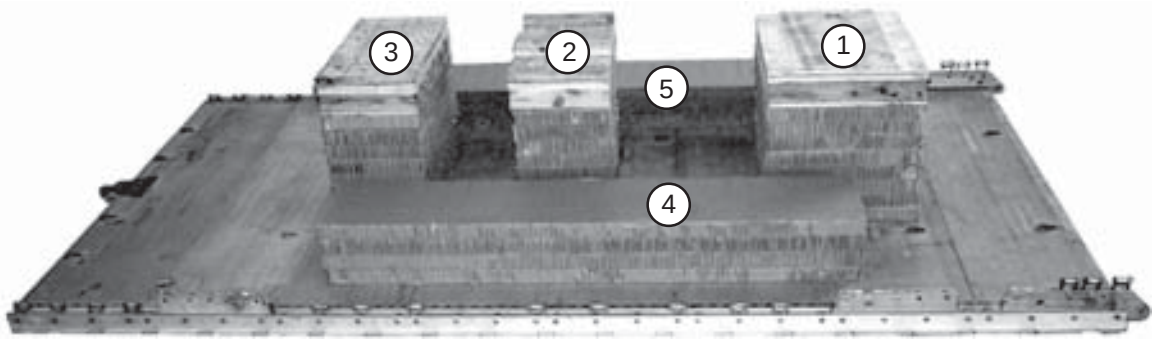
(6) To form stack 4, glue four 18- by 96-inch pieces of honeycomb together (Not Shown).

(7) To form stack 5, glue four 18- by 96-inch pieces of honeycomb together (Not Shown).

Figure 1-5. Honeycomb Stacks 3, 4, and 5 Prepared

Notes: 1. Not drawn to scale.
2. All dimensions are given in inches.





Stack Number	Positition of Stack on Platform
	Place stack:
1	Centered 28 inches from the front edge of the platform.
2	Centered 29 inches from stack 1 or 86 inches from the front edge of the platform.
3	Centered 16 1/2 inches from the rear edge of stack 2 or 121 1/2 inches from the front edge of the platform.
4	41 1/2 inches from the front edge of the platform and 11 1/2 inches from the right side.
5	41 1/2 inches from the front edge of the platform and 11 1/2 inches from the left side.

Figure 1-6. Honeycomb Stacks Positioned on Platform

PREPARING THE 1C45 CRAWLER CARRIER

1-4. Prepare the IC45 crawler carrier as described below.

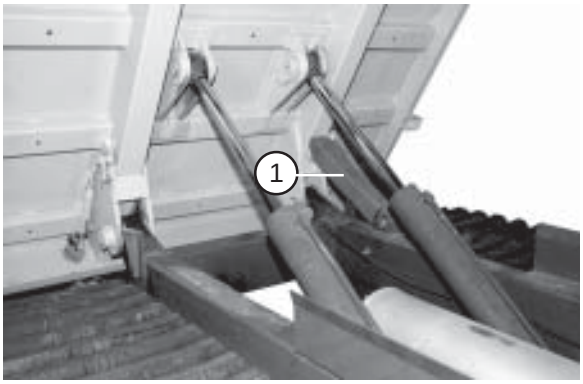
a. Make sure the fuel tank is no more than 75% full.

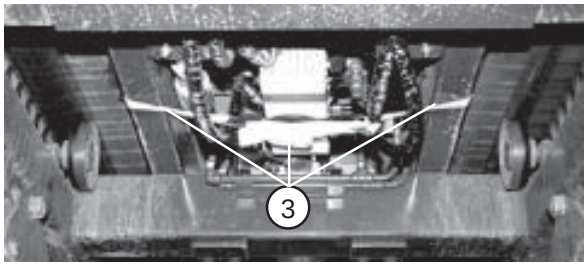
b. Make sure the battery and battery compartment comply with AFMAN 24-204(I)/TM 38-250.

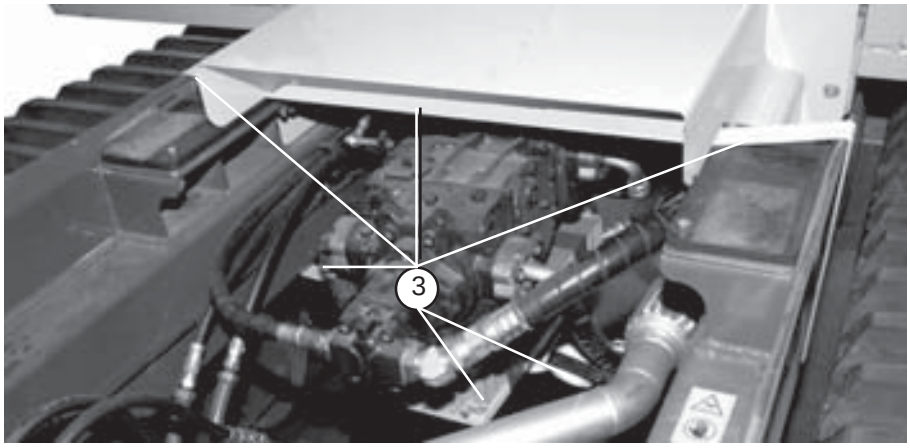
c. Prepare the rest of the IC45 crawler carrier as shown in Figure 1-7 through 1-11.

Table 1-2. Materials Needed to Prepare the Bed for the Canopy Cover and the Cab Protective Box.

Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1	32	75	Honeycomb	See Figure 1-9
1	36	75	Honeycomb	See Figure 1-9
1	22	75	Honeycomb	See Figure 1-9
1	31 1/2	51	3/4" Plywood	See Figure 1-9
2	3	20	Honeycomb	See Figure 1-9
2	32	33	3/4" Plywood	Cut a 6-inch by 21-inch piece out of each side. See Figure 1-10
1	33	50 1/2	2 X 4 Lumber	See Figure 1-10
2	2 X 4	33	2 X 4 Lumber	See Figure 1-10
2	2 X 4	12	3/4" Plywood	See Figure 1-10
1	12	33	3/4" Plywood	See Figure 1-10
1	32	52	3/4" Plywood	See Figure 1-10







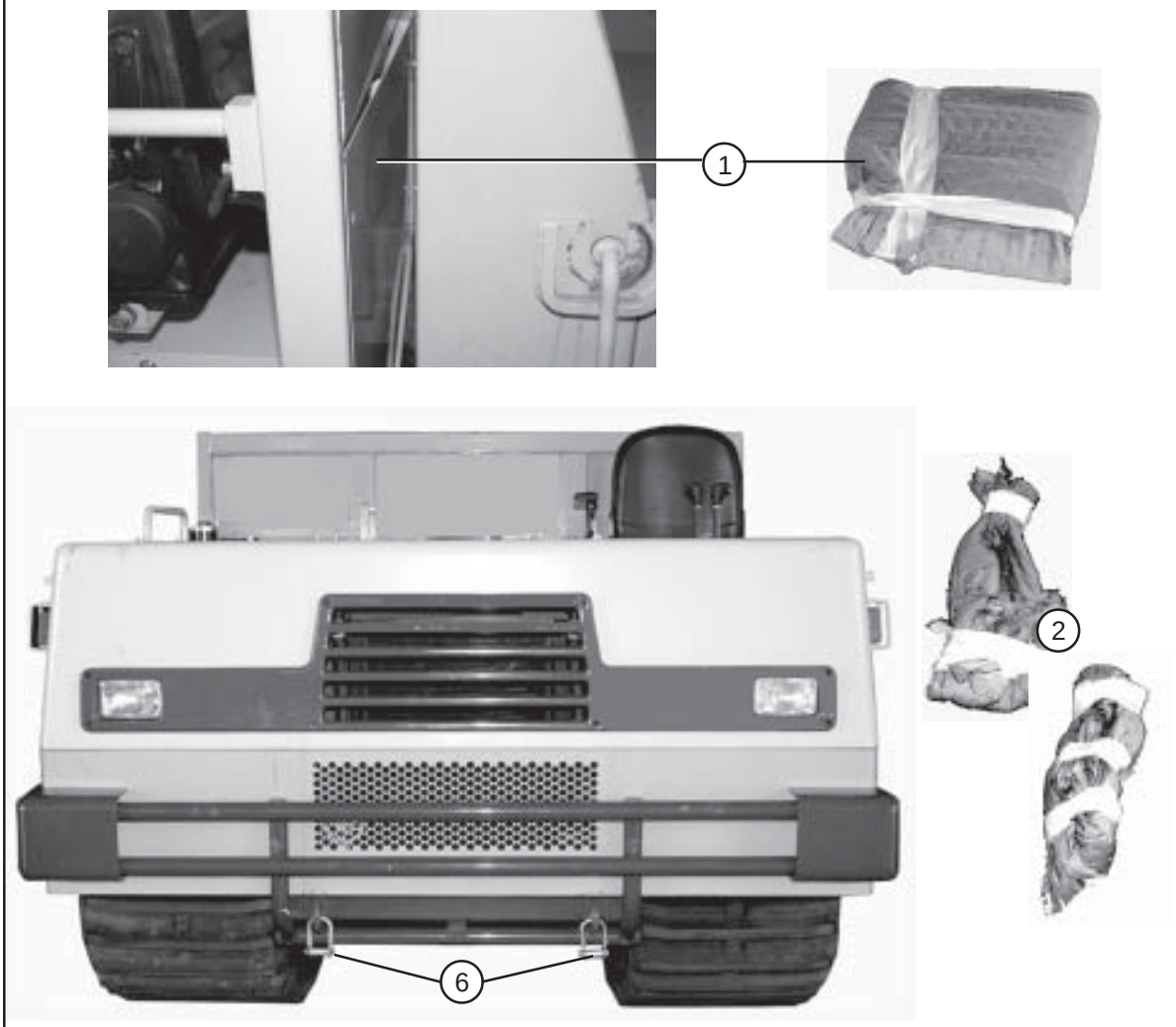
(1) Raise the dump body to the up position. Place the red safety bar in the bracket under the body to prevent the body from falling while lashing the hydraulic pump.

(2) Cut a 6- by 18- by 3/4-inch piece of plywood and a 6- by 18-inch piece of honeycomb and tape them together. (Not Shown)

(3) Route a 15-foot lashing from the hydraulic pump, up around the frame, over the top of the frame to the other side and down along the frame. Place the 6- by 18-inch piece of plywood and honeycomb, with the honeycomb against the hydraulic pump. Secure the lashing with a D-ring and load binder on the piece of plywood.

(4) Remove the red safety bar and lower the dump body to the down position. (Not Shown)

Figure 1-7. Dump Body Prepared



(1) Remove the panel from behind the driver's seat. This panel must be removed prior to removing the canopy cover. Wrap the panel with cellulose wadding and tape.

(2) Remove the mirrors. Wrap the mirrors separately with cellulose wadding and tape.

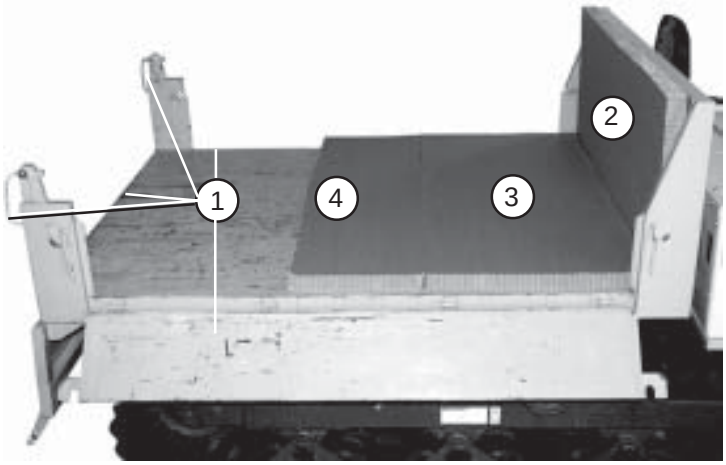
(3) The panel and the mirrors will be stowed in Figure 1-9, step 11.

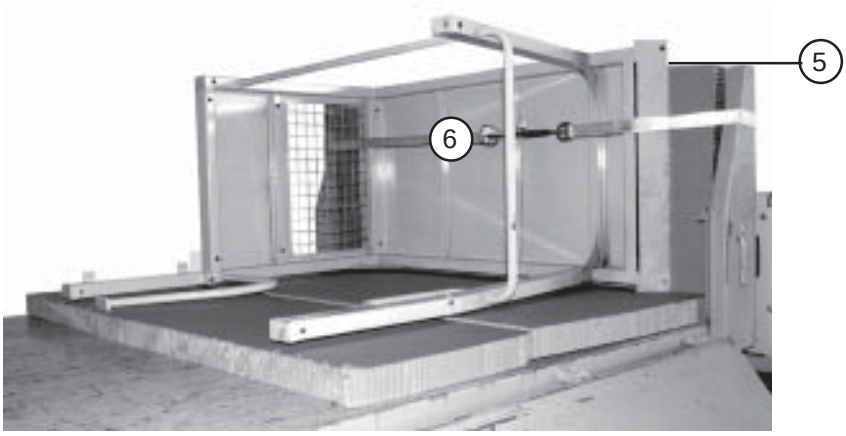
(4) Remove the canopy cover. (Not Shown)

(5) Tape all lights. (Not Shown)

(6) Place one type V platform clevis on each front towing hook.

Figure 1-8. Cab, Cab Canopy Cover and Front Prepared





(1) Lower the dump body's side and rear gate panels. Move the gate locking levers to the down position.

(2) Cut a 32- by 75-inch piece of honeycomb. Position the honeycomb flush against the forward end of the dump body in the vertical position.

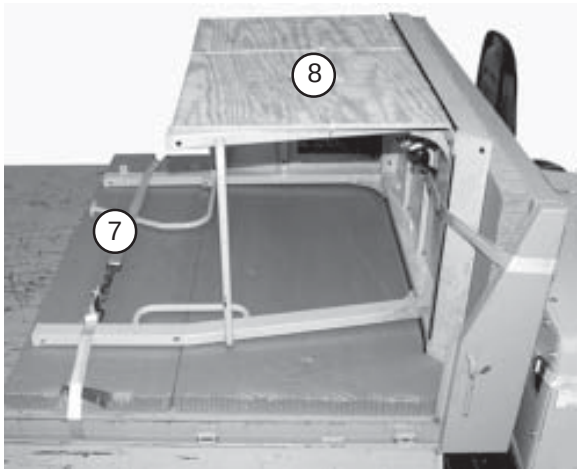
(3) Cut a 36- by 75-inch piece of honeycomb. Position the honeycomb flush against the honeycomb placed in step 2.

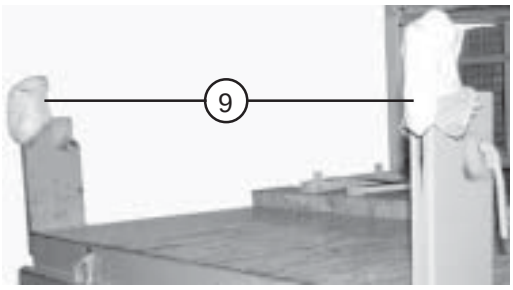
(4) Cut a 22- by 75-inch piece of honeycomb. Position the honeycomb flush against the honeycomb placed in step 3.

(5) Place the cab canopy cover top against and centered on the honeycomb placed in step 4. Place the rear of the cab canopy cover to the left side of the dump body.

(6) Route a 15-foot lashing around the front of the dump body and around the cab canopy cover. Secure the lashing with a D-ring and load binder inside the cab canopy cover.

Figure 1-9. Dump Body Gate and Cab Canopy Cover Prepared





(7) Route a 15-foot lashing between the side gate and the dump body, behind the track, under the main frame, up behind the opposite track, and up over the cab canopy cover. Secure the lashing in the center of the legs with a D-ring and load binder.

(8) Cut a 31 1/2- by 51- by 3/4-inch piece of plywood. Position the plywood on top of the canopy cover and secure it to the canopy cover with type III nylon cord.

(9) Pad the rear upper gate hinges with cellulose wadding and tape.

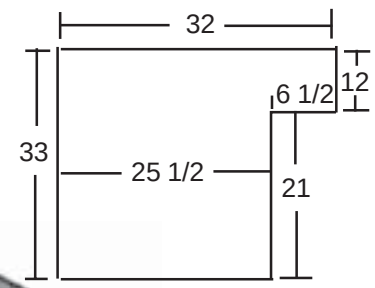
(10) Cut and place two 3- by 20-inch pieces of honeycomb on the forward and rear sides of the travel levers. Secure the honeycomb with tape and type III nylon cord.

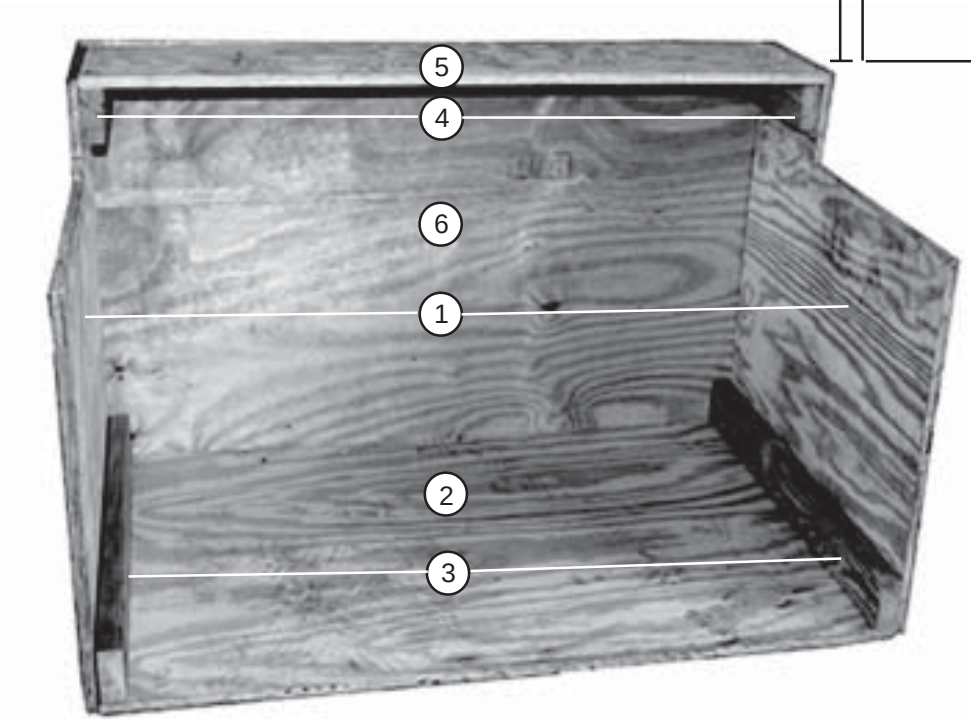
(11) Place the padded mirrors, removed in step 2 of Figure 1-8, in the operator's seat. Place the padded panel in front of the operator's seat. Fold or tilt the operator's seat forward and secure the items and the seat with type III nylon cord.

(12) Tape all gauges and lights with 2-inch masking tape. (Not Shown)

Figure 1-9. Dump Body Gate and Cab Canopy Cover Prepared (Continued)

Notes: 1. Not drawn to scale.
2. All dimensions are given in inches.





(1) Cut two 32- by 33- by 3/4-inch pieces of plywood for the sides. Cut a 6 1/2- by 21-inch piece out of the front of both sides of the plywood as shown in the top right diagram.

(2) Cut one 33- by 50 1/2- by 3/4-inch piece of plywood for the back.

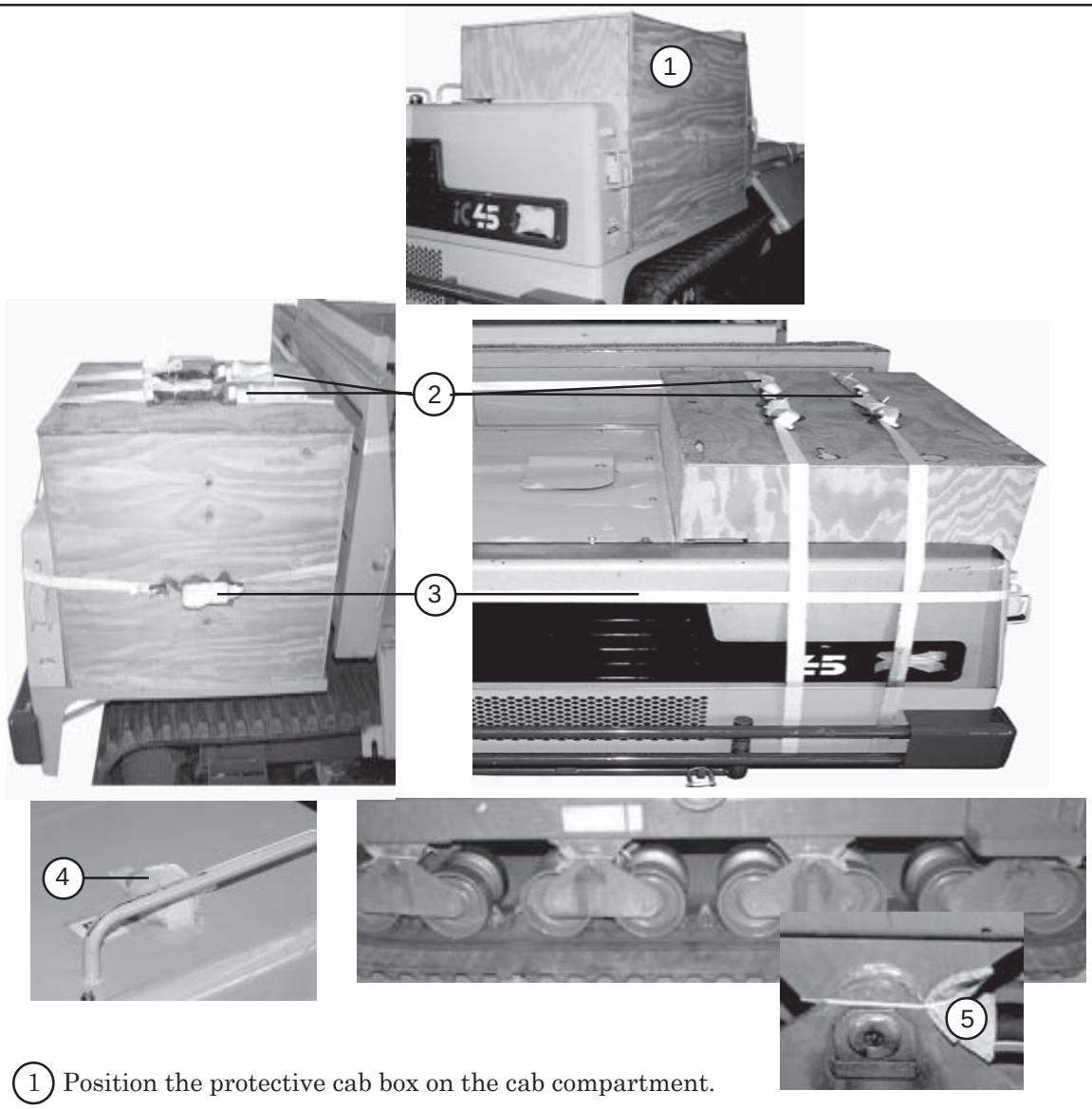
(3) Cut two 2- by 4- by 33-inch pieces of lumber. Place the 2- by 4- by 33-inch piece of lumber with the 2-inch side along the back and 4-inch side against the side. Nail the back and sides to the 2- by 4-inch piece of lumber with 8d nails.

(4) Cut two 2- by 4- by 12-inch pieces of lumber. Nail a 2- by 4- by 12- inch piece of lumber flush on the front of both side pieces of plywood with 8d nails.

(5) Cut a 12- by 50 1/2- by 3/4-inch piece of plywood for the front. Nail the 12- by 33-inch piece of plywood to the sides and 2- by 4-inch piece of lumber with 8d nails.

(6) Cut a 32- by 52- by 3/4-inch piece of plywood for the top. Nail the top to the sides, the back and the front with 8d nails.

Figure 1-10. Protective Cab Box Built

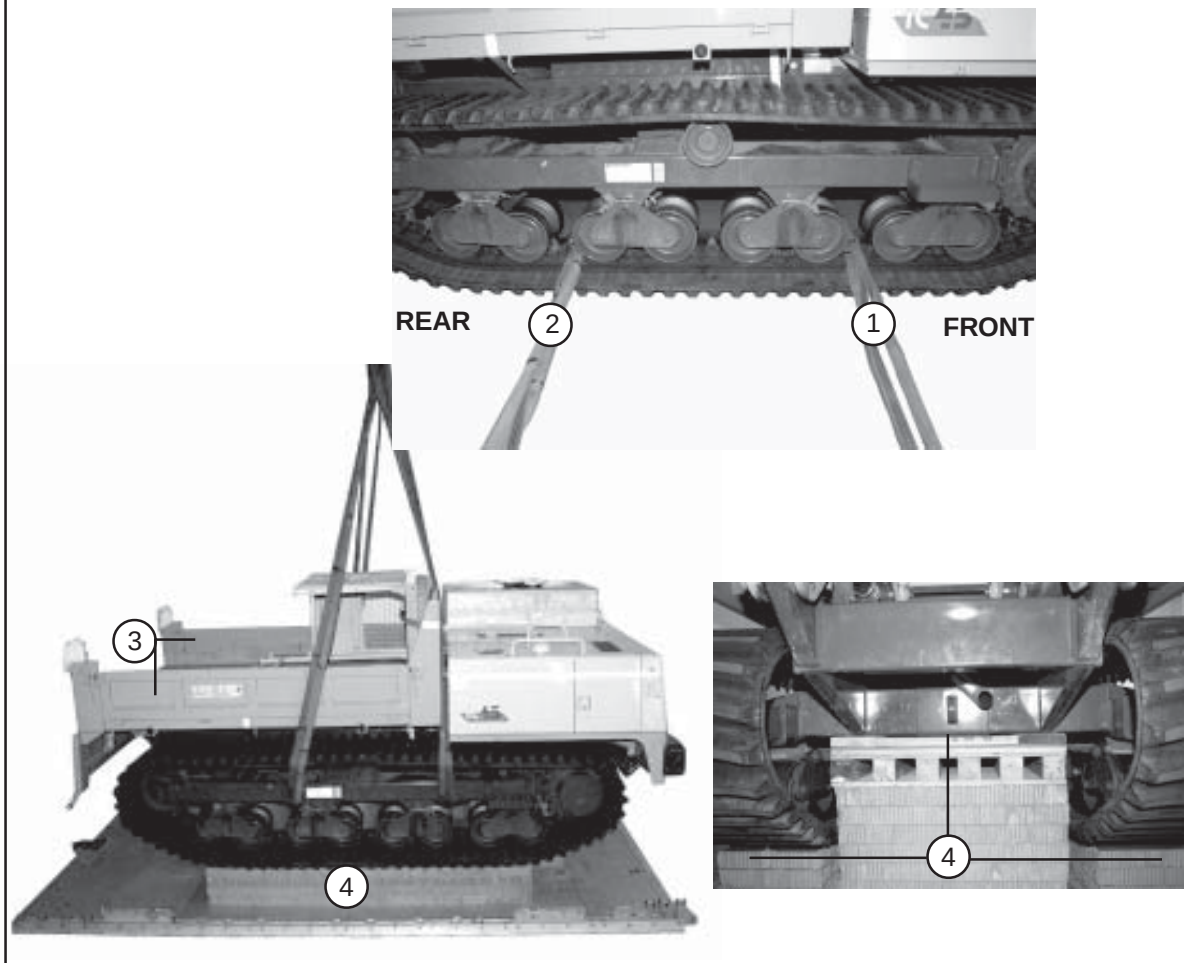


1. Position the protective cab box on the cab compartment.
2. Form two 30-foot lashings. Route them vertically around the cab box from front to rear and secure them on top with two D-rings and a load binder.
3. Form a 30-foot lashing and route it horizontally around the cab from side to side. Secure it on the left side of the carrier and on the cab box with two D-rings and a load binder.
4. Pad with cellulose wadding and tape the fuel tank cap on the cab.
5. Pad the front two rotary link brackets (see insert) with felt toward the front of the carrier. Pad the last two rotary link brackets with felt toward the rear of the carrier. Secure the felt with type III nylon cord.

Figure 1-11. Protective Cab Box, Fuel Cap and Brackets Prepared

INSTALLING LIFTING SLINGS AND POSITIONING THE CARRIER

1-5. Install lifting slings and position the IC45 crawler carrier as shown in Figure 1-12.

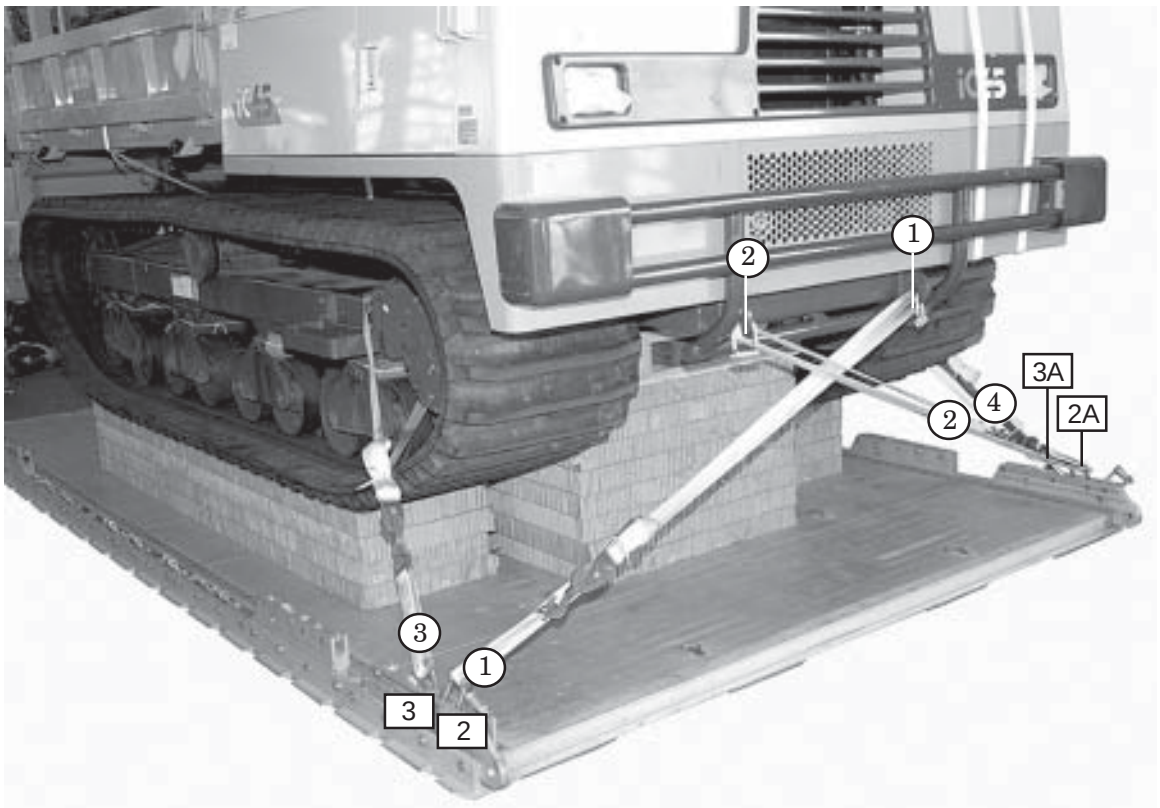


1. Route a doubled 60-foot (three loop), type XXVI nylon sling between the second and third lower rollers and through the other side.
2. Route a doubled 60-foot (three loop), type XXVI sling between the sixth and seventh lower rollers and through the other side.
3. Raise and close the side gates. Lock them in place with both side gate locking levers.
4. Lift and position the carrier with the front bumper flush with the front edge of the platform. Center the carrier's cross frame member on the appropriate honeycomb stack 1. Center the tracks on honeycomb stacks 4 and 5.

Figure 1-12. Carrier Positioned

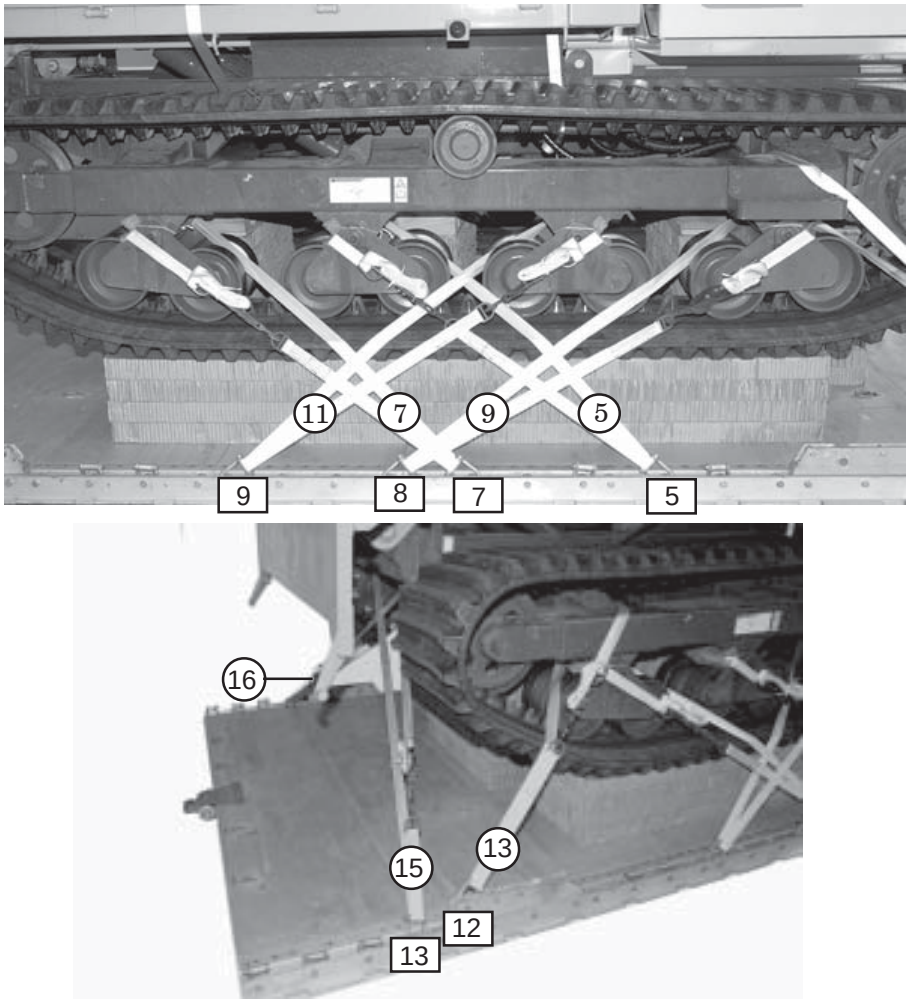
LASHING THE CRAWLER CARRIER

1-6. Lash the IC45 crawler carrier to the platform using sixteen 15-foot tiedown assemblies. Install the lashings as shown in Figures 1-13 and 1-14.



Lashing Number	Tie-down Clevis Number	Instructions
1	2	Pass lashing: Through the carrier's left front towing hook. Make sure the platform clevis is forward of the lashing.
2	2A	Through the carrier's right front towing hook. Make sure the platform clevis is forward of the lashing.
3	3	Around the carrier's right front track frame.
4	3A	Around the carrier's left front track frame.

Figure 1-13. Lashings 1 through 4 Installed

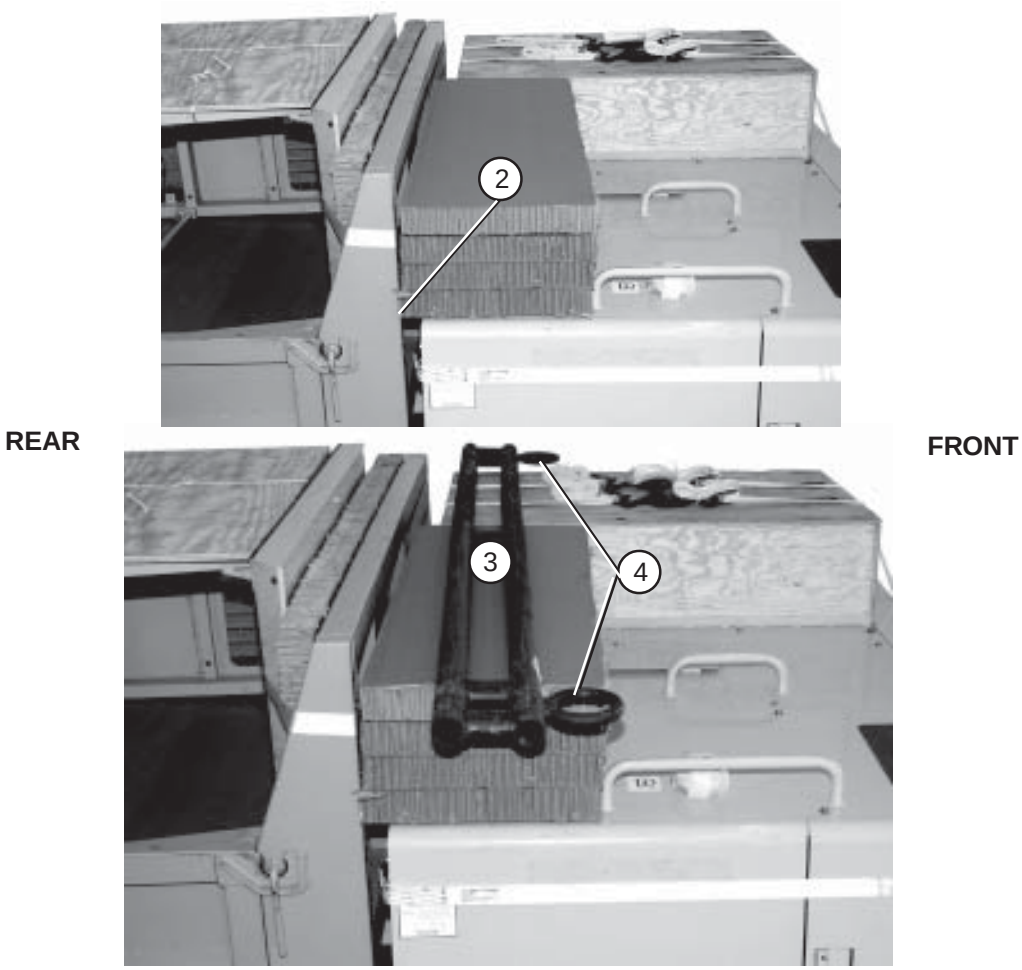


Lashing Number	Tie-down Clevis Number	Instructions
		Pass lashing:
5	5	Around the carrier's right side third rotary link bracket.
6	5A	Around the carrier's left side third rotary link bracket.
7	7	Around the carrier's right side fourth rotary link bracket.
8	7A	Around the carrier's left side fourth rotary link bracket.
9	8	Around the carrier's right side first rotary link bracket.
10	8A	Around the carrier's left side first rotary link bracket.
11	9	Around the carrier's right side second rotary link bracket.
12	9A	Around the carrier's left side second rotary link bracket.
13	12	Around the carrier's right rear track frame.
14	12A	Around the carrier's left rear track frame.
15	13	To the carrier's left side main frame.
16	13A	To the carrier's right side main frame.

Figure 1-14. Lashings 5 through 16 Installed

INSTALLING AND LASHING THE FRONT ATTITUDE CONTROL BAR (ACB)

1-7. Install and lash the front ACB to the platform using eight 15-foot tiedown assemblies. Install the lashings as shown in Figure 1-15.



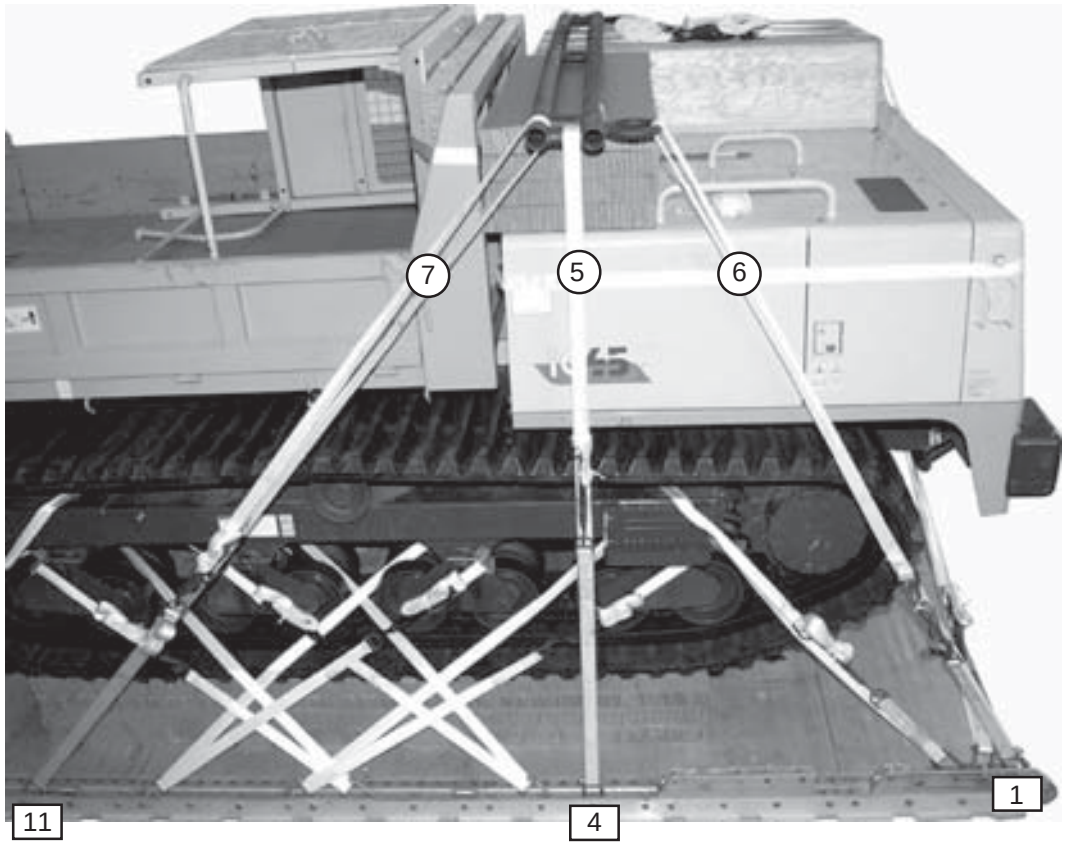
(1) Cut four 19- by 51-inch pieces of honeycomb. Glue all four pieces together to form a stack. (Not Shown)

(2) Position the honeycomb stack flush against the right side cab box and against the cab side of the forward dump body.

(3) Position an ACB centered from side to side and front to rear on the honeycomb from step 1.

(4) Ensure the eyelets (round holes) of the ACB are facing forward.

Figure 1-15. ACB Lashed



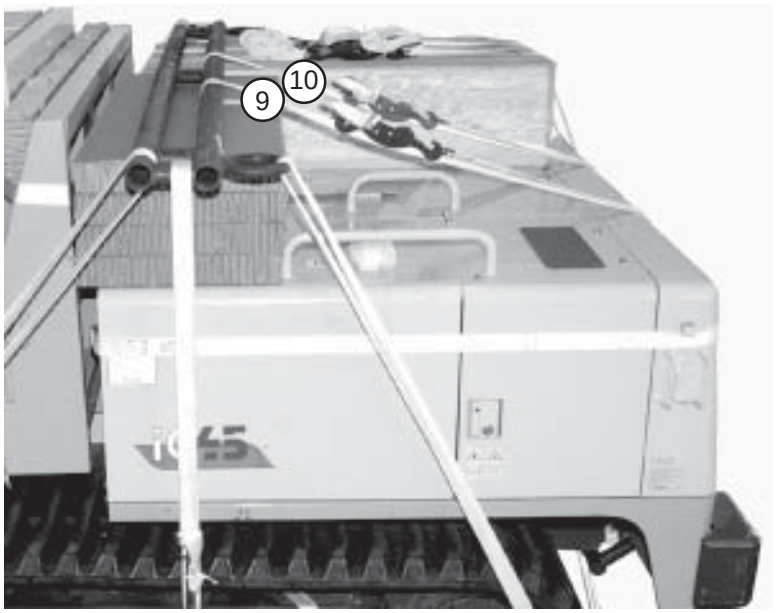
(5) Route a 15-foot lashing through clevis 4, up between the outside center bar of the ACB and back down. Place a D-ring and load binder on the lashing but do not tighten the lashing at this time. Repeat this step on the opposite side of the load using clevis 4A.

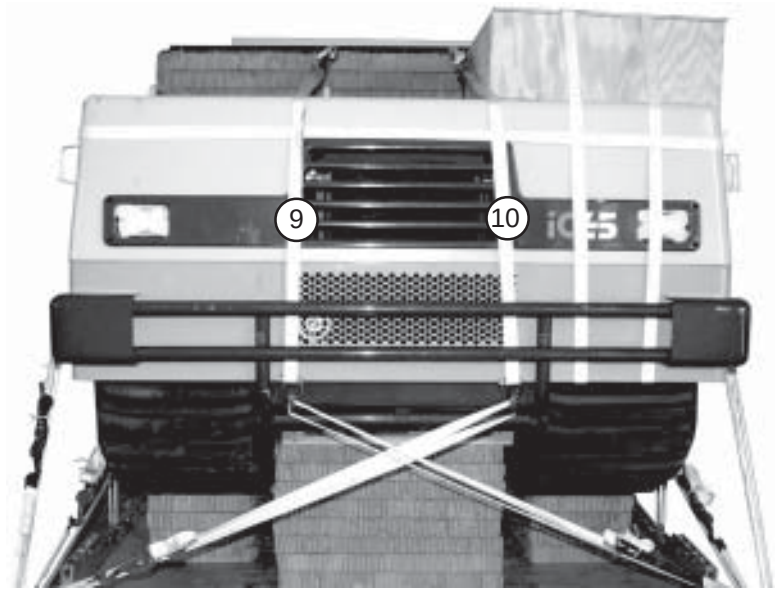
(6) Route a 15-foot lashing through clevis 1, up through the round hole of the ACB and back down. Place a D-ring and load binder on the lashing but do not tighten at this time. Repeat this step on the opposite side using clevis 1A.

(7) Route a 15-foot lashing through clevis 11, up through the outside rear bar of the ACB and back down. Place a D-ring and load binder on the lashing but do not tighten at this time. Repeat this step on the opposite side using clevis 11A.

(8) Tighten all the lashings at the same time with an equal amount of tension. (Not Shown)

Figure 1-15. ACB Lashed (Continued)





(9) Route a 15-foot lashing through the platform clevis attached to the right front towing hook. Route the lashing between the engine cover and the front bumper around the front bar of the ACB. Place the D-ring and load binder on the lashing, but do not tighten at this time. The load binder will be on top of the engine cover.

(10) Repeat step 9 on the left side using the clevis attached to the left front towing hook.

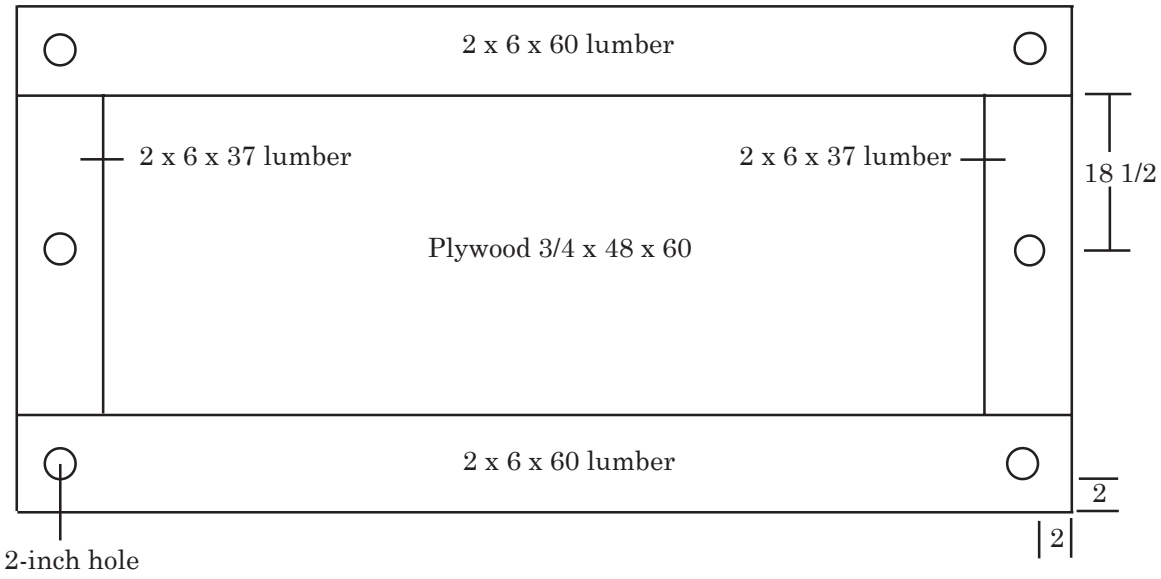
(11) Tighten both lashings equally. (Not Shown)

Figure 1-15. ACB Lashed (Continued)

BUILDING PARACHUTE STOWAGE PLATFORM

1-8. Build the parachute stowage platform as shown in Figure 1-16.

Notes: 1. Not drawn to scale.
2. All dimensions are given in inches.



Step:

1. Use a 3/4- by 48- by 60-inch sheet of plywood as a base.

2. Cut two 2- by 6- by 60-inch pieces of lumber. Nail each piece of lumber flush with the front, rear and sides using 8d nails.

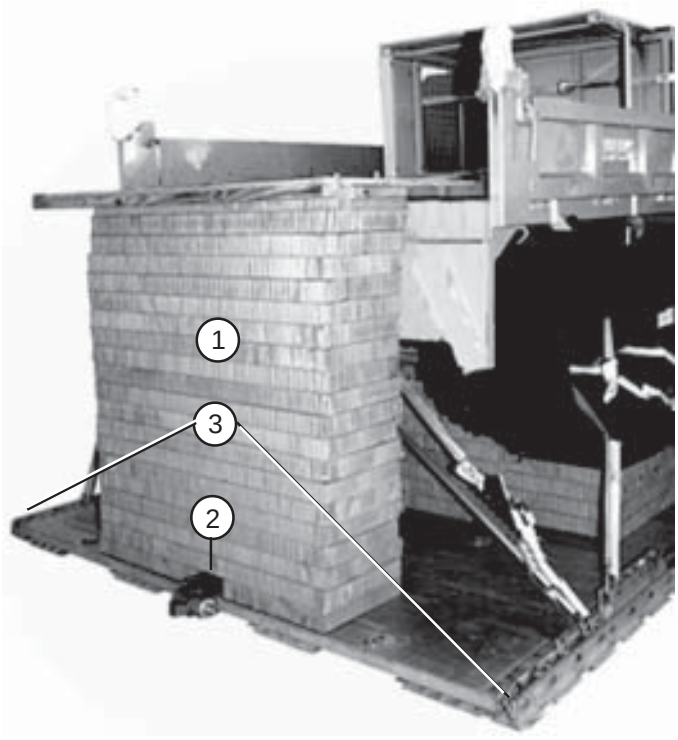
3 Cut two 2- by 6- by 37-inch pieces of lumber. Nail the lumber flush with one piece on each side between the front and rear pieces using 8d nails.

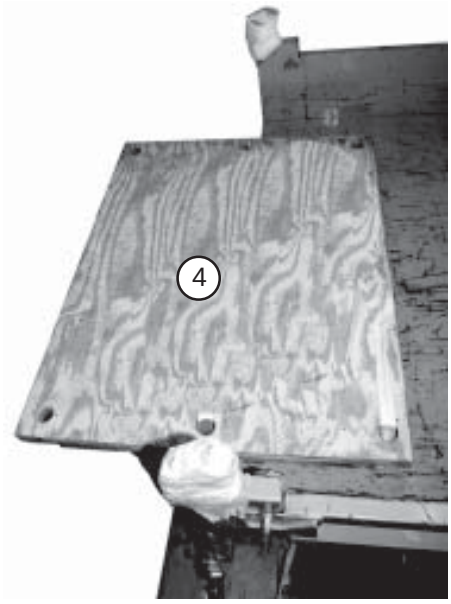
4. Drill six 2-inch holes as shown above. Each hole has a 2-inch border from the outside of each circle to the edge of the lumber it is drilled in. The middle hole is centered 18 1/2 inches from the inside of each 2- by 6- by 60-inch piece of lumber and has a 2 inch border on both sides of the circle to the edges of the 2- by 6-inch piece of lumber.

Figure 1-16. Parachute Stowage Platform Built

INSTALLING PARACHUTE STOWAGE PLATFORM

1-9. Install the parachute stowage platform as shown in Figure 1-17.





(1) Cut and glue twenty 17- by 49-inch pieces of honeycomb to form a stack.

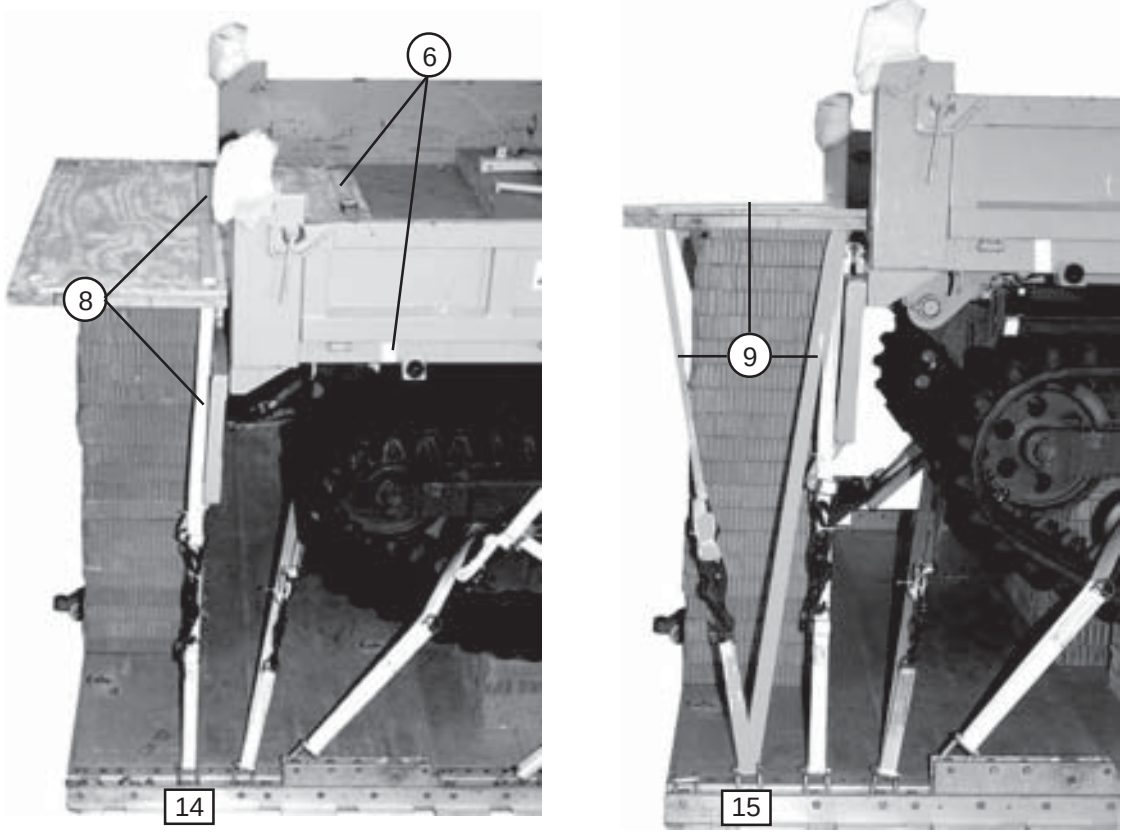
(2) Ensure there is a cutout on the bottom of the stack, towards the rear of the 49-inch edge, for access to the Extraction Force Transfer Coupling (EFTC) extraction bracket.

(3) Position the stack centered from side to side and flush with the rear edge of the platform.

(4) Position the parachute stowage platform on top of the honeycomb stack and the bed of the dump truck. The parachute platform will overhang the rear edge of the airdrop platform 6 inches.

(5) Lower the side gates of the dump body. (Not Shown)

Figure 1-17. Parachute Stowage Platform Installed



(6) Form a 30-foot lashing and route the free ends down through the front holes of the parachute stowage platform and between the side gates of the dump body on both sides. Continue running both free ends underneath the bed and secure the lashing underneath the bed between the frame with two D-rings and a load binder.

(7) Raise and close the side gates of the dump body. (Not Shown)

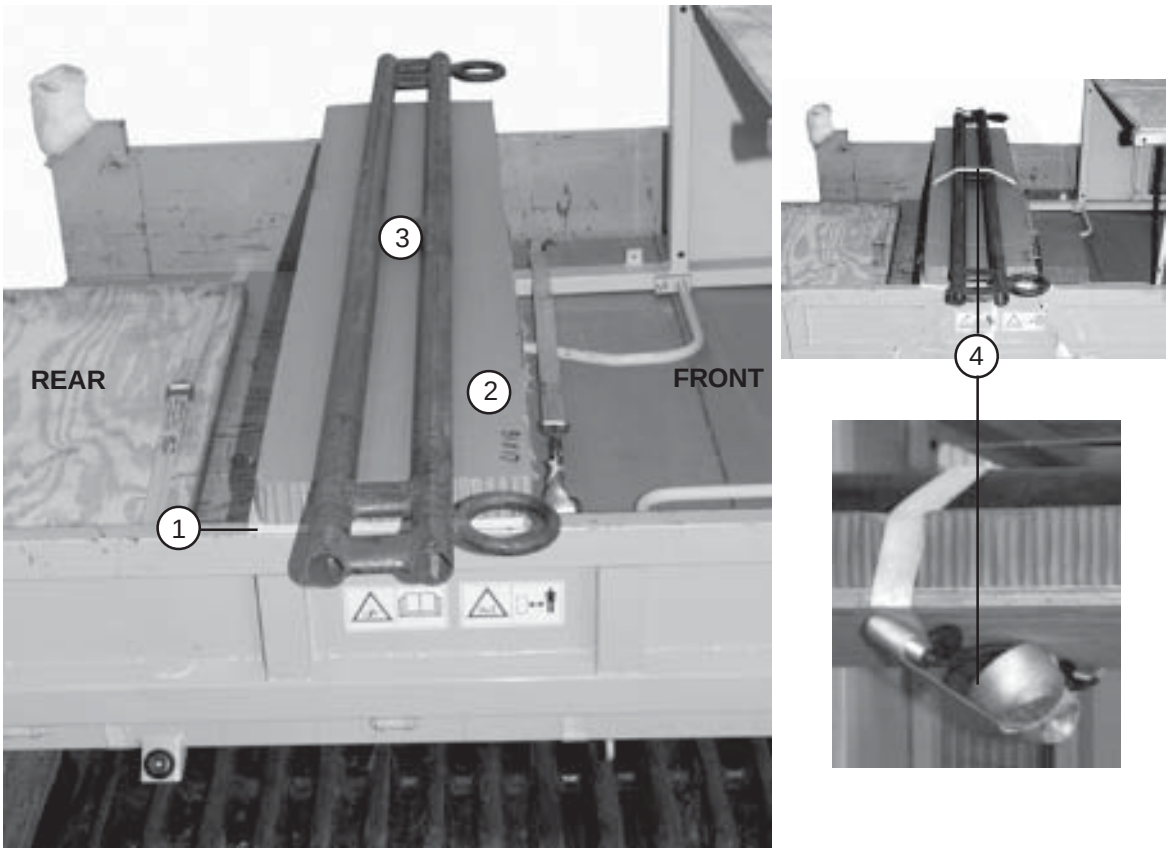
(8) Form a 30-foot lashing and route one end up through the middle left side hole in the parachute stowage platform. Run the lashing across the parachute platform and down through the middle right side hole and through clevis 14. Route the other free end through clevis 14A and back up through the middle left side hole, across the platform, and down through the middle right side hole. Secure the lashing with two D-rings and a load binder on the right side.

(9) Route a 15-foot lashing through clevis 15, up through the right side center hole, and down through the right side rear hole. Secure the lashing with a D-ring and a load binder. Repeat on the left side using clevis 15A.

Figure 1-17. Parachute Stowage Platform Installed (Continued)

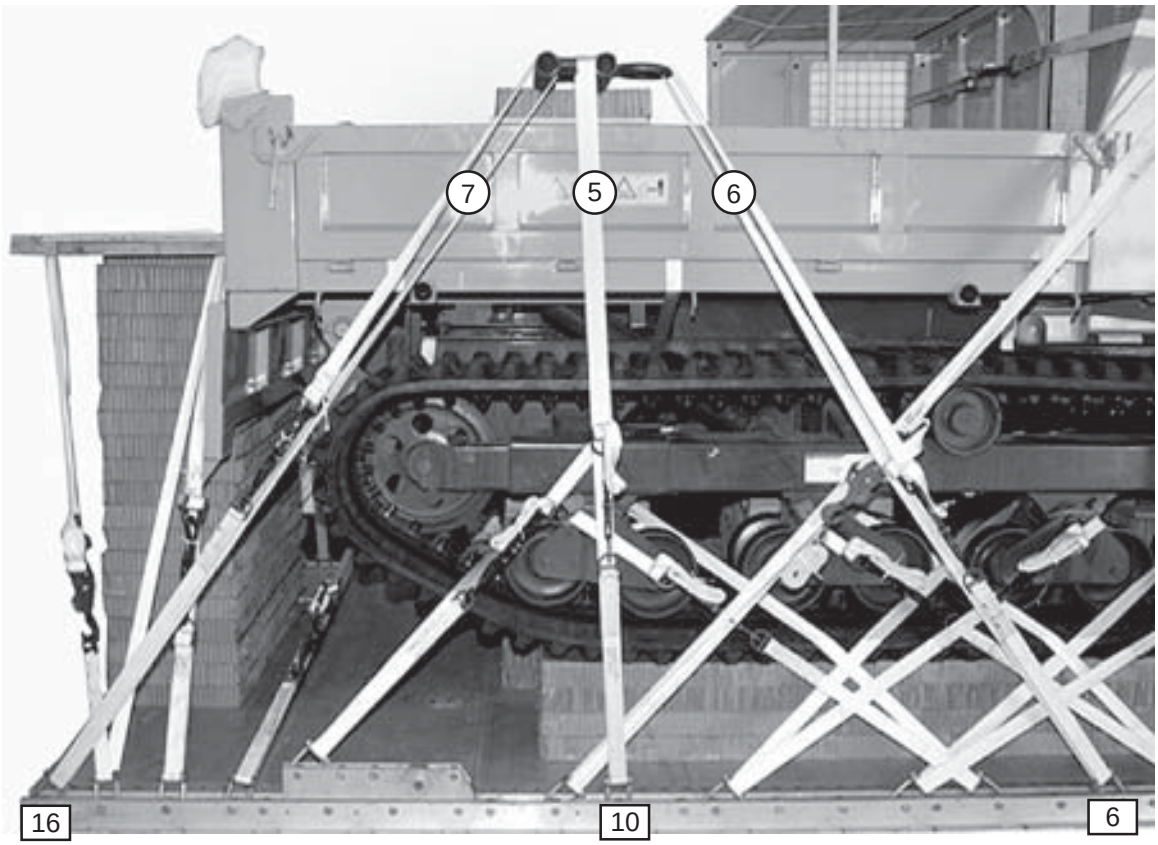
INSTALLING THE REAR ACB

1-10. Install the rear ACB as shown in Figure 1-18.



1. Cut a 17- by 81- by 3/4-inch piece of plywood. Place the rear edge of the plywood 30 inches from the rear edge of the tailgate latch frame on top of the side gates of the dump body.
2. Cut a 17- inch by 81-inch piece of honeycomb. Place the honeycomb flush with and on top of the plywood.
3. Position ACB on top of the honeycomb centered from side to side and front to rear. There will be an overhang on the sides. The round eyelets should be facing forward.
4. Place a 15-foot lashing, centered from side to side, and route the lashing all the way around the ACB, honeycomb and plywood. Secure with a D-ring and a load binder underneath the plywood.

Figure 1-18. ACB Installed and Secured



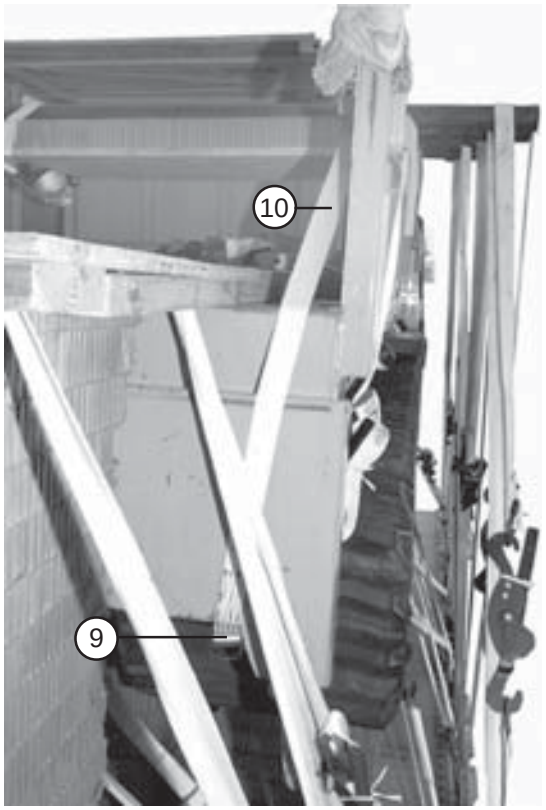
(5) Route a 15-foot lashing through clevis 10, up between the outside center bar of the ACB over the top of the bar and back down. Place a D-ring and a load binder on the lashing but do not tighten at this time. Repeat for the opposite side using clevis 10A.

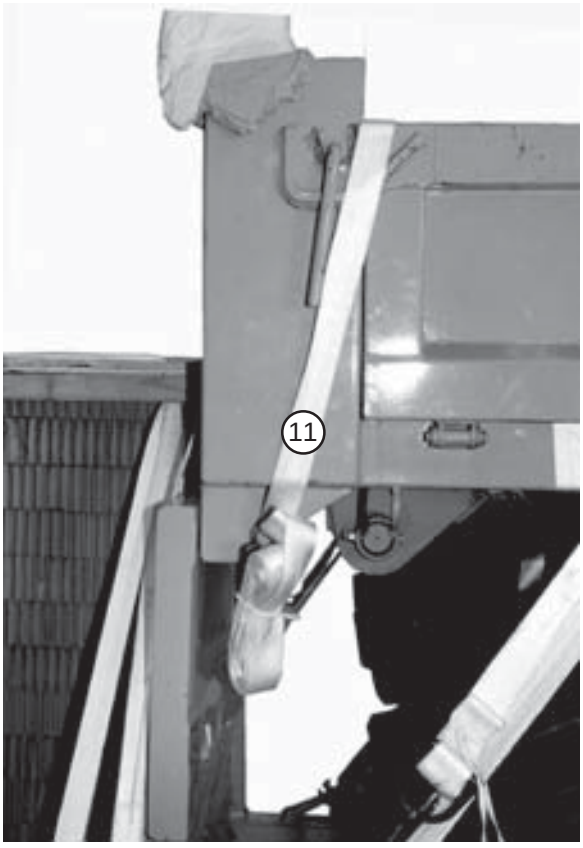
(6) Route a 15-foot lashing through clevis 6, up through the round eyelet of the ACB and back down. Place a D-ring and load binder on the lashing but do not tighten at this time. Repeat this procedure on the opposite side using clevis 6A.

(7) Form a 15-foot lashing and route the lashing through clevis 16, up through and around the rear bar of the ACB and back down. Place a D-ring and a load binder on the lashing but do not tighten at this time. Repeat this step on the opposite side using clevis 16A.

(8) Tighten all lashings equally at this time. (Not Shown)

Figure 1-18. ACB Installed and Secured (Continued)



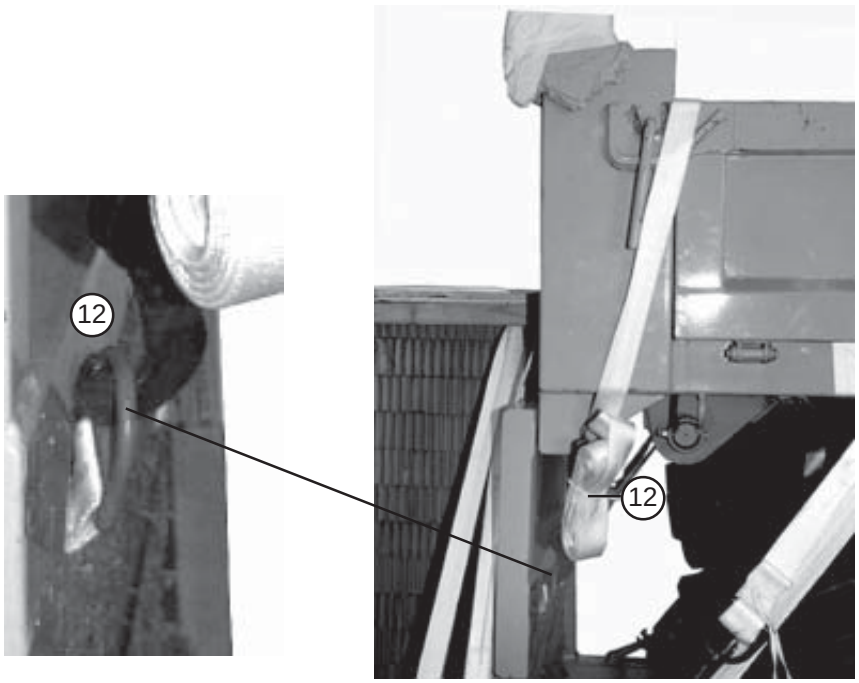


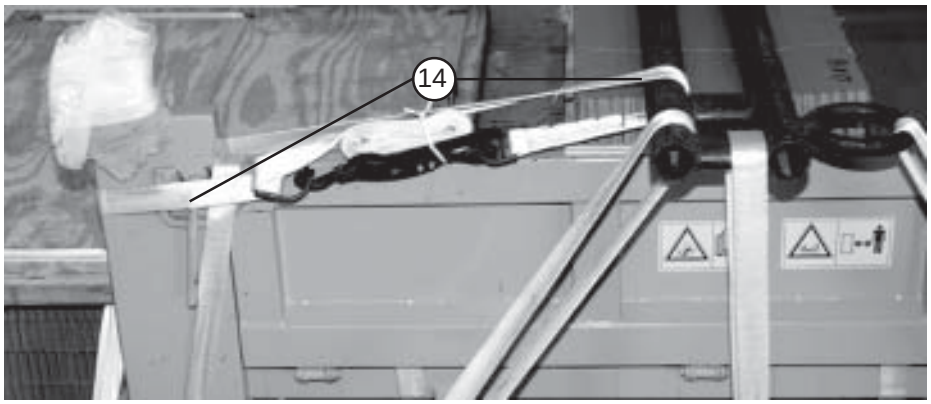
(9) Place the D-ring of a 15-foot lashing 2 inches below the bottom of the tailgate on the carrier's right side.

(10) Route the lashing up across the tailgate.

(11) Continue routing the lashing up and around the rear of the side gate and back down to the D-ring at the bottom of the tailgate.

Figure 1-18. ACB Installed and Secured (Continued)





(12) Secure the lashing on the front side of the tail gate with a D-ring and load binder.

(13) Repeat steps 9 through 12 for the left side.

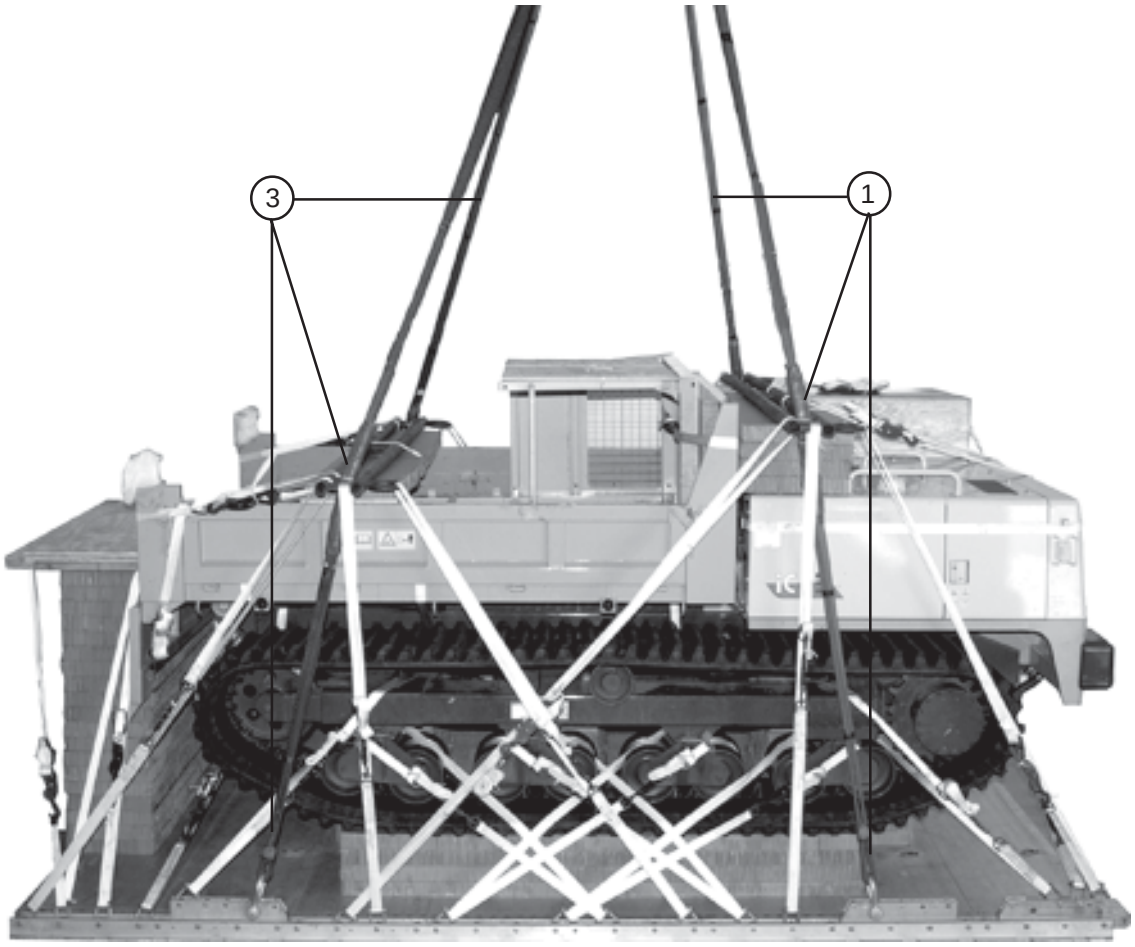
(14) Route a 15-foot lashing up through and around the rear bar of the ACB on the right side, around the upper tail gate hinge. Secure the lashing with a D-ring and load binder. Repeat step 14 for the left side.

Figure 1-18. ACB Installed and Secured (Continued)

INSTALLING SUSPENSION SLINGS

1-11. Install the suspension slings according to FM 4-20.102/NAVSEA SS400-AB-MM0-010/TO 13C7-1-5 and as shown in Figure 1-19.

Note: Pad and tape any sharp areas the suspension slings may come in contact with.



(1) Attach a 16-foot (4-loop), type XXVI nylon sling to each front suspension bracket with a large clevis. Route each 16-foot (4-loop), type XXVI nylon sling through the front ACB on each side.

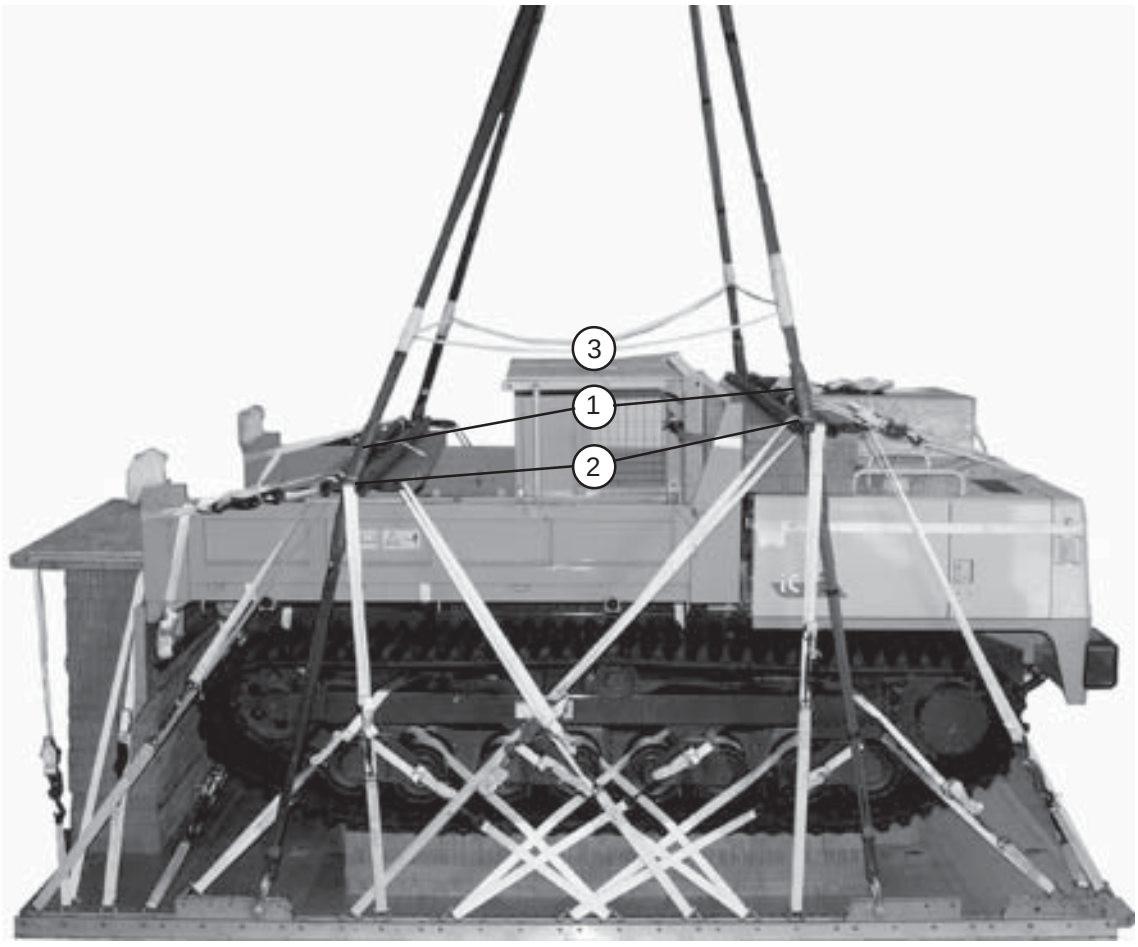
(2) Attach a 3-foot (4-loop), type XXVI nylon sling to the top of each 16-foot (4-loop), type XXVI nylon sling with a 5 1/2 -inch two-point link. Pad each link with felt and tape. (Not Shown)

(3) Attach a 20-foot (4-loop), type XXVI nylon sling to each rear suspension bracket with a large clevis. Route each 20-foot (4-loop), type XXVI nylon sling through the rear ACB on each side.

Figure 1-19. Suspension Slings Installed

PADDING AND SECURING SUSPENSION SLINGS

1-12. Pad, secure and safety the suspension slings according to FM 4-20.102/NAVSEA SS400-AB-MM0-010/TO 13C7-1-5 and as shown in Figure 1-20.



(1) Cut four 12- by 26-inch pieces of felt. Place the bottom of the felt 12 inches below the point where the sling goes through the ACB. Tape the felt to the slings with 2-inch adhesive tape.

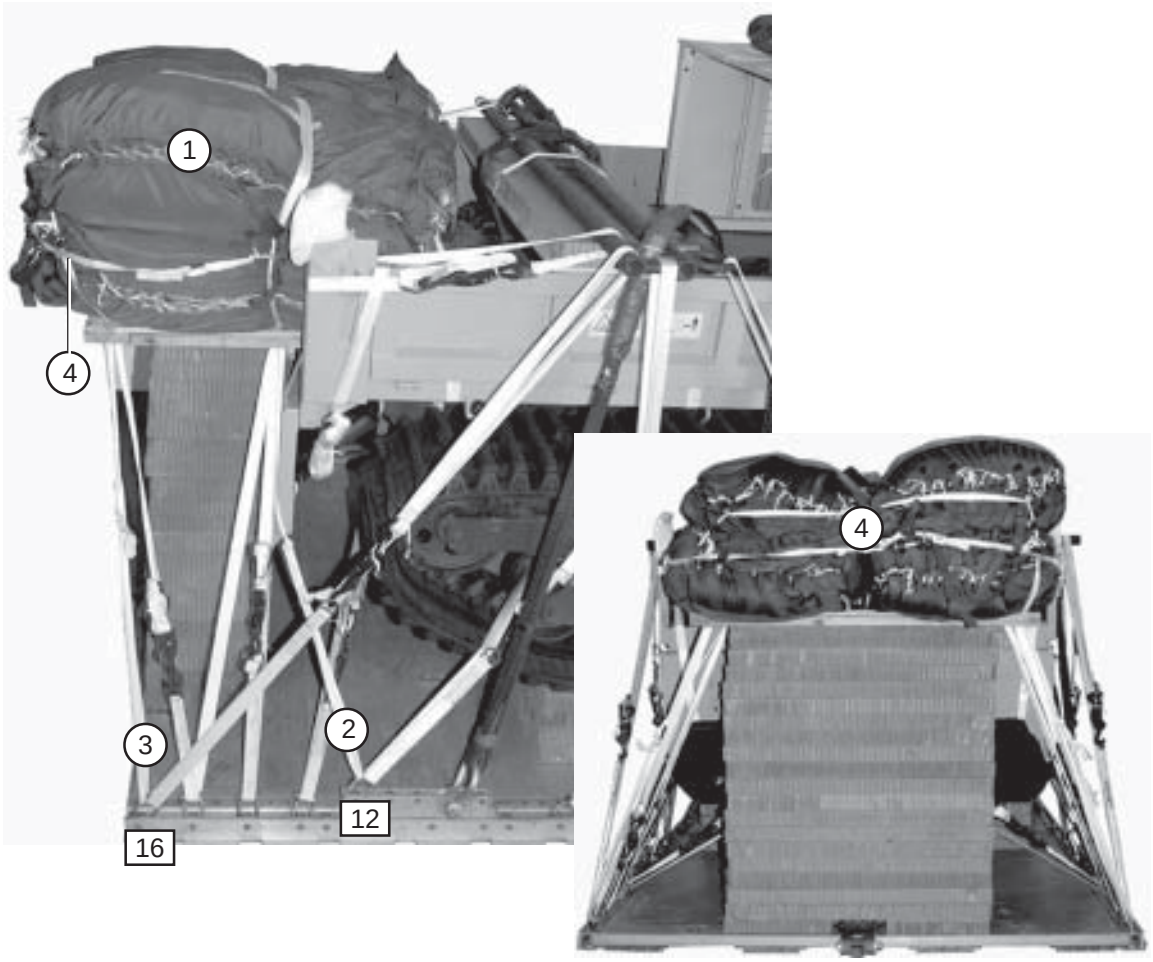
(2) Secure each sling to the ACB with a length of type III nylon cord.

(3) Raise the suspension slings and install the safety tie according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO13C7-1-5.

Figure 1-20. Suspension Slings Padded, Secured, and Safetied

STOWING CARGO PARACHUTES

1-13. Prepare, stow and restrain four G-11B cargo parachutes according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 1-21.



(1) Prepare and stow four G-11B cargo parachutes on the parachute stowage platform according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

(2) Install the first parachute restraint strap through the center hole of the parachute stowage platform and to clevises 12 and 12A.

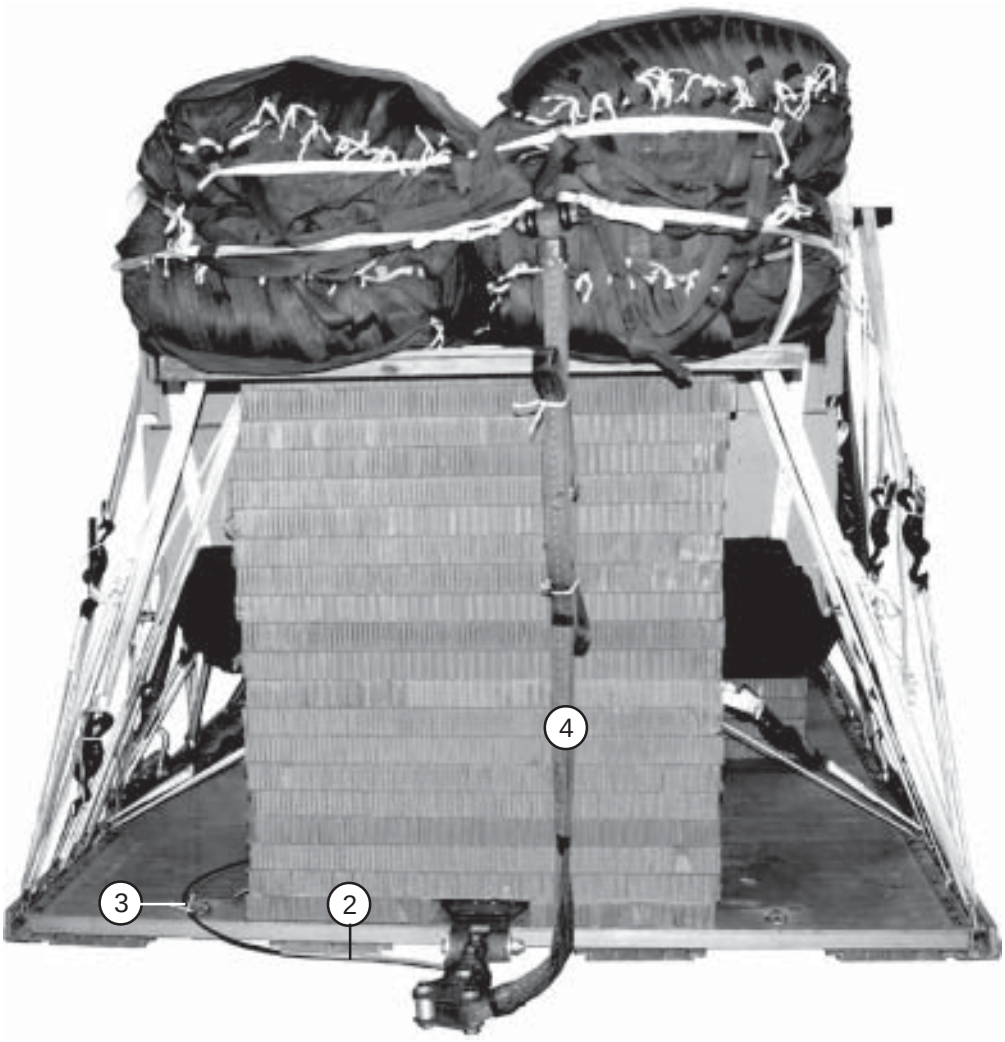
(3) Install the second parachute restraint strap through the rear holes of the parachute stowage platform and to clevises 16 and 16A.

(4) Install two multicut parachute release straps according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

Figure 1-21. Cargo Parachutes Stowed and Restraint Installed

INSTALLING EXTRACTION SYSTEM

1-14. Install the Extraction Force Transfer Coupling (EFTC) system according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 1-22.



(1) Install the EFTC actuator mounting brackets using the rear mounting holes according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. (Not Shown)

(2) Install a 16-foot cable.

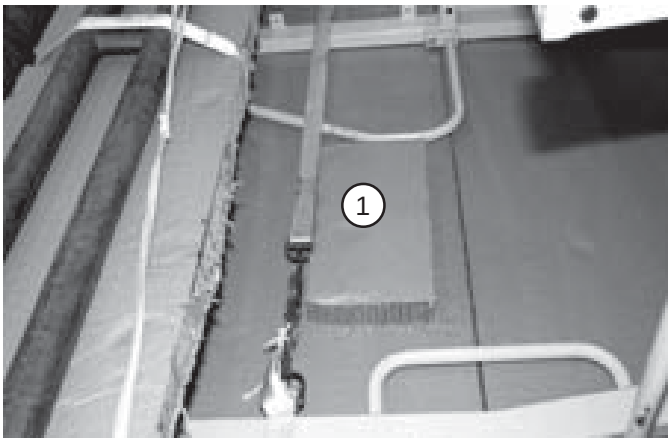
(3) Safety tie the cable in convenient places with one turn type I, 1/4-inch cotton webbing.

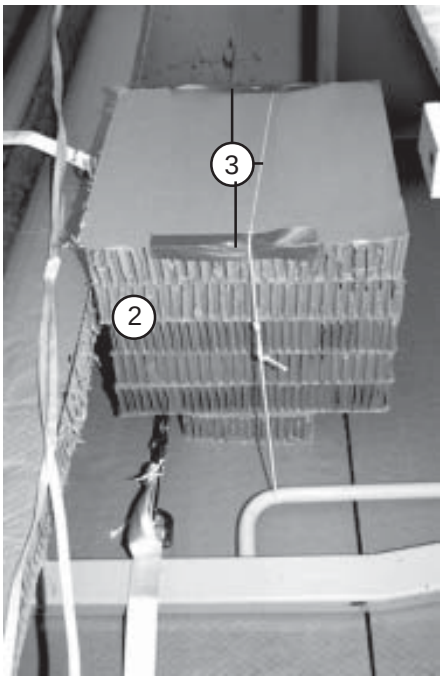
(4) Attach a 9-foot (2 loop), type XXVI nylon sling as the deployment line. Fold and secure the excess line with type I, 1/4-inch cotton webbing.

Figure 1-22. Extraction System Installed

INSTALLING PARACHUTE RELEASE SYSTEM

1-15. Install an M-2 parachute release system according to FM 4-20.102/ NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 1-23.



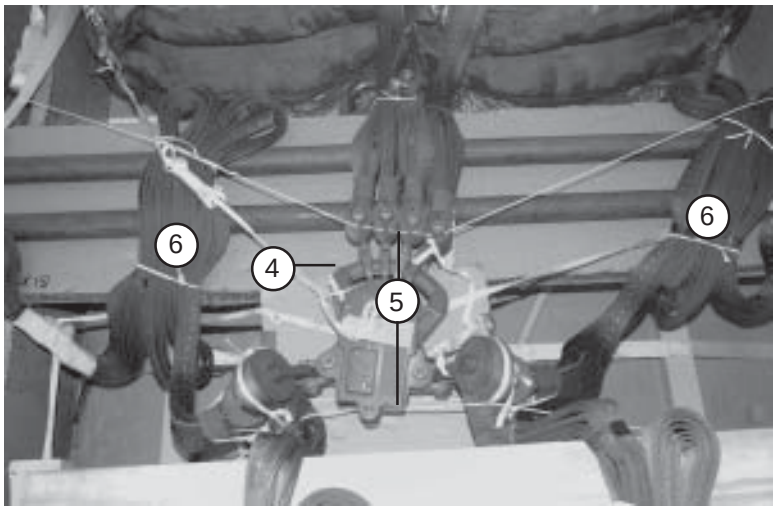


(1) Cut a 9- by 18-inch piece of honeycomb to use as a base. Place the honeycomb in front of the lashing securing the canopy cover.

(2) Cut and glue five 18- by 18-inch pieces of honeycomb to form a stack. Position the stack on top of the 9- by 18-inch piece of honeycomb (from step 1) flush against the front edge of the rear ACB support.

(3) Secure the release platform in place with type III nylon to convenient places on the canopy cover. Tape the edges of the honeycomb stack where the type III nylon will contact the honeycomb.

Figure 1-23. Parachute Release Installed and Suspension Slings Secured



(4) Install an M-2 parachute release according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. Place the release with the top of the upper suspension link flush with the rear edge of the release platform in step 3.

(5) Restrain the release with type III nylon cord routed through the parachute release connectors to bushings 3 and 3A of the rear suspension bracket and around the spacer using bushings 4 and 4A of the front suspension bracket.

(6) Secure the rear suspension slings together with a length of 1/4-inch cotton webbing.

(7) S-fold all the slack in the front suspension slings and secure with 1/4-inch cotton webbing.

Figure 1-23. Parachute Release Installed and Suspension Slings Secured (Continued)

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

1-16. Install the provisions for the emergency restraints on the load according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

PLACING EXTRACTION PARACHUTE

1-17. Select the extraction parachute and extraction line required using the extraction line requirements table in FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. Rig the extraction line in an extraction line bag according to TM 10-1670-286-20/TO 13C5-2-41. Place the extraction parachute and extraction line on the load for installation in the aircraft. If a drogue parachute and drogue line are required, place them on the platform for installation in the aircraft as well.

MARKING RIGGED LOAD

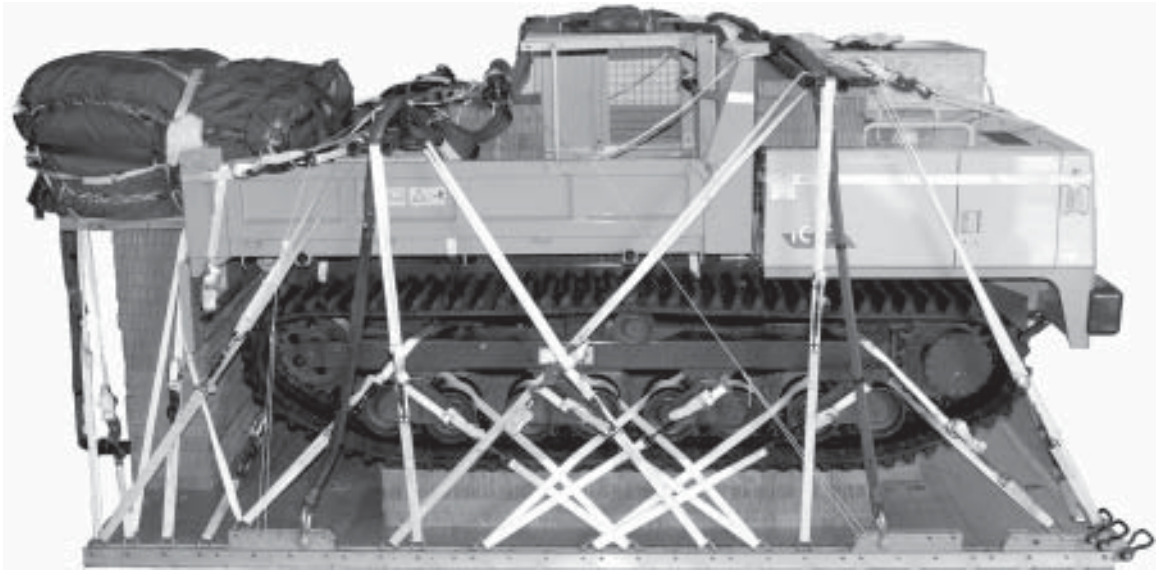
1-18. Mark the rigged load according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 1-24. Complete the Shipper's Declaration for Dangerous Goods. If the load varies from the one shown, the weight, height, center of balance (CB), and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

1-19. Use the equipment listed in Table 1-3 to rig this load.

CAUTION

Make the final rigger inspection required by FM 4-20.102/ NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and AR 59-4/ OPNAVINST 4463.24C/AFJ 13-210(I)/MCO 13480.1B before the load leaves the rigging site.



RIGGED LOAD DATA

Weight ..... 17,480 pounds

Maximum Weight ..... 17,900 pounds

Height ..... 98 1/2 inches

Width ..... 108 inches

Overall Length ..... 210 inches

Overhang: Front ..... 0 inches
Rear (EFTC) ..... 18 inches
(EPJS) ..... 30 inches

Center of Balance (CB) (from front edge of platform) ..... 88 inches

Figure 1-24. IC45 Crawler Carrier Rigged on a Type V Platform for Low-Velocity Airdrop

Table 1-3. Equipment Required for Rigging the IC45 Crawler Carrier on a Type V Platform for Low-Velocity Airdrop

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive paste, 1-gal	As required
1670-01-035-6054	Bridle, extraction line lead, (line bag for DES)	1
4030-00-090-5354	Clevis, large	5
4030-00-678-8562	Clevis, medium	6
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5785	Coupling, airdrop, EFTC, 16-ft	1
1670-00-360-0328	Cover, clevis, large	4
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
8305-00-958-3685	Felt, 1/2-inch	As required
8305-00-290-5584	Felt, 3/16 inch	As required
1670-00-003-4391	Knife, parachute bag (for DES)	1
1670-01-183-2678	Leaf, extraction line, (line bag) (add 2 for DES)	2
	Line, drogue (for DES)	
1670-01-064-4452	60-ft 1-loop, type XXVI	1
	Line, extraction, type XXVI nylon webbing	
1670-01-062-6313	60-ft (3-loop, C-130)	1
1670-01-107-7651	140-ft (3-loop, C-17)	1
	Link	
1670-01-493-6418	Assembly small, two-point, 3 3/4-in	1
1670-01-493-6420	Assembly large, two-point, 5 1/2-in	3
1670-01-483-8259	Tow Release Mechanism (TRM)(H-block) C17 aircraft	1
	Lumber:	
5510-00-220-6146	2- by 4- by 12-in	2
	2- by 4- by 19-in	2
	2- by 4- by 33-in	2
5510-00-220-6148	2- by 6- by 19-in	2
	2- by 6- by 37-in	4
	2- by 6- by 60-in	2
5510-00-220-6246	2- by 8- by 19-in	2
5510-00-220-6274	4- by 4- by 19-in	12
	4- by 4- by 36-in	6
	Nail, steel wire, common,	
5315-00-010-4659	8d	As required

Table 1-3. Equipment Required for Rigging the IC45 Crawler Carrier on a Type V Platform for Low-Velocity Airdrop (Continued)

National Stock Number	Item	Quantity
1670-00-753-3928	Pad, energy dissipating, honeycomb, 3- by 36- by 96-in	23 sheets
	Parachute:	
1670-01-016-7481	Cargo: G-11B	4
1670-00-040-8135	Cargo extraction 28-foot	1
1670-01-063-3715	Drogue, 15-ft (for DES)	1
	Platform, airdrop type V, 16-ft	
1670-01-353-8425	Bracket assembly, coupling	1
1670-01-353-8424	Bracket, assembly, extraction	1
1670-01-162-2372	Clevis assembly, type V, tiedown clevis	32
1670-01-247-2389	Link, suspension bracket, type V	4
1670-01-162-2381	Link, tandem assembly (Multipurpose link)	2
5530-00-128-4981	Plywood, 3/4- by 48- by 96-inch sheet	5
5530-00-262-8195	Plywood, 1/2- by 48- by 96-inch sheet	1
1670-01-097-8817	Release, cargo parachute, M-2	1
	Sling, cargo airdrop	
	For suspension:	
1670-01-062-6306	3-ft (4-loop), type XXVI nylon webbing	2
1670-01-062-6308	16-ft (4-loop), type XXVI nylon webbing	2
1670-01-064-4453	20-ft (4-loop), type XXVI nylon webbing	2
	For deployment:	
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	1
	For riser extentsion:	
1670-01-062-6313	60-ft (3-loop), type XXVI nylon webbing	4
5340-00-040-8219	Strap, parachute release, multicut	2
7510-00-266-5016	Tape, adhesive, 2-in, OD	As required
7510-00-266-6710	Tape, masking, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-ft	47
5365-00-937-0147	D-ring, heavy duty, 10,000-lb	47
1670-00-937-0272	Binder, load, 10,000-lb	42
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type I	As required
	Nylon:	
8305-00-082-5752	Tubular, 1/2-in	As required
8305-00-263-3591	Type VIII	As required

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Chapter 2

RIGGING M973A, 1 1/2-TON CARGO CARRIER SMALL UNIT SUPPORT VEHICLE (SUSV) ON A TYPE V PLATFORM FOR LOW-VELOCITY AIRDROP

DESCRIPTION OF LOAD

2-1. The small unit support vehicle (SUSV), Figure 2-1, is a tracked vehicle with a driver's compartment and a cargo-troop carrier compartment attached to the rear. The vehicle is 271 inches long, 74 inches wide, 90 1/2 inches high, and weighs 10,000 pounds. The SUSV is rigged on a 28-foot type V airdrop platform using four G-11B cargo parachutes for low-velocity airdrop from C-130 and C-17 aircraft. The vehicle must be rigged with an accompanying load that weighs 2,000 pounds but not more than 2,100 pounds. The accompanying load is 105-millimeter (MM) ammunition rigged on the front end of the platform, however other equipment may be used.

CAUTION

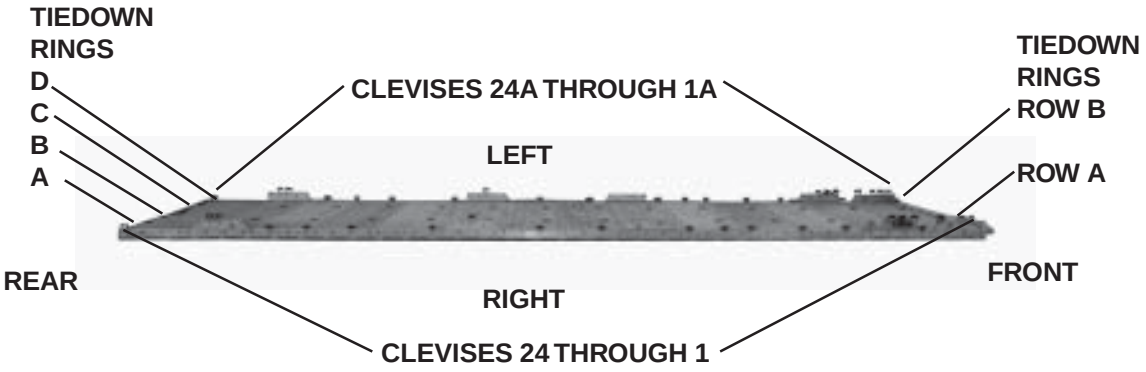
Only ammunition listed in FM 4-20.153/MCRP 4-11.3B/ TO13C7-18-41 may be airdropped.

PREPARING PLATFORM

2-2. Prepare a 28-foot, type V airdrop platform according to TM 10-1670-268-20&P/TO 13C7-52-22. Install two tandem links, eight suspension brackets and 50 tiedown clevis assemblies as shown in Figure 2-2.

Notes: 1. The nose bumper may or may not be installed.
2. Measurements given in this chapter are from the front edge of the platform, NOT from the front edge of the nose bumper.

Figure 2-1. SUSV



Steps:

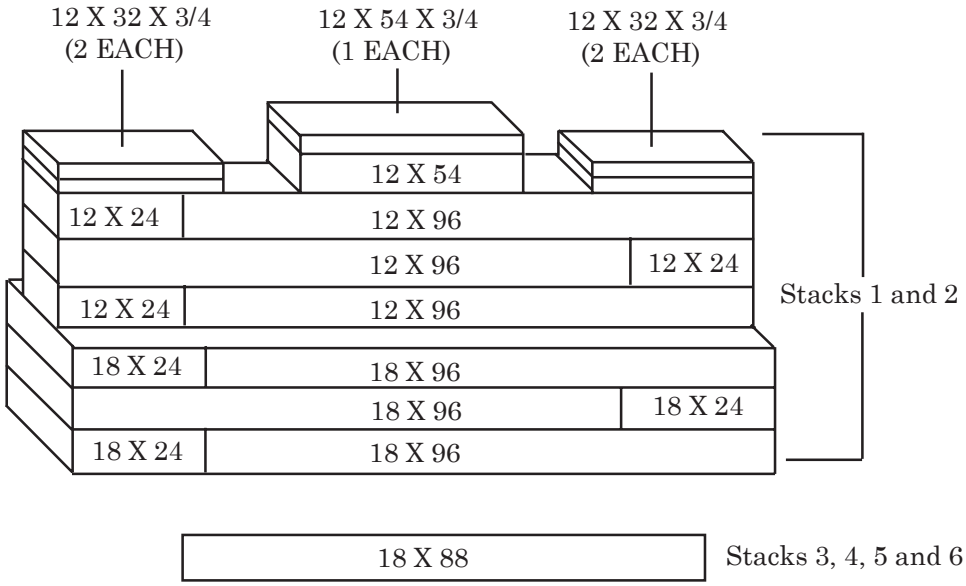
1. Inspect, or assemble and inspect, the platform according to TM 10-1670-268-20&P/TO 13C7-52-22.
2. Install a tandem link on the front of each platform side rail using holes 1, 2, and 3.
3. Install four suspension brackets on each side rail using bushing holes 6, 7, and 8; 22, 23, and 24; 33, 34, and 35; 49, 50, and 51.
4. Install a clevis on bushings 1, 2, 3 and 4 on each front tandem link.
5. Install a clevis on bushings 1, 2 (triple), and 3 on the first set of suspension brackets.
6. Install a clevis on bushing 2 on the third set of suspension links.
7. Install a clevis on bushings 2 and 3 on the fourth set of suspension links.
8. Starting at the front of each platform side rail, install clevises on each bushing bolted on holes 5, 10, 13, 16, 18, 20, 26, 30, 37, 42, 45, 47, and 56.
9. Starting at the front of each platform side, number the clevises bolted to the right side rail from 1 through 24 and those bolted to the left side from 1A through 24A.
10. Label the tiedown rings according to FM 4-20.102 / TO 13C7-1-5.

Figure 2-2. Platform Prepared

BUILDING AND POSITIONING HONEYCOMB STACKS

2-3. Build five honeycomb stacks and place them on the platform as shown in Figures 2-3 and 2-4.

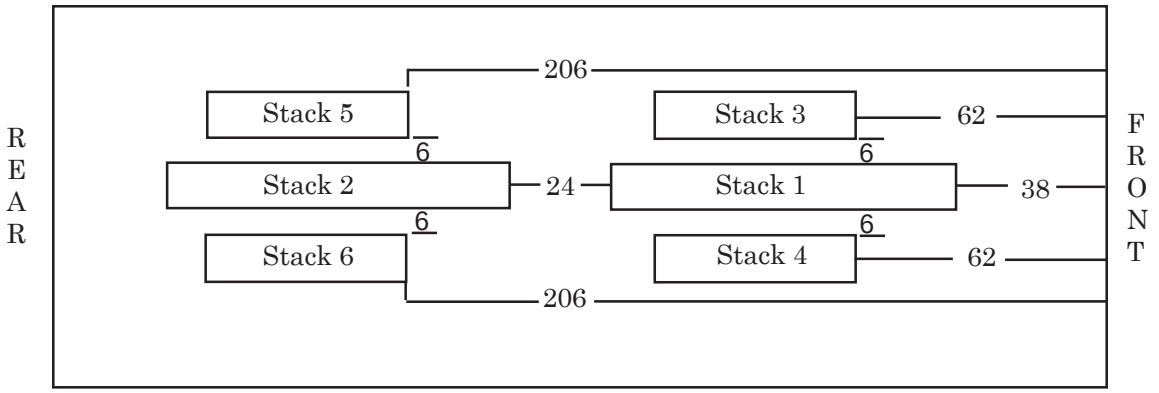
Notes: 1. Not drawn to scale.
2. All dimensions are given in inches.



Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1 and 2	3 3	18 18	96 24	Honeycomb	Alternate pieces of honeycomb as shown to form base
	3 3	12 12	96 24	Honeycomb	Center and alternate honeycomb pieces on base
	4	12	32	3/4" Plywood	Place two pieces on each end of the stack
	1	12	54	Honeycomb	Center the piece of honeycomb between the 12- by 32-inch pieces of plywood.
	1	12	54	3/4" Plywood	Center the piece of plywood on the 12- by 54-inch piece of honeycomb
3,4,5,and 6	1	18	88	Honeycomb	Stand alone stacks

Figure 2-3. Honeycomb Stacks 1 through 6 Prepared

Notes: 1. Not drawn to scale.
2. All dimensions are given in inches.



Stack Number	Positition of Stack on Platform
1	Place stack: 38 inches from the front edge of the platform and centered in the middle.
2	24 inches from the rear edge of stack 1 or 182 inches from the front edge and centered in the middle.
3	62 inches from the front edge of the platform and 6 inches from the left side of stack 1.
4	62 inches from the front edge of the platform and 6 inches from the right side of stack 1.
5	206 inches from the front edge of the platform and 6 inches from the left side of stack 2.
6	206 inches from the front edge of the platform and 6 inches from the right side of stack 2.

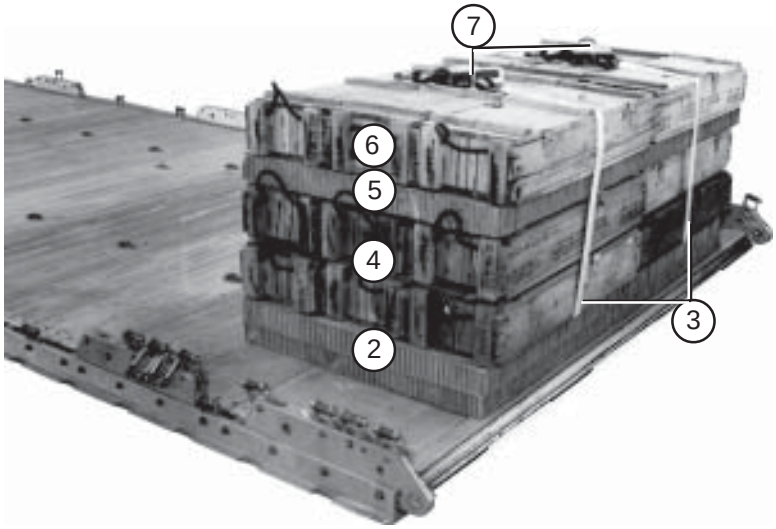
Figure 2-4. Honeycomb Stacks Placed on the Platform

POSITIONING ACCOMPANYING LOAD ON THE PLATFORM

2-4. Position and secure 18 boxes of 105-MM ammunition on the platform as shown in Figure 2-5.

CAUTION

The accompanying load must weigh at least 2,000 pounds, but not more than 2,100 pounds. The center of balance is critical for this load.



(1) Cut three 78 1/2- by 36-inch pieces of honeycomb. (Not Shown)

(2) Center two 78 1/2- by 36-inch pieces of honeycomb 1 inch from the front edge of the platform.

Note: Leave room for the front end board to set on the platform without the nose bumper attached.

(3) Evenly space two 15-foot lashings on the honeycomb.

(4) Position 12 boxes of ammunition on the pre-positioned lashings to form two layers of ammunition.

(5) Place a 78 1/2- by 36-inch piece of honeycomb on top of the second layer of ammunition.

(6) Position six boxes of ammunition on top of the 78 1/2- by 36-inch piece of honeycomb to form a third layer of ammunition.

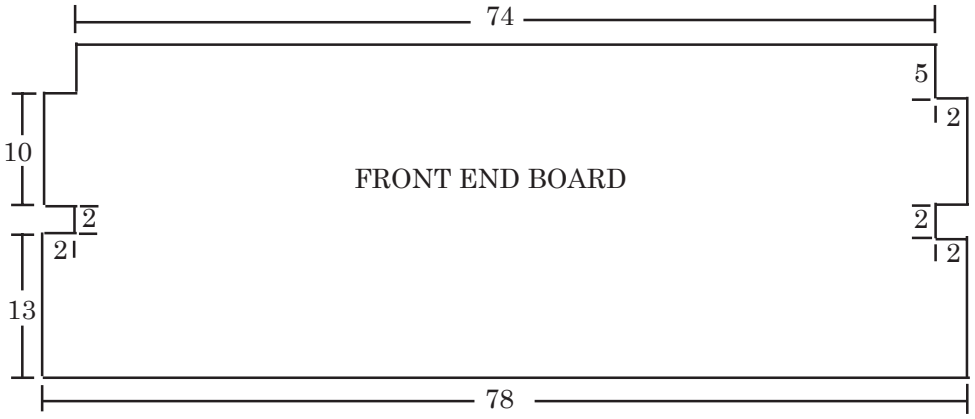
(7) Secure the pre-positioned lashings on top of the boxes of ammunition.

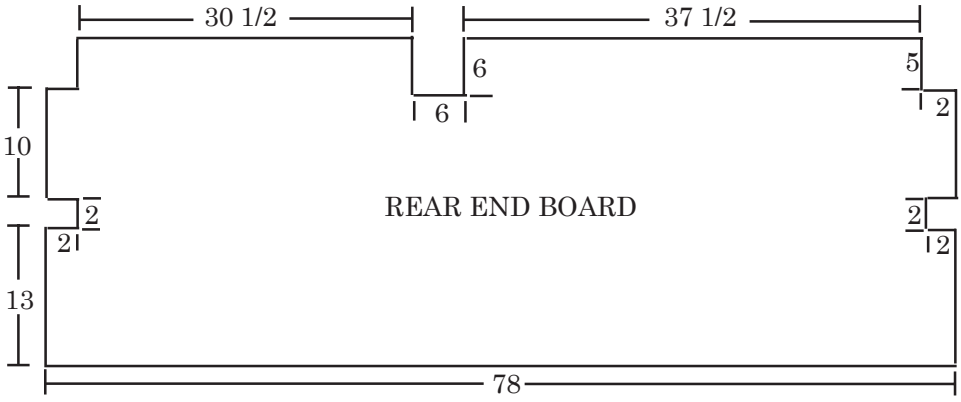
Figure 2-5. Accompanying Load Positioned on Platform

BUILDING, POSITIONING, AND SECURING END BOARDS AND LASHING THE ACCOMPANYING LOAD

2-5. Build, position, and secure the end boards and lash the accompanying load as shown in Figures 2-6 and 2-7.

Notes: 1. Not drawn to scale.
2. All dimensions are given in inches.



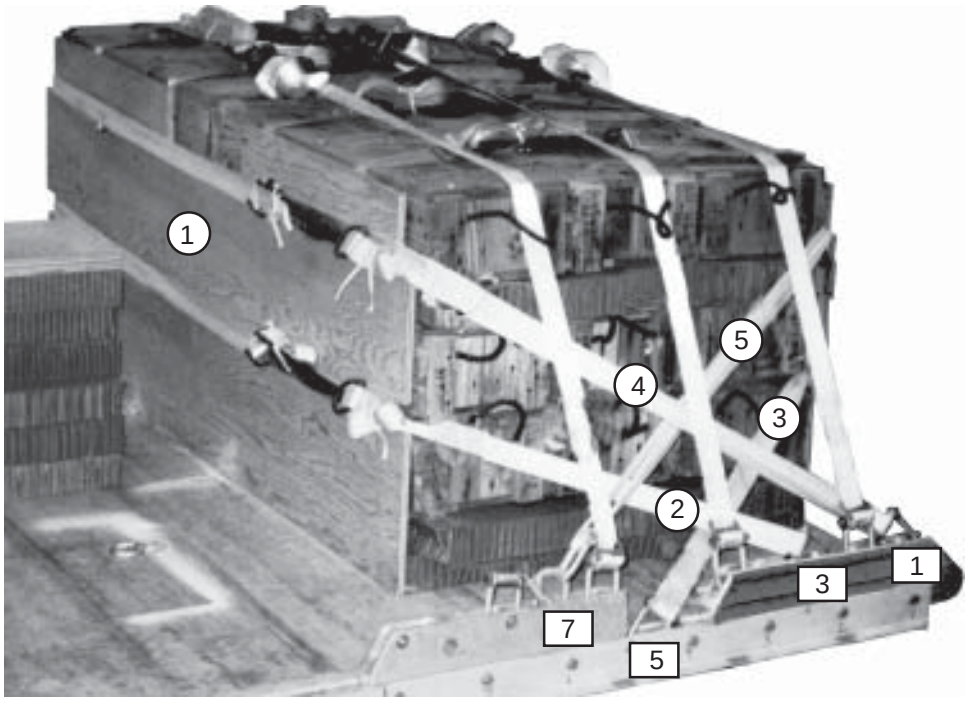


Steps:

1. Construct two end boards using one piece of 3/4- by 30- by 78- inch plywood for each endboard.

2. Make cutouts as shown.

Figure 2-6. Endboards Constructed



(1) Position the end boards against the front and rear of the ammunition boxes.

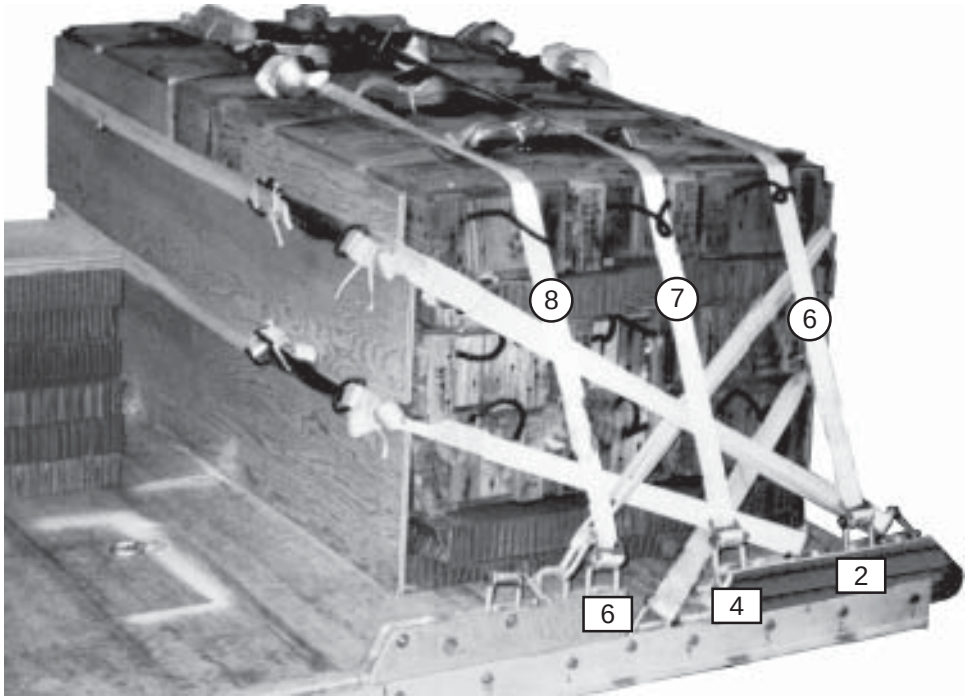
(2) Route a 30 foot lashing through the bottom notches of the rear end board, through clevises 3 and 3A, and then secure the lashing with two D-rings and a load binder on the rear end board.

(3) Route a 30 foot lashing through the bottom notches of the front end board, through clevises 5 and 5A, and then secure the lashing with two D-rings and a load binder on the front end board.

(4) Route a 30 foot lashing through the top notches of the rear end board, through clevises 1 and 1A, and then secure the lashing with two D-rings and a load binder on the rear end board.

(5) Route a 30 foot lashing through the top notches of the front end board, through clevises 7 and 7A, and then secure the lashing with two D-rings and a load binder on the front end board.

Figure 2-7. Endboards Positioned and Secured and Accompanying Load Lashed



(6) Route two lashings, one through clevis 2 and the other through clevis 2A, then back through their own D-rings and up between the carrying handle and the box on the top layer of ammunition. Secure both lashings on top of the load.

(7) Route two lashings, one through clevis 4 and the other through clevis 4A, then back through their own D-rings behind the carrying handle on the top layer of ammunition. Secure both lashings on top of the load.

(8) Route two lashings, one through clevis 6 and the other through clevis 6A, then back through their own D-rings behind the carrying handle on the top layer of ammunition. Secure both lashings on top of the load.

Figure 2-7. Endboards Positioned and Secured and Accompanying Load Lashed (Continued)

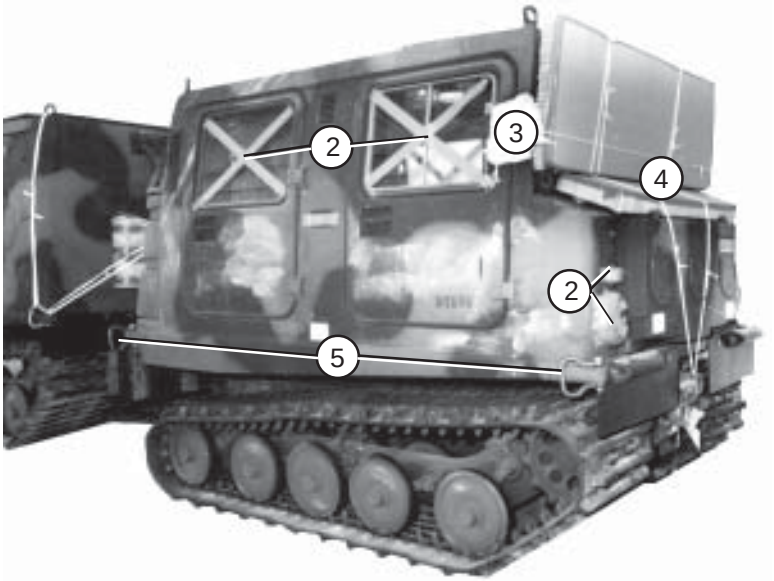
PREPARING THE SUSV

2-6. Prepare the SUSV as described below.

a. Prepare the front car as shown in Figures 2-8 and 2-9.

b. Prepare the rear car as shown in Figures 2-10 through 2-12.

c. Prepare the inside of the rear car as shown in Figure 2-13.



(1) Make sure each of the two fuel tanks are 3/4 full. (Not Shown)

(2) Tape the front headlights, turn signals, windows, and side reflectors.

(3) Pad and tape both outside mirrors with cellulose wadding.

(4) Fit and position two pieces of honeycomb to cover the windshield and front grill. Secure the honeycomb in place using type III nylon cord.

(5) Install a medium clevis in each of the four holes on the four corners of the front car.

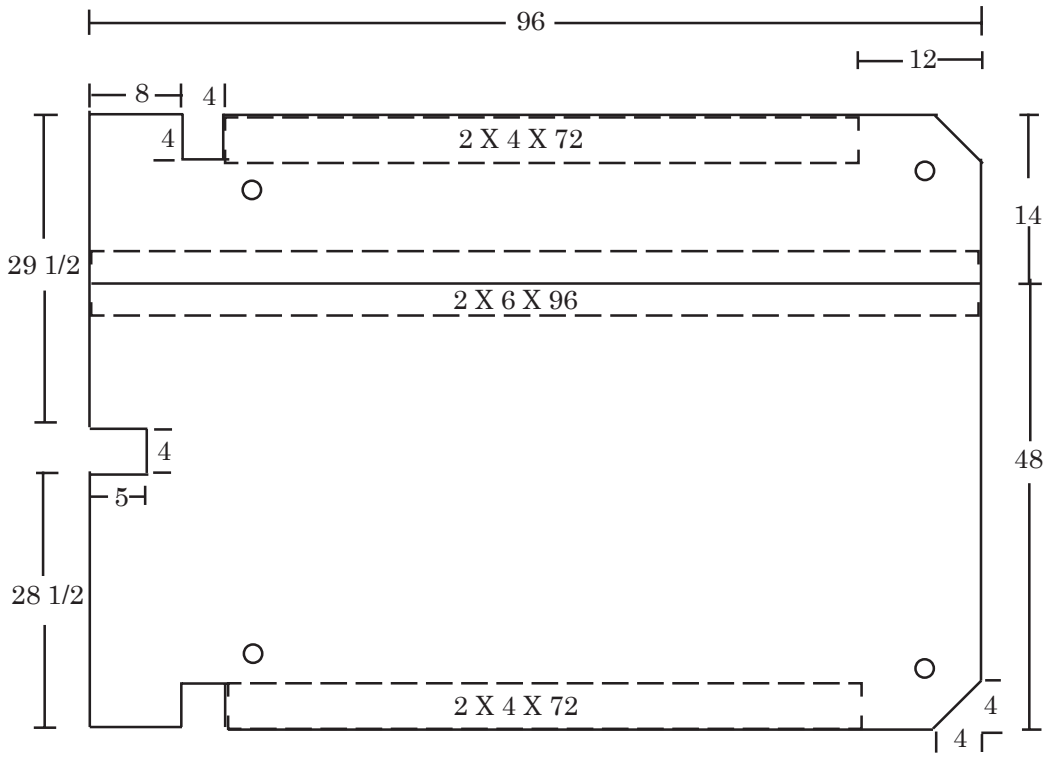
(6) Tape the instrument panel gauges inside the driver's compartment. (Not Shown)

(7) Tape the opening on the left side of the air breather on the rear of the front car. (Not Shown)

(8) Secure the steering wheel to the seat frame with type III nylon cord. (Not Shown)

Figure 2-8. Front Car Prepared

Notes: 1. Not drawn to scale.
2. All dimensions are given in inches.
3. All holes are 1 inch in diameter.



Steps:

1. Prepare a roof protector board for the front car using a 3/4- by 48- by 96-inch piece of plywood and a 3/4- by 14- by 96-inch piece of plywood.

2. Join the pieces of plywood in step 1 by nailing a 2- by 6- by 96-inch piece of lumber on the bottom of the seam.

3. Make the cutouts in the plywood using the above dimensions.

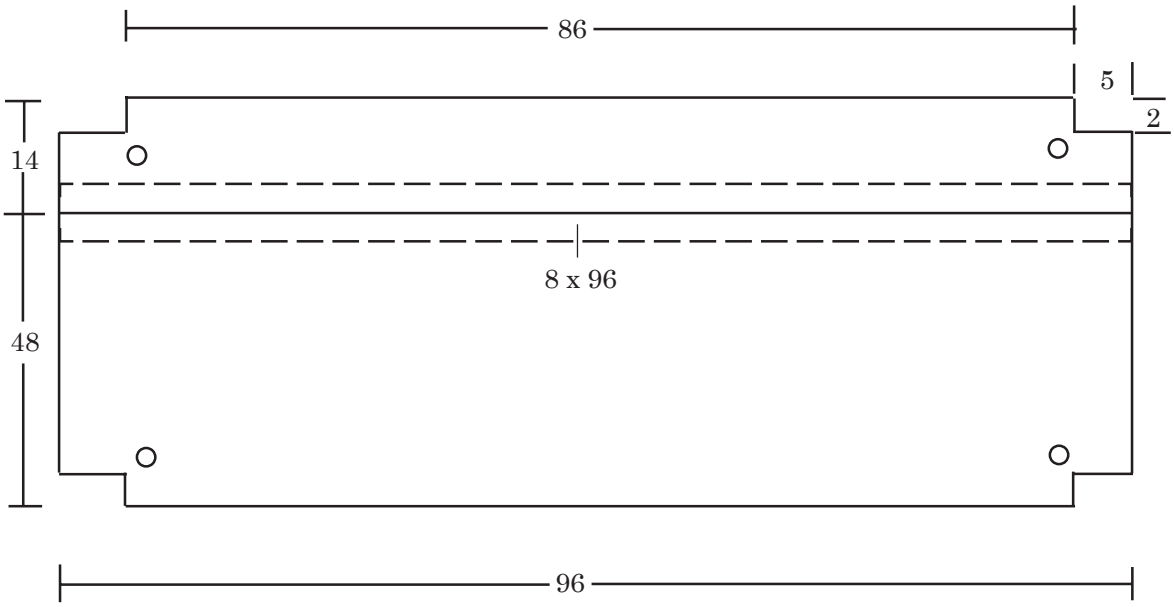
4. Nail a 2- by 4- by 72-inch piece of lumber to the bottom left side of the roof protector 12 inches from the front edge and flush with the side.

5. Nail a 2- by 4- by 72-inch piece of lumber to the bottom right side of the roof protector 12 inches from the front edge and flush with the side.

6. The plywood roof protector board for the front car will be positioned and secured after the load is positioned on the platform. (Not shown)

Figure 2-9. Front Car Roof Protector Board Built

Notes: 1. Not drawn to scale.
2. All dimensions are given in inches.
3. All holes 1 inch in diameter.



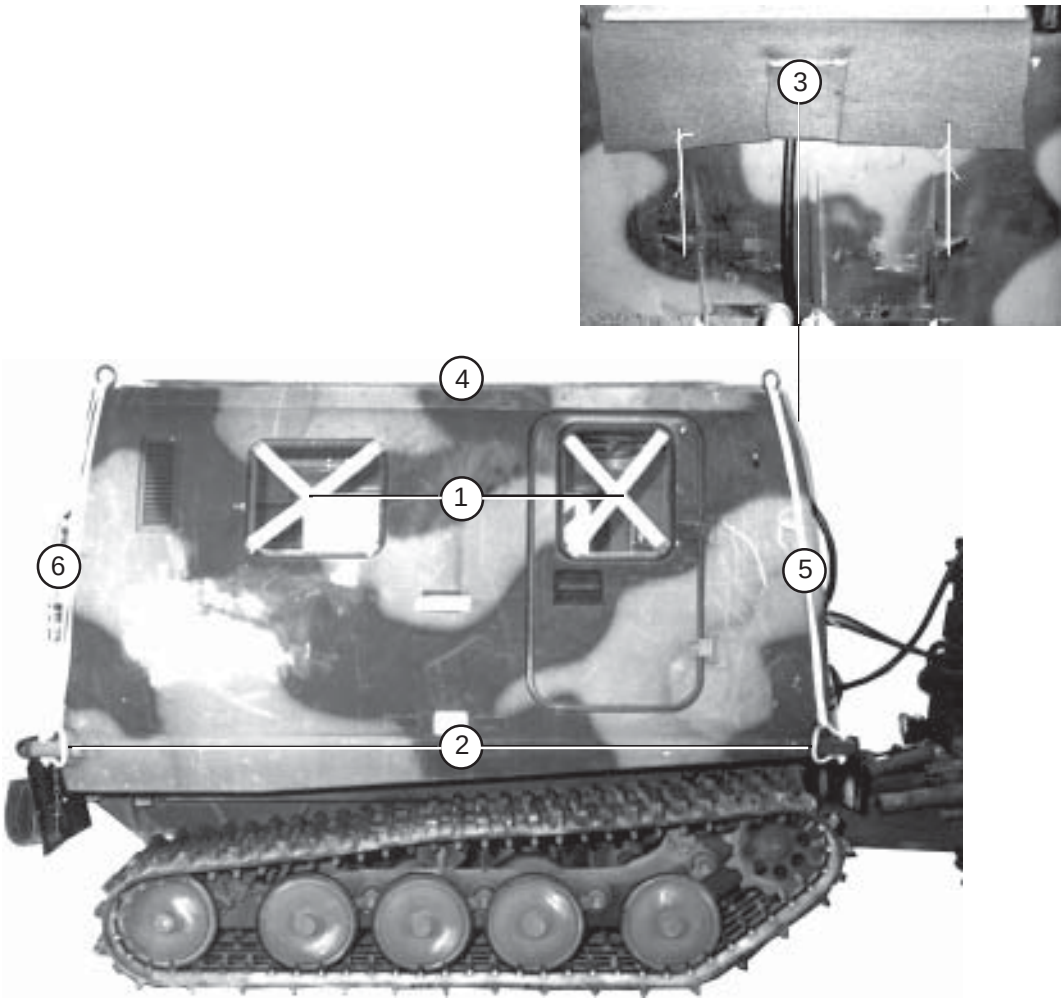
Steps:

1. Prepare a roof protector board for the rear car using a 3/4- by 48- by 96-inch piece of plywood and a 3/4- by 14- by 96-inch piece of plywood.

2. Join the pieces of plywood in step 1 by nailing a 3/4- by 8- by 96-inch piece of plywood on top of the seam.

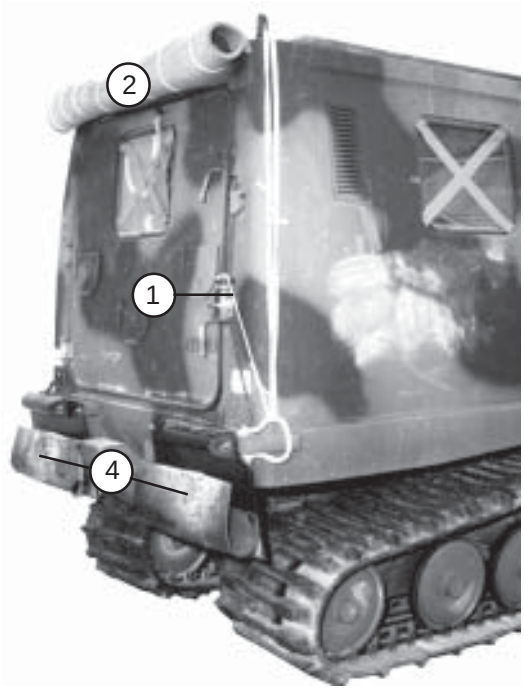
3. Make cutouts on the corners of the plywood using the dimensions given above.

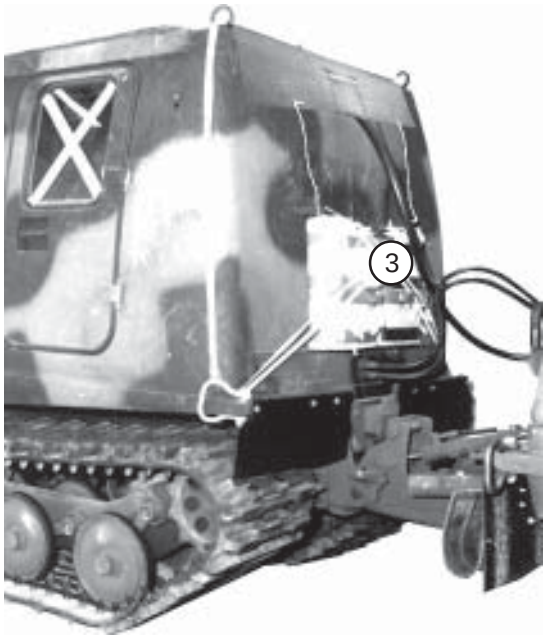
Figure 2-10. Rear Car Roof Protector Board Built



1. Tape the turn signals, windows and side reflectors.
2. Install a medium clevis in each of the four holes on each corner of the rear car.
3. Place a piece of 25- by 96-inch felt padding over the front of the rear car. Secure the felt with type III nylon.
4. Position the roof protector board made in Figure 2-10 on top of the rear car.
5. Secure the roof protector board by passing a length of 1/2-inch tubular nylon webbing through the right rear hole of the protector board, through the right front lifting point and medium clevis of the rear car.
6. Repeat step 5 for the other three corners of the car.

Figure 2-11. Rear Car Roof Protector Board Secured





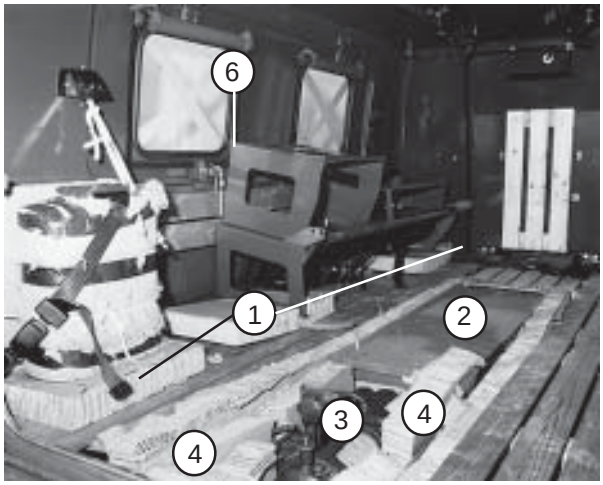
(1) Secure the trailer tail light cord with a length of type III nylon cord.

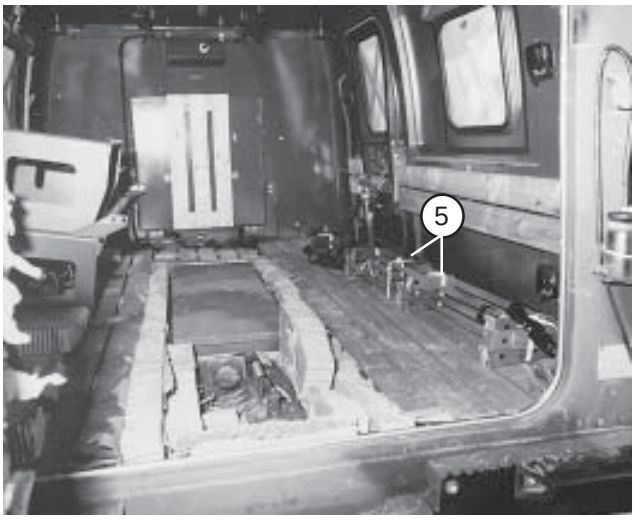
(2) Wrap a 18- by 57-inch piece of felt padding over the rear tail lights. Secure the felt padding in place using pieces of type III nylon cord.

(3) Pad and tape two fuel cans with cellulose wadding. Strap the fuel cans on the front of the rear car in their stowage compartments. Secure the fuel cans using two lengths of 1/2-inch tubular nylon webbing.

(4) Raise the rear mud flaps and secure them in place with their own hook buttons.

Figure 2-12. Rear Car Prepared





(1) Place a layer of honeycomb under the troop seats in the rear car.

(2) Place the operator's vehicle maintenance (OVM) box between the troop seats.

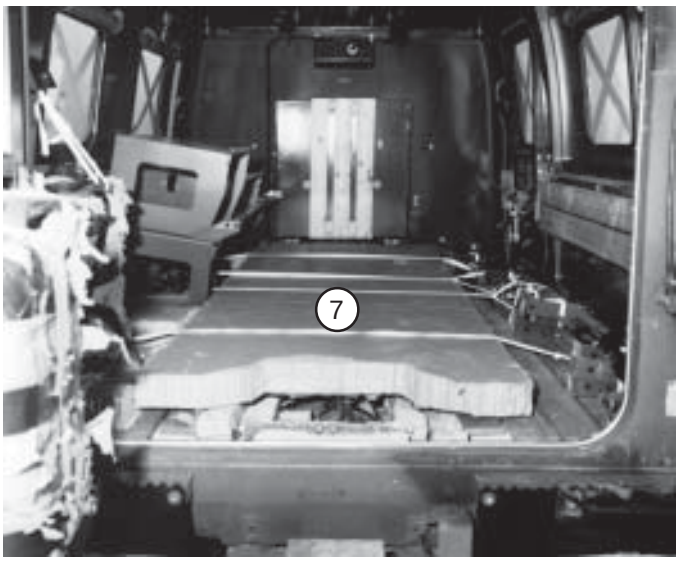
(3) Disconnect the winch and place it to the rear of the OVM box.

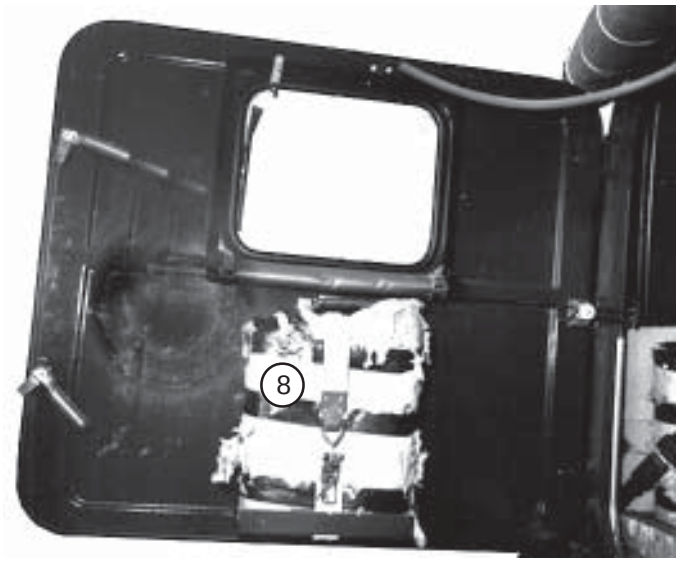
(4) Use pieces of honeycomb as filler around the OVM box and the winch.

(5) Place the rear car roof racks on the right troop seats. Secure the racks to the seats using 1/2-inch tubular nylon.

(6) Secure the emergency escape window handles using type III nylon cord to the back of the left troop seats.

Figure 2-13. Inside of Rear Car Prepared





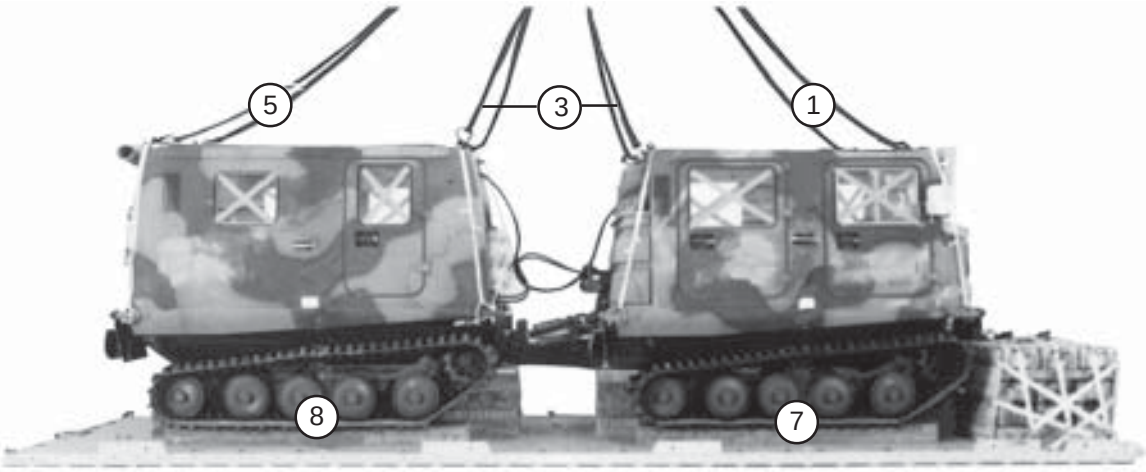
(7) Place a layer of honeycomb on top of the OVM box and winch. Secure the honeycomb in place using four pieces of 1/2-inch tubular nylon webbing.

(8) Pad and tape an additional fuel can with cellulose wadding. Place the fuel can in the fuel can compartment on the inside of the rear door. Secure the fuel can using the securing straps provided.

Figure 2-13. Inside of Rear Car Prepared (Continued)

POSITIONING THE SUSV ON THE PLATFORM

2-7. Position the SUSV on the platform as shown in Figure 2-14.



(1) Attach two 12-foot (2-loop), type XXVI nylon webbing slings to the front lifting provisions of the front car using two medium clevises.

(2) Pass a 3-foot (2-loop), type XXVI nylon webbing sling through the free ends of the 12-foot slings (Not Shown).

(3) Attach four 9-foot (2-loop), type XXVI nylon webbing slings to the four lifting provisions in the center of the vehicle using four medium clevises.

(4) Pass a 3-foot (2-loop), type XXVI nylon webbing sling through the free ends of the 9-foot slings to form a donut (Not Shown).

(5) Attach two 12-foot (2-loop), type XXVI nylon webbing slings to the rear lifting provisions of the rear car using two medium clevises.

(6) Pass a 3-foot (2-loop), type XXVI nylon sling through the free ends of the 12-foot slings (Not Shown).

(7) Position the front car squarely on honeycomb stack 1 and center on the platform.

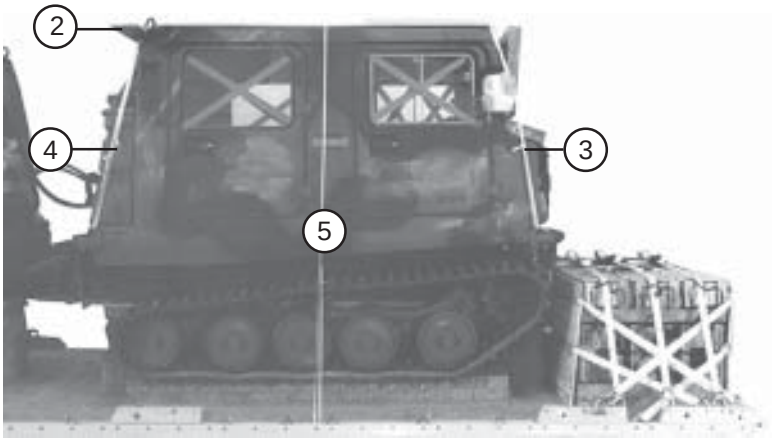
(8) Position the rear car squarely on honeycomb stack 2 and center on the platform.

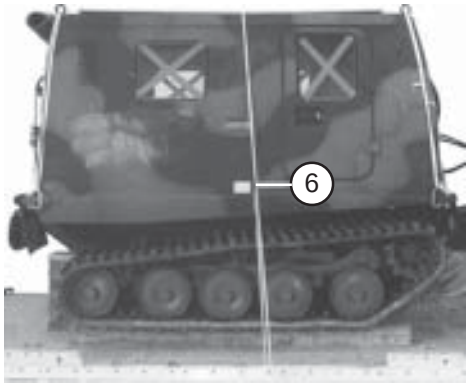
Note: Honeycomb stacks 3, 4, 5, and 6 may need to be adjusted to fit directly under the vehicle track road wheels.

Figure 2-14. SUSV Positioned on Platform

PREPARING SUSV AFTER POSITIONING

2-8. Prepare the SUSV after positioning as shown in Figures 2-15 and 2-16.





(1) Remove the lift kit from the front cars (Not shown).

(2) Position the roof protective board built in Figure 2-10 on top of the front car.

(3) Secure the roof protector board by passing a length of 1/2-inch tubular nylon webbing through the right front 1-inch hole of the protector board, and through the right front medium clevis of the front car.

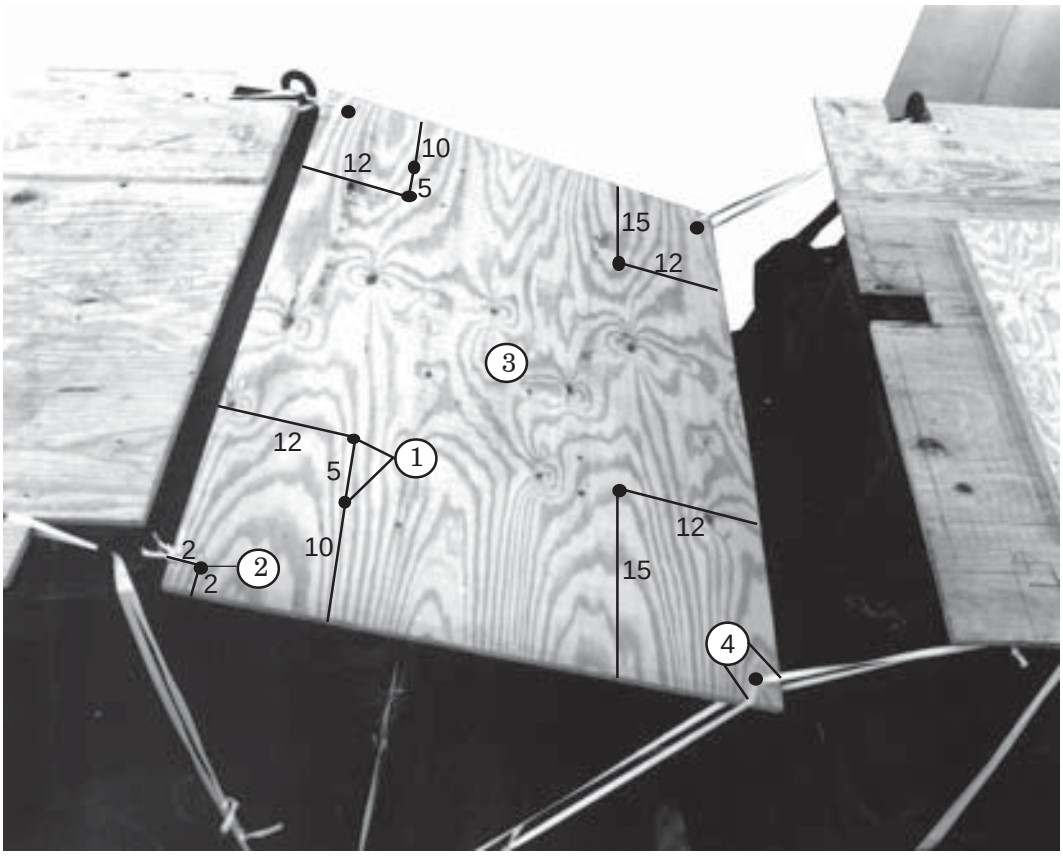
(4) Repeat step 3 for the other three corners of the front car.

(5) Pass a length of 1/2-inch tubular nylon webbing from bushing 17, over the front car, and secure it to bushing 17A.

(6) Pass a length of 1/2-inch tubular nylon webbing from bushing 41, over the rear car and the protective platform placed in Figure 2-11, and secure it to bushing 41.

Figure 2-15. SUSV Prepared and Positioned

Notes: 1. Not drawn to scale.
2. All dimensions are given in inches.
3. This plywood will serve as the M-2 parachute release platform.



(1) Using the dimensions shown above, drill six 1/2-inch holes in a 3/4- by 59- by 42-inch piece of plywood. These holes will be used later in this manual to secure the suspension slings from the M-2 parachute release.

(2) Drill 1/2-inch holes in all four corners 2 inches in from each edge.

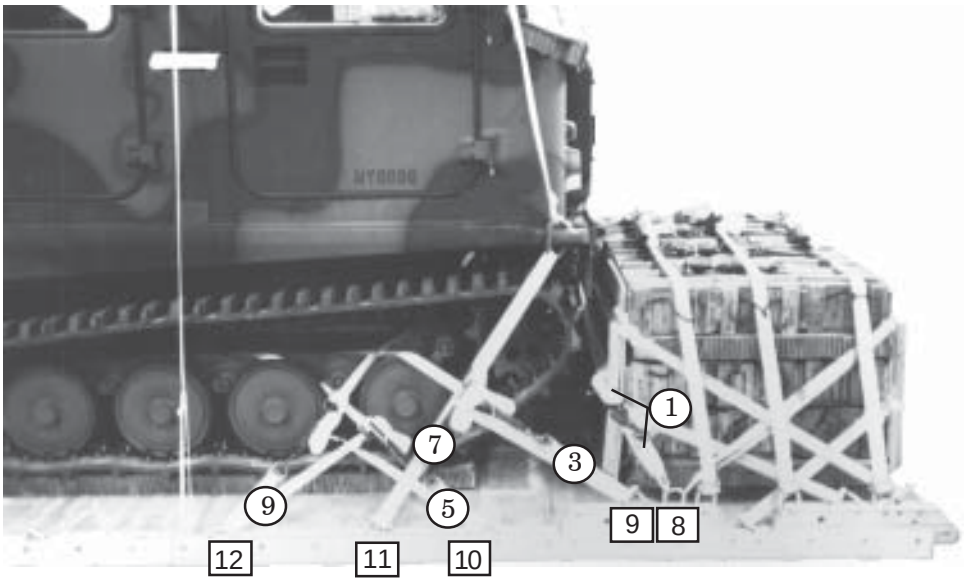
(3) Position the plywood between both cars at a 25- to 30-degree angle.

(4) Secure the plywood to convenient places on both cars using 1/2-inch tubular nylon and the holes drilled in each corners.

Figure 2-16. SUSV M-2 Parachute Release Platform Positioned

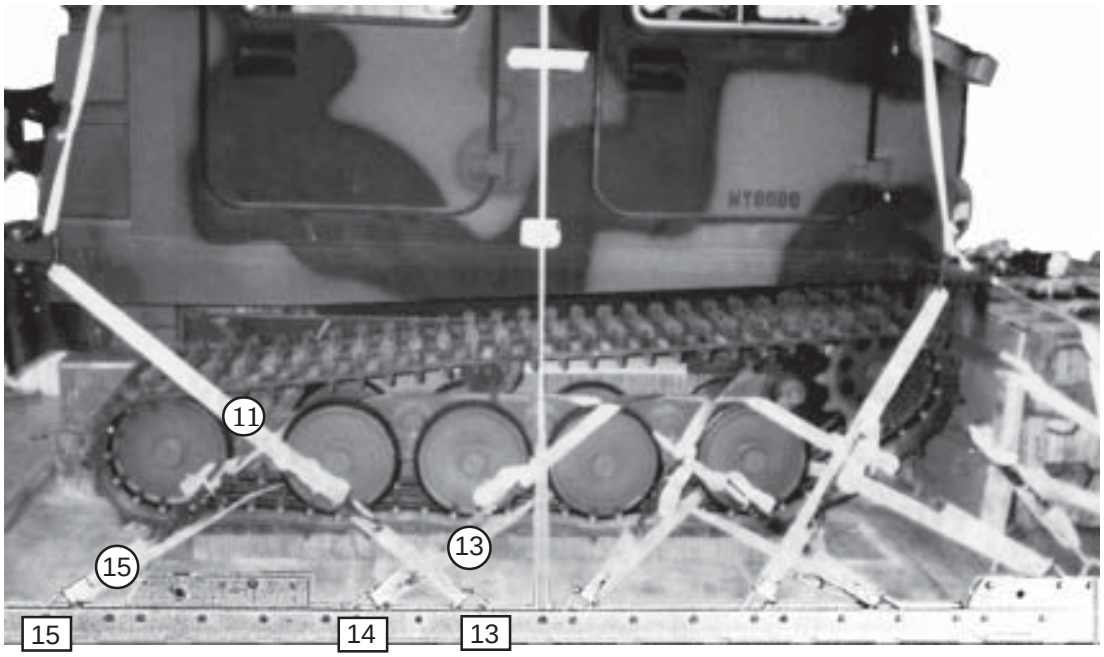
LASHING THE SUSV

2-9. Lash the SUSV to the platform using 15-foot tiedown assemblies. Install the lashings according to FM 4-20.102/NAVSEA SS400-AB-MMO-010 /TO 13C7-1-5 and as shown in Figures 2-17 through 2-20.



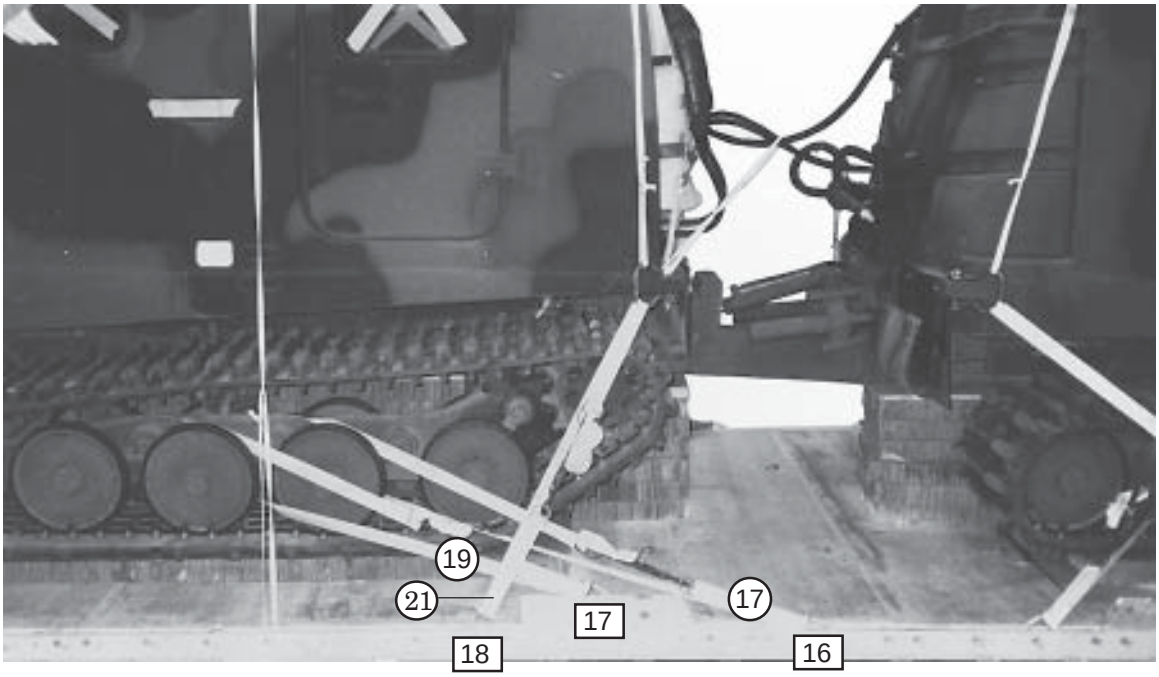
Lashing Number	Tie-down Clevis Number	Instructions
		Pass lashing:
1	8	Around towing pin.
2	8A	Around towing pin.
3	9	Over track frame and to the rear of inside pivot arm shoulder of the third road wheel on the right side.
4	9A	Over track frame and to the rear of inside pivot arm shoulder of the third road wheel on the left side.
5	10	Over track frame and to the rear of inside pivot arm shoulder of the fourth road wheel on the right side.
6	10A	Over track frame and to the rear of inside pivot arm shoulder of the fourth road wheel on the left side.
7	11	Through right front medium clevis.
8	11A	Through left front medium clevis.
9	12	Around track frame support and to the rear of the inside pivot arm shoulder of the first road wheel on the right side.
10	12A	Around track frame support and to the rear of inside pivot arm shoulder of first road wheel on the left side.

Figure 2-17. Lashings 1 through 10 Installed



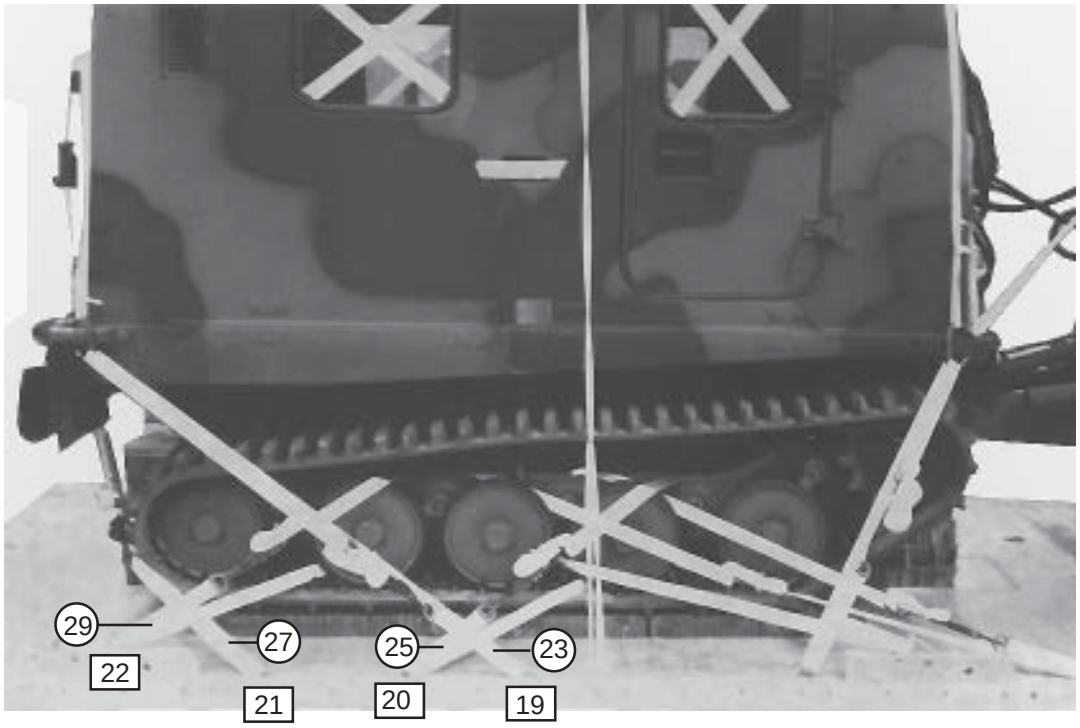
Lashing Number	Tie-down Clevis Number	Instructions
		Pass lashing:
11	13	Through right rear medium clevis on front car.
12	13A	Through left rear medium clevis on front car.
13	14	Around track frame support and to the rear of the inside pivot arm shoulder of second road wheel on the right side.
14	14A	Around track frame support and to the rear of inside pivot arm shoulder of second road wheel on the left side.
15	15	Around track frame support and to rear of the inside pivot arm shoulder of the fourth road wheel on the right side.
16	15A	Around track frame support and to the rear of the inside pivot arm shoulder of the fourth road wheel on the left side.

Figure 2-18. Lashings 11 through 16 Installed



Lashing Number	Tie-down Clevis Number	Instructions
		Pass lashing:
17	16	Around track frame support and to the rear inside pivot arm shoulder of the third road wheel of rear car, right side.
18	16A	Around track frame support and to the rear of inside pivot arm shoulder of the third road wheel of rear car, left side.
19	17	Around track frame support and to rear of the inside pivot arm shoulder of the fourth road wheel on the right side.
20	17A	Around track frame support and to the rear of the inside pivot arm shoulder of the fourth road wheel on the left side.
21	18	Through right front medium clevis on the rear car.
22	18A	Through left front medium clevis on the rear car.

Figure 2-19. Lashings 17 through 22 Installed



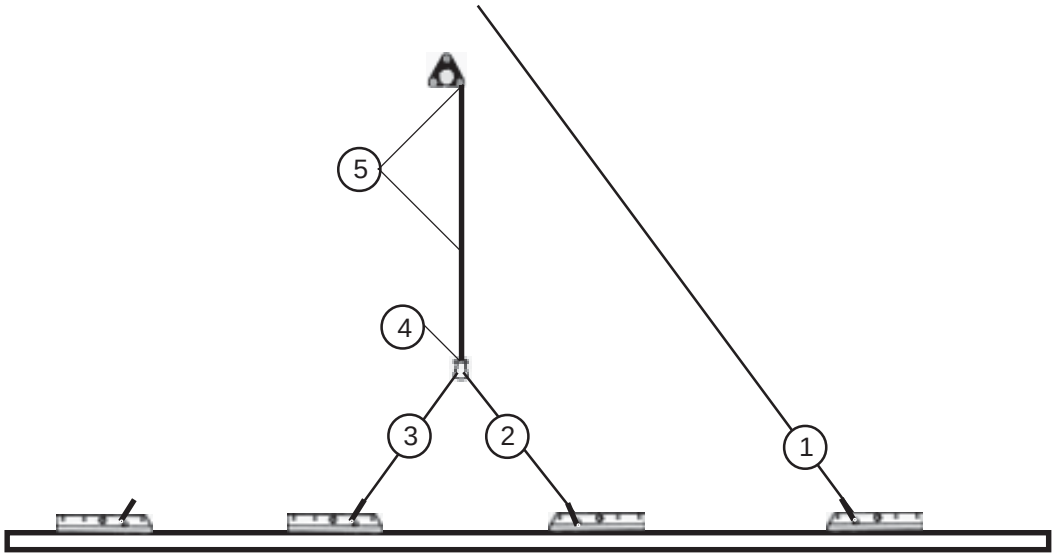
Lashing Number	Tie-down Clevis Number	Instructions
		Pass lashing:
23	19	Through right rear medium clevis on rear car.
24	19A	Through left rear medium clevis on rear car.
25	20	Around track frame support and to the rear of inside pivot arm shoulder of the second road wheel of rear car, right side.
26	20A	Around track frame support and to the rear of inside pivot arm shoulder of second road wheel of rear car, left side.
27	21	Through tow pintle, right side.
28	21A	Through tow pintle, left side.
29	22	Around track frame support and to the rear of inside pivot arm shoulder of fourth road wheel of rear car, right side.
30	22A	Around track frame suppot and to the rear of inside pivot arm shoulder of fourth road wheel of rear car, left side.

Figure 2-20. Lashings 23 through 30 Installed

INSTALLING SUSPENSION SLINGS

2-10. Install the suspension slings according to FM 4-20.102/NAVSEA SS400-AB-MM0-010/TO 13C7-1-5 and as shown in Figure 2-21.

Notes: 1. Not drawn to scale.
2. Pad and tape any sharp areas the suspension slings may contact.



(1) Attach a 20-foot (4-loop), type XXVI nylon webbing sling to the bell portion of a large suspension clevis. Bolt the large suspension clevis to the first suspension link on the right side of the platform.

(2) Attach a 3-foot (4-loop), type XXVI nylon webbing sling to the bell portion of a large suspension clevis. Bolt the large suspension clevis to the second suspension link on the right side of the platform.

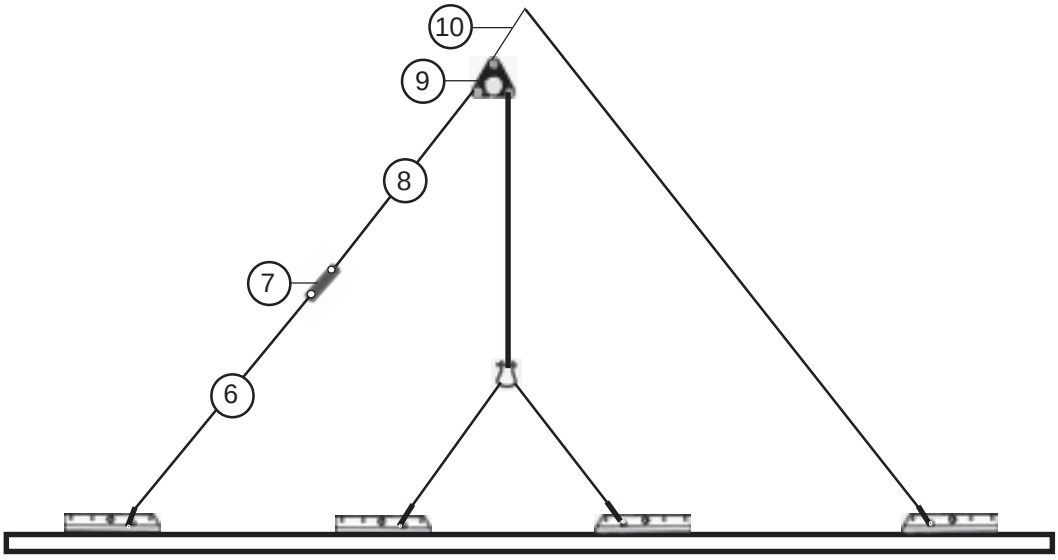
(3) Attach a 3-foot (4-loop), type XXVI nylon webbing sling to the bell portion of a large suspension clevis. Bolt the large suspension clevis to the third suspension link on the right side of the platform.

(4) Attach the free ends of both 3-foot slings to the bell portion of a large suspension clevis on the right side of the platform.

(5) Attach a 12-foot (4-loop), type XXVI nylon webbing sling to the bolt of the large suspension clevis (used in step 4). Attach the free end of the sling to one end of a three-point link.

Figure 2-21. Suspension Slings Installed

Notes: 1. Not drawn to scale.
2. Pad and tape any sharp areas the suspension slings may contact.



(6) Attach a 9-foot (4-loop), type XXVI nylon webbing sling to the bell portion of a large suspension clevis. Bolt the large suspension clevis to the fourth suspension link on the right side of the platform.

(7) Attach the free end of the sling to a 5 1/2-inch two-point link.

(8) Attach the end of a 9-foot (4-loop), type XXVI nylon webbing sling to the other point of the two-point link.

(9) Attach the free end of the sling to the three-point link installed in step 5.

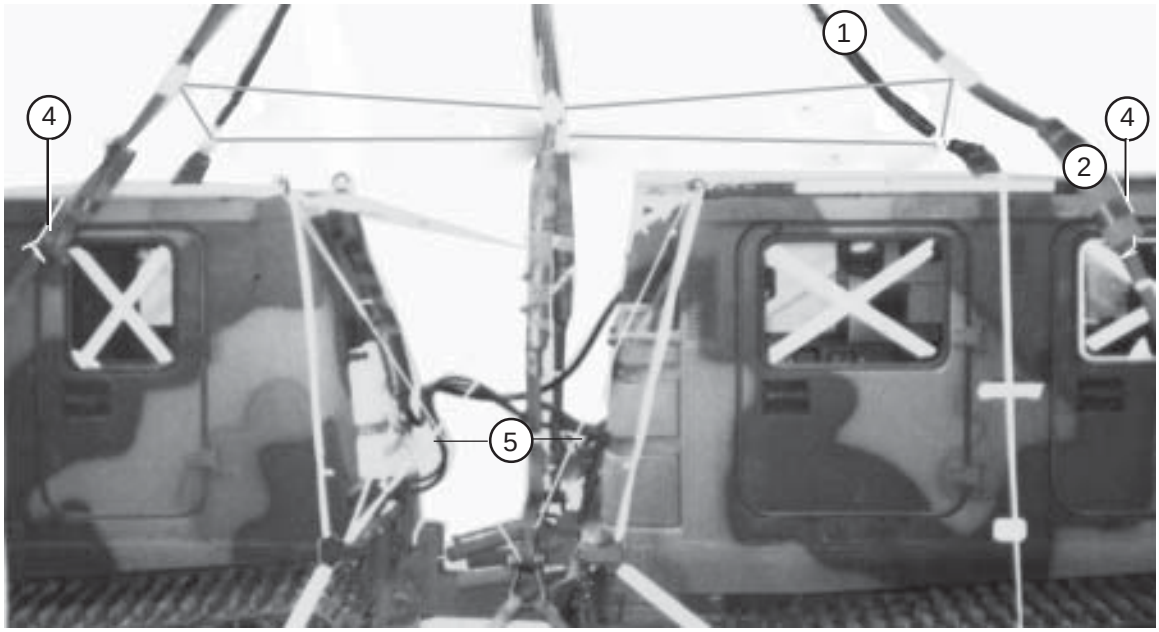
(10) Attach a 3-foot (4-loop), type XXVI nylon webbing sling to the top spacer of the three-point link. Pad the three-point link with felt. Tape the felt in place.

(11) Repeat steps 1 through 10 for the left side of the platform. (Not Shown)

Figure 2-21. Suspension Slings Installed (Continued)

PADDING AND SECURING SUSPENSION SLINGS

2-11. Pad, secure and safety the suspension slings according to FM 4-20.102/NAVSEA SS400-AB-MM0-010/TO 13C7-1-5 and as shown in Figure 2-22.



(1) Raise the suspension slings and install the safety tie according to FM 4-20.102/ NAVSEA SS400-AB-MMO-010/TO13C7-1-5.

(2) Pad the front and rear suspension slings where they make contact with the sides of the front and rear cars.

(3) Pad all link assembles with felt and secure with type III nylon cord and tape. (Not Shown)

(4) Safety tie the front and rear slings, from right to left, across the top of the forward and aft car with type III nylon cord.

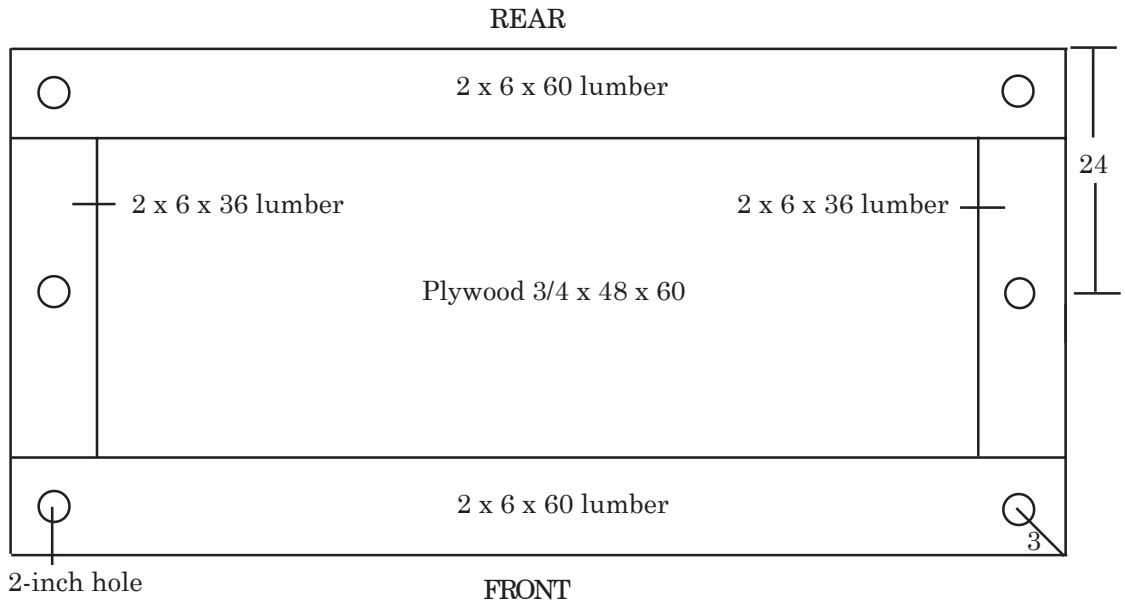
(5) Safety the center sling assembly and large clevises with two lengths of type III nylon cord. Secure the cord to the bolt of the large clevises and to the center lifting provisions on the forward and rear cars.

Figure 2-22. Suspension Slings Safetied, Padded and Secured

BUILDING PARACHUTE STOWAGE PLATFORM

2-12. Build the parachute stowage platform as shown in Figure 2-23.

Notes: 1. Not drawn to scale.
2. All dimensions are given in inches.



Step:

1. Use a 3/4- by 48- by 60-inch sheet of plywood as a base.

2. Cut two 2- by 6- by 60-inch pieces of lumber. Nail each piece of lumber flush with the front, rear and sides of the base piece using 8d nails.

3. Cut two 2- by 6- by 36 inch pieces of lumber. Nail the lumber flush one on each side between the front and rear pieces using 8d nails.

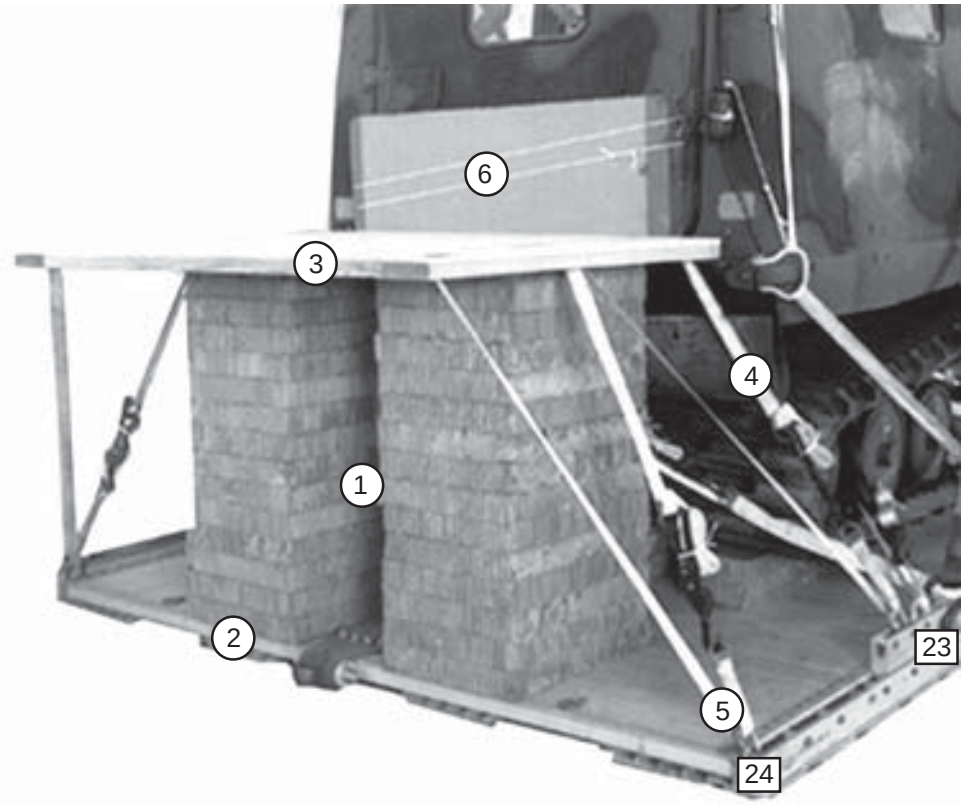
4. Drill four 2-inch holes 3 inches in diagonally from each corner.

5. Drill two 2-inch holes 2 inches in from each side centered 24 inches from the top.

Figure 2-23. Parachute Stowage Platform Built

INSTALLING PARACHUTE STOWAGE PLATFORM

2-13. Install and secure the parachute stowage platform as shown in Figure 2-24.



(1) Cut 30 pieces of 18- by 24-inch honeycomb. Glue 15 pieces together to form two stacks.

(2) Position the stacks flush with the rear edge of the platform and 28 inches in from the left and right side rails.

(3) Center the parachute stowage platform on the honeycomb support stacks.

(4) Pass a 15-foot lashing through the center and rear holes on each side of the parachute stowage platform and secure the lashings to clevises 23 and 23A.

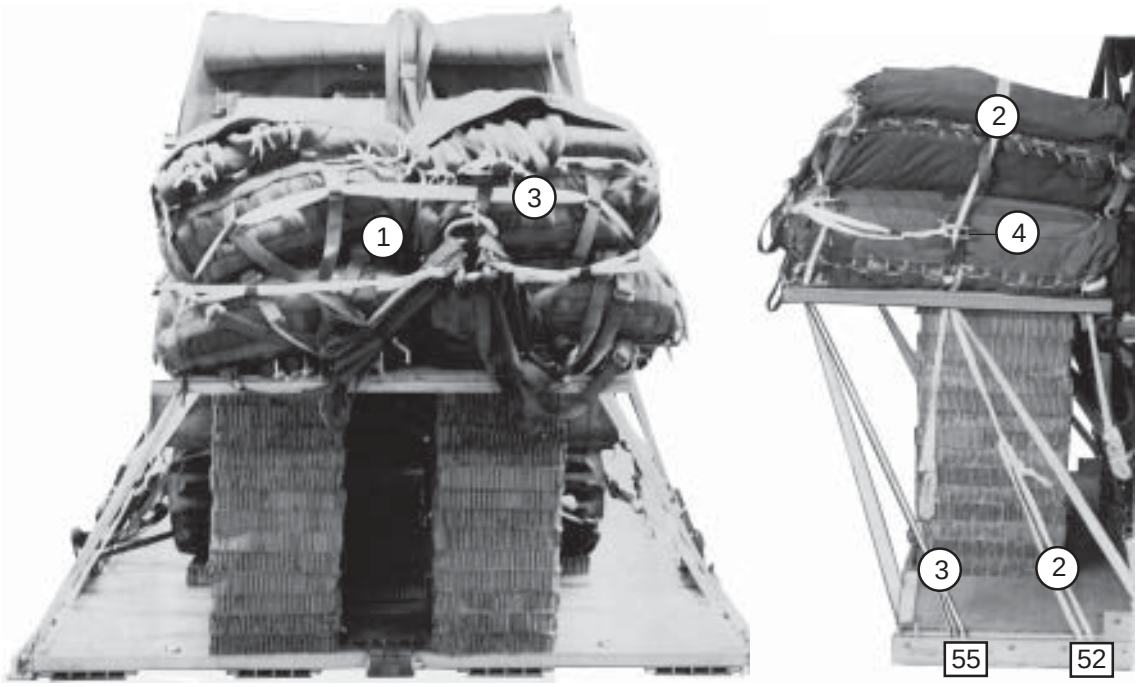
(5) Pass a 15-foot lashing through the center and front holes on each side of the parachute stowage platform and secure the lashings to clevises 24 and 24A.

(6) Position a 48- by 36-inch piece of honeycomb across the lower half of the rear door. Secure the honeycomb to the car using type III nylon cord.

Figure 2-24. Parachute Stowage Platform Installed

STOWING CARGO PARACHUTES

2-14. Prepare, stow and restrain four G-11B cargo parachutes according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 2-25.



(1) Prepare and stow four G-11B cargo parachutes on the parachute stowage platform according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

(2) Install the first parachute restraint strap through the center hole of the parachute stowage platform and to bushings 52 and 52A.

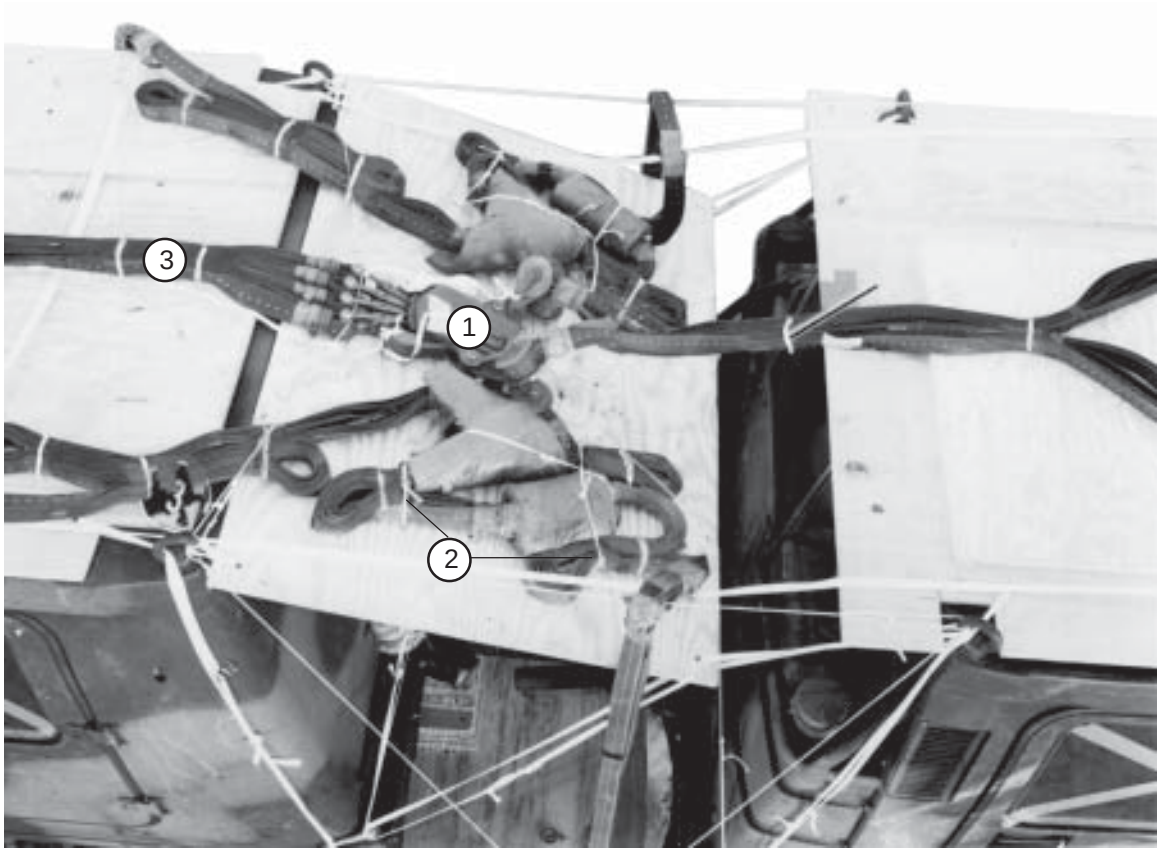
(3) Install the second parachute restraint strap through the rear holes of the parachute stowage platform and to bushings 55 and 55A.

(4) Install two multicut parachute release straps according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

Figure 2-25. Cargo Parachutes Stowed and Restraint Installed

INSTALLING PARACHUTE RELEASE SYSTEM

2-15. Install an M-2 parachute release system according to FM 4-20.102/ NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 2-26.



(1) Prepare an M-2 cargo release assembly according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. Place the M-2 release on the 1/2- by 59- by 42-inch piece of plywood positioned in Figure 2-16. Attach the release to the suspension slings and the cargo parachutes according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

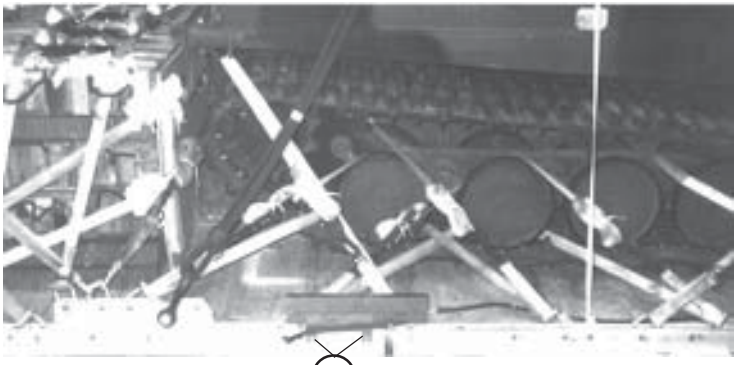
(2) Fold the suspension slings. Secure the folds to the plywood platform with lengths of type I, 1/4-inch cotton webbing. Pass the webbing through the holes in the plywood and over the taped links.

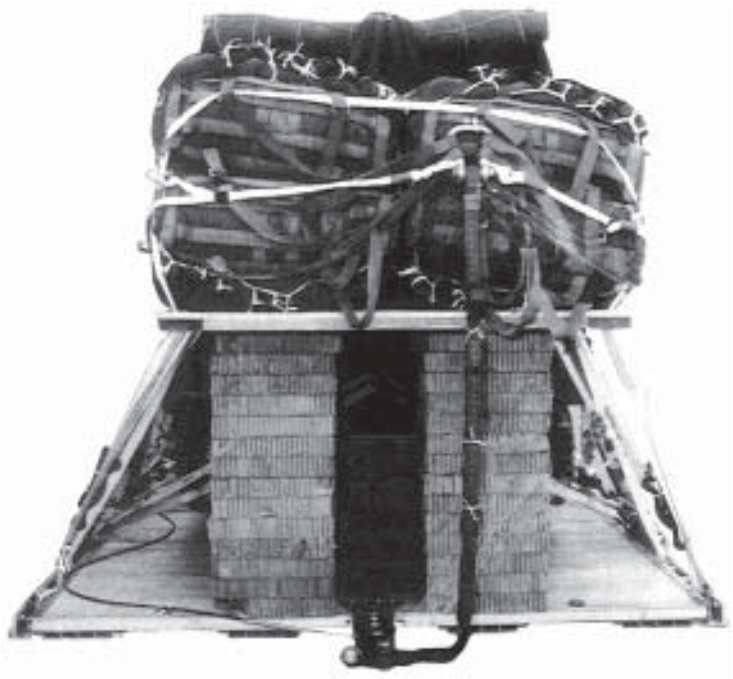
(3) Tie the exposed riser extensions along the rear roof protective board with lengths of type I, 1/4-inch cotton webbing.

Figure 2-26. Parachute Release Installed and Suspension Slings Secured

INSTALLING EXTRACTION SYSTEM

2-16. Install the Extraction Force Transfer Coupling (EFTC) system according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 2-27.





(1) Install the EFTC actuator mounting brackets using the front mounting holes.

(2) Install a 28-foot cable. Safety tie the cable in convenient places with one turn type I, 1/4-inch cotton webbing.

(3) Attach a 9-foot (2 loop), type XXVI nylon sling as the deployment line. Fold and secure the excess line with type I, 1/4-inch cotton webbing.

Figure 2-27. Extraction System Installed

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

2-17. Install the provisions for the emergency restraints on the load according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

PLACING EXTRACTION PARACHUTE

2-18. Select the extraction parachute and extraction line needed using the extraction line requirements table in FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. Rig the extraction line in an extraction line bag according to TM 10-1670-286-20/TO 13C5-2-41. Place the extraction parachute and extraction line on the load for installation in the aircraft. If a drogue parachute and drogue line are required, place them on the platform for installation in the aircraft as well.

MARKING RIGGED LOAD

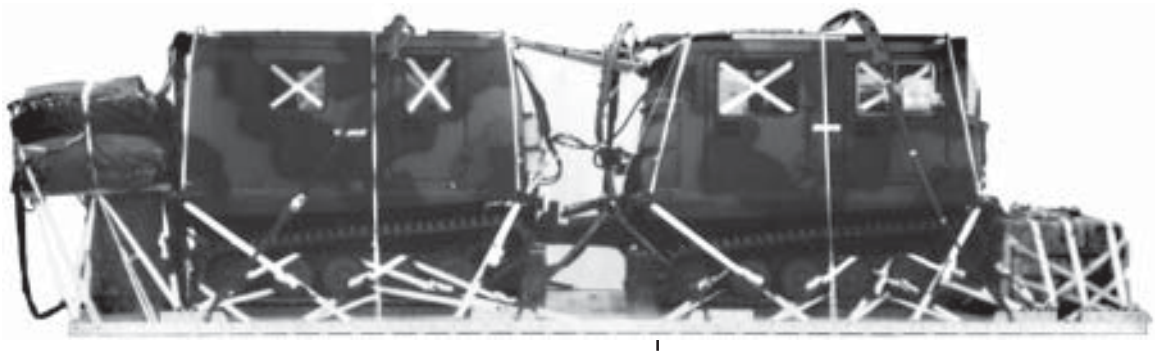
2-19. Mark the rigged load according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 2-28. Complete the Shipper's Declaration for Dangerous Goods. If the load varies from the one shown, the weight, height, center of balance (CB), and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

2-20. Use the equipment listed in Table 2-1 to rig this load.

CAUTION

Make the final rigger inspection required by FM 4-20.102/ NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and AR 59-4/ OPNAVINST 4463.24C/AFJ 13-210(I)/MCO 13480.1B before the load leaves the rigging site.



CB

RIGGED LOAD DATA

Weight ..... 16,800 pounds

Maximum Weight ..... 17,000 pounds

Height ..... 97 inches

Width ..... 108 inches

Overall Length ..... 353 inches

Overhang: Front ..... 0 inches
Rear (EFTC) ..... 18 inches
Rear (EPJS) ..... 30 inches

Center of Balance (CB) (from front edge of platform) ..... 155 inches

Figure 2-28. SUSV Rigged on a Type V Platform for Low-Velocity Airdrop

Table 2-1. Equipment Required for Rigging the SUSV on a Type V Platform for Low-Velocity Airdrop

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive paste, 1-gal	As required
1670-01-035-6054	Bridle, extraction line lead, (line bag for DES)	1
4030-00-090-5354	Clevis, large	15
4030-00-678-8562	Clevis, medium	14
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-326-7309	Coupling, airdrop, EFTC, 28-ft	1
1670-00-360-0328	Cover, clevis, large	4
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
8305-00-958-3685	Felt, 1/2-inch	As required
8305-00-290-5584	Felt, Type I, 3/16 in	As required
1670-00-003-4391	Knife, parachute bag (for DES)	1
1670-01-183-2678	Leaf, extraction line, (line bag) (add 2 for DES)	2
	Line, drogue (for DES)	
1670-01-064-4452	60-ft 1-loop, type XXVI	1
	Line, extraction, type XXVI nylon webbing	
1670-01-062-6313	60-ft (3-loop, C-130)	1
1670-01-107-7651	140-ft (3-loop, C-17)	1
	Link	
1670-01-493-6418	Assembly small, two-point, 3 3/4-in	2
1670-01-493-6420	Assembly large, two-point, 5 1/2-in	2
1670-01-307-0155	Assembly, coupling, 3 point	2
1670-01-483-8259	Tow Release Mechanism (TRM)(H-block) C17 aircraft	1
	Lumber:	
5510-00-220-6146	2- by 4- by 72-in	1
5510-00-220-6148	2- by 6- by 36-in	1
	2- by 6- by 60-in	3
	2- by 6- by 96-in	1

Table 2-1. Equipment Required for Rigging the SUSV on a Type V Platform for Low-Velocity Airdrop (Continued)

National Stock Number	Item	Quantity
	Nail, steel wire, common,	As required
5315-00-010-4657	6d	As required
5315-00-010-4659	8d	
1670-00-753-3928	Pad, energy dissipating, honeycomb, 3- by 36- by 96-in	16 sheets
	Parachute:	
1670-01-016-7481	Cargo: G-11B	4
1670-00-040-8135	Cargo extraction 28-foot	1
1670-01-063-3715	Drogue, 15-ft (for DES)	1
	Platform, airdrop Type V, 28-ft	
1670-01-353-8425	Bracket assembly, component (EFTC)	1
1670-01-353-8424	Bracket, assembly, extraction	1
1670-01-162-2372	Clevis assembly, Type V, tiedown clevis	50
1670-01-247-2389	Link, suspension bracket, Type V	8
1670-01-162-2381	Link, tandem assembly (Multipurpose link)	2
5530-00-128-4981	Plywood, 3/4-in by 48- by 96- inch sheet	5 sheets
5530-00-262-8195	Plywood, 1/2-in by 48- by 96- inch sheet	1 sheet
1670-01-097-8817	Release, cargo parachute, M-2	1
	Sling, cargo airdrop (Line Multi-loop)	
	For lifting	
1670-01-062-6301	3-ft (2-loop), type XXVI nylon webbing	3
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	4
1670-01-062-6303	12-ft (2-loop), type XXVI nylon webbing	4
	For suspension:	
1670-01-062-6306	3-ft (4-loop), type XXVI nylon webbing	4
1670-01-062-6305	9-ft (4-loop), type XXVI nylon webbing	4
1670-01-062-6307	12-ft (4-loop), type XXVI nylon webbing	2
1670-01-064-4453	20-ft (4-loop), type XXVI nylon webbing	2
	For deployment:	
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	1
	For riser extention:	
1670-01-062-6313	60-ft (3-loop), type XXVI nylon webbing	4
5340-00-040-8219	Strap, parachute release, multicut	2
7510-00-266-5016	Tape, adhesive, 2-in, OD	As required
7510-00-266-6710	Tape, masking, 2-in	As required

Table 2-1. Equipment Required for Rigging the SUSV on a Type V Platform for Low-Velocity Airdrop (Continued)

National Stock Number	Item	Quantity
1670-00-937-0271	Tie-down assembly, 15-ft	50
5365-00-937-0147	D-ring, heavy duty, 10,000-lb	50
1670-00-937-0272	Binder, load, 10,000-lb	43
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type I	As required
	Nylon:	
8305-00-082-5752	Tubular, 1/2-in	As required
8305-00-263-3591	Type VIII	As required

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GLOSSARY

ACB	**attitude control bar**
AD	**airdrop**
AFB	**Air Force base**
AFMAN	**Air Force Manual**
AFTO	**Air Force Technical Order**
AGL	**Above Ground Level**
ALC	**Airlift Logistics Center**
AMC	**Air Mobility Command**
attn	**attention**
CB	**center of balance**
chap	**chapter**
EFTC	**extraction force transfer coupling**
d	**penny**
DA	**Department of the Army**
DES	**Drogue Extraction System**
DC	**District of Columbia**
DD	**Department of Defense**
diam	**diameter**
fig	**figure**
FM	**field manual**
ft	**foot/feet**
gal	**gallon**
HQ	**headquarters**
in	**inch**
JAI	**joint airdrop inspector**
lb	**pound**
MAJCOM	**Major Command**
MACS	**Modular Artillery Charged System**
LV	**low-velocity**
MCRP	**Marine Corps Reference Publication**
mm	**millimeter**
NAVSEA	**Navel Sea Command**
NSN	**national stock number**
OVM	**operator's vehicle maintenance**
PFA	**platform fitting assembly**
TM	**technical manual**
TO	**technical order**
TRADOC	**US Army Training and Doctrine Command**
US	**United States**
wt	**weight**
w	**with**
w/o	**without**
yd	**yard**

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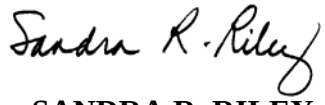
FM 4-20.167(FM 10-567)
TO 13C7-16-171
11 MAY 2005

By Order of the Secretary of the Army and the Air Force:

PETER J. SCHOOMAKER
General, United States Army
Chief of Staff

Official:



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