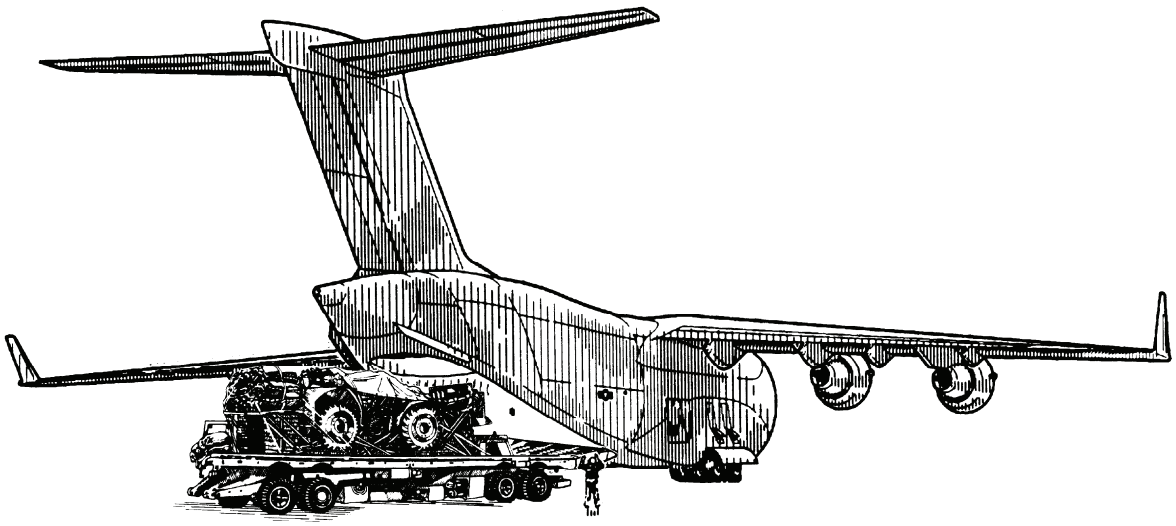
FM 4-20.166 (FM 10-500-66)
TO 13C7-25-71
30 May 2006

Airdrop of Supplies and Equipment: Rigging 2- and 4-Litter Ambulances



Headquarters
Department of the Army
Department of the Air Force

This publication is available at
Army Knowledge Online (www.us.army.mil) and
General Dennis J. Reimer Training and Doctrine
Digital Library at (www.train.army.mil).

Field Manual
No. 4-20.166 (10-500-66)
Technical Order
No. 13C7-25-71

Headquarters
Department of the Army
Department of the Air Force
Washington, DC, 30 May 2006

Airdrop of Supplies and Equipment: Rigging 2- and 4-Litter Ambulances

Contents

***This publication supersedes FM 10-500-66/TO 13C7-25-71, 6 August 1999.**

Preface

SCOPE

This manual tells and shows how to rig the M996 2-litter armored ambulance (HMMWV) and the M997 4-litter ambulance. The M996 ambulance can be low-velocity airdropped from C-17 and C-130 aircraft. The M997 ambulance is restricted to the C-17 aircraft only.

USER INFORMATION

The proponent of this publication is United States Army Training and Doctrine Command (TRADOC). You are encouraged to report any errors or omissions and to suggest ways of making this a better manual. This publication applies to the Active Army, the Army National Guard (ARNG)/Army National Guard of the United States (ARNGUS), and the United States Army Reserve (USAR) unless otherwise stated.

Army personnel, send your comments on DA Form 2028 (*Recommended Changes to Publications and Blank Forms*) directly to:

Director
Aerial Delivery and Field Services Department
USA Quartermaster Center and School
710 Adams Avenue
Fort Lee, Virginia 23801-1502

Air Force personnel, send your reports on AFTO Form 22 (Technical Manual (TM) Change Recommendation and Reply) through your respective command Weapons and Tactics to:

Headquarters
Air Mobility Command (AMC/A39T)
402 Scott Drive, Unit 3AI
Scott AFB, Illinois 62225-5302

Air Force personnel in Special Operations Command, send your reports on AFTO Form 22. HQ AMC/A39T will consolidate and forward changes to:

Director
Aerial Delivery and Field Services Department
USA Quartermaster Center and School
710 Adams Avenue
Fort Lee, Virginia 23801-1502

Also send an information copy of AFTO Form 22 to:

WR-ALC/LEET
295 Byron Street
Robins AFB, Georgia 31098-1611

Introduction

DESCRIPTION OF ITEM

The M996, 2-litter, armored ambulance weighs 7,180 pounds with the fuel tank no more than ¾ full. The vehicle is 203 inches long, 87 inches high, and 86 inches wide. The body configuration makes other uses of this vehicle possible, such as specialized communication or command and control functions.

The M997 4-litter ambulance weighs 7,880 pounds with the fuel tank no more than ¾ full. The vehicle is 204 inches long, 99 inches high and 85 inches wide. The height restricts this load to the C-17 aircraft only.

SPECIAL CONSIDERATIONS

Special considerations for this manual are described below.

- The loads covered in this manual may include hazardous material as defined in AFMAN 24-204(I)/TM 38-250. If included, the hazardous materials must be packaged, marked, and labeled as required by AFMAN 24-204(I)/TM 38-250.
- Be sure that a vehicle rigged using these procedures is the same vehicle shown and described in this manual. Be sure the equipment rigged inside the vehicle is restrained and protected.
- A copy of this manual must be available to the joint airdrop inspectors during the before- and after-loading inspections.

Chapter 1

Rigging the M996 Ambulance on a 20-Foot, Type V Airdrop Platform for Low-Velocity Airdrop

DESCRIPTION OF LOAD

1-1. The M996 ambulance (shown in Figure 1-1) is rigged on a 20-foot, type V airdrop platform for low-velocity airdrop. The load requires two or three G-11 cargo parachutes, depending upon the accompanying load in the vehicle.

PREPARING PLATFORM

1-2. Prepare a 20-foot, type V platform as described below and as shown in Figure 1-2.

- **Inspecting Platform**. Inspect, or assemble and inspect, the platform according to TM 10-1670-268-20&P/TO 13C7-52-22.
- **Installing Tandem Links**. Install tandem links as shown in Figure 1-2.
- **Installing Suspension Links**. Install the suspension links as described in Figure 1-2.
- **Attaching and Numbering Clevises**. Attach and number 28 clevis assemblies as shown in Figure 1-2.

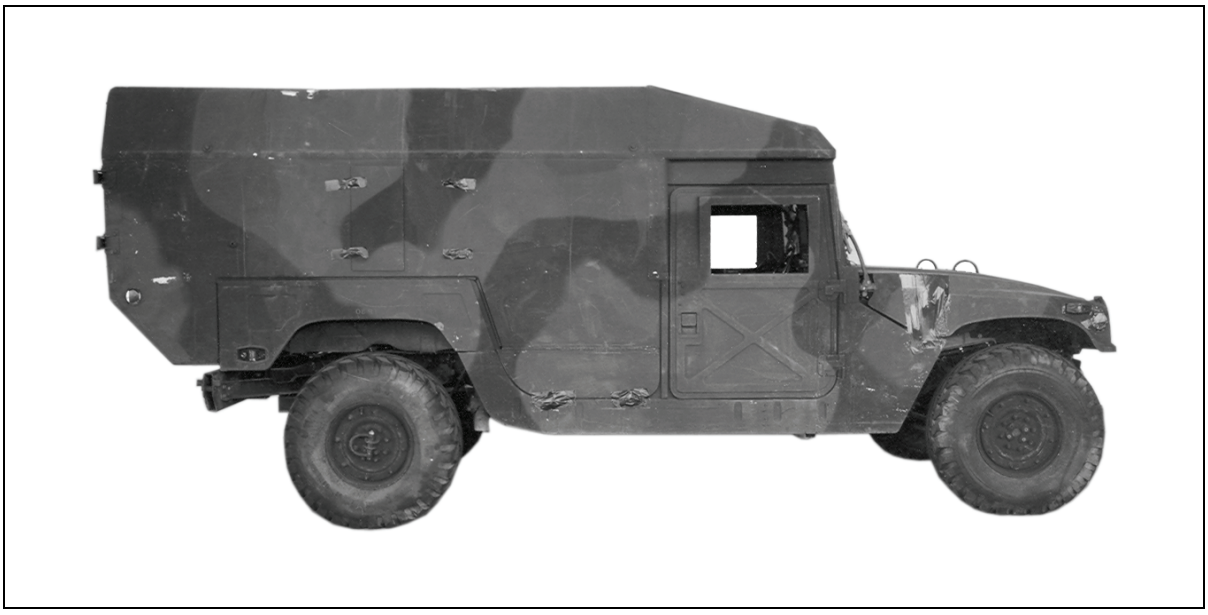
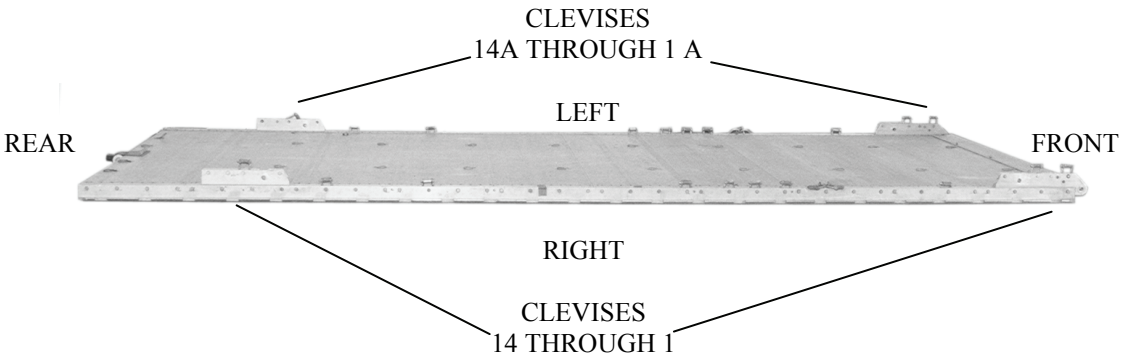


Figure 1-1. M996 2-Litter Armored Ambulance

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.



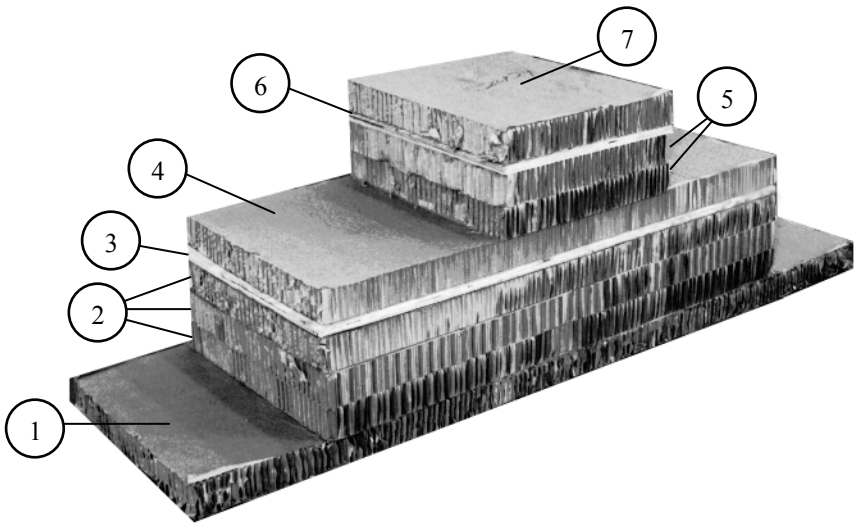
Steps:

1. Install a tandem link on the front of each platform side rail using holes 1, 2, and 3.
2. Install a suspension link to each side rail using holes 33, 34, and 35.
3. Install clevises on bushings 1 and 3 on each tandem link.
4. Install a clevis on bushing 2 on each suspension link.
5. Starting at the front of each platform side rail, install clevises on each platform side rail using the bushings bolted on holes 6, 11 (tripled) 13, 14, 15, 17, 22, 27 (tripled), and 31.
6. Starting at the front of the platform, number the clevises bolted to the right side from 1 through 14 and those bolted to the left side from 1A through 14A.
7. Label the tie-down rings according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

Figure 1-2. Platform Prepared

BUILDING AND POSITIONING HONEYCOMB STACKS

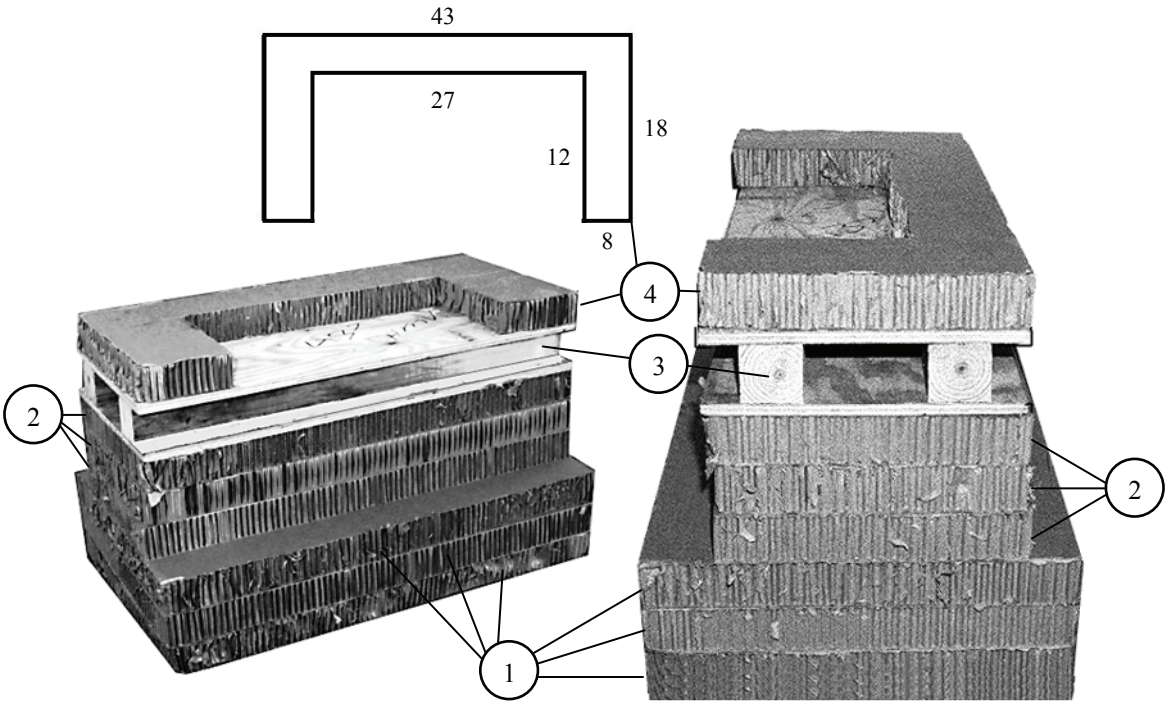
1-3. Build the honeycomb stacks as shown in Figures 1-3 and 1-4. Position the honeycomb stacks as shown in Figure 1-5.



1. Use an 80- by 24-inch piece of honeycomb to form a base.
2. Center and glue three 54- by 24-inch pieces of honeycomb on the base.
3. Glue a 3/4- by 54- by 24-inch piece of plywood over the honeycomb placed in step 2 above.
4. Glue one 54- by 24-inch piece of honeycomb on top of the plywood placed in step 3 above.
5. Center and glue two 20- by 24-inch pieces of honeycomb on top of the honeycomb placed in step 4 above.
6. Glue a 3/4- by 20- by 24-inch piece of plywood over the honeycomb placed in step 5 above.
7. Glue one 20- by 24-inch piece of honeycomb on top of the plywood placed in step 6 above.
8. Repeat to make a second stack.

Figure 1-3. Stacks 1 and 3 Prepared

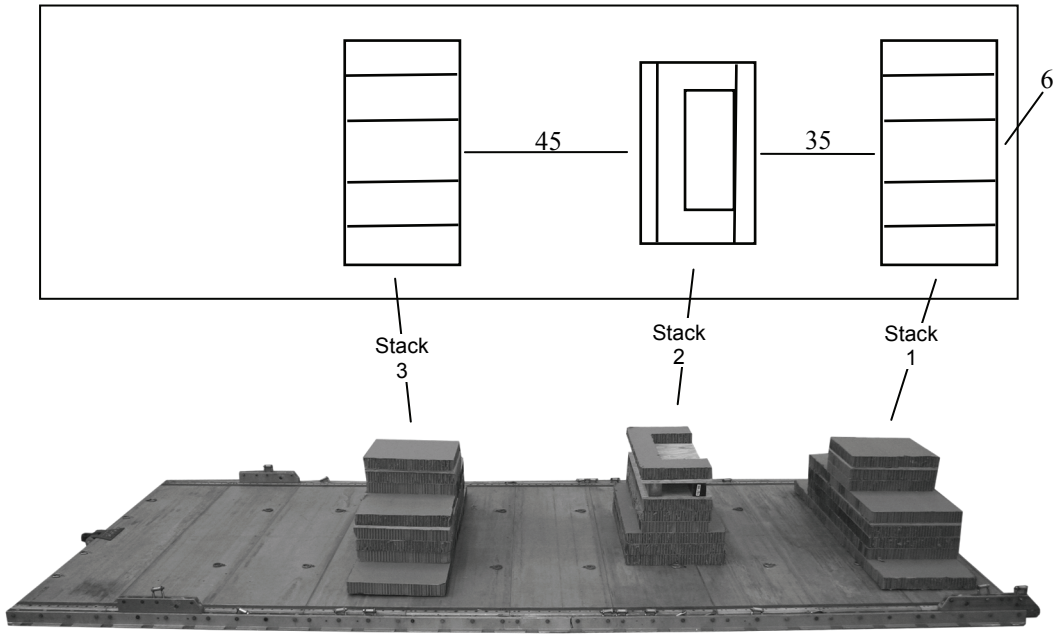
Notes. 1. This drawing is not drawn to scale.
2. All dimensions are given in inches.



1. Glue three 43- by 26-inch pieces of honeycomb flush together to form a base.
2. Center and glue three 43- by 18-inch pieces of honeycomb flush on the base.
3. Nail a 43-inch piece of 4- by 4-inch lumber parallel to each long side and 1 1/2 inches from each long edge of a 3/4- by 43- by 18-inch piece of plywood. Nail a second 3/4- by 43- by 18-inch piece of plywood to the lumber and flush with the bottom piece of plywood. Glue the wooden section of the stack flush on the honeycomb placed in step 2 above.
4. Make the cutout as shown in a 43- by 18-inch piece of honeycomb. Glue the honeycomb flush over the plywood.

Figure 1-4. Stack 2 Prepared

Notes. 1. All measurements are given in inches.
2. This drawing is not drawn to scale.



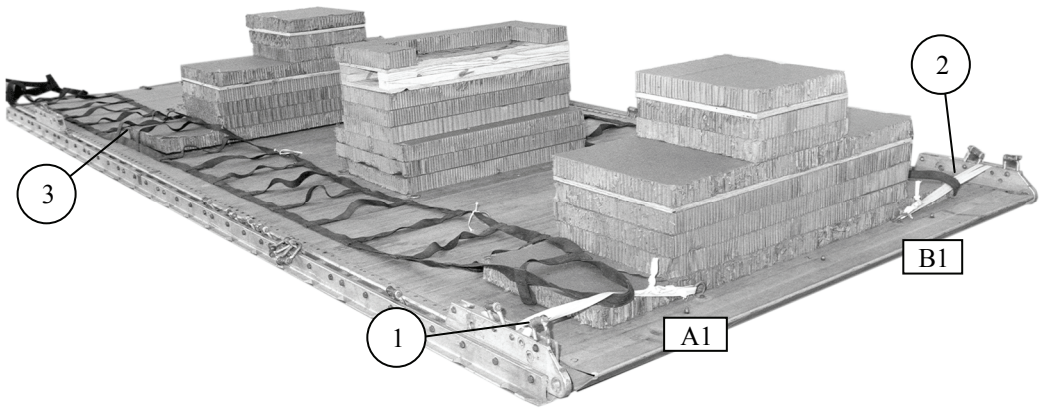
Stack Number	*Position of Stack on Platform*
1	Position stack 1 centered and 6 inches from the front edge of the platform.
2	Position stack 2 centered and 35 inches from stack 1.
3	Position stack 3 centered and 45 inches from stack 2.

Figure 1-5. Honeycomb Stacks Placed on Platform

INSTALLING OPTIONAL DRIVE-OFF AIDS ON PLATFORM

1-4. Install the drive-off aids on the platform as shown in Figure 1-6.

Note. The use of the drive-off aids are optional.



1. Pass a 45-inch length of 1-inch tubular nylon webbing through tie-down ring A1, through the end loop of the drive-off aid, and around the second bushing of the right tandem link. Knot the webbing according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.
2. Repeat step 1 for the left side, using tie-down ring B1 and the second bushing of the left tandem link.
3. Extend the drive-off aids to the rear, over stacks 1 and 3. Secure the drive-off aids to clevises and bushing with type I, ¼-inch cotton webbing.

Figure 1-6. Drive-Off Aids Installed on Platform

PREPARING AMBULANCE

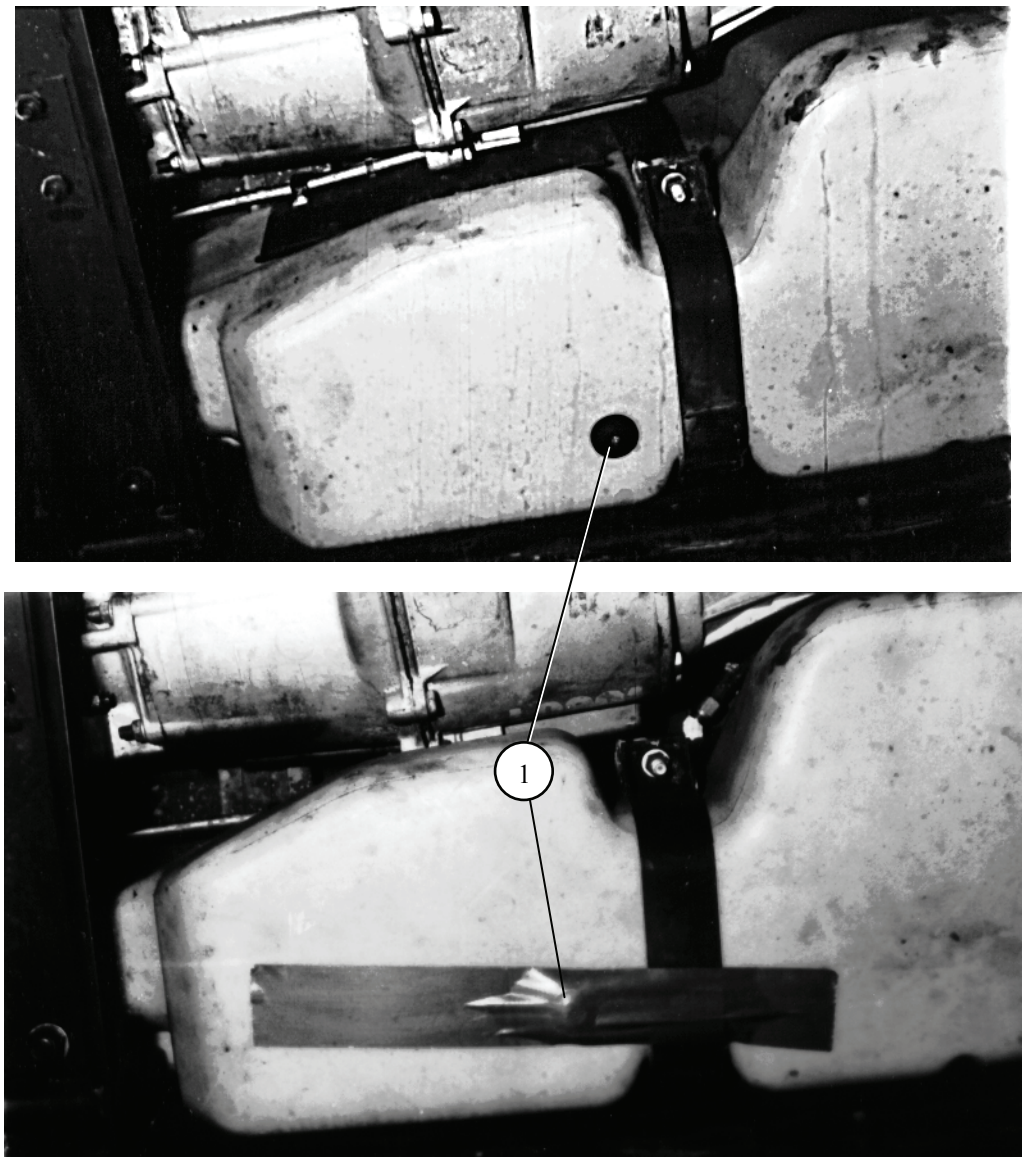
1-5. Prepare the truck as described below.

- Make sure the fuel tank is no more than 3/4 full. Prepare the fuel tank filler cap and fuel filler opening as shown in Figure 1-7. Prepare the fuel tank drain plug as shown in Figure 1-8.
- Make sure the batteries and battery compartment comply with AFMAN 24-204(I)/TM 38-250.
- Stow the ambulance on-vehicular equipment (OVE) in the compartment behind the driver's door. Fill the empty space with honeycomb and close the compartment door. Tape the latches (not shown).
- Prepare the cab of the ambulance as shown in Figure 1-9.

1 Tie the fuel filler cap to the body of the truck with type III nylon cord.

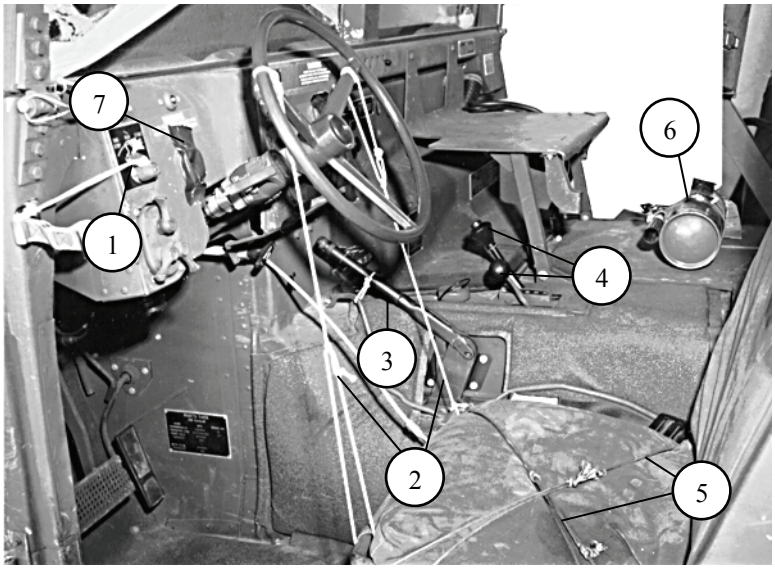
2 Tape the fuel filler opening.

Figure 1-7. Fuel Tank Filler Cap and Opening Prepared



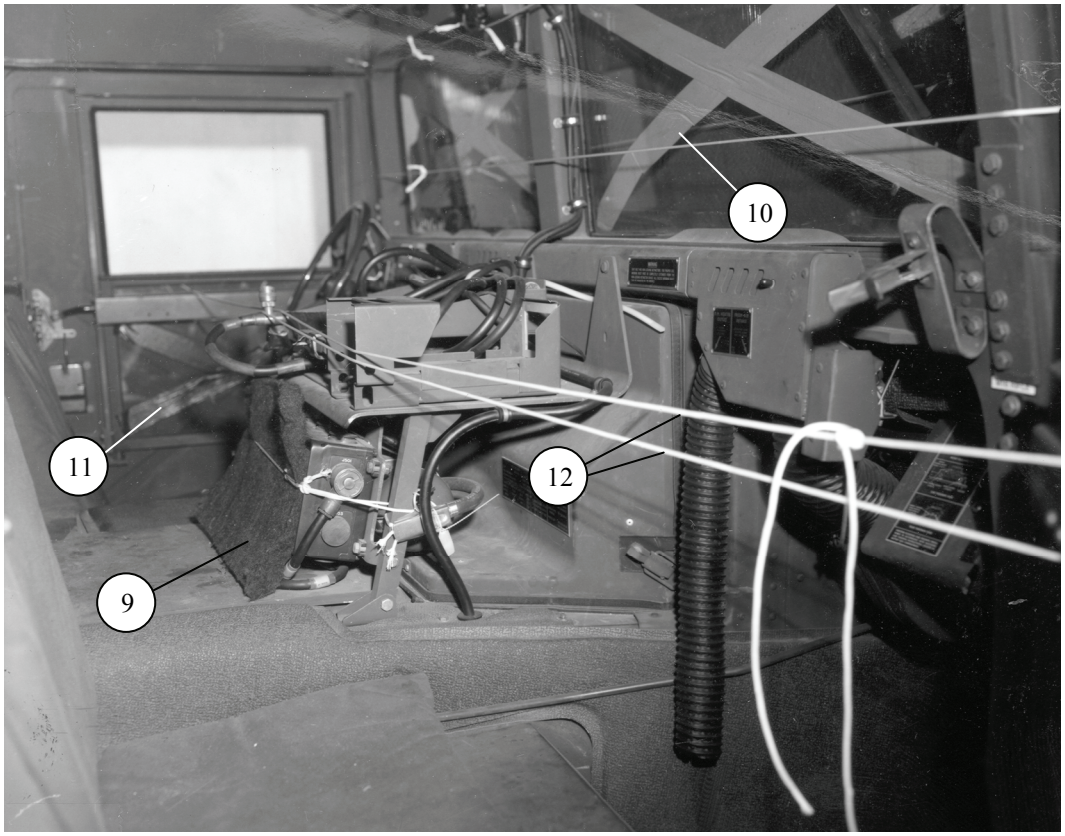
1 Place a 12-inch length of cloth-backed tape over the fuel tank drain plug.

Figure 1-8. Fuel Tank Drain Plug Prepared



1. Tie the engine start switch in the engine stop position with type I, 1/4-inch cotton webbing.
2. Tie the steering wheel to the seat frame in two places with type III nylon cord, or use the retractable steering wheel locking cable. If the locking cable is used, secure it to the steering wheel with type III nylon cord, not a padlock.
3. Tie the emergency brake handle in the off position with type III nylon cord.
4. Place the transmission and four-wheel drive levers in the neutral position.
5. Tie the seat cushions to the seat frames with type III nylon cord.
6. Tie the fire extinguisher in place with two lengths of type III nylon cord.
7. Tape all instrument panel gauges.
8. If equipped with an antenna, remove the antenna and tape over the hole with a length of 2-inch cloth-backed tape. Wrap the mount with cellulose wadding and tape. Secure the antenna mount in the equipment storage box (not shown).

Figure 1-9. Cab Prepared



(9) Pad the face of the radio with felt. Tie the felt to the radio mount supports with type III nylon cord.

Note. Pad the control of any other radio equipment in the same way. Tie larger radios to their mounts with ½-inch tubular nylon webbing.

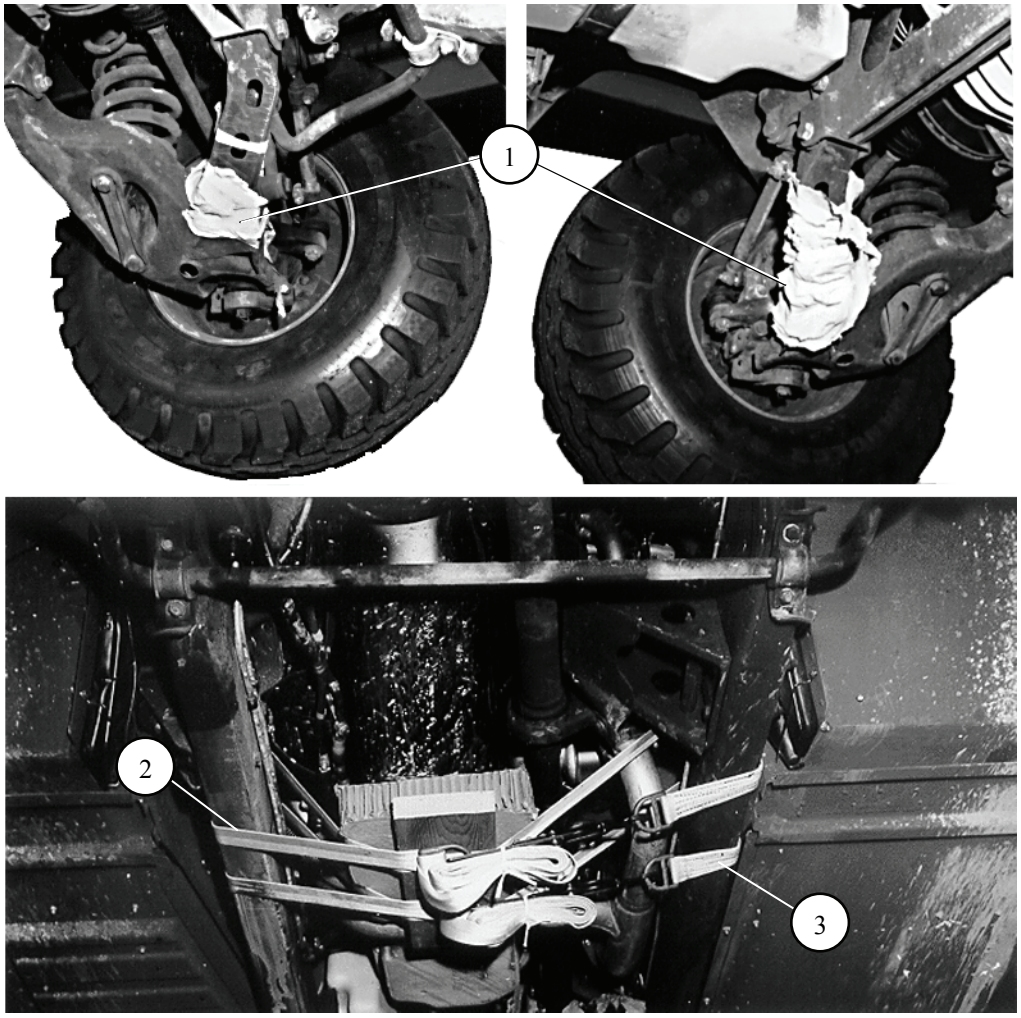
(10) Tape the windshield glass on both sides in an X using 2-inch masking tape.

(11) Tape the side windows on both sides in an X using 2-inch masking tape and lower them.

(12) Secure both doors of the cab with a length of type III nylon cord from door-to-door.

Figure 1-9. Cab Prepared (Continued)

- Prepare the underside of the truck as shown in Figure 1-10.



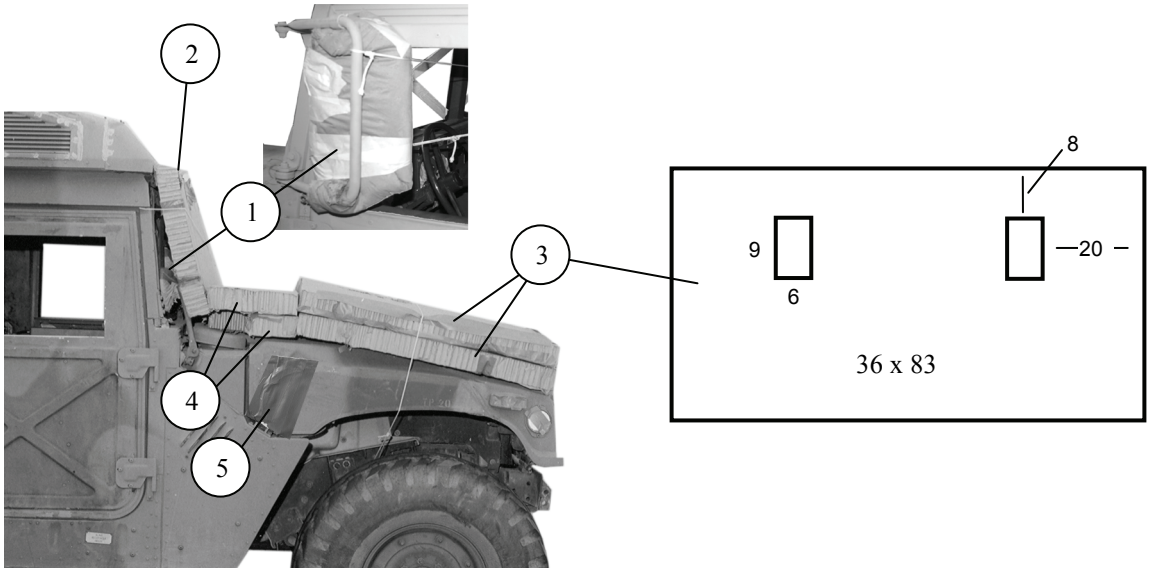
1. Pad the lower control arms on the front and rear of the truck with cellulose wadding taped in place.

2. Pass a 15-foot lashing over the right frame rail, under the oil pan, and over the left frame rail. Make sure the lashing goes over the exhaust pipe and then under it. Make sure the wires running along the frame rail are to the outside of the lashing. Place a 12- by 12-inch piece of honeycomb and a 2- by 6- by 16-inch piece of lumber between the lashing and the oil pan. Fasten the lashing with a D-ring and a load binder.

3. Secure a second lashing just to the rear of the lashing installed in step 2. Route the lashing in the same way.

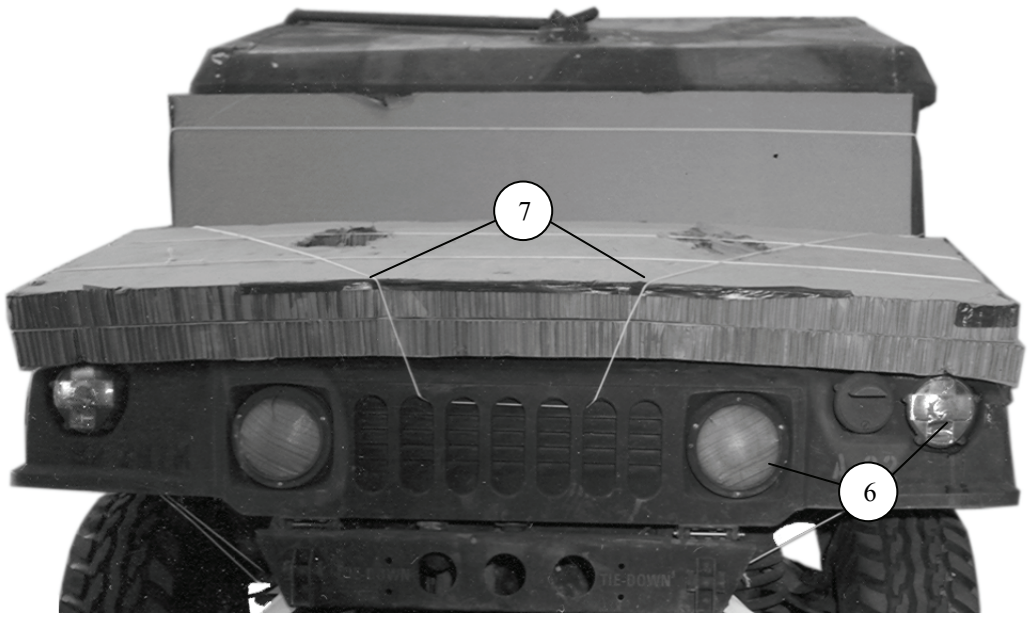
Figure 1-10. Underside of Ambulance Prepared

- Prepare the front of the ambulance as shown in Figure 1-11.



1. Pad the mirrors with cellulose wadding. If the mirrors are on single posts, fold them inward over the windshield and secure together with type III nylon cord. If the mirrors are supported on brackets at the top and bottom, fold them inward against the doors; tie them together inside the cab.
2. Secure a 21- by 83-inch piece of honeycomb over the windshield with type III nylon cord.
3. Make cutouts in two 36- by 83-inch pieces of honeycomb as shown and place the honeycomb on the hood. Secure the honeycomb in place with a length of type III nylon cord tied to the upper control arms.
4. Place two 12 by 83-inch pieces of honeycomb between the windshield and the pieces of honeycomb placed in step 3 above. Make a cutout 10 inches wide and 5 inches long in the bottom piece to clear the air breather cap.
5. Tape the hood latches with 2-inch cloth-backed tape.

Figure 1-11. Honeycomb Placed on Front of Ambulance and Mirrors Folded



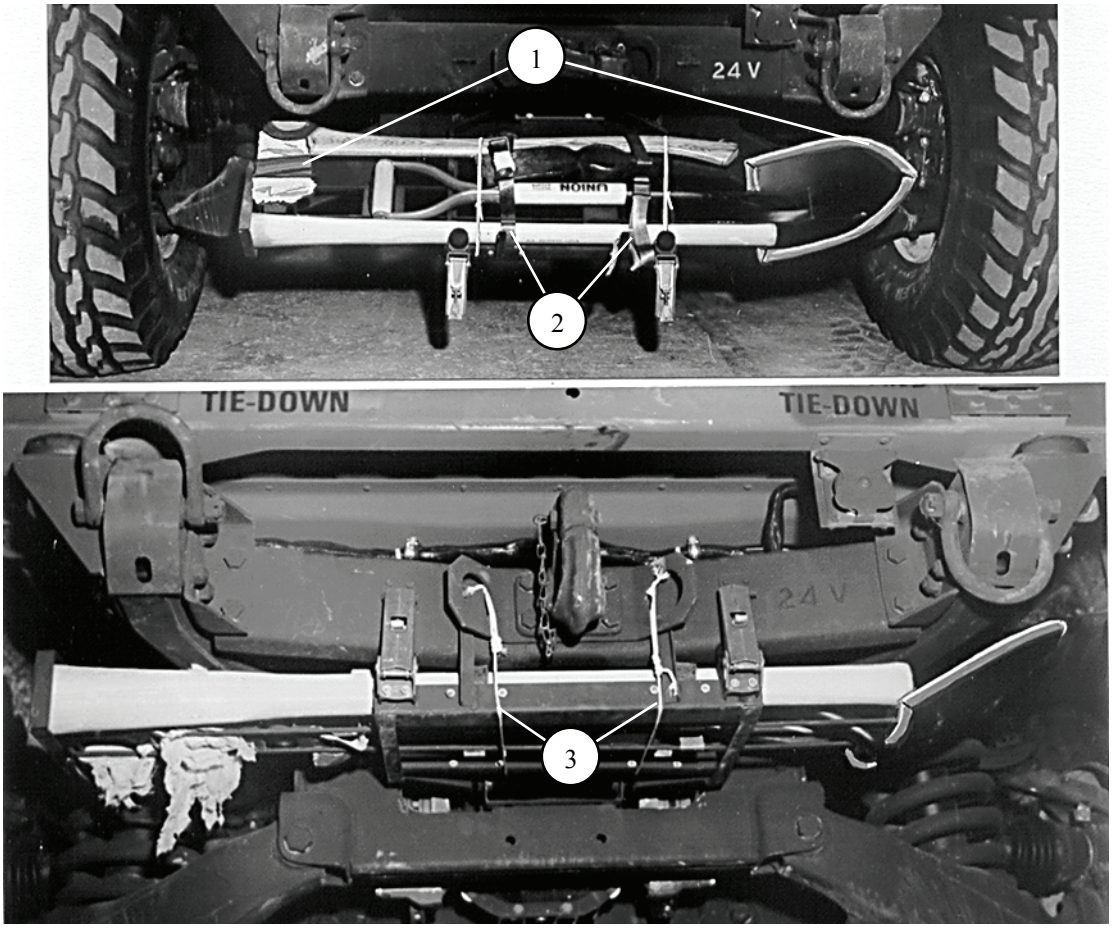
6 Run a length of type III nylon cord through the grille as shown. Run each free end over the honeycomb placed in steps 3 and 4 above. Tie the ends to the mirror supports or the upper door hinges.

7 Tape all lights and reflectors with masking tape.

Note. Burlap or sandbag material may be placed over the headlights and held in place by the headlight securing rings.

Figure 1-11. Honeycomb Placed on Front of Ambulance and Mirrors Folded (Continued)

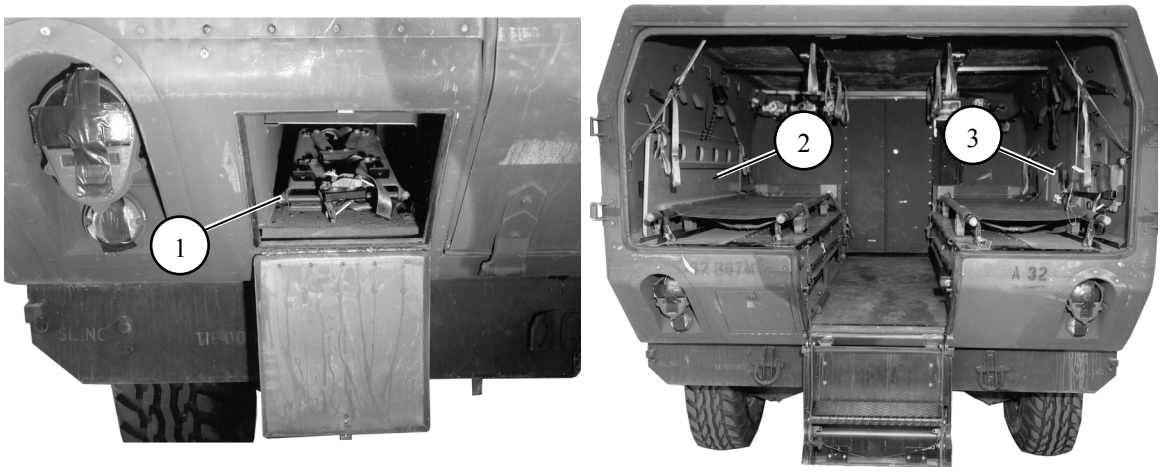
- Prepare and secure the pioneer tool kit according to TM 9-2320-280-10/TO 36A12-1A-2091-1/TM 2320-10/6, and as shown in Figure 1-12.



1. Tape all sharp edges of the pioneer tools. Pad the ax head with cellulose wadding.
2. Place the tools in the rack, and secure them with the straps provided, and with type III nylon cord.
3. Close and latch the tool rack. Tie the rack in place with type III nylon cord.

Figure 1-12. Pioneer Tool Kit Secured

- Prepare the ambulance body as shown in Figures 1-13 and 1-14.



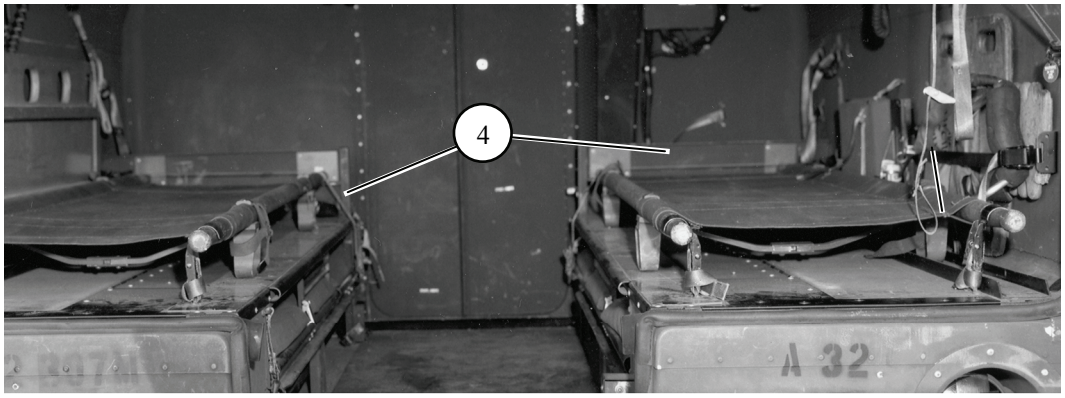
WARNING

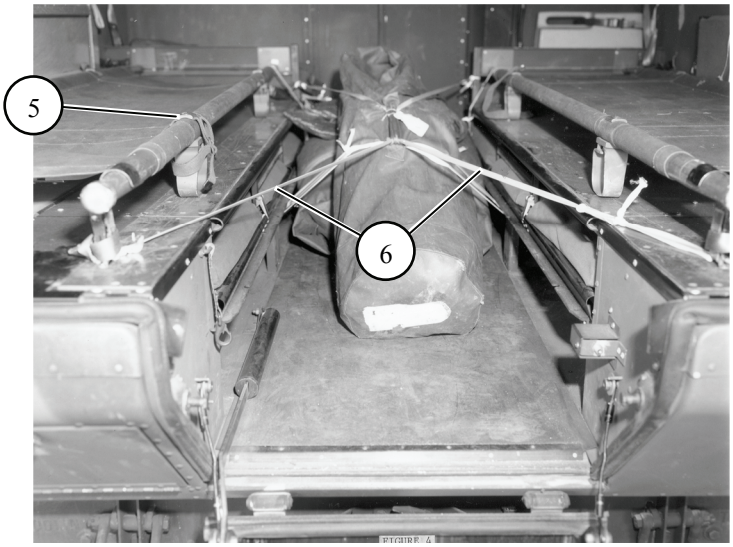
Lowering the steps at the rear of the ambulance from inside may cause serious injury. Lower the steps from outside the ambulance. Use one hand to activate the release, and control the descent of the steps assembly with the other hand.

1. Secure the splints in their storage compartment. Use the securing straps provided.
2. Secure the long backboard against the left wall with the straps provided.
3. Secure the short backboard and traction splint against the right wall with the straps provided.

Note. Reinforce the straps with type III nylon cord.

Figure 1-13. Medical Equipment Secured





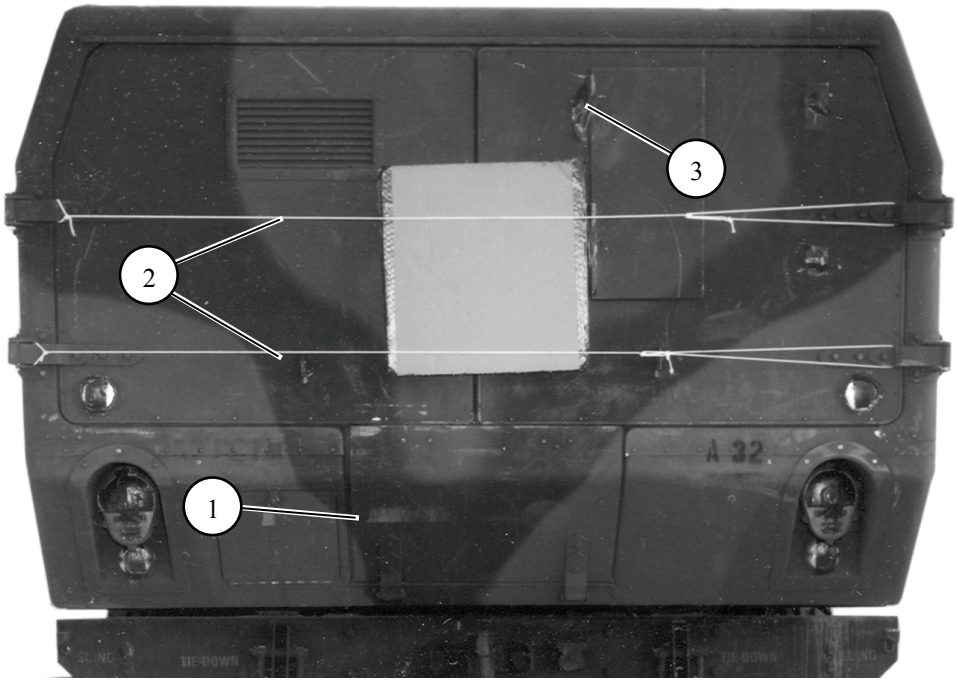
(4) Secure the blanket set in the left front compartment and the resuscitator kit box in the right front compartment. Use the straps provided.

(5) Secure the two litters with the straps provided.

(6) Place the camouflage net and pole bags in the center of the floor. Secure them to the litter tie-down brackets and to the shelf supports with ½-inch tubular nylon webbing.

Note. Medical equipment may be different, depending upon the needs of the medical unit. Tie additional equipment, such as water cans, securely to stationary points in the ambulance with ½-inch tubular nylon webbing.

Figure 1-13. Medical Equipment Secured (Continued)

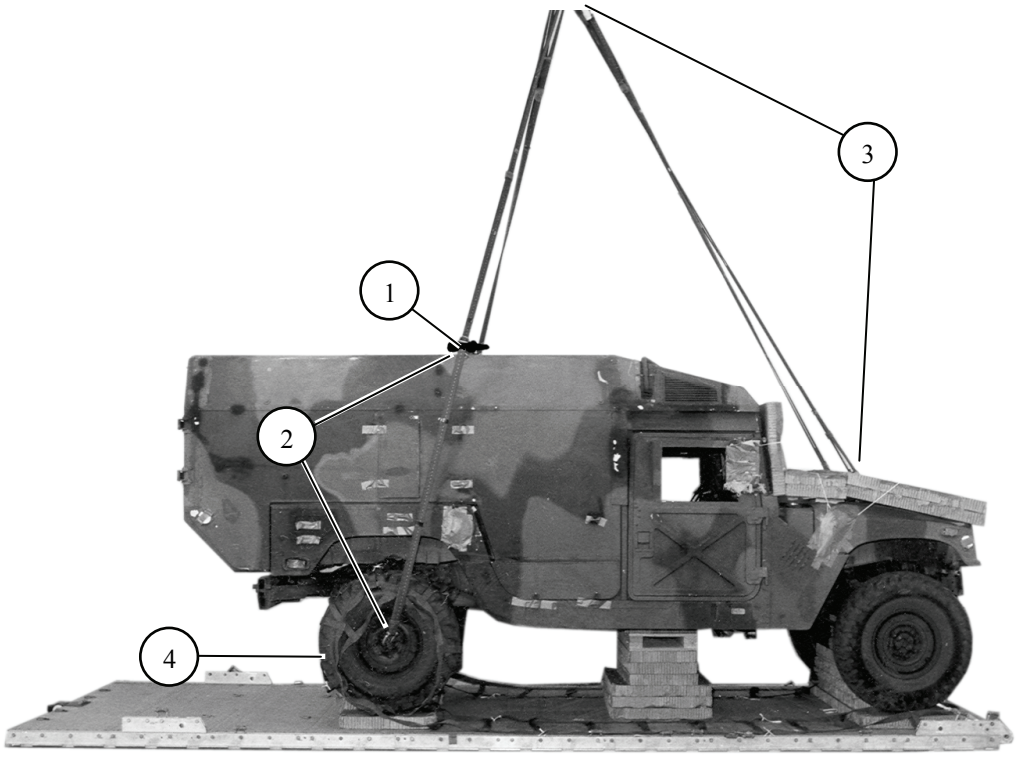


1. Close and latch the doors.
2. Make an indentation in the center of an 18- by 18-inch piece of honeycomb to fit the door handle. Tape the edges with 2-inch cloth-backed tape and secure the honeycomb to the door handle with two lengths of type III nylon cord.
3. Tape the medical identification panel latches on the rear and side of the ambulance.

Figure 1-14. Doors Secured and Latches Covered

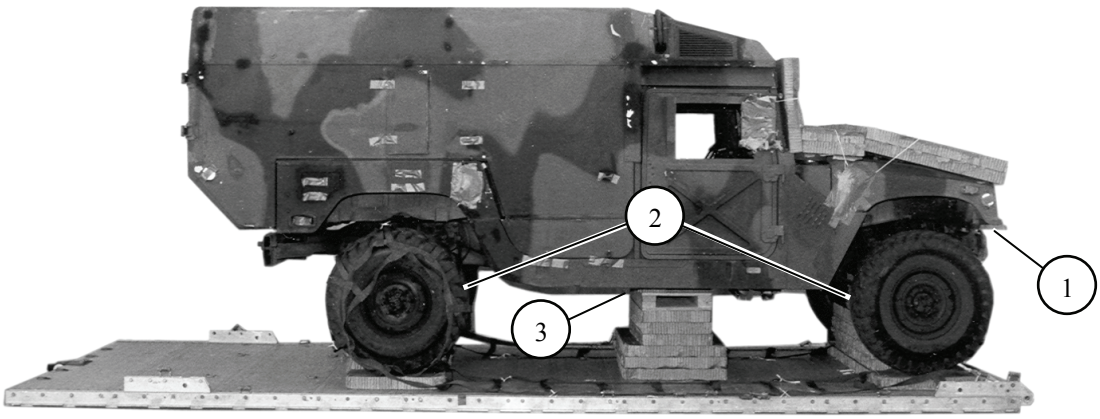
LIFTING AND POSITIONING AMBULANCE

1-6. Install slings for lifting the ambulance and an attitude control bar (ACB) for the rear lifting slings as shown in Figure 1-15. Position the ambulance on the honeycomb stacks as shown in Figure 1-16.



1. Tie a piece of plywood or felt to the ACB to prevent damage to the roof. Center the ACB across the roof.
2. Attach a 16-foot (2-loop), type XXVI nylon webbing sling to each rear wheel shackle. Pass the sling up through the square holes of the ACB.
3. Attach a 12-foot (2-loop), type XXVI nylon webbing sling to each airlift bracket with a large suspension clevis. Pass a 3-foot (2-loop), type XXVI nylon webbing sling through the end loops of both front lifting slings. Place both loops of the 3-foot sling in the crane.
4. Lift the ambulance and suspend it slightly above the honeycomb stack. Place a drive-off aid under the right rear wheel. Holding the drive-off aid against the wheel, turn the wheel clockwise until the drive-off aid is under slight tension. Repeat for the other side, but turn the wheel counterclockwise. Tie the end loop of each drive-off aid to the nearest cross piece with a double length of type I, ¼-inch cotton webbing.

Figure 1-15. Lifting Slings Installed, Ambulance Lifted, and Drive-off Aids Installed

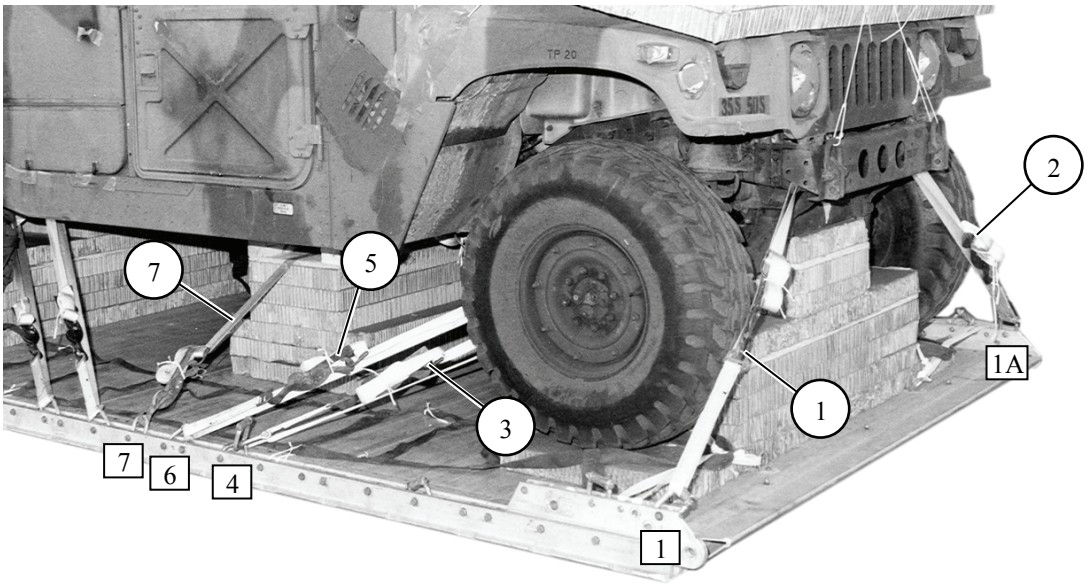


1. Center the ambulance on the platform with the front of the ambulance 2 inches from the front edge of the platform.
2. Make sure that the suspension cross members rest squarely on stacks 1 and 3.
3. Make sure that the frame rails rest squarely on stack 2.
4. Remove the lifting slings and ACB (not shown).

Figure 1-16. Ambulance Positioned

LASHING AMBULANCE

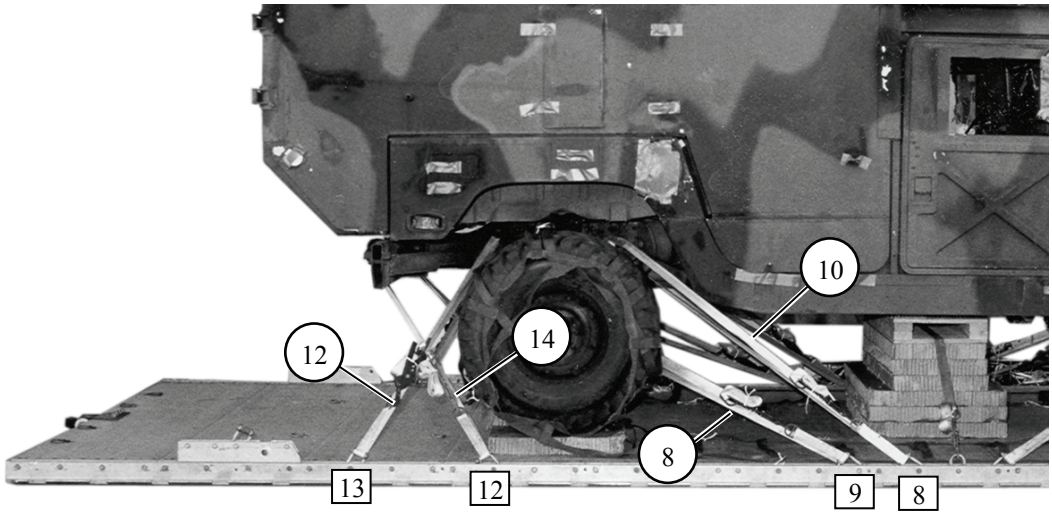
1-7. Lash the ambulance to the platform as shown in Figures 1-17 and 1-18.



Lashing Number	*Tiedown Clevis Number*	*Instructions*
		Pass lashing:
1	1	Through tie-down bracket on end of right frame rail.
2	1A	Through tie-down bracket on end of left frame rail.
3	4	Around right front lower control arm.
4	4A	Around left front lower control arm.
5	6	Through tie-down bracket behind right front coil spring.
6	6A	Through tie-down bracket behind left front coil spring.
7	7 and 7A	Pass a 15-foot lashing through clevis 7A and through its own D-ring. Pass the lashing through the hole in stack 2. Attach the lashing to clevis 7 with a load binder.

Figure 1-17. Lashings 1 through 7 Installed

Note. Although the lashing order deviates from normal numerical order, it allows for easier installation of the lashings.



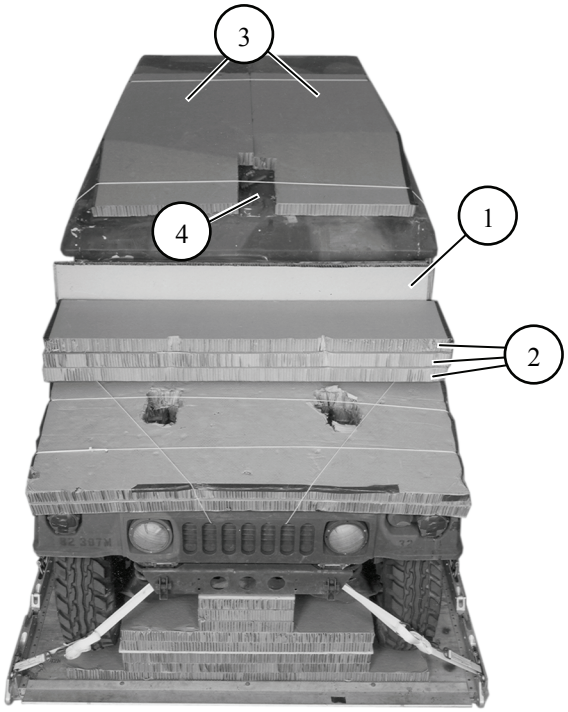
Lashing Number	*Tiedown Clevis Number*	*Instructions*
		Pass lashing:
8	9	Around right rear lower control arm.
9	9A	Around left rear lower control arm.
10	8	Through tie-down bracket in front of right rear coil spring.
11	8A	Through tie-down bracket in front of left rear coil spring.
12	13	Through tie-down bracket behind right rear coil spring.
13	13A	Through tie-down bracket behind left rear coil spring.
14	12	Through tie-down shackle on right side of bumper.
15	12A	Through tie-down shackle on left side of bumper.

Figure 1-18. Lashings 8 through 15 Installed

INSTALLING SUSPENSION SYSTEM

1-8. Install the suspension system as given below:

- Install the roof covers and ACB supports as shown in Figure 1-19.

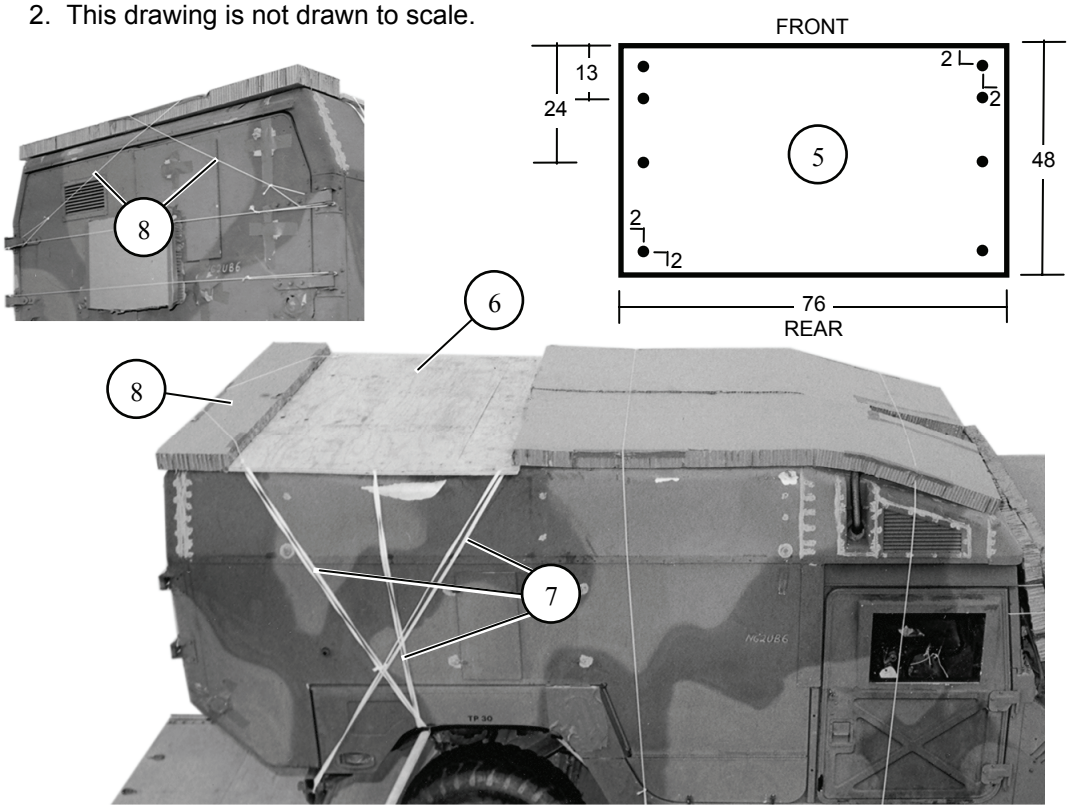


1. Place a 16- by 82-inch piece of honeycomb over the piece of honeycomb covering the windshield. Tie the honeycomb in place with type III nylon cord.
2. Stack three 18- by 82-inch pieces of honeycomb against the piece of honeycomb placed in step 1 above.
3. Cover the front of the roof with two 36- by 96-inch pieces of honeycomb, with the front edge of the honeycomb 6 inches from the front edge of the roof.
4. Make a 10- by 20-inch cutout in the honeycomb as shown to allow for fixtures on the roof. Tie the honeycomb to convenient points on the load with type III nylon cord.

Note. Tape the edges of the honeycomb where the type III nylon cord passes over it.

Figure 1-19. Roof Cover and ACB Supports Installed

Notes. 1. All measurements are given in inches.
2. This drawing is not drawn to scale.



5 Drill eight ½-inch holes in a ¾- by 48- by 76-inch piece of plywood as shown.

6 Cover the rear of the ambulance roof with the plywood so the front edge of the plywood extends under the honeycomb and the rear edge is 12 inches from the rear edge of the roof.

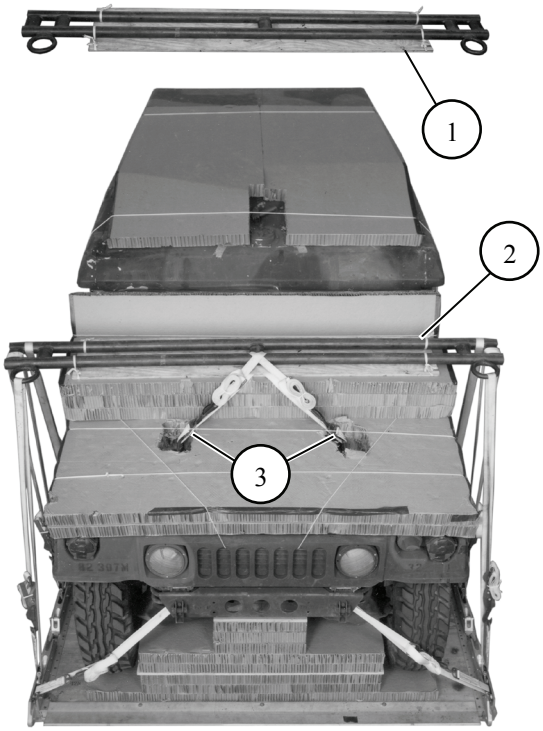
7 Secure the plywood to the roof with ½-inch tubular nylon webbing as follows: from the front holes in the plywood to the rear bumpers, from the rear holes to the tie-down brackets in front of the rear coils springs, and from the center holes to the tie-down brackets behind the rear coil springs.

8 Place a 76- by 12-inch piece of honeycomb across the roof against the rear edge of the plywood. Tape the edges and secure the honeycomb to the rear door hinges and to the rear holes in the plywood with type III nylon cord.

Figure 1-19. Roof Cover and ACB Supports Installed (Continued)

- Install the ACB to the front of the ambulance as shown in Figure 1-20.

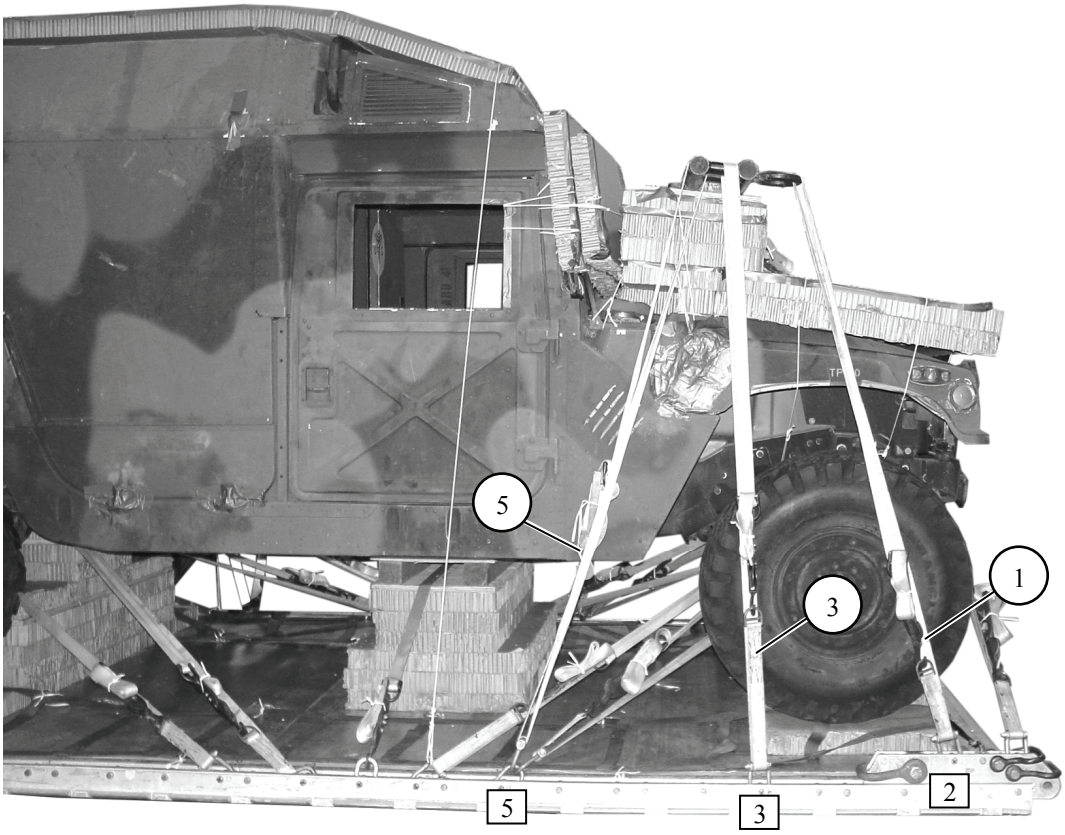
Note. Do NOT use the suspension sling spreader bar on the front of the ambulance. Use only the ACB.



1. Drill a ½-inch hole 1 inch from each corner of a ¾- by 15- by 76-inch piece of plywood. Tie an ACB to the plywood with ½-inch tubular nylon webbing.
2. Center the ACB and plywood on the honeycomb stack on the front of the ambulance with the rings facing the front.
3. Run a 15-foot lashing from each airlift bracket around the center bar of the ACB.

Figure 1-20. ACB Installed on Front of Ambulance

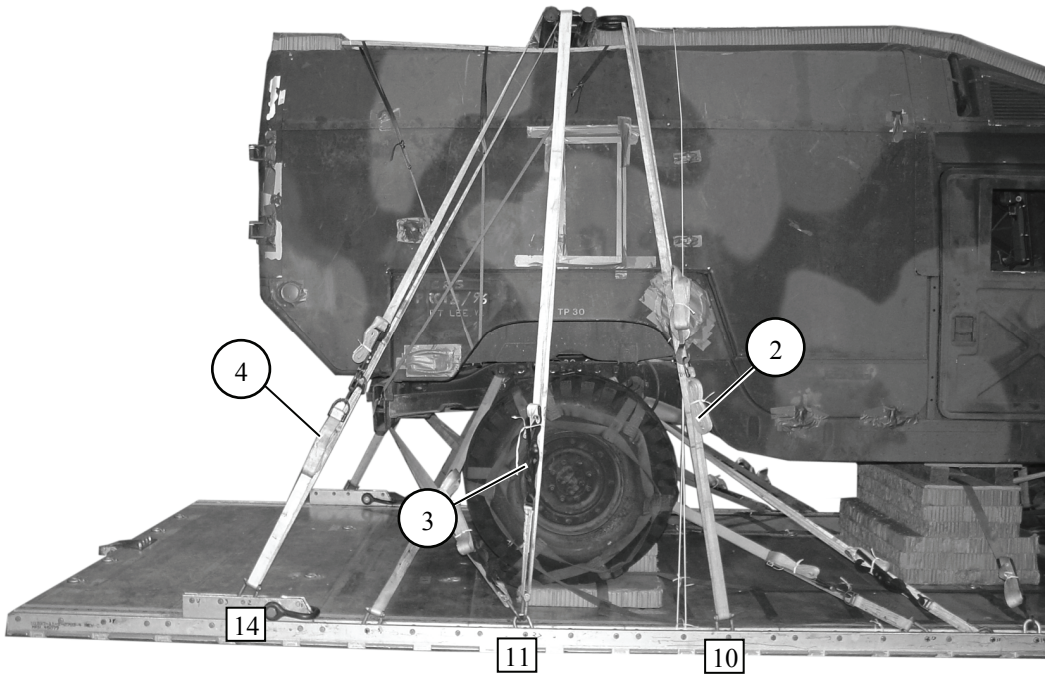
- Lash the front ACB to the platform as shown in Figure 1-21.



Lashing Number	*Tiedown Clevis Number*	*Instructions*
		Pass lashing:
1	2	Through ring of ACB.
2	2A	Through ring of ACB.
3	3	Through square hole of ACB.
4	3A	Through square hole of ACB.
5	5	Around rear bar of ACB.
6	5A	Around rear bar of ACB.

Figure 1-21. Front ACB Lashed to Platform

- Install and lash the rear ACB to the platform as shown in Figure 1-22.



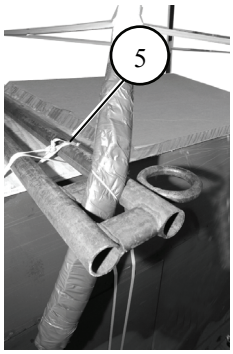
Step:

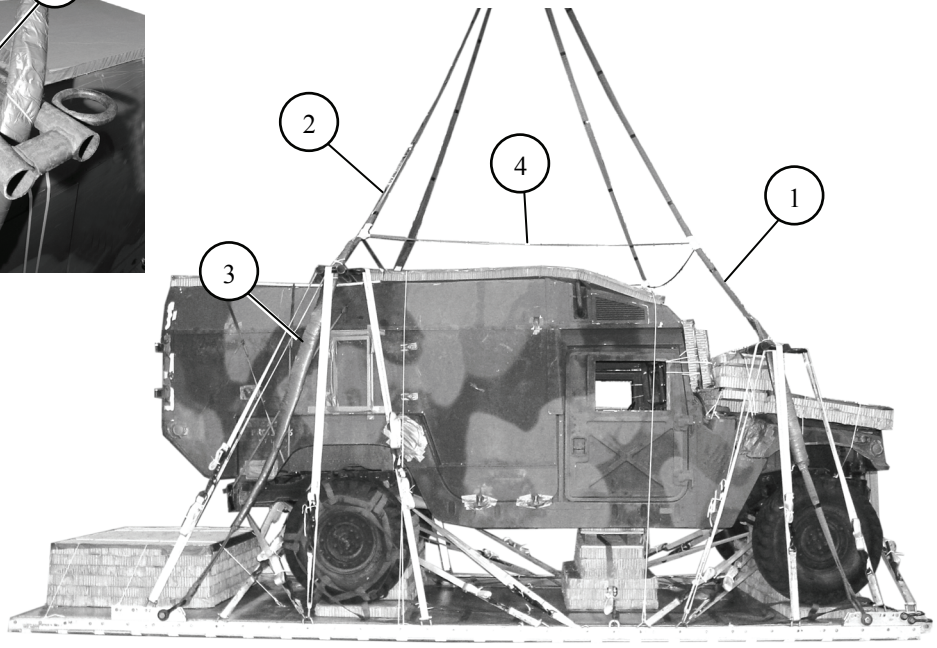
1. Center the ACB on the plywood with the rings facing front. Tie the ACB to the plywood through the second and third holes with ½-inch tubular nylon webbing (not shown).

Lashing Number	*Tiedown Clevis Number*	*Instructions*
		Pass lashing:
1	10	Through ring of ACB.
2	10A	Through ring of ACB.
3	11	Through square hole of ACB.
4	11A	Through square hole of ACB.
5	14	Around rear bar of ACB.
6	14A	Around rear bar of ACB.
Note. Be sure that the lashings are not so tight that they cause the roof to buckle.		

Figure 1-22. Rear ACB Lashed to Platform

- Install the suspension slings and the deadman's tie as shown in Figure 1-23.



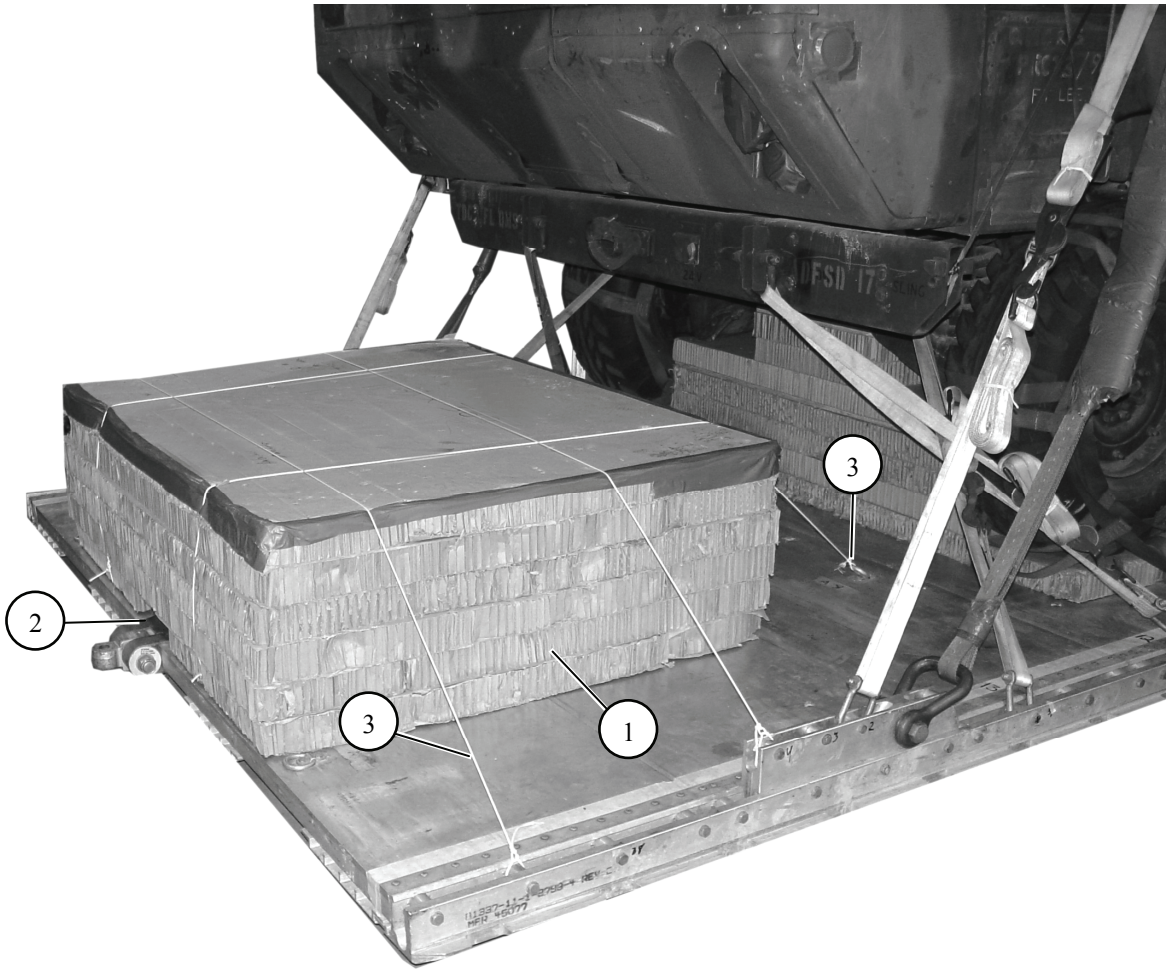


1. Attach a 20-foot (2-loop), type XXVI nylon sling with a large clevis to the tandem link. Route the free running end through the square hole of the ACB. Repeat for opposite side.
2. Attach a 20-foot (2-loop), type XXVI nylon sling with a large clevis to the suspension bracket. Route the free running end through the square hole of the ACB. Repeat for opposite side.
3. Raise the slings and pad with felt and tape 12 inches above and below the ACB.
4. Install a deadman's tie according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.
5. Secure the slings to the ACB with a piece of type III nylon cord.

Figure 1-23. Suspension Slings and Deadman's Tie Installed

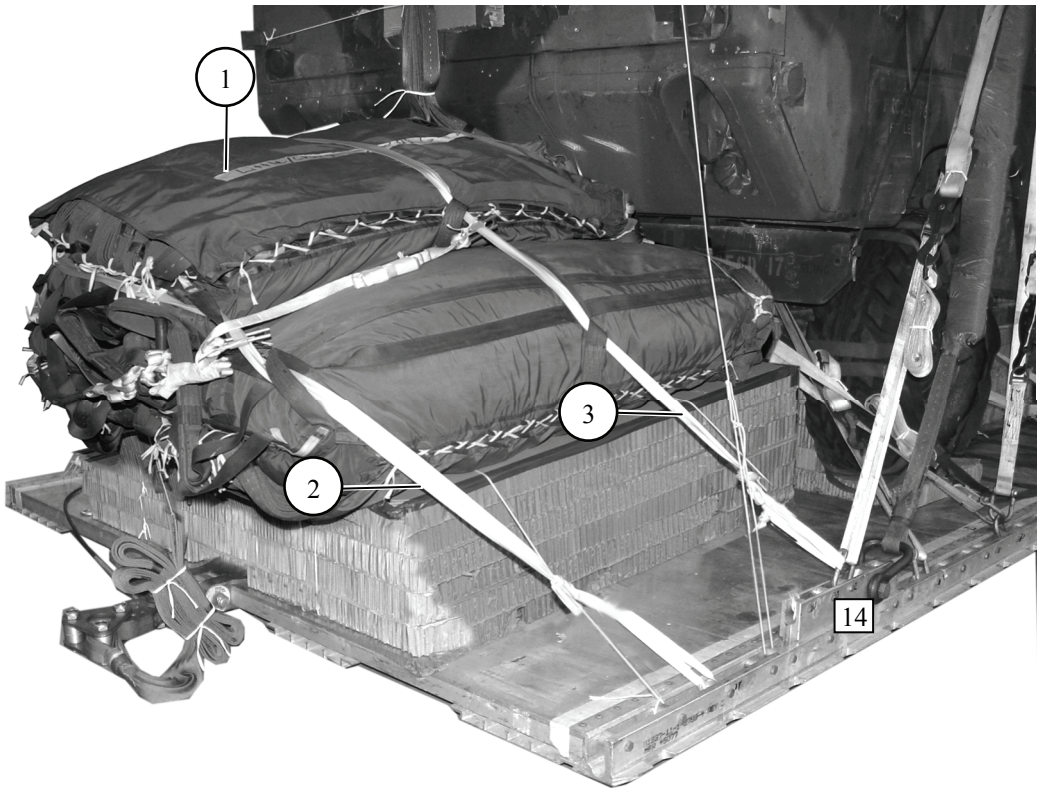
STOWING CARGO PARACHUTES

1-9. Prepare and install the parachute stowage platform as shown in Figure 1-24. Weigh the load and install the correct number of parachutes according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. The load shown in Figure 1-25 requires three G-11 cargo parachutes.



1. Alternate six pieces of 60- by 36- inch honeycomb and six pieces of 60- by 12-inch to make a six-layer stack 60- by 48-inches. Glue the layers together and tape the top edges.
2. Center a 60-inch edge flush with the rear edge of the platform. Cut a 5- by 12-inch section from the honeycomb over the extraction bracket nuts to allow for inspection.
3. Secure the stack to the platform with type III nylon cord tied to convenient tie-down rings, clevises, or bushings.

Figure 1-24. Parachute Stowage Platform Prepared and Installed

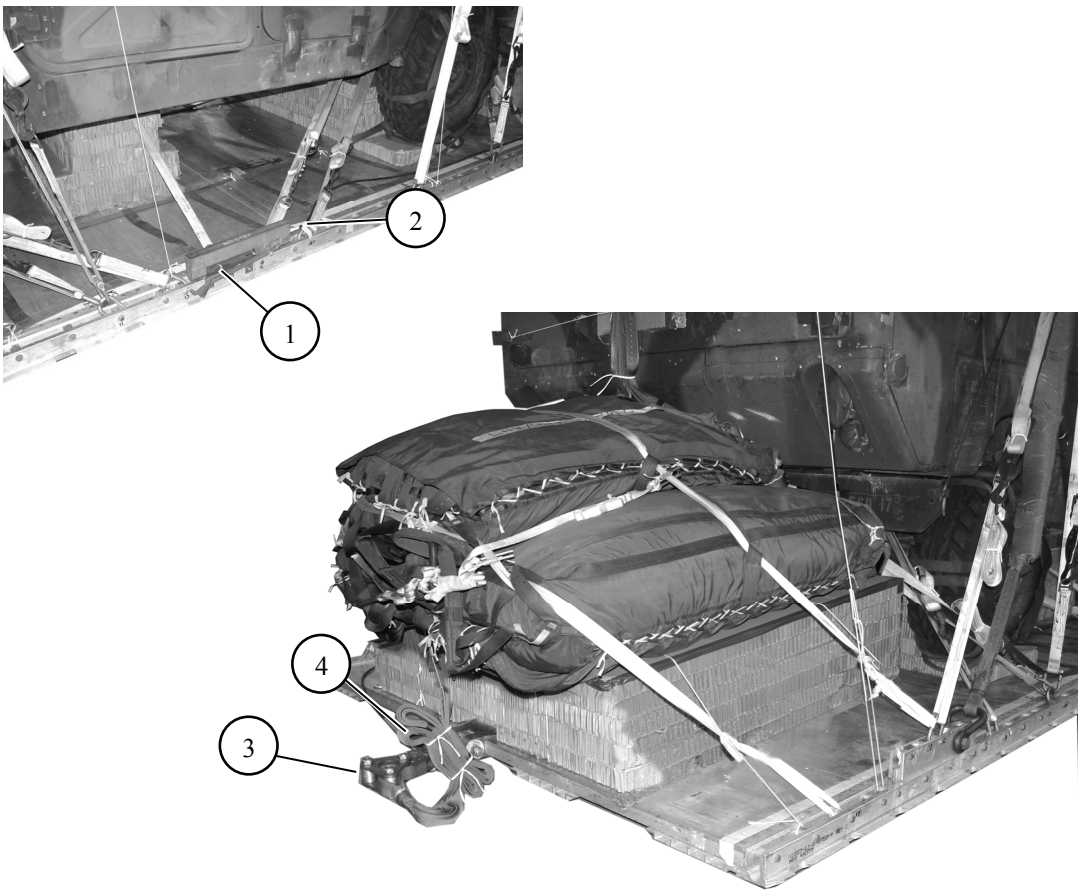


1. Install three G-11 cargo parachutes according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.
2. Tie the rear parachute restraint strap to the 38th bushing on each side.
3. Tie the front parachute restraint strap to clevises 14 and 14A.

Figure 1-25. Parachutes Installed

INSTALLING EXTRACTION SYSTEM

1-10. Install the extraction force transfer coupling (EFTC) according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 1-26. If applicable, install the extraction parachute jettison system (EPJS) according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.



1. Install the actuator bracket to the rear holes in the left platform side rail.
2. Install the actuator and a 16-foot cable. Tie the cable to convenient points inside the lashings with type I, ¼-inch cotton webbing.
3. Install the latch assembly and install the cable. Secure the cable according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.
4. Install a 9-foot (2-loop), type XXVI nylon webbing sling as the deployment line. Fold and secure the excess with type I, ¼-inch cotton webbing.

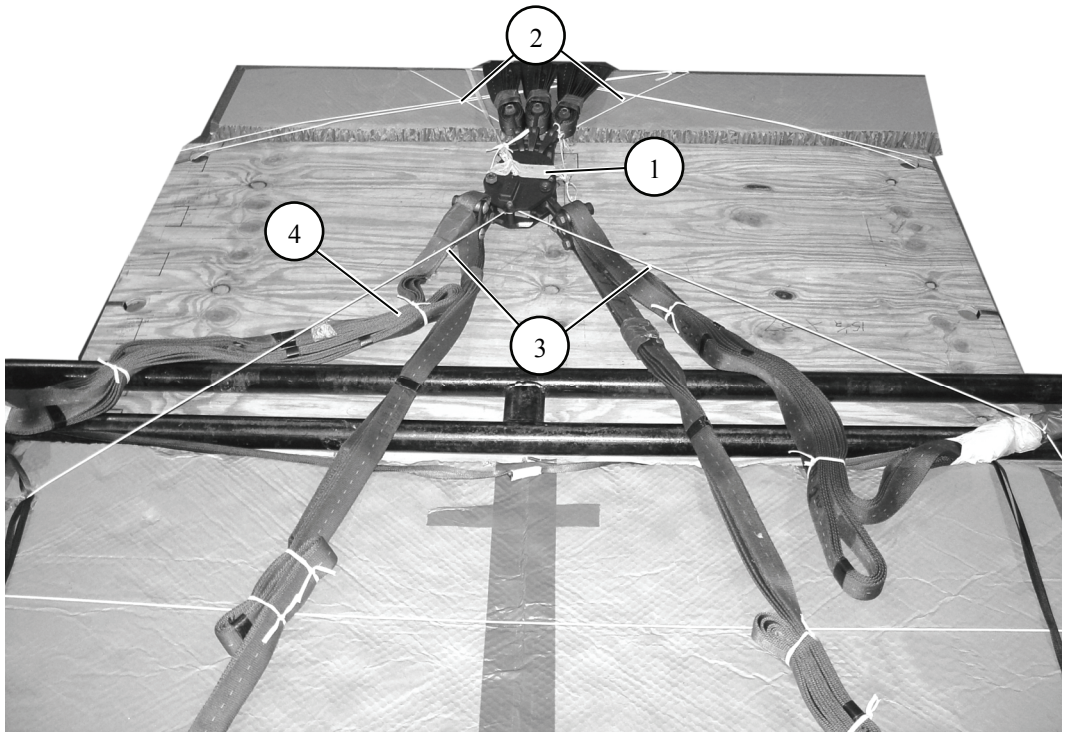
Figure 1-26. EFTC Installed

INSTALLING PARACHUTE RELEASE

1-11. Install an M-1 cargo parachute release according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 1-27.

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

1-12. Install provisions for emergency restraints on the front of the platform according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.



1. Center the release assembly on the roof behind the spreader bar as shown. Connect the suspension slings and the riser extensions according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.
2. Safety tie the connector links with type III nylon cord to a convenient point on the load.
3. Safety tie the bottom of the release with type III nylon cord to a convenient point on the load.
4. S-fold and tie any slack in the suspension slings with type I, ¼-inch cotton webbing.

Figure 1-27. M-1 Release Installed

PLACING EXTRACTION PARACHUTE

1-13. Select the extraction parachute and extraction line needed using the extraction line requirements table in FM 4-20.102/MCRP 4-11.3J/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

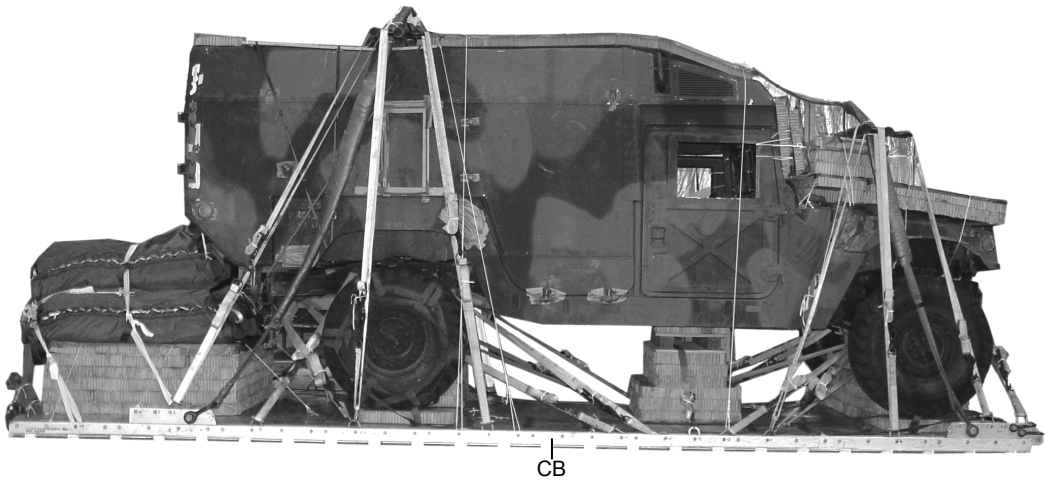
1-14. Mark the rigged load according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 1-28. Complete the Shipper's Declaration for Dangerous Goods. If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

1-15. Use the equipment listed in Table 1-1 to rig this load.

CAUTION

Make the final rigger inspection required by FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 before the load leaves the rigging site.



RIGGED LOAD DATA

Weight: Load shown	11,680 pounds
Maximum load allowed	13,500 pounds
Height	100 inches
Width	108 inches
Overall Length with EFTC	258 inches
Overall Length with EPJS	270 inches
Overhang: Front	0 inches
Rear (EFTC)	18 inches
Rear (EPJS)	30 inches
Center of Balance (from front edge of platform)	110 inches

Figure 1-28. M996, 2-litter Armored Ambulance (HMMWV) Rigged for Low-Velocity Airdrop

Table 1-1. Equipment Required for Rigging M996 Ambulance for Low-Velocity Airdrop

National Stock Number	*Item*	*Quantity*
8040-00-273-8713	Adhesive, paste, 1-gallon	As required
1670-00-003-4389	Bar, attitude control	2
4030-00-090-5354	Clevis, suspension, 1-inch (large)	5
4020-00-240-2146	Cord, nylon, type III, 550-pound	As required
1670-00-434-5785	Coupling, airdrop, extraction force transfer with cable, 16-foot	1
1670-00-360-0328	Cover, clevis, large	3
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
8305-00-958-3685	Felt, ½-inch thick	As required
1670-01-183-2678	Leaf, extraction line (line bag)	2
1670-01-064-4452	Line, drogue, 60-foot (1-loop), type XXVI (for C-17)	1
	Line, extraction	
1670-01-062-6313	60-foot (3-loop), type XXVI (for C-130)	1
1670-01-107-7651	140-foot (3-loop), type XXVI (for C-17)	1
	Link assembly, two-point	
1670-00-003-1953	3 ¾-inch	2
	Lumber:	
5510-00-220-6148	2- by 6-inch	As required
5510-00-220-6274	2- by 4-inch	As required
5315-00-010-4659	Nail, steel wire, 8d	As required
1670-00-753-3928	Pad, energy-dissipating (honeycomb)	20 sheets
	Parachute:	
	Cargo:	
1670-01-016-7841	G-11	3
	Cargo extraction:	
1670-01-063-3716	22-foot	1
1670-01-063-3715	15-foot (drogue for C-17)	1
	Platform, airdrop, type V, 20-foot	
1670-01-353-8425	Bracket assembly, coupling	(1)
1670-01-162-2372	Clevis assembly, type V	(28)
1670-01-353-8424	Extraction bracket assembly	(1)
1670-01-247-2389	Suspension link	(2)
1670-01-162-2381	Tandem link assembly (multipurpose link)	(2)
5530-00-128-4981	Plywood, ¾-inch	4 sheets
1670-01-097-8816	Release, cargo parachute, M-1	1

Table 1-1. Equipment Required for Rigging M996 Ambulance for Low-Velocity Airdrop (Continued)

National Stock Number	*Item*	*Quantity*
	Sling, cargo, airdrop:	
	For suspension:	
1670-01-062-6302	20-foot (2-loop), type XXVI nylon webbing	4
	For lifting:	
1670-01-062-6301	3-foot (2-loop), type XXVI nylon webbing	1
1670-01-062-6303	12-foot (2-loop), type XXVI nylon webbing	2
1670-01-063-7761	16-foot (2-loop), type XXVI nylon webbing	2
	For deployment:	
1670-01-062-6304	9-foot (2-loop), type XXVI nylon webbing	1
	For riser extension:	
1670-01-062-6302	20-foot (2-loop), type XXVI nylon webbing	2
1670-01-062-6313	60-foot (3-loop), type XXVI nylon webbing	3
4910-01-313-8839	Spreader bar assembly	1
5340-00-040-8219	Strap, parachute release multi-cut, with 3 knives	2
7510-00-266-5016	Tape, adhesive, 2-inch	As required
1670-00-937-0271	Tie-down assembly, 15-foot	34
1670-01-483-8259	Tow release mechanism (H-Block for C-17)	1
1670-01-344-0825	Vehicle drive-off aid	1
	Webbing:	
8305-00-268-2411	Cotton, ¼-inch, type I	As required
8305-00-082-5752	Nylon, tubular, ½-inch	As required
8305-00-263-3591	Type VIII	As required

This page intentionally left blank.

Chapter 2

Rigging the M997 Ambulance on a 20-Foot, Type V Airdrop Platform for Low-Velocity Airdrop

DESCRIPTION OF LOAD

2-1. The M997 ambulance (shown in Figure 2-1) is rigged on a 20-foot, type V airdrop platform for low-velocity airdrop. The load requires three G-11 cargo parachutes, depending upon the accompanying load in the vehicle.

CAUTION

This load may be dropped from C-17 aircraft only.

PREPARING PLATFORM

2-2. Prepare a 20-foot, type V platform as described below and as shown in Figure 2-2.

- **Inspecting Platform**. Inspect, or assemble and inspect the platform according to TM 10-1670-268-20&P/TO 13C7-52-22.
- **Installing Tandem Links**. Install tandem links as shown in Figure 2-2.
- **Installing Suspension Links**. Install the suspension links as described in Figure 2-2.
- **Attaching and Numbering Clevises**. Attach and number 28 clevis assemblies as shown in Figure 2-2.

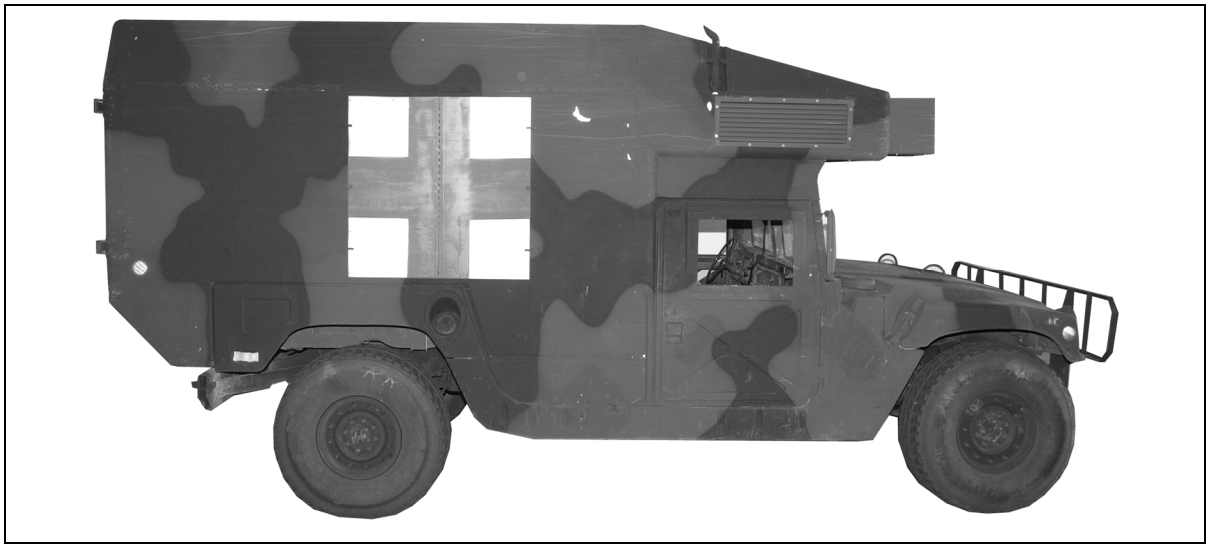
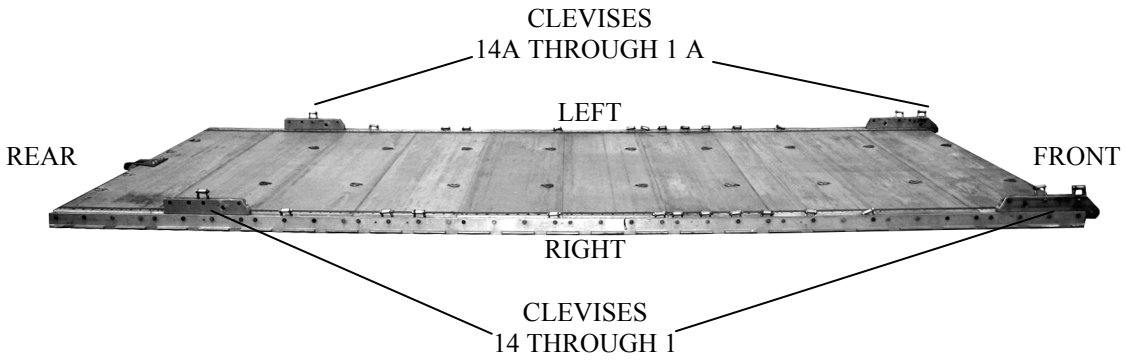


Figure 2-1. M997 4-Litter Ambulance



Steps:

1. Install a tandem link on the front of each platform side rail using holes 1, 2, and 3.
2. Install a suspension link to each side rail using holes 33, 34, and 35.
3. Install clevises on bushings 1 and 3 on each tandem link assembly.
4. Install a clevis on bushing 2 on each suspension link assembly.
5. Starting at the front of each platform side rail, install clevises on each platform side rail using the bushings bolted on holes 9, 11, 13, 14, 15, 16, 17, 21, 26, 27, and 31.
6. Starting at the front of the platform, number the clevises bolted to the right side from 1 through 14 and those bolted to the left side from 1A through 14A.

Note. Position clevis 6 in an inverted position.

7. Label the tie-down rings according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

Figure 2-2. Platform Prepared

BUILDING AND POSITIONING HONEYCOMB STACKS

2-3. Build the honeycomb stacks as shown in Figures 1-3 and 1-4. Position the honeycomb stacks as shown in Figure 2-3.

INSTALLING OPTIONAL DRIVE-OFF AIDS ON PLATFORM

2-4. Install the drive-off aids on the platform as described in Paragraph 1-4.

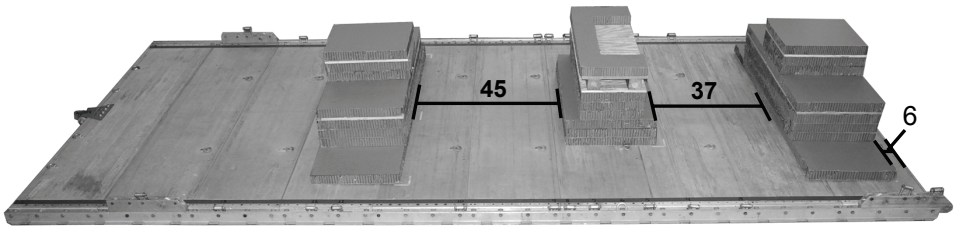
Note. Drive-off aids are optional and not shown in this chapter.

PREPARING AMBULANCE

2-5. Prepare the ambulance as described below.

- Make sure the fuel tank is no more than 3/4 full. Prepare the fuel tank filler cap and fuel filler opening as shown in Figure 1-7. Prepare the fuel tank drain plug as shown in Figure 1-8.
- Make sure the batteries and battery compartment comply with AFMAN 24-204(I)/TM 38-250.
- Stow the ambulance OVE equipment in the compartment behind the driver's door. Fill the empty space with honeycomb and close the compartment door. Tape the latches (not shown).
- Tape all lights and reflectors.
- Prepare the underside of the truck as shown in Figure 1-10.
- Prepare and secure the pioneer tool kit according to TM 9-2320-280-10/TO 36A12-1A-2091-1/TM 2320-10/6 and as shown in Figure 1-12.

Notes. 1. All measurements are given in inches.
2. This drawing is not drawn to scale.

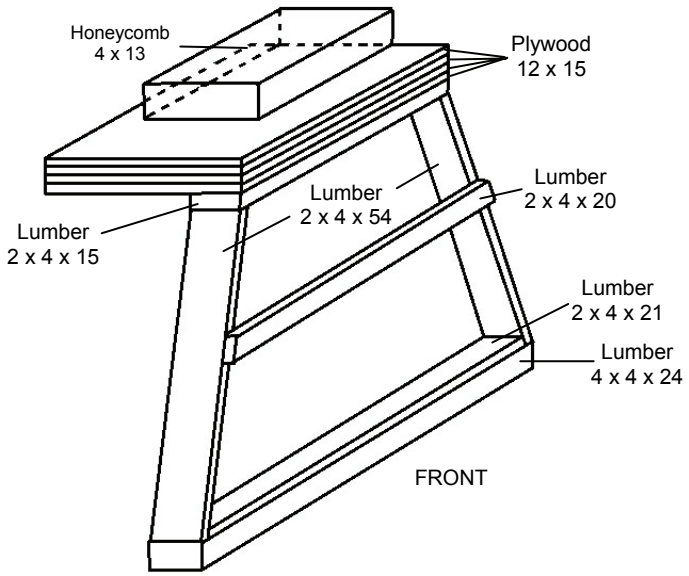


Stack Number	*Position of Stack on Platform*
1	Position stack 1 centered and 6 inches from the front edge of the platform.
2	Position stack 2 centered and 37 inches from stack 1.
3	Position stack 3 centered and 45 inches from stack 2.

Figure 2-3. Honeycomb Stacks Placed on Platform

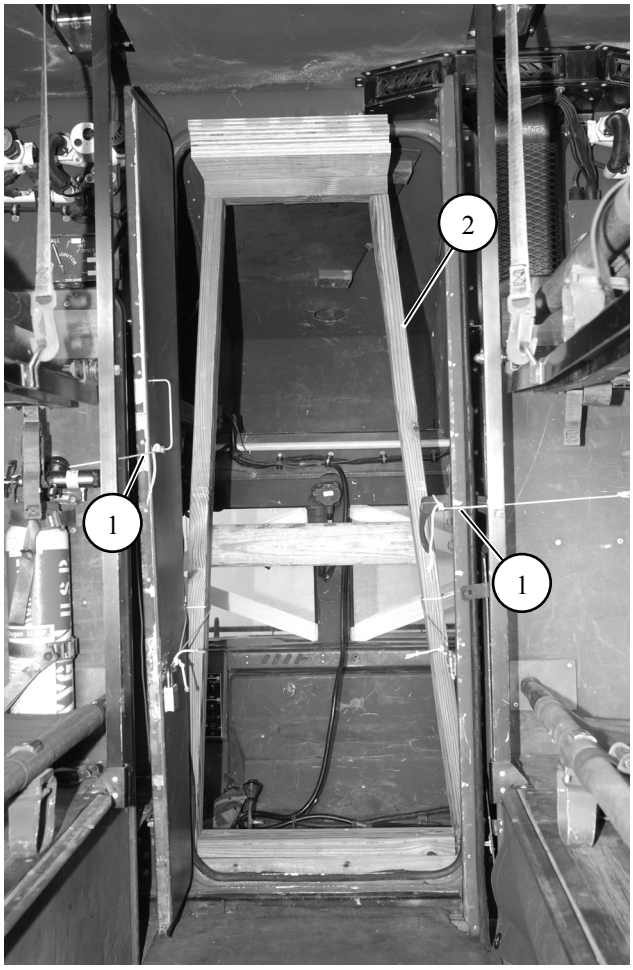
- Construct and position inner door support frame as shown in Figures 2-4 and 2-5.

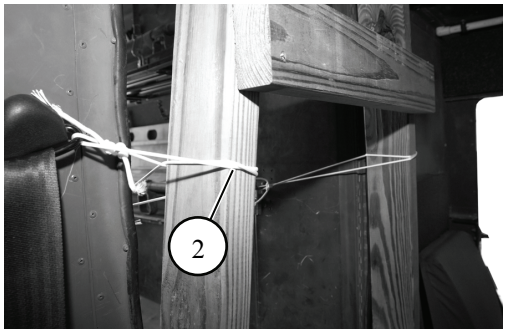
Notes. 1. All measurements are given in inches.
2. This drawing is not drawn to scale.
3. Glue the honeycomb after the frame is positioned.

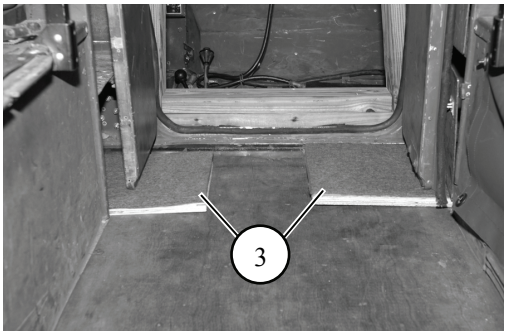


Support Number	*Pieces*	*Width (inches)*	*Length (inches)*	*Material*	*Instructions*
1	1		24	4x4 lumber	Cut to form base.
	1		21	2x4 lumber	Nail centered on base.
	2		54	2x4 lumber	Nail upright against the 2 by 4 nailed on base.
	1		15	2x4 lumber	Nail flush against the top of the 54-inch 2 by 4 lumber.
	1		20	2x4 lumber	Nail to the side of the 54-inch 2 by 4 22 ½ inches above the 4 by 4 lumber.
	4	12	15	¾-inch plywood	Nail flush against the 15-inch 2 by 4.
	1	4	13	Honeycomb	Glue the honeycomb 4 inches from the front edge the ¾-inch plywood and flush against the 12-inch side of the ¾-inch plywood after the support frame is positioned.

Figure 2-4. Inner Door Support Constructed







(1) Open and secure the inner doors between the cab and transport area with type III nylon cord.

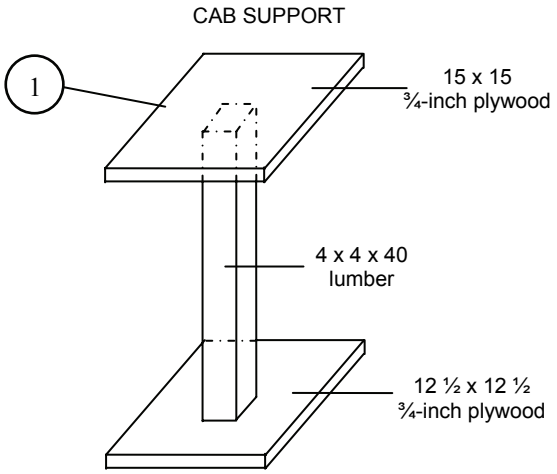
(2) Position the inner door support in the cab flush against the door opening to the transport area. Ensure 4 inches of the top of the frame is to the inside of the cab and the bottom of the frame is flush against the inner door frame. Secure the inner door frame support in place with lengths of type III nylon cord.

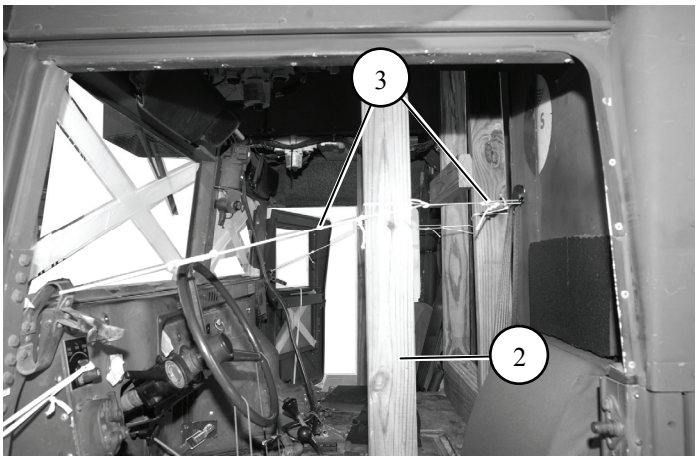
(3) Cut two 9- by 11-inch pieces of felt and two ¾- by 9- by 11-inch piece of plywood. Place a piece of felt on top of the ¾-inch plywood and place under the inner door. Repeat for opposite door.

Figure 2-5. Inner Door Support Positioned

- Prepare the cab of the ambulance as shown in Steps 1 through 10 of Figure 1-9 and Figure 2-6.

Notes. 1. Drawing not drawn to scale.
2. All dimensions are in inches.





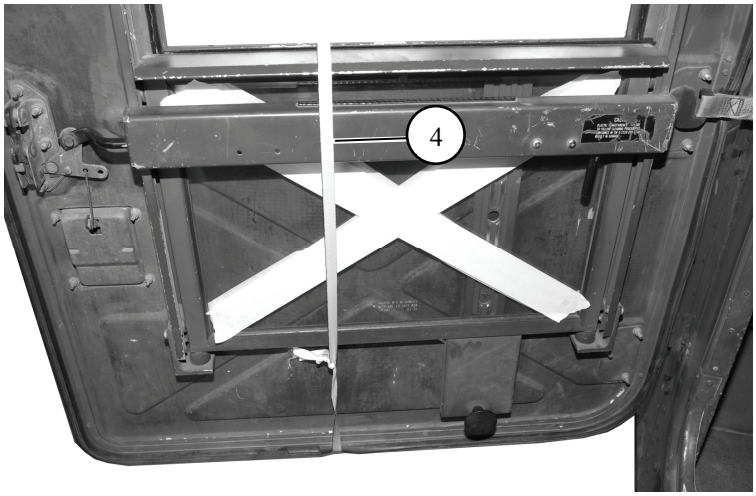
(1) Construct two cab supports as shown.

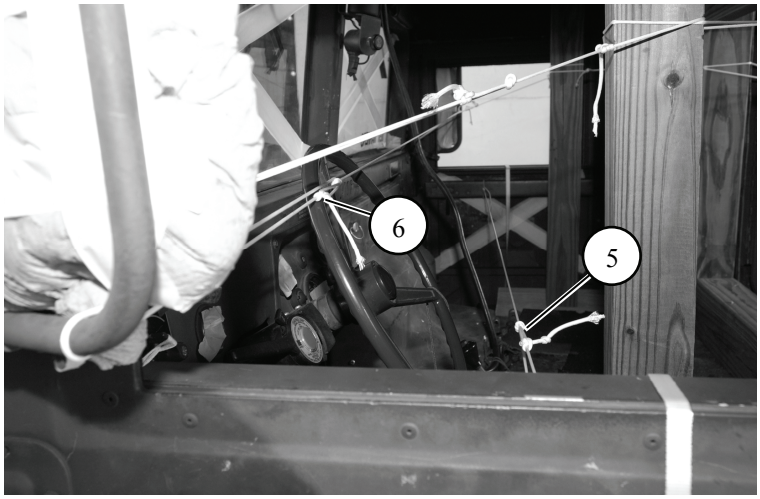
(2) Position the driver's side and passenger side cab support on the respective seat. Ensure the supports do not make contact with the air and heat elements running along the inside of the cab roof.

Note. If the seats are worn additional wood shims may be needed to make contact with the top of the cab and the seat.

(3) Secure the cab supports in place with a length of type III nylon cord horizontally to convenient places within the cab.

Figure 2-6. Cab Prepared





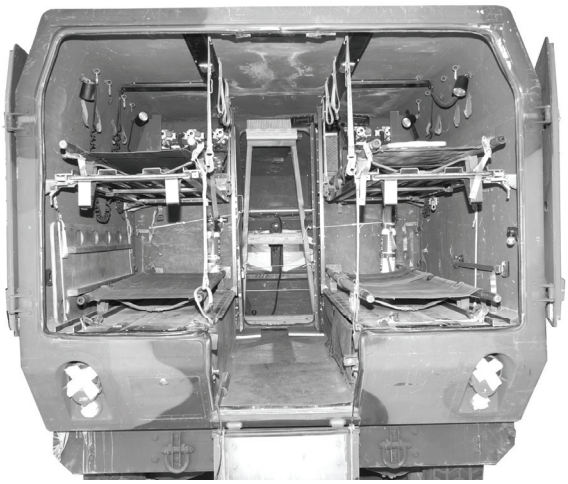
(4) Secure the windows in the down position with lengths of ½-inch tubular nylon over the window and around the door.

(5) Secure both doors of the cab with a length of type III nylon cord from door-to-door.

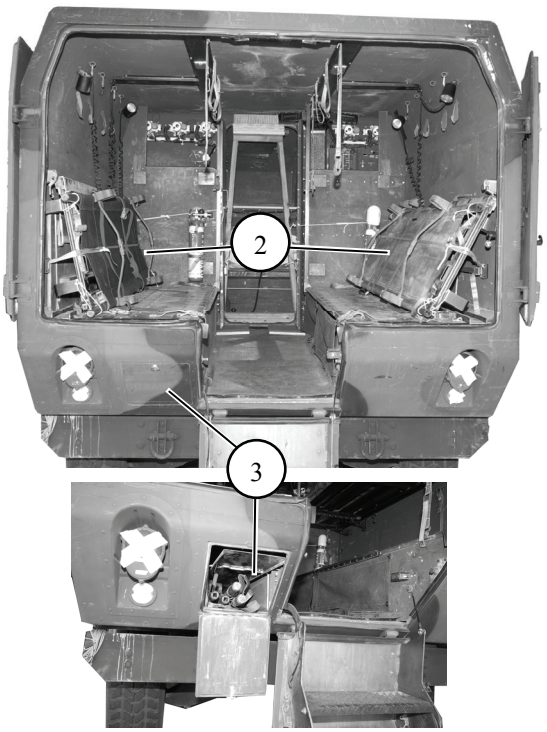
(6) Rotate the mirrors inward toward the doors and secure with a length of type III nylon cord from the mirror bracket-to-mirror bracket.

Figure 2-6. Cab Prepared (Continued)

- Prepare the transport area of the ambulance as shown in Figures 2-7 through 2-19.



CONFIGURED FOR OPERATION



WARNING

Lowering the steps at the rear of the ambulance from inside may cause serious injury. Lower the steps from outside the ambulance. Use one hand to activate the release, and control the descent of the steps assembly with the other hand.

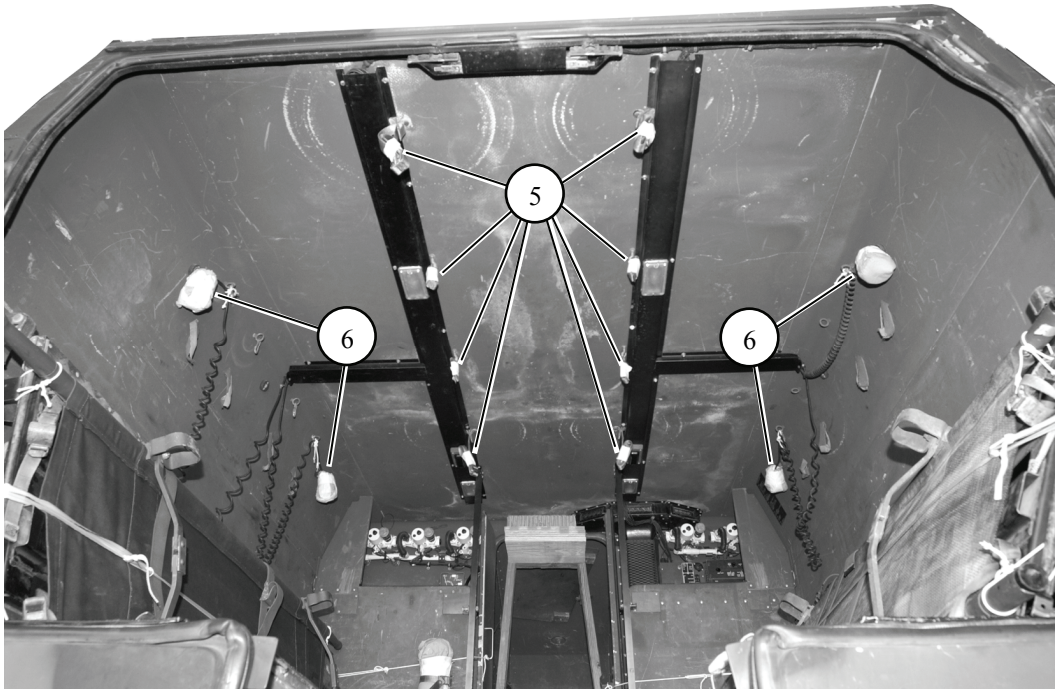
(1) Secure the blanket set in the left front compartment and resuscitator kit in the right side compartment. Place the camouflage nets and poles in the storage compartments (not shown).

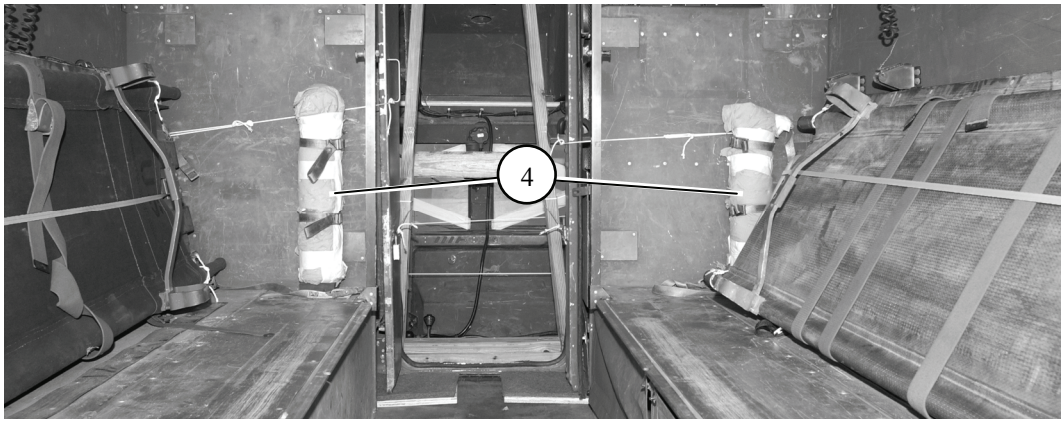
Note. Medical equipment may be different, depending upon the needs of the medical unit. Tie additional equipment, such as water cans, securely to stationary points in the ambulance with ½-inch tubular nylon webbing.

(2) Remove two of the four litters and place them in their storage compartment. Remove the remaining two litters and place to the side.

(3) Remove the litter support racks from their latches. Position the litters and backboards against the racks. Secure the racks and litters together with type III nylon cord through the legs of the litters. Route an additional length of ½-inch tubular nylon webbing around the racks and litters and secure to the backboard support brackets. Ensure all hardware is re-installed once the racks are removed.

Figure 2-7. Transport Area Prepared



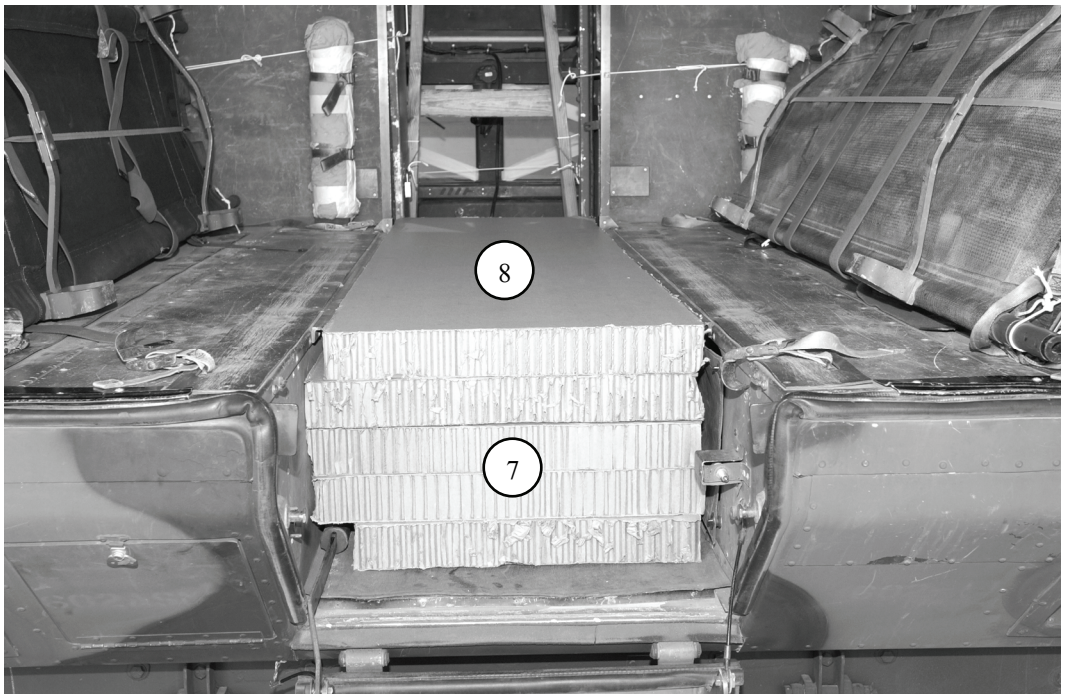


(4) Remove the oxygen tanks from the designed racks. Pad the tanks with cellulose wadding and return them to the designated racks.

(5) Tape all straps in the transport area.

(6) Remove the inner lights from their mounting brackets and wrap with cellulose wadding and tape. Return the lights to their brackets and secure the light wiring to a convenient point with type III nylon cord.

Figure 2-7. Transport Area Prepared (Continued)

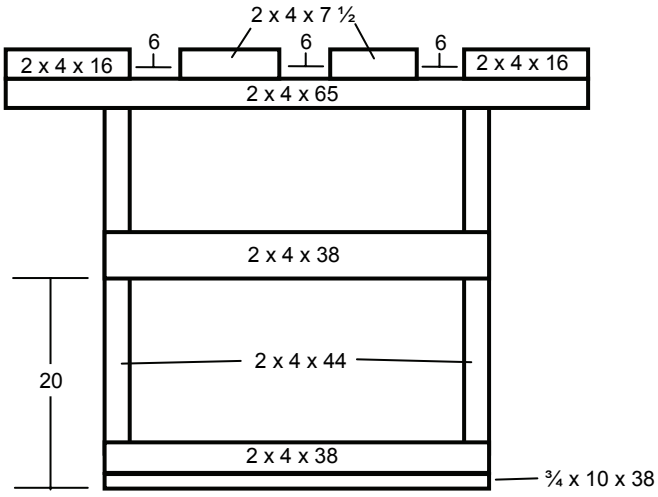


(7) Cut four 77- by 24-inch pieces of honeycomb. Position the pieces on the floor of the transport area and flush against the opened inner doors. Cutouts on the bottom piece may be necessary to fit on the floor.

(8) Cut and position a 77- by 23-inch piece of honeycomb on top of the pieces from step 7.

Figure 2-7. Transport Area Prepared (Continued)

Notes. 1. All measurements are given in inches.
2. This drawing is not drawn to scale.

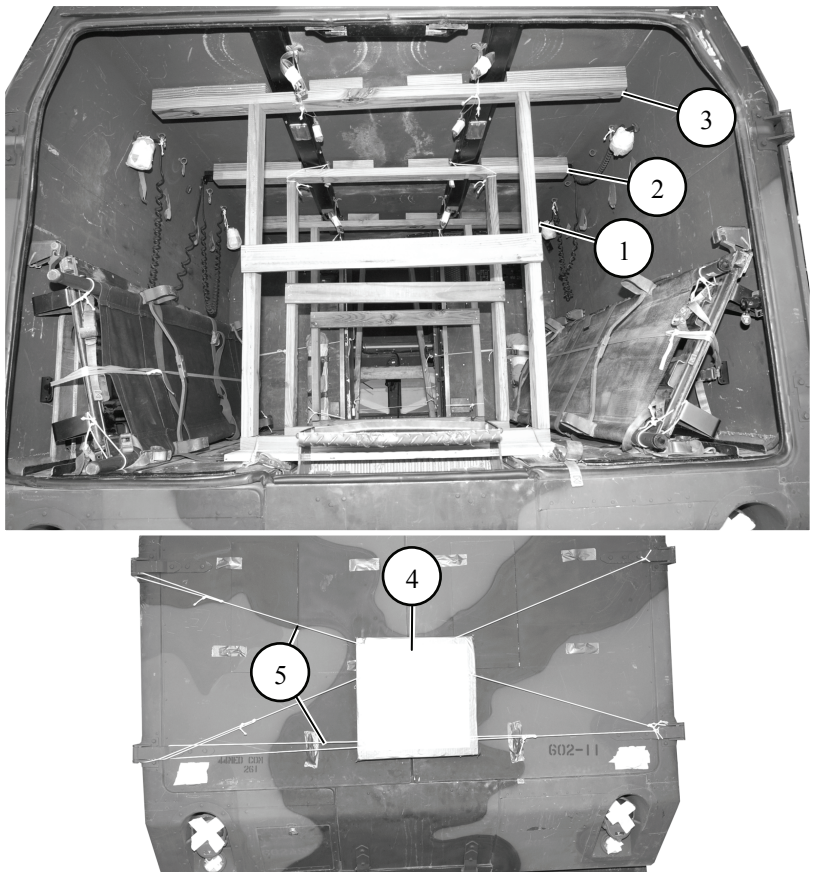


Step:

1. Construct three transport area roof supports.

Support Number	*Pieces*	*Width (inches)*	*Length (inches)*	*Material*	*Instructions*
1, 2, and 3	1	10	38	¾-inch plywood	Cut to form base.
	1		38	2 by 4 lumber	Nail centered on the ¾-inch plywood.
	2		44	2 by 4 lumber	Nail one piece upright on the end of the base.
	1		38	2 by 4 lumber	Nail to the uprights 20 inches above base.
	1		65	2 by 4 lumber	Nail centered on the uprights.
	2		16	2 by 4 lumber	Nail one on each end of the 65-inch 2 by 4.
	2		7 ½	2 by 4 lumber	Nail one 65-inch 2 by 4 six inches from the 16-inch 2 by 4.

Figure 2-8. Transport Area Supports Constructed



1. Position the first transport area roof support on the forward edge of the 77- by 23-inch piece of honeycomb. Secure the support in place with type III nylon cord to convenient places on the top and bottom of the support.

2. Position the second transport area roof support centered on the 77- by 23-inch piece of honeycomb. Secure the support in place with type III nylon cord to convenient places on the top and bottom of the support.

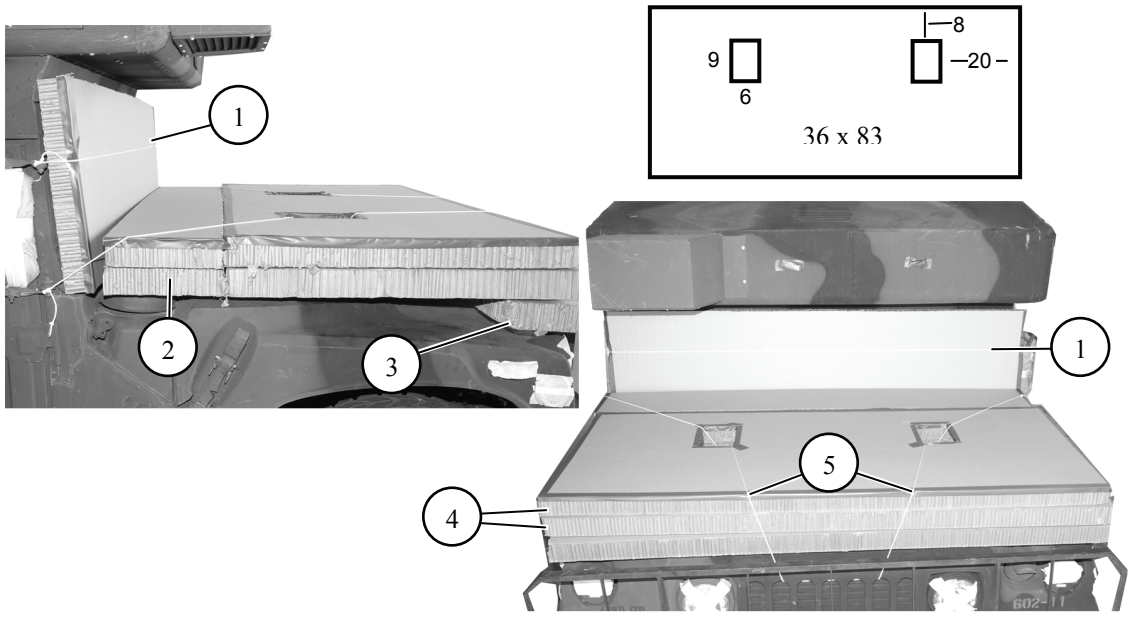
3. Position the third transport area roof support on the rear edge of the 77- by 23-inch piece of honeycomb. Secure the support in place with type III nylon cord to convenient places on the top and bottom of the support.

4. Close the transport area doors. Close the exposed “Red Cross” Markers on the outside of the vehicle. Cut an 18- by 18-inch piece of honeycomb. Make an indentation on one side to fit the handles of the door.

5. Secure the honeycomb to the doors with two lengths of type III nylon cord in an “X” from the door hinges. Secure the bottom of the honeycomb with a length of type III nylon cord from hinge to hinge.

Figure 2-9. Transport Area Support Positioned

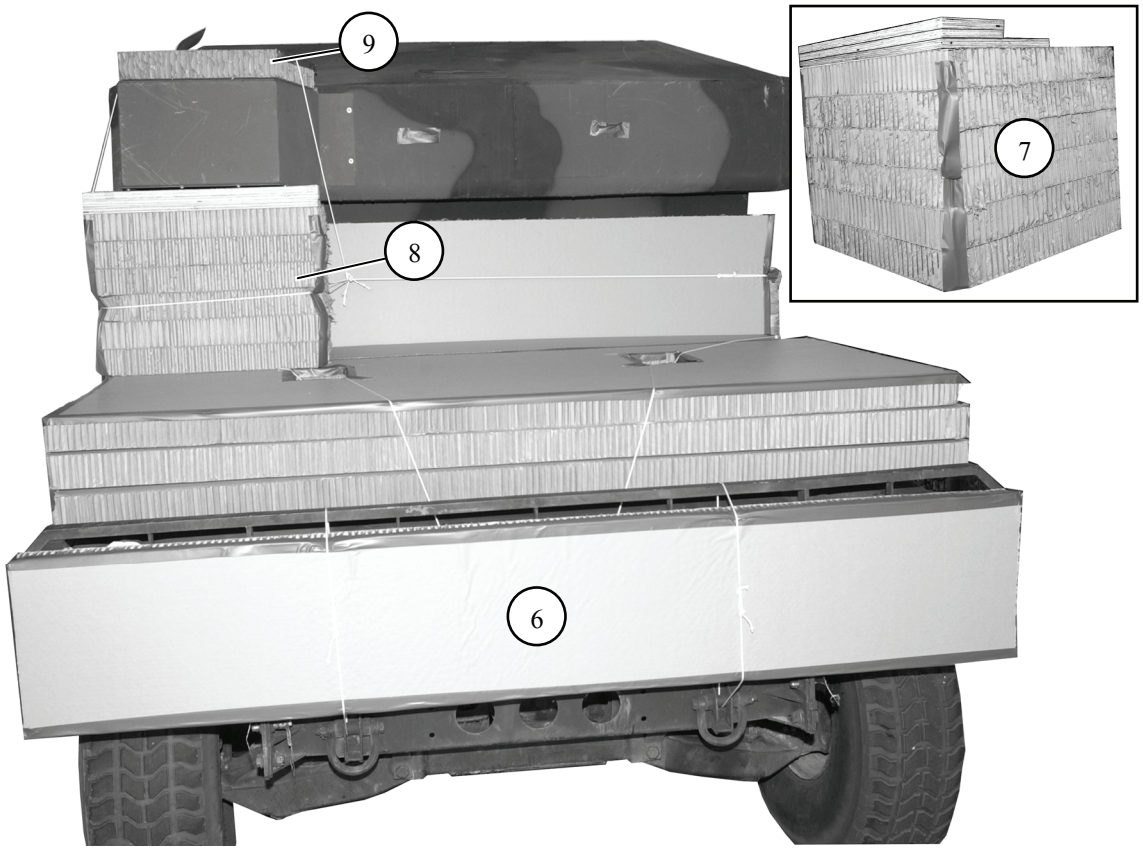
- Prepare the body of the ambulance as shown in Figures 2-10 through 2-12.



Note. Tape the edges of the honeycomb.

1. Tie a 21- by 83-inch piece of honeycomb over the windshield with type III nylon cord.
2. Place two 12- by 83-inch pieces of honeycomb flush against the windshield.
3. Place an 8- by 83-inch piece of honeycomb on the front of the hood.
4. Make cutouts in two 36- by 83-inch pieces of honeycomb as shown and place the honeycomb on the hood against the honeycomb placed in step 2 and on top of the honeycomb positioned in step 3.
5. Secure the honeycomb with a length of type III nylon cord. Tie one end to the hood latch through the front lifting point, through the grill, back up to the other front lifting point and to the opposite side latch.

Figure 2-10. Honeycomb Placed on Front of Ambulance



(6) Cut a 14- by 83-inch piece of honeycomb. Place the honeycomb in front of the vehicle brush guard. Secure with type III nylon cord to convenient points on the load.

Note. This procedure is only required if the vehicle is equipped with a brush guard.

(7) Cut six 20- by 25-inch pieces of honeycomb. Cut a ¾- by 11- by 25-inch and a ¾- by 6- by 25-inch piece of plywood. Glue the six pieces of honeycomb together to form a base. Glue the 11- by 25-inch piece of plywood on top, flush against the 25-inch edge of honeycomb. Glue the 6- by 25-inch piece of plywood on top, flush against the 25-inch edge.

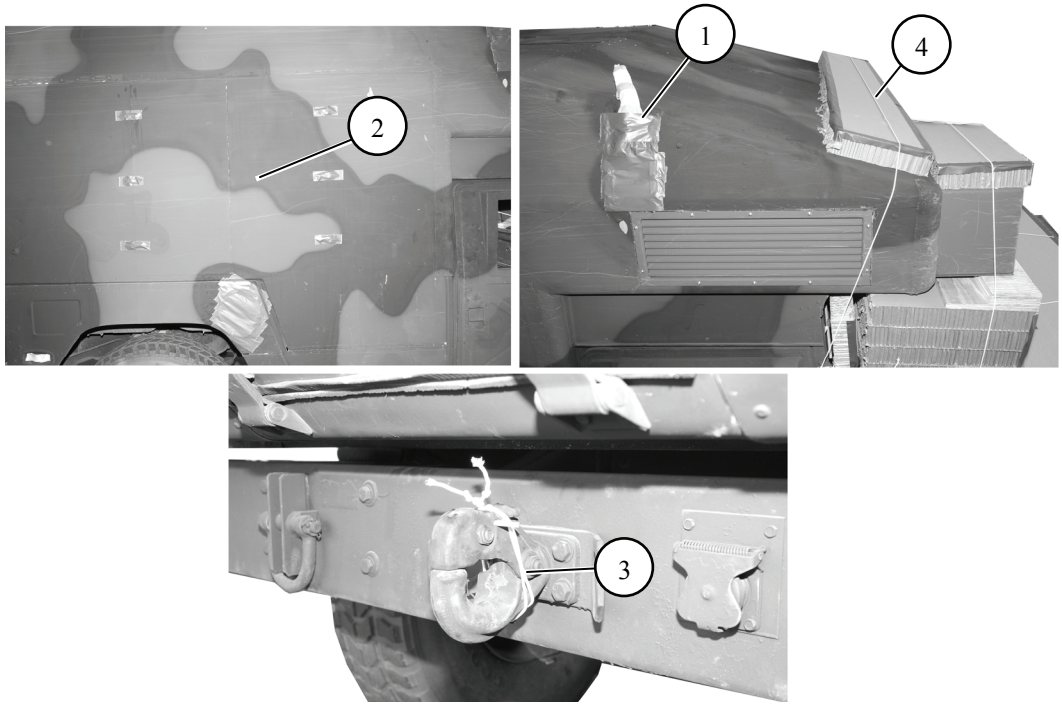
Note. May be necessary to add a second ¾- by 6- by 25-inch piece of plywood to fill the gap.

(8) Position the stack under the air-conditioning element with the 25-inch plywood edge facing the front of the vehicle. Secure the stack with a length of type III nylon cord horizontally and over the top of the honeycomb on the air-conditioning element.

(9) Place a 10- by 21-inch piece of honeycomb on top of air-conditioning element. Trim the edge of the honeycomb to fit the angle of the air-conditioning element. Secure with a length of type III nylon cord from the hood latch to a convenient point on the load.

(10) Tape the hood latches (not shown).

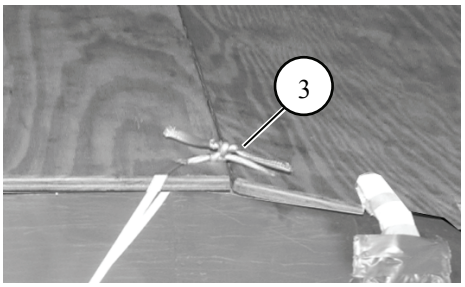
Figure 2-10. Honeycomb Placed on Front of Ambulance (Continued)

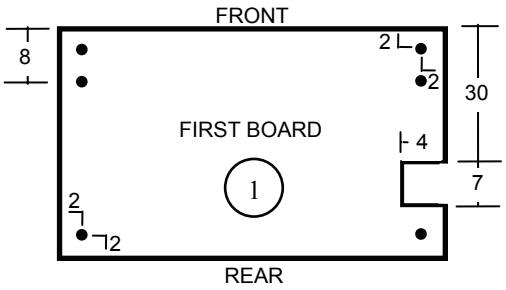


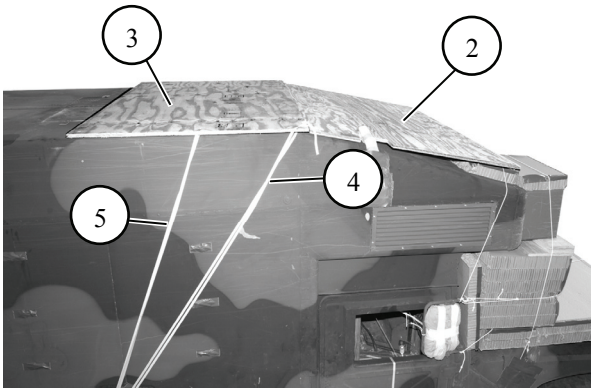
1. Pad the air-conditioning exhaust with cellulose wadding and tape.
2. Close all exposed “Red Cross” markers on both sides of the vehicle and tape exposed latches with 2-inch cloth-backed tape.
3. Secure the pintle with type III nylon cord.
4. Cut a 12- by 78-inch piece of honeycomb. Position it on top of the forward part of the roof. Tape the edges with cloth-backed tape. Secure in place with a length of type III nylon cord.

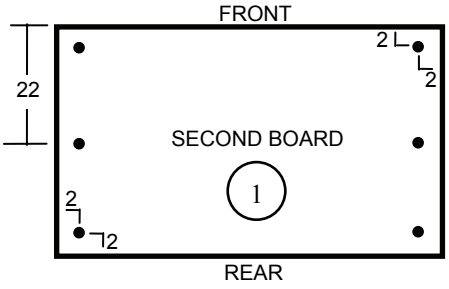
Figure 2-11. Vehicle Body Prepared

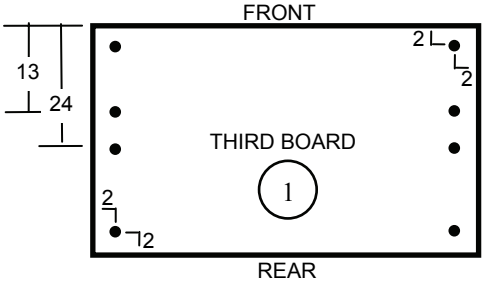
Notes. 1. All measurements are given in inches.
2. This drawing is not drawn to scale.











(1) Prepare three 48- by 76-inch ¾-inch pieces of plywood as shown.

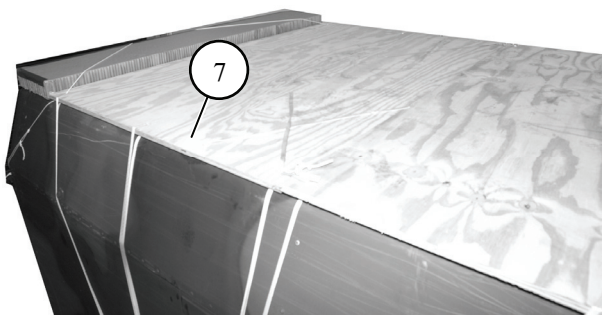
(2) Position first board with the cutout around the air-conditioning exhaust. Place the front end of the board on top of the piece of honeycomb from Figure 2-11, step 4.

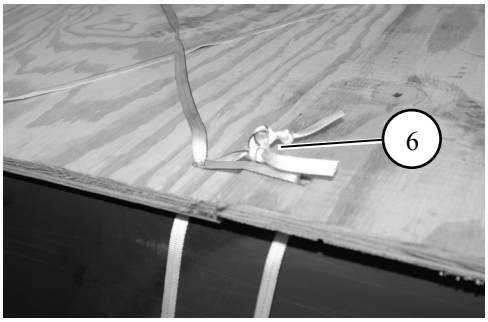
(3) Position second board flush against the previous board. Secure the rear holes of first board to the front holes of second board with a piece of ½-inch tubular nylon webbing on each side.

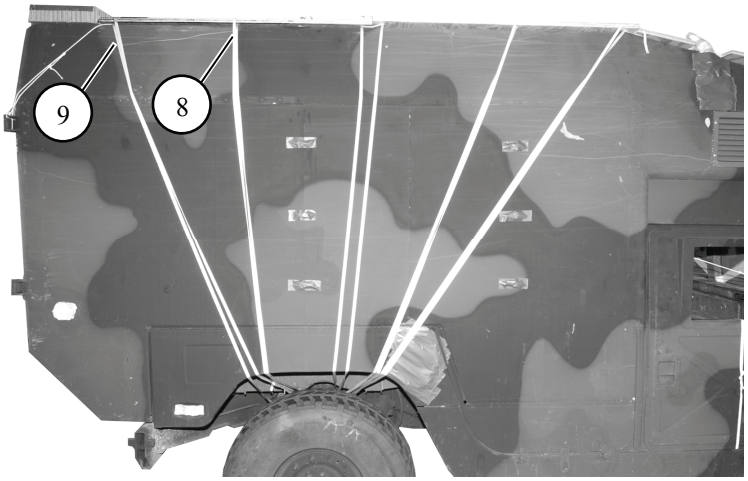
(4) Route a length of ½-inch tubular nylon webbing up through the front hole of second board and secure to the suspension. Repeat for opposite side.

(5) Route a length of ½-inch tubular nylon webbing up through the center hole of second board and secure to the suspension. Repeat for opposite side.

Figure 2-12. Roof Cover Installed







6 Position the third board against the second board and secure the rear hole of second board to the front holes of third board with a length of ½-inch tubular nylon webbing.

7 Route each end of a length of ½-inch tubular nylon webbing up through front holes and at the 13-inch mark. Lay the excess on top of plywood. It will be used at a later step to secure the ACB. Repeat for opposite side.

8 Route a length of ½-inch tubular nylon webbing through the hole at the 24-inch mark of the third board and secure to the suspension. Repeat for opposite side.

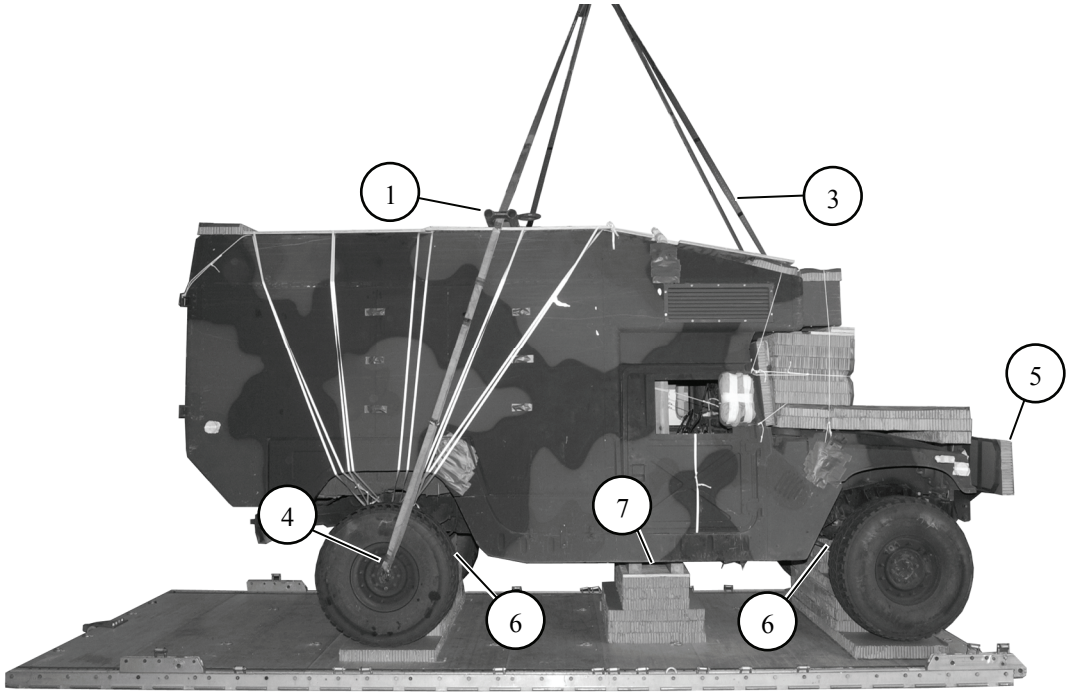
9 Route a length of ½-inch tubular nylon webbing through the rear hole of the third board and secure to suspension. Repeat for opposite side.

10 Cut a 12-by 76-inch piece of honeycomb. Tape the top edges with cloth-backed tape. Position the piece flush against the rear of the third board. Secure the piece with a length of type III nylon cord to a convenient point on the load.

Figure 2-12. Roof Cover Installed (Continued)

LIFTING AND POSITIONING AMBULANCE

2-6. Lift and position the vehicle as shown in Figure 2-13.



(1) Place an attitude control bar (ACB) over the transport area of the ambulance.

(2) Route a 3-foot (2-loop), type XXVI nylon sling through each front lifting point on the vehicle's hood (not shown).

(3) Attach a 12-foot (2-loop), type XXVI nylon sling to the 3-foot sling with a large clevis.

(4) Remove the rear lifting shackles from the rear of the vehicle. Attach them to the rear wheel hubs. Attach a 16-foot (2-loop), type XXVI nylon sling to the shackle with a large clevis to each side. Route the running ends up through the ACB.

(5) Raise the slings and position the ambulance on the platform with a 3-inch overhang from the front of the platform to the brush guard.

Note. Overhang will only occur if the vehicle is equipped with a brush guard.

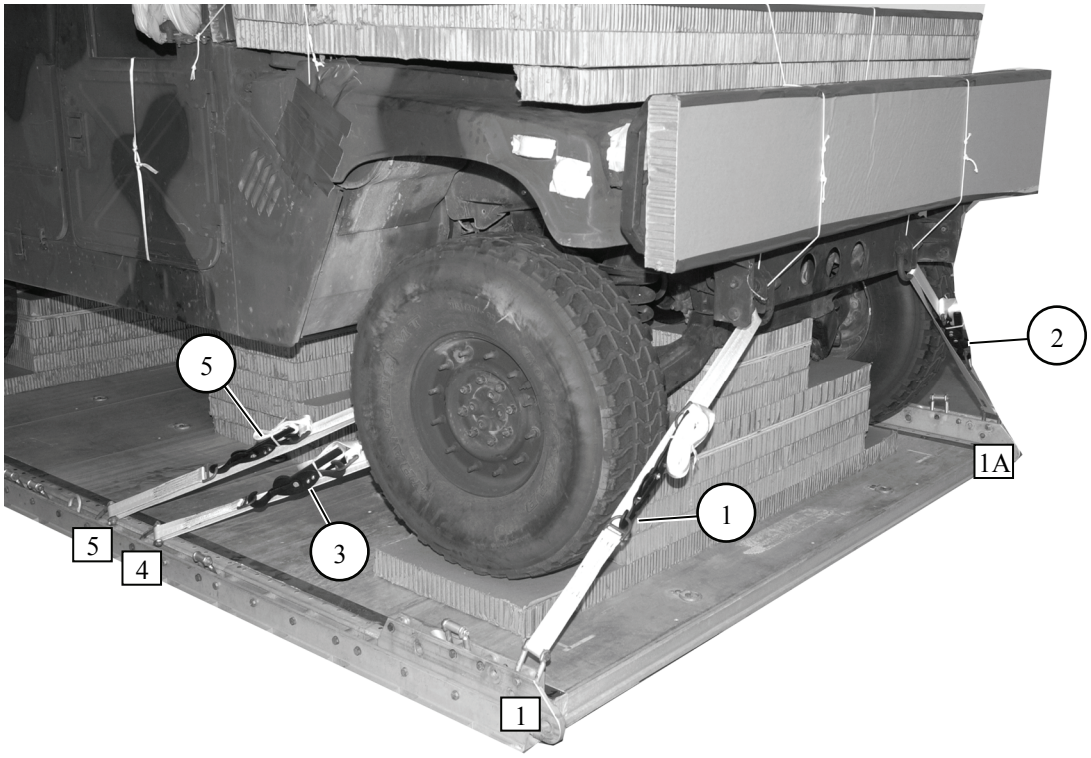
(6) Make sure the suspension cross members set squarely on stacks 1 and 3.

(7) Make sure the frame rail sets squarely on stack 2.

Figure 2-13. Ambulance Positioned

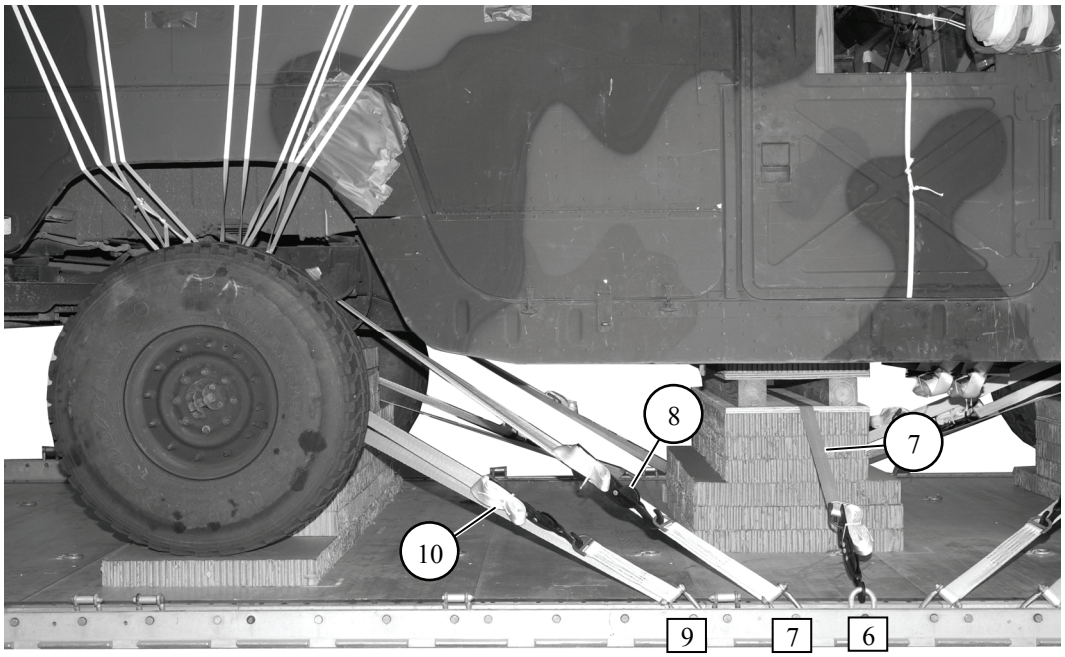
LASHING AMBULANCE

2-7. Lash the ambulance to the platform as shown in Figures 2-14 through 2-16.



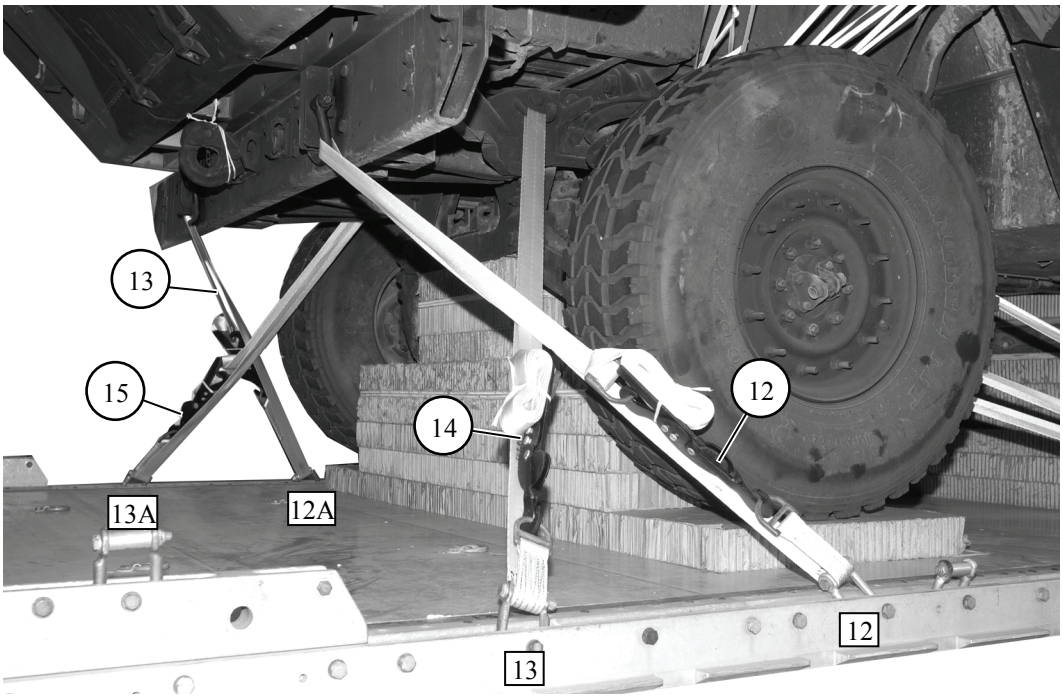
Lashing Number	*Tiedown Clevis Number*	*Instructions*
		Pass lashing:
1	1	Through right bumper shackle.
2	1A	Through left bumper shackle.
3	4	Around right front lower control arm.
4	4A	Around left front lower control arm.
5	5	Through tie-down bracket behind right front coil spring.
6	5A	Through tie-down bracket behind left front coil spring.

Figure 2-14. Lashings 1 through 6 Installed



Lashing Number	*Tiedown Clevis Number*	*Instructions*
		Pass lashing:
7	6 and 6A	Pass a 15-foot lashing through clevis 6A and through its own D-ring. Pass the lashing through the hole in stack 2. Attach the lashing to clevis 6 with a load binder.
8	7	Through tie-down bracket in front of right rear coil spring.
9	7A	Through tie-down bracket in front of left rear coil spring.
10	9	Around right rear lower control arm.
11	9A	Around left rear lower control arm.

Figure 2-15. Lashings 7 through 11 Installed



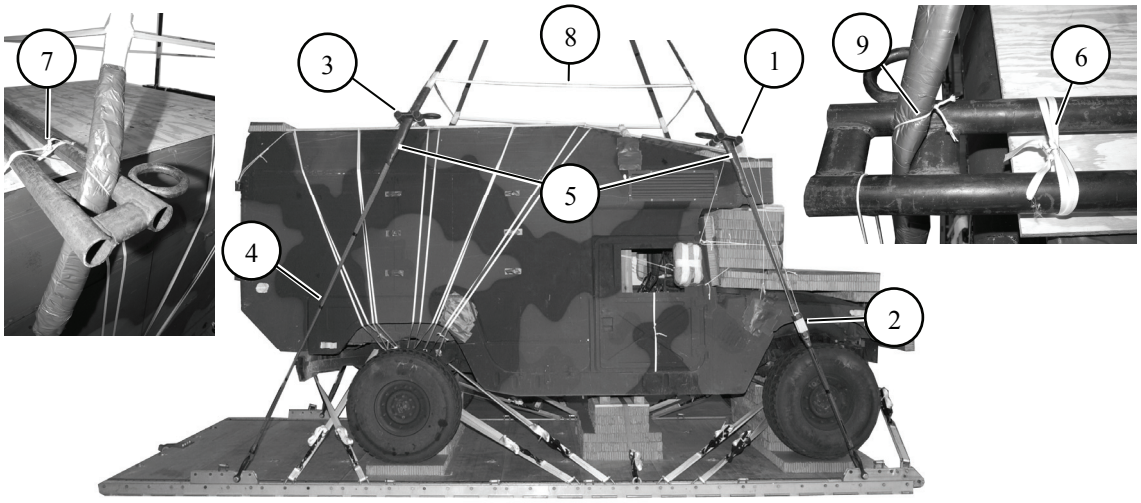
Lashing Number	*Tiedown Clevis Number*	*Instructions*
		Pass lashing:
12	12	Through tie-down shackle on right side of bumper.
13	12A	Through tie-down shackle on left side of bumper.
14	13	Through tie-down bracket behind right rear coil spring.
15	13A	Through tie-down bracket behind left rear coil spring.

Figure 2-16. Lashings 12 through 15 Installed

INSTALLING SUSPENSION SYSTEM

2-8. Install the suspension system as given below:

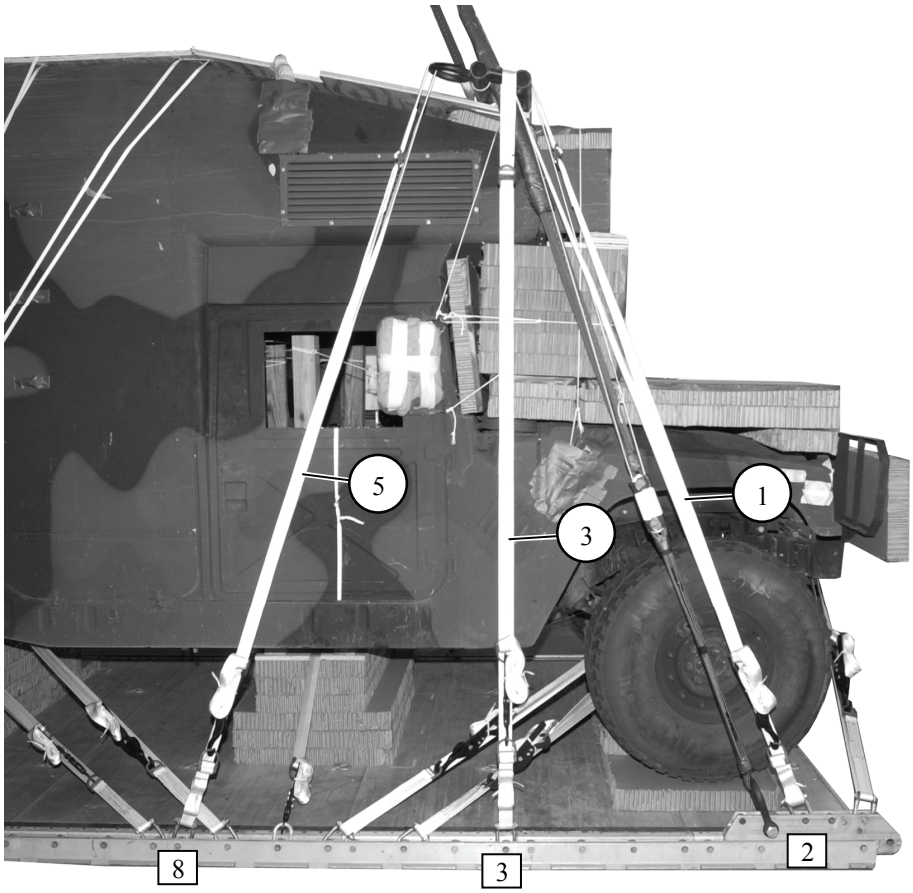
- Install the suspension slings and the deadman's tie as shown in Figure 2-17.



1. Position an ACB on the first board with the rings facing to the rear of ambulance.
2. Attach a 3-foot (2-loop), type XXVI nylon sling with a large clevis to the tandem link. Attach a 16-foot (2-loop), type XXVI nylon sling to the 3-foot sling with a 5 ½-inch two-point link. Route the free running end through the square hole of the ACB. Repeat for opposite side.
3. Position an ACB on the third board with the rings facing to the front of ambulance.
4. Attach a 20-foot (2-loop), type XXVI nylon sling with a large clevis to the suspension bracket. Route the free running end through the square hole of the ACB. Repeat for opposite side.
5. Raise the slings and pad with felt and tape 12 inches above and below the ACB.
6. Route a length of ½-inch tubular nylon webbing up through the front hole and center hole of first board and over the ACB and secure the ends. Repeat for opposite side.
7. Route the existing free running ends of ½-inch tubular nylon webbing on third board over the ACB and secure the ends. Repeat for opposite side.
8. Raise the slings and install a deadman's tie according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.
9. Secure the slings to the ACB with a piece of type III nylon cord.

Figure 2-17. Suspension Slings and Deadman's Tie Installed

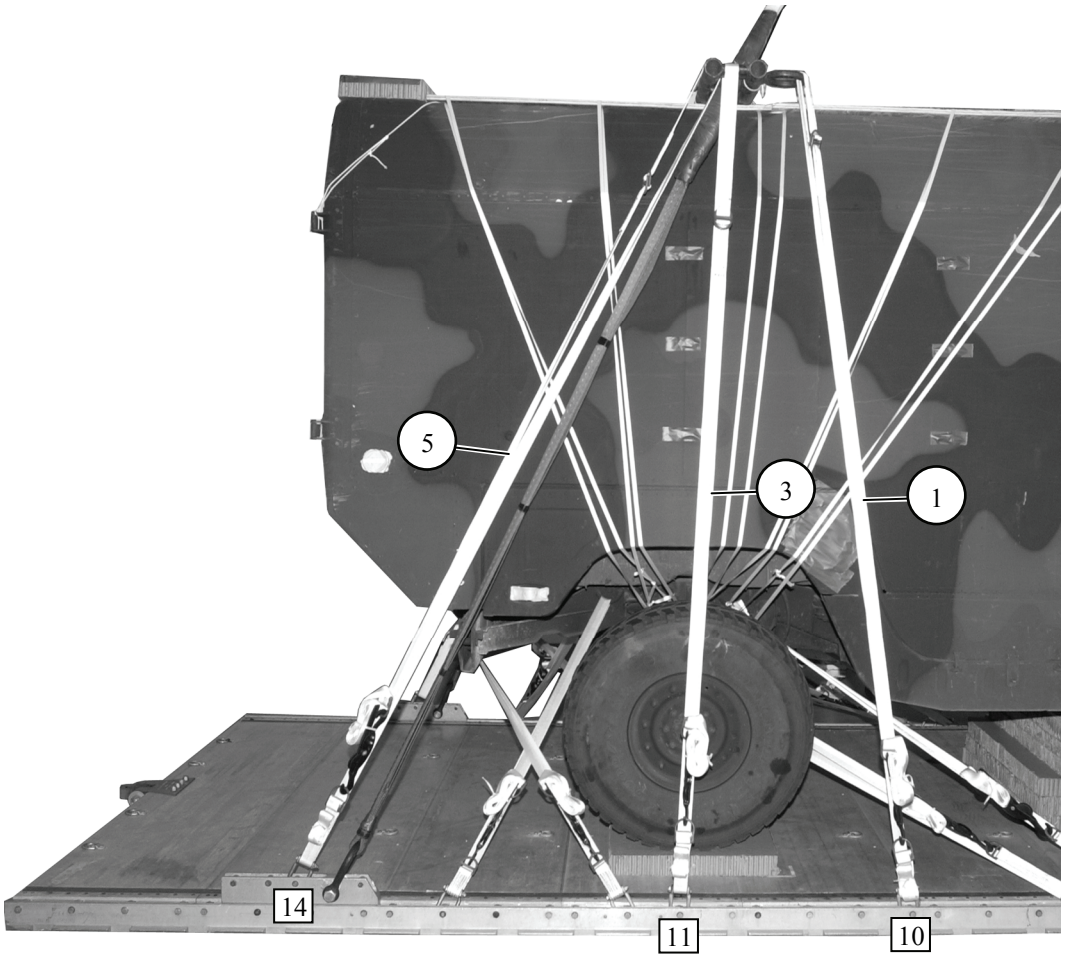
- Lash the front ACB to the ambulance as shown in Figure 2-18.



Lashing Number	*Tiedown Clevis Number*	*Instructions*
		Pass lashing:
1	2	Around front bar of ACB.
2	2A	Around front bar of ACB.
3	3	Through square hole of ACB.
4	3A	Through square hole of ACB.
5	8	Through ring of ACB.
6	8A	Through ring of ACB.
Note. Tighten all lashings at the same time to prevent shifting of the ACB.		

Figure 2-18. Front ACB Lashed to Platform

- Lash the rear ACB to the ambulance as shown in Figure 2-19.

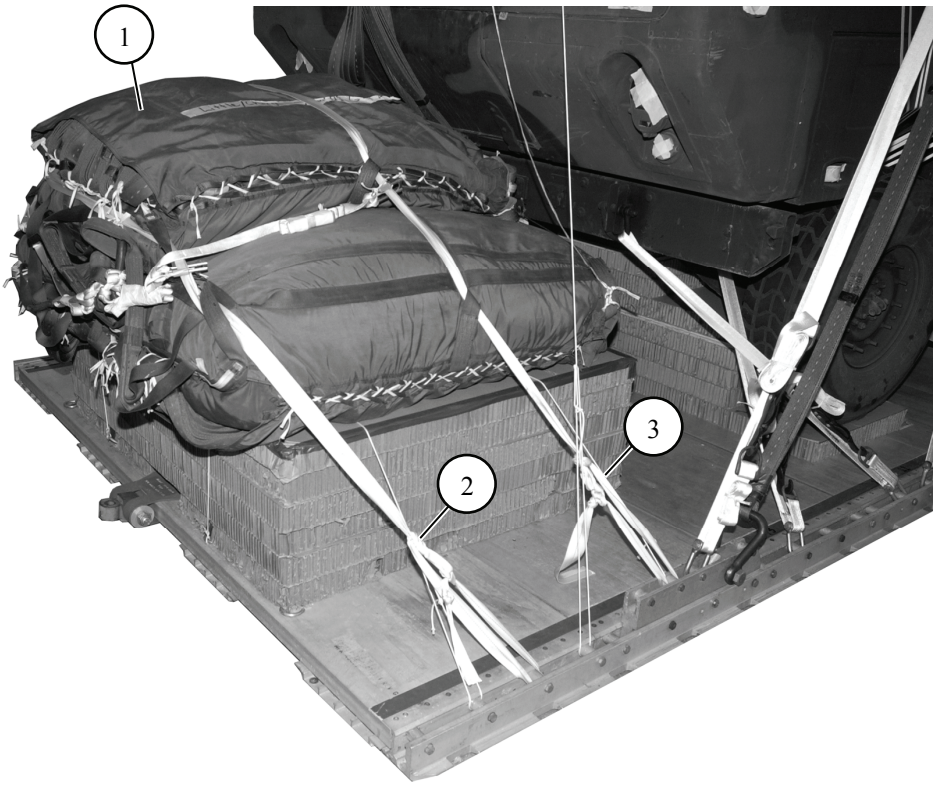


Lashing Number	*Tiedown Clevis Number*	*Instructions*
		Pass lashing:
1	10	Around ring of ACB.
2	10A	Around ring of ACB.
3	11	Through square hole of ACB.
4	11A	Through square hole of ACB.
5	14	Through rear bar of ACB.
6	14A	Through rear bar of ACB.
Note. Tighten all lashings at the same time to prevent shifting of the ACB.		

Figure 2-19. Rear ACB Lashed to Platform

STOWING CARGO PARACHUTES

2-9. Prepare and install the parachute stowage platform according to Figure 1-24. Prepare and install three G-11 cargo parachutes according to Figure 2-20.



1. Install three G-11 cargo parachutes according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.
2. Tie the rear parachute restraint strap to the 38th bushing on each side.
3. Tie the front parachute restraint strap to the 3rd bushing on the suspension link.

Figure 2-20. Parachutes Installed

INSTALLING EXTRACTION SYSTEM

2-10. Install the EFTC extraction system according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 1-26. If applicable, install the extraction parachute jettison system (EPJS) according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

INSTALLING PARACHUTE RELEASE

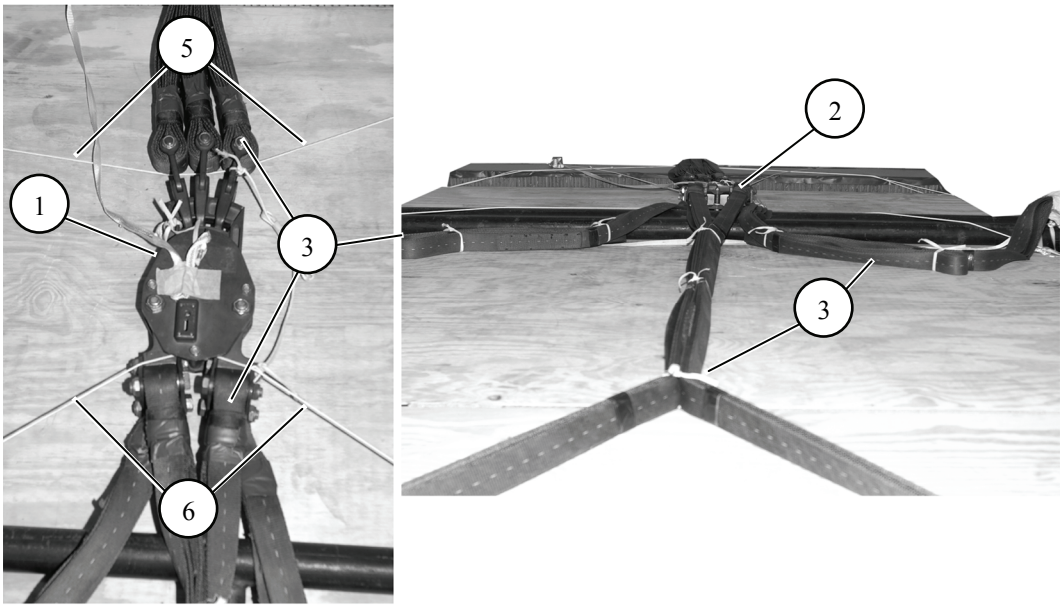
2-11. Install an M-1 cargo parachute release according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 2-21.

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

2-12. Install provisions for emergency restraints on the front of the platform according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

PLACING EXTRACTION PARACHUTE

2-13. Select the extraction parachute and extraction line needed using the extraction line requirements table in FM 4-20.102/MCRP 4-11.3J/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.



1. Prepare and install the M-1 cargo parachute release according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. Install a 25-foot arming wire lanyard.
2. Position the release on top of the ambulance roof on board number 3 to the rear of the ACB.
3. Attach the suspension slings and riser extensions according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. Fold the excess and secure with type I, ¼-inch cotton webbing. Secure the riser extension together at three places between the release and the parachutes with type I, ¼-inch cotton webbing.
4. Tape the loose deadman's tie to the plywood with masking tape (not shown).
5. Safety tie the connector links to a convenient point on the load with type III nylon cord.
6. Safety tie the bottom of the release to a convenient point on the load.

Figure 2-21. M-1 Release Installed

MARKING RIGGED LOAD

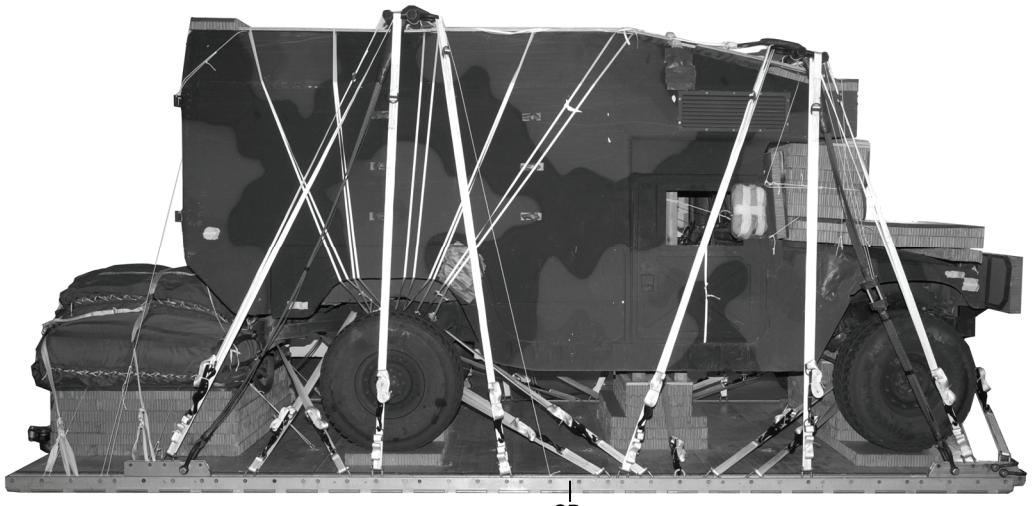
2-14. Mark the rigged load according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 2-22. Complete the Shipper's Declaration for Dangerous Goods. If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

2-15. Use the equipment listed in Table 2-1 to rig this load.

CAUTION

Make the final rigger inspection required by FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 before the load leaves the rigging site.



RIGGED LOAD DATA

Weight: Load shown	11,480 pounds
Maximum load allowed	13,500 pounds
Height	115 inches
Width	108 inches
Overall Length with EFTC	261 inches
Overall Length with EPJS	273 inches
Overhang: Front	3 inches
Rear (EFTC)	18 inches
Rear (EPJS)	30 inches
Center of Balance (from front edge of platform)	107 inches

Figure 2-22. M997, 4-Litter Ambulance Rigged for Low-Velocity Airdrop

Table 2-1. Equipment Required for Rigging M997, 4-Litter Ambulance Rigged for Low-Velocity Airdrop

National Stock Number	*Item*	*Quantity*
8040-00-273-8713	Adhesive, paste, 1-gallon	As required
1670-00-003-4389	Bar, attitude control	2
4030-00-090-5354	Clevis, suspension, 1-inch (large)	8
4020-00-240-2146	Cord, nylon, type III, 550-pound	As required
1670-00-434-5785	Coupling, airdrop, extraction force transfer with cable, 16-foot	1
1670-00-360-0328	Cover, clevis, large	3
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
8305-00-958-3685	Felt, ½-inch thick	As required
1670-01-183-2678	Leaf, extraction line (line bag)	2
1670-01-064-4452	Line, drogue, 60-foot (1-loop), type XXVI	1
1670-01-107-7651	Line, extraction, 140-foot (3-loop), type XXVI	1
	Link assembly, two-point	
1670-00-003-1953	3 ¾-inch	2
1670-00-003-1954	5 ½-inch	2
	Lumber:	
5510-00-220-6274	2- by 4-inch	As required
5510-00-220-6274	4- by 4-inch	As required
	Nail, steel wire,	
5315-00-010-4659	8d	As required
5315-00-753-3885	16d	As required
1670-00-753-3928	Pad, energy-dissipating (honeycomb)	25 sheets
	Parachute:	
	Cargo:	
1670-01-016-7841	G-11	3
	Cargo extraction:	
1670-01-063-3716	22-foot	1
1670-01-063-3715	15-foot drogue	1
	Platform, airdrop, type V, 20-foot	
1670-01-353-8425	Bracket assembly, coupling	(1)
1670-01-162-2372	Clevis assembly, type V	(28)
1670-01-353-8424	Extraction bracket assembly	(1)
1670-01-247-2389	Suspension link	(2)
1670-01-162-2381	Tandem link assembly (multipurpose link)	(2)
5530-00-128-4981	Plywood, ¾-inch	7 sheets
1670-01-097-8816	Release, cargo parachute, M-1	1

Table 2-1. Equipment Required for Rigging M997, 4-Litter Ambulance Rigged for Low-Velocity Airdrop (Continued)

National Stock Number	*Item*	*Quantity*
	Sling, cargo, airdrop:	
	For suspension:	
1670-01-062-6301	3-foot (2-loop), type XXVI nylon webbing	2
1670-01-063-7761	16-foot (2-loop), type XXVI nylon webbing	2
1670-01-062-6302	20-foot (2-loop), type XXVI nylon webbing	2
	For lifting:	
1670-01-062-6301	3-foot (2-loop), type XXVI nylon webbing	2
1670-01-062-6303	12-foot (2-loop), type XXVI nylon webbing	2
1670-01-063-7761	16-foot (2-loop), type XXVI nylon webbing	2
	For deployment:	
1670-01-062-6304	9-foot (2-loop), type XXVI nylon webbing	2
	For riser extension:	
1670-01-062-6313	60-foot (3-loop), type XXVI nylon webbing	3
5340-00-040-8219	Strap, parachute release multi-cut, with 3 knives	2
7510-00-266-5016	Tape, adhesive, 2-inch	As required
1670-00-937-0271	Tie-down assembly, 15-foot	34
1670-01-483-8259	Tow release mechanism (H-block for C-17)	1
	Webbing:	
8305-00-268-2411	Cotton, ¼-inch, type I	As required
8305-00-082-5752	Nylon, tubular, ½-inch	As required
8305-00-263-3591	Type VIII	As required

Glossary

ACB	attitude control bar
AD	airdrop
AFB	Air Force base
AFMAN	Air Force Joint Manual
AFR	Air Force regulation
AFTO	Air Force Technical Order
ALC	Airlift Logistics Center
attn	attention
CB	center of balance
P	penny
DA	Department of the Army
DC	District of Columbia
DD	Department of Defense
EFTC	extraction force transfer coupling
EPJS	extraction parachute jettison system
FM	field manual
HMMWV	high mobility multipurpose wheeled vehicle
HQ	headquarters
MCRP	Marine Corps Reference Publication
NSN	national stock number
OVE	on-vehicular equipment
TM	technical manual
TO	techinical order
TRADOC	US Army Training and Doctrine Command
US	United States

This page intentionally left blank.

References

AFMAN 24-204(I)/TM 38-250, *Preparing Hazardous Materials for Military Air Shipments*, December 2001

FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5, *Airdrop of Supplies and Equipment: Rigging Airdrop Platforms*, 29 August 2001

TM 9-2320-280-10/TO 36A12-1A-2091-1/TM 2320-10/6B, *Operator's Manual for Truck, Utility: Cargo/Troop Carrier, 1-1/4,* 31 January 1996

TM 10-1670-268-20&P/TO 13C7-52-22, *Organizational Maintenance Manual (Including Repair Parts and Special Tools List) for the Type V Airdrop Platform and the Dual Row Airdrop Platform*, 15 September 2002

TM 10-1670-278-23&P/TO 13C5-26-2/NAVAIR 13-1-27/TM 01109C-23&P/1, *Unit and Intermediate Direct Support (DS) Maintenance Manual (Including Repair Parts and Special Tools List) for Parachute, Cargo Type: 15-Foot Diameter, Cargo Extraction Parachute*, 31 December 2004

TM 10-1670-279-23&P/TO 13C5-27-2/NAVAIR 13-1-27, *Unit and Intermediate Direct Support (DS) Maintenance Manual (Including Repair Parts and Special Tools List) for Parachute, Cargo Type: 22-Foot Diameter, Cargo Extraction Parachute*, 30 August 1989

TM 10-1670-280-23&P/TO 13C5-31-2/NAVAIR 13-1-31, *Unit and Direct Support (DS) Maintenance Manual (Including Repair Parts and Special Tools List) for Parachute, Cargo Type: 100-Foot Diameter, G-11B, G-11C, and G-11D*, 12 September 2002

TM 10-1670-286-20/TO 13C5-2-41, *Unit Maintenance for Extraction Line Panel (Including Stowing Procedures)*, 15 March 2001

AFTO Form 22, 22 (Technical Manual (TM) Change Recommendation and Reply)

DA Form 2028, *Recommended Changes to Publications and Blank Forms*

This page intentionally left blank.

FM 4-20.166 (FM 10-500-66)
TO 13C7-25-71
30 May 2006

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

PETER SCHOOMAKER
General, United States Army
Chief of Staff

Official:

JOYCE E. MORROW
Administrative Assistant to the
Secretary of the Army
0612907

GREGORY S. MARTIN
General, USAF
Commander, AFMC

JOHN P. JUMPER
General, USAF
Chief of Staff

DISTRIBUTION:

Active Army, Army National Guard, and U.S. Army Reserve: To be distributed in accordance with the initial distribution number 114830, requirements for FM 4-20.166.

This page intentionally left blank.