LESSON ASSIGNMENT

LESSON 4

Ground Evacuation Vehicles.

LESSON ASSIGNMENT

Paragraphs 4-1 through 4-13.

LESSON OBJECTIVES

After completing this lesson, you should be able to:

4-1. Identify the normal casualty loads for AMEDD ground ambulances, including the M113, M996, M997, M1010, and Stryker.

4-2. Identify the procedures for loading casualties onto AMEDD ground ambulances, including the M113, M996, M997, M1010, and Stryker.

4-3. Identify the normal casualty loads for nonmedical ground vehicles, including the M880, M890, M998, M1008, 2 ½-ton cargo truck, and Gator.

4-4. Identify the procedures for loading casualties onto nonmedical ground vehicles, including the M880, M890, M998, M1008, 2 ½-ton cargo truck, and Gator.

4-5. Identify the normal sequences for loading and unloading casualties for AMEDD ground ambulances and nonmedical ground vehicles used to transport casualties.

SUGGESTION

After completing the assignment, complete the exercises at the end of this lesson. These exercises will help you to achieve the lesson objectives.
LESSON 4
GROUND EVACUATION VEHICLES
Section I. GROUND AMBULANCES

4-1. GENERAL

Ground ambulances are motor vehicles designed to carry casualties. The ground ambulances operating in forward areas of the combat zone possess mobility and survivability comparable to the units being supported. Each ground ambulance normally has a crew of two medical specialists. The medical specialist assigned as the driver is responsible for care and maintenance of the vehicle, including reporting major defects to the motor sergeant. He also prepares the ambulance for loading and unloading casualties. The other medical specialist (the assistant driver) checks the casualties upon arrival at the pickup site and renders emergency medical treatment en route to the medical treatment facility. Medical specialists are trained to perform both functions and their duties are interchangeable.

4-2. GENERAL RULES FOR LOADING AND UNLOADING GROUND AMBULANCES

Follow the rules listed below when loading and unloading litter casualties. They apply to ground ambulances and to nonmedical vehicles used to evacuate casualties.

a. Use a litter team to load litter casualties. The litter team should follow any special instructions given by ambulance personnel.

b. Load a litter casualty with his head toward the front of the vehicle unless:

   (1) The casualty is loaded crosswise.

   (2) The assistant driver wants the casualty’s feet in the direction of travel. For example, a casualty with an injury to one side of his body may need to be loaded feet first so the injured side is readily accessible to the assistant driver.

c. Load litter casualties from top to bottom. If the top litter slips or something falls from the litter while it is being loaded, there is no casualty underneath to be injured.

d. Load litter casualties from right to left.

e. Load casualties receiving IV fluids, having bulky splints, or with chest or abdominal wounds in the lower berths regardless of their triage category.
f. Load the least seriously injured casualty first and the most seriously injured casualty last.

(1) If casualties are picked up at more than one location, do not move a previously loaded litter casualty to make the most seriously injured casualty occupy the "last loaded, first unloaded" berth.

(2) If casualties are to be unloaded in other than the normal sequence, the assistant driver tells the litter team in which order the casualties are to be unloaded.

g. Secure each litter casualty to his litter.

h. Secure each litter to the vehicle.

i. Unload casualties in the reverse order in which they are loaded, unloading the most seriously injured casualty first. Unloading the lower berth first keeps the casualty in the lower berth from being injured should something fall from the upper berth during unloading.

4-3. M996 ARMORED AMBULANCE

The M996 and M997 are armored high mobility multipurpose-wheeled vehicle (HMMWV) ambulances. The M996 (figure 4-1) is a diesel-powered vehicle designed over all types of roads and cross-country terrain. The ambulance is equipped with a gas-particulate filter unit (GPFU) for operations in a nuclear, biological, or chemical (NBC) environment. The M996 can carry two litter casualties or six ambulatory casualties or a mixed load of one litter casualty and three ambulatory casualties. Use a three-man litter team to load and unload litter casualties from the M996.

Figure 4-1. Truck, ambulance, 4x4, armored, M996.
NOTE: When litter casualties are being transported, remove the litter rail extensions (figure 4-2) from the storage compartments and use them to help load the litters into the berths and unload litters. Details on how to prepare, use, and store the litter rail extensions are given in Field Manual 8-10-6, Medical Evacuation in a Theater of Operations.

Figure 4-2. M996 litter rail extension.

a. **Two-Litter Load.** When two litter casualties are to be transported, load the casualties in the following order.

   (1) Right berth.

   (2) Left berth (more seriously injured casualty).

b. **Mixed Load.** When a mixed load is to be transported, load the litter casualty in the right berth and the ambulatory casualties on the seat on the left.

c. **Ambulatory Load.** Make sure the litters are in a stowed position and secured. Then seat the ambulatory casualties on the right and left sides.

4-4. **M997 ARMORED AMBULANCE**

The M997 (figure 4-3) is a diesel-powered vehicle designed for use over all types of roads and cross-country terrain. The ambulance is equipped with a GPFU for operations in an NBC environment. It is also equipped with an air conditioner. The M997 can carry four litter casualties or eight ambulatory casualties or a mixed load of two litter casualties and four ambulatory casualties. Use a three-man litter team to load and unload litter casualties from the M997.
NOTE: When litter casualties are being transported, remove the litter rail extensions from the storage compartments and use them to assist in loading the litters into the berths and unloading litters (figure 4-2). Details on how to prepare, use, and store the litter rail extensions are given in Field Manual 8-10-6, Medical Evacuation in a Theater of Operations. Splint sets are stored in the cargo net compartments.

a. Four-Litter Load. When four litter casualties are to be transported, load the casualties in the following order.

(1) Upper right berth (least seriously injured casualty).

(2) Lower right berth.

(3) Upper left berth.

(4) Lower left berth (most seriously injured casualty).

b. Mixed Load. When a mixed load is to be transported, load the casualties in the following order.

(1) Upper right berth.

(2) Lower right berth (more seriously injured litter casualty).

(3) Ambulatory casualties seated on left side.

c. Ambulatory Load. If the ambulance is configured for litters, fold the upper litter racks to their backrest position. Then load the ambulatory casualties on the right and left seats.
4-5. M1010 TRUCK AMBULANCE

The M1010 ambulance (figure 4-4) is a diesel-powered vehicle with air conditioning and an optional GPFU for NBC operations. The vehicle has a patient assist boom and block and tackle to assist in loading and unloading litter casualties. The M1010 truck ambulance is designed to carry four litter casualties or eight ambulatory casualties or a mixed load of two litter casualties and four ambulatory casualties.

![Figure 4-4. Truck, ambulance, 1 1/4-ton, 4x4, M1010.](image)

a. **Four-Litter Load.** When four litter casualties are to be transported, load the casualties in the following order.

   (1) Upper right berth (least seriously injured casualty).

   (2) Lower right berth.

   (3) Upper left berth.

   (4) Lower left berth (most seriously injured casualty).

b. **Mixed Load.** When a mixed load is to be transported, load the casualties in the sequence given below. If only one litter casualty is loaded, the casualty is placed on either the upper or lower right berth.

   (1) Upper right berth.

   (2) Lower right berth (more seriously injured litter casualty).

   (3) Ambulatory casualties seated on left side.

c. **Ambulatory Load.** When only ambulatory casualties are to be transported, the casualties sit on the right and left sides.
4-6. M113 ARMORED PERSONNEL CARRIER

An M113 armored personnel carrier (figure 4-5) is a standard evacuation vehicle. It is lightly armored to protect against small arms fire. It is highly maneuverable and capable of amphibious operation on inland lakes and streams. The vehicle can transport ten ambulatory casualties in its normal configuration. The vehicle can transport four litter casualties by removing the spall liner and installing the litter suspension kit. (Litter casualties cannot be safely moved if the litter suspension kit is not installed.) When litter casualties are transported, they are loaded in the following sequence.

a. Upper right berth (least seriously injured casualty).

b. Lower right berth.

c. Upper left berth.

d. Lower left berth (most seriously injured casualty).

Figure 4-5. Carrier, personnel, full-tracked, armored, M113.
4-7. **STRYKER MEDICAL EVACUATION VEHICLE**

a. The Stryker medical evacuation vehicle (MEV) is the primary ambulance platform for the Stryker Brigade Combat Team (SBCT). The MEV provides the mounting capability to transport four patients on standard NATO litters or six ambulatory patients, in addition to an ambulance team of three (see figure 4-6). The MEV provides protection for the patient and the medical team and enhances the medical care in a protected environment with adequate lighting and accessible medical equipment. The MEV provides essential force health protection.

b. The MEV incorporates an automatic litter-lifting capability that improves on the M-113 ambulance that requires awkward lifting of the litters to the upper patient securing system. On the MEV, the medical only has to carry the litter to the back of the vehicle, load it onto a tray, and push it in. The vehicle will slide the litter over and then raise it up to the upper locked position.

c. Patients are loaded in the following order.

(1) Upper right berth (least seriously injured casualty).

(2) Lower right berth.

(3) Upper left berth.

(4) Lower left berth (most seriously injured casualty).

![Figure 4-6. Stryker MEV and standard crew.](image-url)
Section II. NONMEDICAL MILITARY VEHICLES

4-8. GENERAL

If ambulances are not available, nonmedical vehicles can be used to evacuate casualties. Many of the vehicles available to combat unit can be used to evacuate casualties with little or no change. Some of these vehicles and their capacities are discussed in the following paragraphs.

4-9. M880/M890/M1008 CARGO TRUCK

M880, M890, and M1008 cargo trucks (figure 4-7) are lightweight vehicles used to transport personnel or light general cargo. They can easily be adapted for use as carriers to evacuate up to five litter casualties each.

![Figure 4-7. Truck, cargo, 1 1/4-ton, 4x4/4x2, M880/M890/M1008, with five litters.](image)

a. Prepare Vehicle for Use. Prepare the vehicle for evacuating litter casualties in the following manner.

   (1) Fold the fabric cover and metal bows forward (toward the truck cab) as an assembly and secure the assembly to the front bow.

   (2) Lower the tailgate.

   (3) Lower the seats and lock them in place.
b. **Load Litters.** Load litter casualties in the following manner. Secure each litter to the vehicle as it is loaded into place.

   (1) **First litter.** Load the first litter crosswise across the sideboards close to the truck cab with the casualty's head behind the driver's seat.

   (2) **Second litter.** Load the second litter crosswise across the sideboards close to the first litter with the casualty's head behind the passenger's seat (head next to the first casualty's feet).

   (3) **Third litter.** Load the third litter crosswise across the sideboards close to the second litter with the casualty's head behind the driver's seat (head next to the second casualty's feet). [Loading casualties alternately head to foot is a commonly used method when casualties are loaded crosswise.]

   (4) **Fourth litter.** Load the fourth litter head first (toward the cab) on the right side of the bed of the truck. The stirrups keep the litter off the floor.

   (5) **Fifth litter.** Load the fifth litter head first on the left side of the bed of the truck.

c. **Secure Tailgate.** Raise and fasten the tailgate.

**4-10. M998 CARGO TRUCK (FOUR-MAN CONFIGURATION)**

The M998 cargo truck (figure 4-8), four-man configuration, can be used to transport three litter casualties.
a. **Prepare Vehicle for Use.** Prepare the vehicle for evacuating litter casualties.

   (1) Remove the cargo cover and metal bows, then secure them.

   (2) Lower the tailgate.

b. **Load Litters.** Load litter casualties in the following manner. Secure each litter to the vehicle as it is loaded into place.

   (1) **First litter.** Load the first litter crosswise across the sideboards close to the truck cab with the casualty’s head behind the driver’s seat.

   (2) **Second litter.** Load the second litter crosswise across the sideboards close to the first litter with the casualty’s head behind the passenger’s seat (head next to first casualty’s feet).

   (3) **Third litter.** Load the third litter head first (toward the cab) on the right side of the bed of the truck. The stirrups will keep the litter off the floor.

c. **Check Tailgate.** Leave the tailgate open. Make sure the two tailgate chain hooks are secure.

4-11. **M998 CARGO TRUCK (TWO-MAN CONFIGURATION)**

The M998 cargo truck (figure 4-9), two-man configuration, can be used to transport five litter casualties.

Figure 4-9. Truck, cargo/troop carrier, 1 1/4-ton, 4x4, M998, with five litters.
a. **Prepare Vehicle for Use.** Prepare the vehicle for evacuating litter casualties.

   (1) Fold the fabric cover and metal bows forward as an assembly and secure the assembly to the front bow.

   (2) Lower the tailgate.

b. **Load Litters.** Load litter casualties in the following manner. Secure each litter to the vehicle as it is loaded into place.

   (1) **First litter.** Load the first litter crosswise across the sideboards close to the truck cab with the casualty’s head behind the driver’s seat.

   (2) **Second litter.** Load the second litter crosswise across the sideboards close to the first litter with the casualty’s head next to first casualty’s feet.

   (3) **Third litter.** Load the third litter crosswise across the sideboards close to the second litter with the casualty’s head next to second casualty’s feet.

   (4) **Fourth litter.** Load the fourth litter head first on the right side of the bed of the truck.

   (5) **Fifth litter.** Load the fifth litter head first on the left side of the bed of the truck.

c. **Check Tailgate.** Leave the tailgate open. Make sure the two tailgate chain hooks are secure.

4-12. **TWO AND ONE-HALF-TON AND FIVE-TON CARGO TRUCKS**

The 2 1/2-ton (figure 4-10) cargo truck and the 5-ton cargo truck can be used to transport up to 12 litter casualties each.

a. **Prepare Vehicle for Use.** The following instructions are used with the M55A1 2 ½-ton, 6x6 cargo truck, but the same procedures generally apply to any other 2 ½-ton or 5-ton truck, including the family of medium tactical vehicles (FMTV) and light medium tactical vehicle (LMTV).

   (1) Roll the canvas cover to the front of the truck and secure it in a roll to the front bow.

   (2) Remove the three center bows and secure them to the canvas.

   (3) Lower the seats and the tailgate.
b. **Load Litters.** Load 12 litter casualties in the following manner. A four-man litter squad is normally used. Secure each litter to the vehicle as it is loaded into place.

**NOTE:** The illustration shows only nine litters being transported: three litters on the floor in the front of the truck (hidden in illustration), three litters on the floor in the rear of the truck, and three litters on the seats.

1. **First group of three litters.** Load the first group of three litters crosswise across the seats in the front half (near the cab) of the truck with the litter handles resting on the seats and with the casualties placed head to foot.

   a. The bearers approach the left (driver's) side of the rear of the truck in a four-man carry, stop three paces from the truck, and execute a litter post carry (casualty’s feet toward the truck).

   b. The front bearer (bearer between the litter and the truck) turns and faces the litter. The bearers then raise the litter to the level of the seats.

   c. The front bearer releases the front litter handles, climbs in the truck bed, receives the front litter handles (litter handles nearest the casualty’s feet), and places the front stirrups on the left (driver’s side) seat.
(d) The bearers at the side of the litter work their way to the rear litter handles and support the rear of the litter (casualty’s head). The bearer at the foot of the litter releases his hold and moves to the right (passenger’s) side of the truck, but remains on the outside of the truck.

(e) The bearer inside the truck moves his end of the litter to the right (passenger’s) side of the truck and transfers the litter handles to the bearer on the outside of the truck who places the litter handles on the seat on the right side of the truck.

(f) At the same time, the two bearers at the rear of the litter position their end of the litter so the litter handles rest on the seat on the left side of the vehicle. The litter is now crosswise with the casualty’s head behind the driver’s seat.

(g) The bearers move the litter toward the front of the truck until it is next to the cab of the truck. All litter handles rest securely on the seats.

(h) The second litter is loaded in the same manner as the first, except the litter is loaded from the right (passenger’s) side and the casualty’s head is behind the passenger’s seat (next to the first casualty’s feet).

(i) The third litter is loaded in the same manner as the first.

(2) **Second group of three litters.** Load the second group of three litters lengthwise (head first) on the floor in the front half of the truck beneath the first group of litters. The stirrups will keep the litters off the floor.

(a) The bearers approach the right (passenger’s) side of the rear of the truck in four-man carry formation, stop three paces from the truck, execute a litter post carry, and then rotate the litter (if needed) so the casualty’s head is toward the truck.

(b) The front bearer (bearer between the litter and the truck) releases his litter handles and climbs in the truck bed.

(c) The two bearers at the sides place the front stirrups on the right side of the truck bed.

(d) The two bearers on the litter’s sides release their hold (leaving one bearer holding the foot end of the litter) and climb into the truck bed.

(e) The bearers in the truck take the litter and move it under the litters on the seats and next to the right side of the truck. The bearers avoid sliding the litter along the bed of the truck whenever possible.
(f) The fifth litter is loaded in the same manner as the fourth except the litter bearers position themselves at the center of the truck bed and place the litter in the center of the truck bed beneath the first three litters.

(g) The sixth litter is loaded in the same manner as the fourth except the litter bearers position themselves at the left side of the truck bed and place the litter in the left side of the truck bed beneath the first three litters.

(3) Third group of three litters. Load the third group of three litters crosswise across the seats in the rear half of the truck with the litter handles resting on the seats. Continue to alternate casualties.

   (a) Load the seventh casualty in the same manner as the second casualty (casualty’s head next to the third casualty’s feet).

   (b) Load the eighth casualty in the same manner as the first casualty (head behind driver and next to the seventh casualty’s feet).

   (c) Load the ninth casualty in the same manner as the second casualty (casualty’s head next to the eighth casualty’s feet).

(4) Fourth group of three litters. Load the fourth group of three litters lengthwise (head first) on the floor in the rear half of the truck behind the second group of litters and beneath the third group of litters.

   (a) Load the tenth casualty on the right in the same manner as the fourth casualty, except the bearers do not climb in the truck bed.

   (b) Load the eleventh casualty in the center in the same manner as the fifth casualty, except the bearers do not climb in the truck bed.

   (c) Load the twelfth casualty on the left in the same manner as the sixth casualty, except the bearers do not climb in the truck bed.

c. Secure Tailgate. Raise and fasten the tailgate as high as possible (about a 45° angle) to help secure the litters in place and prevent them from sliding out of the truck when it is in motion.
4-13. JOHN DEERE GATOR

The “Gator” (figure 4-11) is a highly mobile, air assault, air-droppable, light wheeled vehicle used by front line infantry, airborne and air assault soldiers to move ammunition, supplies and casualties on the battlefield. The “Gator” is capable of carrying three litter casualties.

a. The least seriously injured patient should be loaded behind the passenger compartment seats.

b. The next casualty should be loaded closest to the tailgate.

c. The most seriously injured casualty should be loaded on the carrying rack on the front of the vehicle so he can be monitored.

Figure 4-11. John Deere Gator.

Continue with Exercises

Return to Table of Contents
EXERCISES, LESSON 4

INSTRUCTIONS: Answer the following exercises by marking the lettered response that best answers the question or best completes the incomplete statement or by writing the answer in the space provided at the end of the exercise.

After you have completed all the exercises, turn to "Solutions to Exercises" at the end of the lesson and check your answers. For each exercise answered incorrectly, reread the material referenced with the solution.

1. You are loading litter casualties into an evacuation vehicle. The most seriously injured casualty is usually loaded:
   a. First.
   b. Last.

2. You are unloading litter casualties from an evacuation vehicle. The most seriously injured casualty should be unloaded:
   a. First.
   b. Last.

3. You are loading four litter casualties into an M113 evacuation vehicle. In what order should the berths be filled?

   __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________
   __________________________________________
4. You are unloading four litter casualties from an M113 evacuation vehicle. In what order should the berths be unloaded?

________________________ ____________________
________________________ ____________________
________________________ ____________________
________________________ ____________________

5. When using a nonmedical vehicle to evacuate a litter casualty, make sure:
   a. The casualty is secured to the litter.
   b. The litter is secured to the vehicle.
   c. The casualty is secured to the litter and the litter is secured to the vehicle.

6. The M997 armored ambulance can carry up to _____ litter casualties or up to ______ ambulatory casualties. Its normal mixed load is _____ litter casualty(ies) and ______ ambulatory casualty(ies).

7. The John Deere Gator can carry ______ litter casualties.

8. When a litter casualty is loaded lengthwise, the casualty's ________ normally pointing in the direction of travel.
   a. Feet are.
   b. Head is.

Check Your Answers on Next Page
SOLUTIONS TO EXERCISES, LESSON 4

1. b (para 4-2f)

2. a (para 4-2i)

3. Upper right berth
   Lower right berth
   Upper left berth
   Lower left berth (para 4-6)

4. Lower left berth
   Upper left berth
   Lower right berth
   Upper right berth (paras 4-2i, 4-6)

5. c (paras 4-2g, h)

6. Four; eight; two, four (para 4-4)

7. 3 litter casualties (para 4-13)

8. b (para 4-2b)

Return to Table of Contents