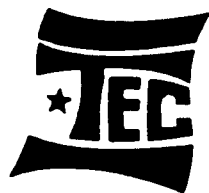
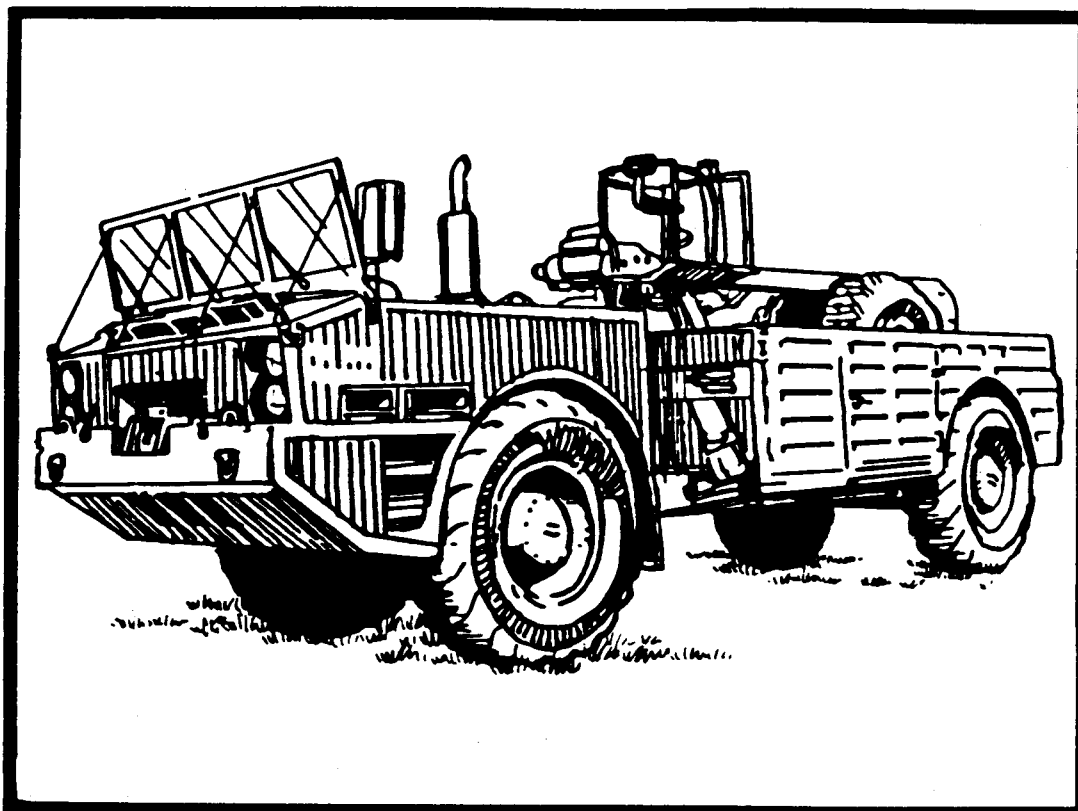
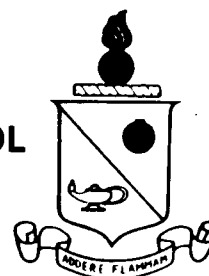


TOW DISABLED VEHICLE WITH 10-TON WRECKER (M553)

TEC LESSON NO. 499-091-1916-A



**PRODUCED BY
US ARMY ORDNANCE CENTER AND SCHOOL
ABERDEEN PROVING GROUND, MD**



**STUDENT/SUPERVISOR INSTRUCTIONS AND PRETEST/POSTTEST
ARE CONTAINED WITHIN THIS LESSON.**

**READ THE STUDENT/SUPERVISOR INSTRUCTIONS CAREFULLY. BE SURE
YOU UNDERSTAND THEM COMPLETELY BEFORE CONTINUING THE
LESSON.**

STUDENT/SUPERVISOR INSTRUCTIONS

AUDIENCE

- MOS 63S10 soldiers.

TRAINING OBJECTIVES

- Tow another Goer with a towbar.
- Lift and tow another Goer.
- Tow a vehicle other than a Goer with a towbar.

MATERIAL/EQUIPMENT/PERSONNEL REQUIRED

- 10-ton wrecker (Goer) (M553).
- Disabled 10-ton wrecker (Goer) (M553).
- Disabled 5-ton vehicle.
- Basic issue items (BII).
- Pencil, paper, and this lesson.
- One assistant.

TIME REQUIRED

- Individual Mode: 1 hour.
- Group Mode: 1 hour 30 minutes.

REFERENCES (with changes if applicable)

- TM 9-2320-233-10.
- FM 20-22.

STUDENT INSTRUCTIONS

- Take the pretest. If you pass, you need not take this lesson.
- Make sure you have all material, equipment, and personnel required to complete this lesson.
- Take this lesson.
- Observe all warnings, and safety precautions.
- Follow instructions. Do not take shortcuts!
- Do not write in this booklet.
- Take the posttest. If you do not pass it, take the lesson and the test again.

PRETEST/POSTTEST

Type of Lesson: **Ordnance**
MOS: **63S10**

TEC Lesson
499-091-1916-A

TOW DISABLED VEHICLE WITH 10-TON WRECKER (M553)

Directions to the Test Administrator:

The soldier is to be given the pretest and posttest in a shop or field environment. It's important that the soldier select and use the proper technical publications. The test should be performed in accordance with safety precautions.

The following items are to be furnished to the soldier by the test administrator:

- 10-ton wrecker (M553)
- Disabled 10-ton wrecker (M553)
- Disabled 5-ton vehicle
- BII

The following items are to be selected by the soldier during the test:

- FM 20-22 with change(s) if applicable.
- TM 9-2320-233-10 with change(s) if applicable.
- Pencil and paper.

Pretest Directions:

Prior to administering the pretest, the test administrator should say to the soldier:

"You will be allowed one attempt to pass this test. You must perform the task with no mistakes. If you receive a "NO GO" on a task element, you will be stopped and directed to take this lesson."

The test administrator will then read the test item to the soldier. (The test item follows the posttest directions below.)

Posttest Directions:

The soldier is to be allowed three attempts to pass this test.
The soldier may use notes while taking the posttest.

PRETEST/POSTTEST

If the soldier receives a "NO GO" on a task element, the test administrator should offer corrective guidance and allow the soldier to continue the attempt. If the soldier receives a second "NO GO" or is having obvious difficulty, the test administrator is to stop the attempt and inform the soldier of the mistake(s). The test administrator will then direct the soldier to review the lesson and take the posttest again.

Prior to administering the posttest, the test administrator should say to the soldier:

"You have three attempts to pass this test. You may use any notes you have during the test."

The test administrator should then read the test item to the soldier:

TEST ITEM:

"After selecting the appropriate technical manuals, you will tow a disabled vehicle with a 10-ton wrecker (M553). You have 30 minutes to complete this task. Remember, you must do the following:

- a. Select and use tools properly.
- b. Select and use publications properly.
- c. Follow procedures outlined in this lesson.
- d. Observe safety precautions.
- e. Complete task within the allotted time.

Do you have any questions?"

PRETEST/POSTTEST ANSWER KEY/CHECKLIST

School: **Ordnance**
MOS: **63S10**

TEC Lesson No.
499-091-1916-A

TOW DISABLED VEHICLE WITH 10-TON WRECKER (M553)

Each student must correctly perform all steps. A time limit of one hour is allowed. If the student does not correctly perform all steps, he should take/retake this lesson.

1. While towing another Goer with a towbar, did the soldier:
 - a. Select/use technical manuals correctly?
 - b. Select/use tools properly?
 - c. Attach clevises to towbar?
 - d. Attach the towbar and clevises to the towing eyes?
 - e. Remove load binder and place in storage compartment of towing wrecker?
 - f. Attach towbar to towing pintle on the wrecker?
 - g. Connect air lines to emergency service couplings on the vehicle to be towed?
 - h. Connect electrical line to disabled vehicle?

Go	NoGo	Go	NoGo	Go	NoGo

PRETEST/POSTTEST ANSWER KEY/CHECKLIST

School: **Ordnance**

MOS: **63S10**

TEC Lesson No.

499-091-1916-A

	Go	NoGo	Go	NoGo	Go	NoGo
i. Wrap air and electrical lines around towbar and connect to the towing wrecker?						
j. Attach safety chains to towed and towing vehicle?						
k. Place transmission of towed truck in neutral?						
l. Place parking brake in towed truck off?						
m. Observe the 5-mile-per-hour towing limit?						
n. Remove the drive shaft between the transfer case and the front differential if towing over 25 miles?						
o. Observe safety precautions?						
p. Complete task within allotted time?						
q. Complete DA Form correctly?						
2. While lifting and towing a vehicle other than a goer, did the soldier:						
a. Select/use technical manuals correctly?						
b. Select/use tools properly?						
c. Inflate the rear tires of the wrecker to 45 psi?						

PRETEST/POSTTEST ANSWER KEY/CHECKLIST

School: **Ordnance**
MOS: **63S10**

TEC Lesson No.
499-091-1916-A

- d. Connect the air lines to the front of the vehicle to be towed?
- e. Connect the electrical line to the front of the vehicle to be towed?
- f. Swing the intervehicle lock on the towed vehicle in place and lock it with the pin?
- g. Put the steering limit blocks on the disabled vehicle steering cylinder?
- h. Engage the oscillation stops on the towed truck?
- i. Attach clevises to the towing eyes of the vehicle to be towed?
- j. Attach the bar, lift and tow (lifting bar) to the clevises on the front of the vehicle to be towed?
- k. Attach safety chains to the lifting eyes of the towed vehicle and towing pintle of the towing wrecker?

Go	NoGo	Go	NoGo	Go	NoGo

PRETEST/POSTTEST ANSWER KEY/CHECKLIST

School: **Ordnance**

MOS: **63S10**

TEC Lesson No.

499-091-1916-A

- l. Extend the boom support?
- m. Lift the front of the towed truck with the crane hook?
- n. Support the boom on the towing wrecker with the boom supports?
- o. Connect the air and electrical lines to the wrecker?
- p. Place the transmission of the vehicle to be towed in neutral?
- q. Place the towed vehicle's parking brake in off position?
- r. Tow the vehicle?
- s. Remove and store the intervehicle locks and steering limit blocks in their original positions after towing?
- t. Observe safety precautions?
- u. Complete task within allotted time?
- v. Complete DA For correctly?

Go	NoGo	Go	NoGo	Go	NoGo

OVERVIEW

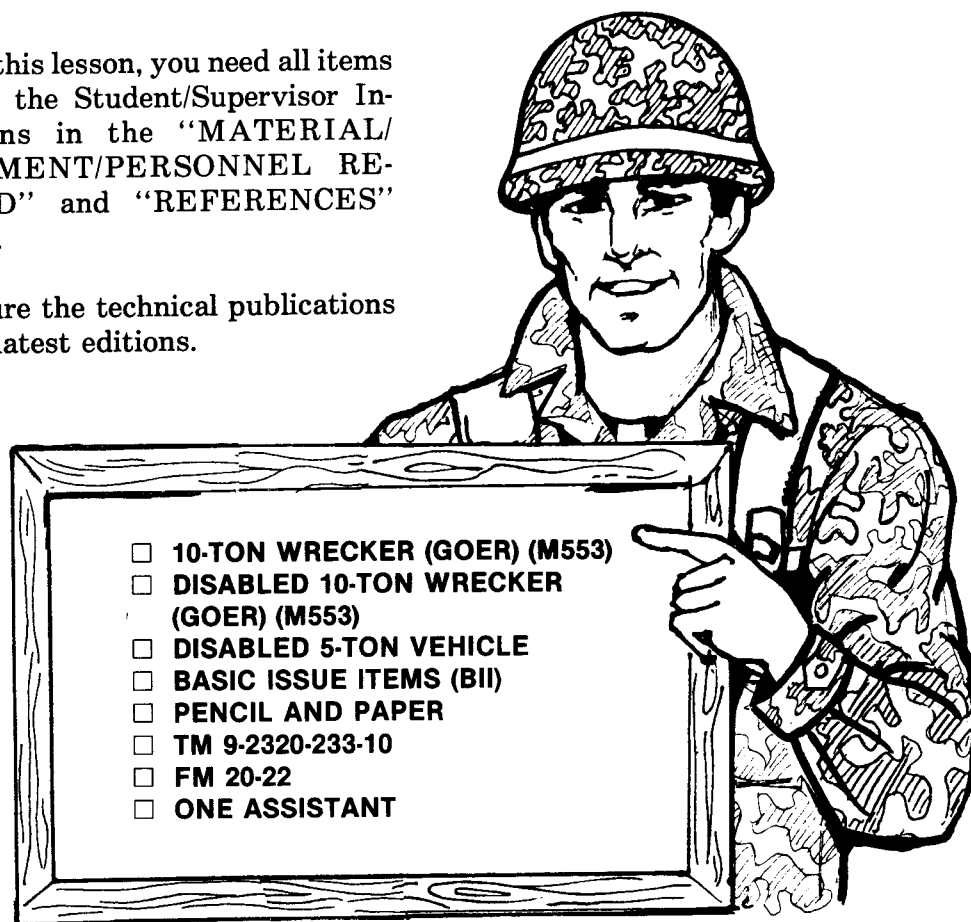
This lesson teaches you how to tow with a towbar other Goers and vehicles other than Goers.

You may take notes while you work through the lesson. You may use these notes when you take the posttest.

Now that you know what you are required to do and what equipment you will use, begin.

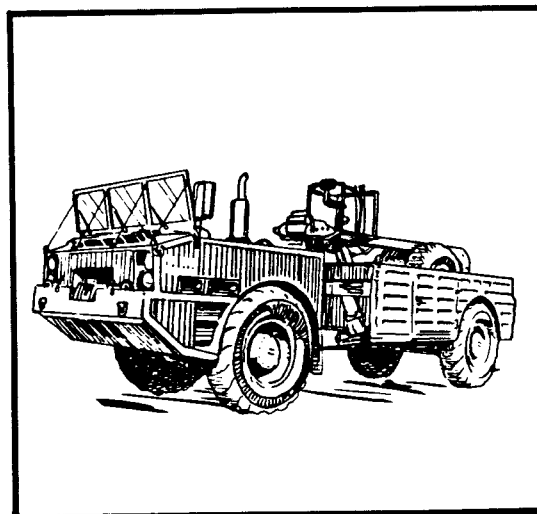
To take this lesson, you need all items listed in the Student/Supervisor Instructions in the "MATERIAL/EQUIPMENT/PERSONNEL REQUIRED" and "REFERENCES" sections.

Make sure the technical publications are the latest editions.



You are responsible for making sure each job you do is done without damaging the equipment or injuring personnel.

Observe all warnings and cautions before beginning work on any vehicle.



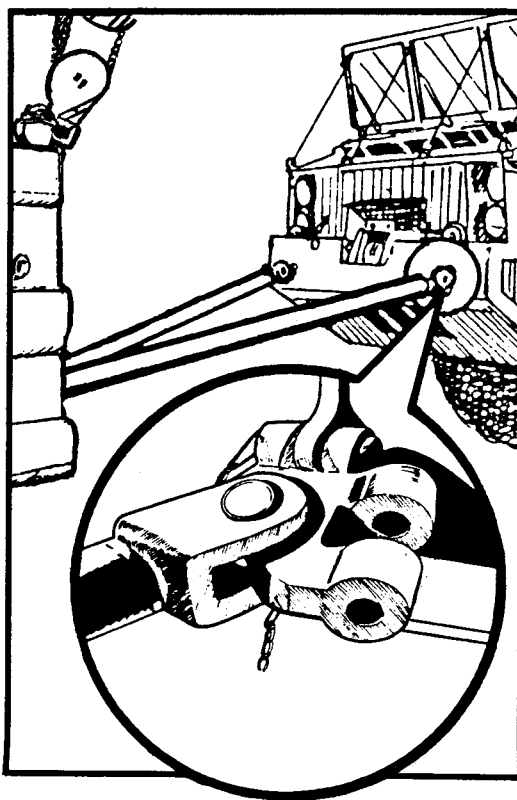
WARNING

Never place yourself between the cab and trailer of the Goer while the engine is running. Serious injury or death could be the result.

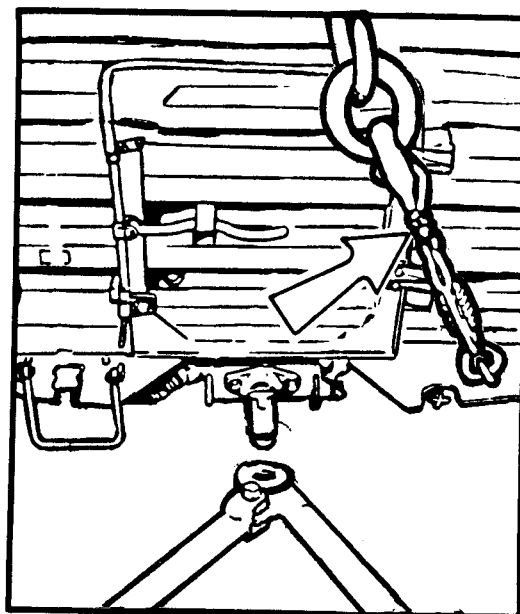
Begin with the procedures for towing another Goer with a towbar and a right and a left clevis.

Attach a clevis to each end of the towbar, making sure the extra eyelets on the clevis are on the outside of the towbar as shown here.

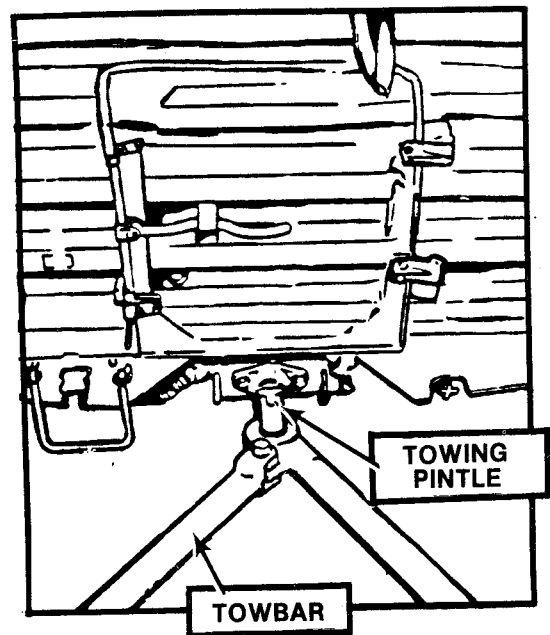
Then attach the towbar and clevis to the towing eyes on the front of the disabled Goer.



Now remove the load binder and place it in the storage compartment of the towing wrecker.

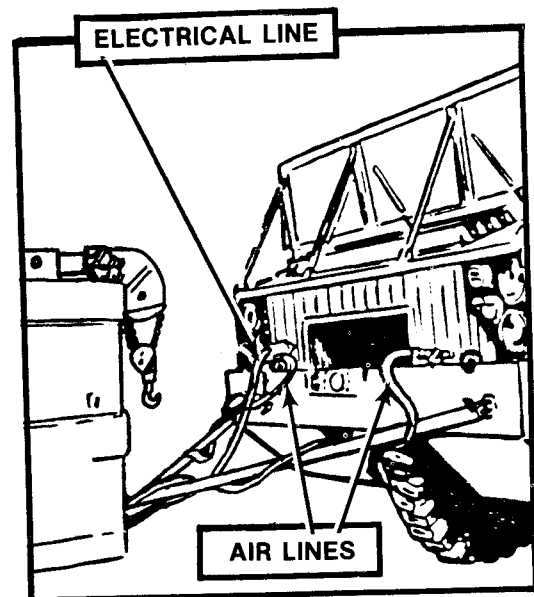


Now, attach the towbar to the towing pintle on the wrecker.



Connect the air lines to the front of the vehicle to be towed. Connect one air line to the service coupling on the right. Connect the other air line to the emergency coupling on the left.

Next, connect the electrical line to the auxiliary receptacle on the vehicle to be towed.



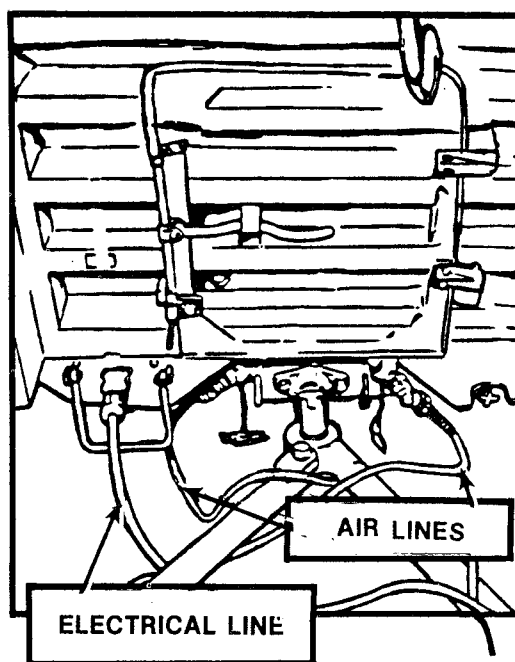
Now you are ready to connect the air and electrical lines to the wrecker.

First, wrap the lines around the towbar.

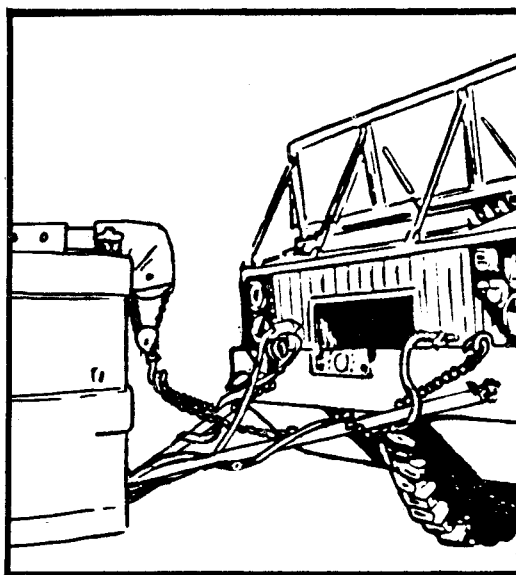
Then connect the service line to the coupling on the left. The emergency line connects to the coupling on the right.

When completely connected, the lines will cross each other.

Next, connect the electrical line to the auxiliary receptacle on the towing wrecker.

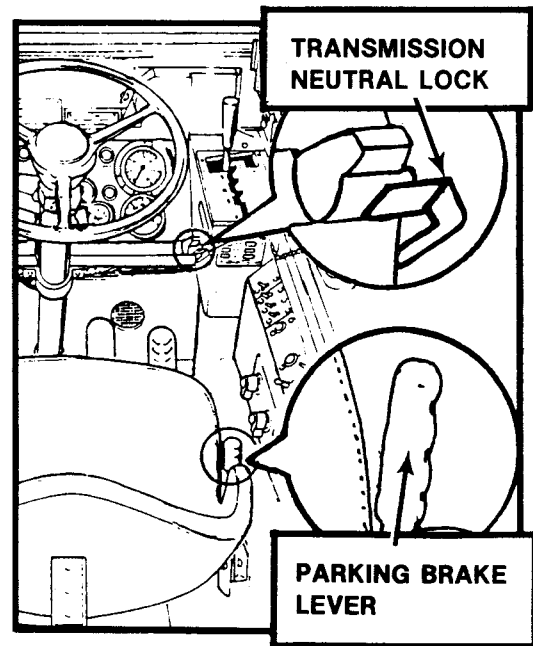


Now, take the safety chains and attach them to the lifting eyes of the towed vehicle. Then wrap the chains around the towbar, and hook the chain ends to the boom hook on the towing vehicle.



Now, check the transmission in the towed truck. Make sure its locked in neutral.

Then make sure the towed truck's parking brake is off.



When towing another Goer, never go more than 5 miles per hour.

Do not tow a vehicle farther than 25 miles unless this procedure is followed:

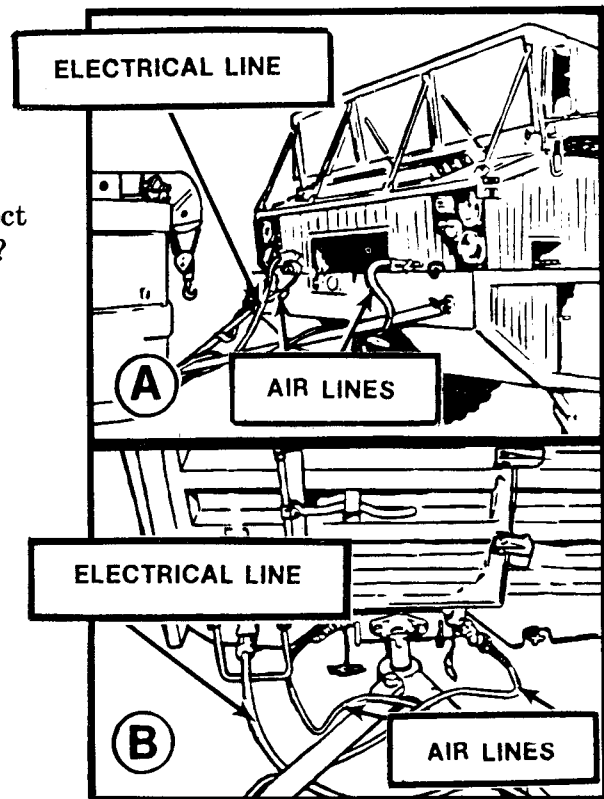
**Towing farther than 25 miles?
Have your mechanic remove the
FRONT DRIVE SHAFT between
the TRANSFER CASE and the
FRONT DIFFERENTIAL on the
towed vehicle.**



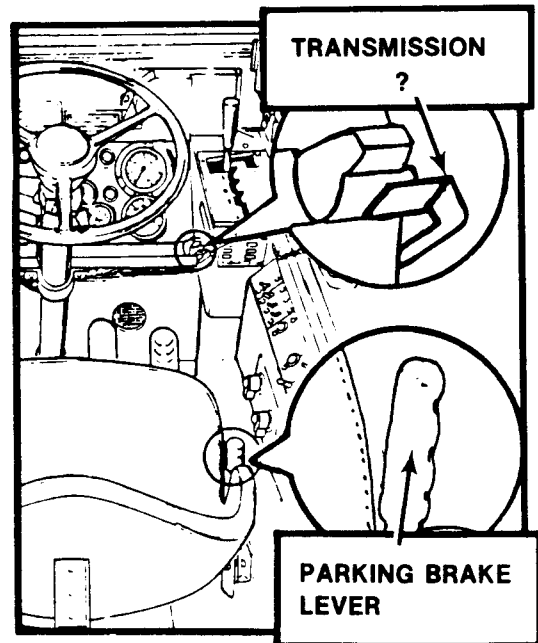
STOP! TAKE A PRACTICE EXERCISE.

PRACTICE EXERCISE 1

1. To which vehicle do you connect the air and electrical lines first?
 - a. The disabled Goer.
 - b. The wrecker.

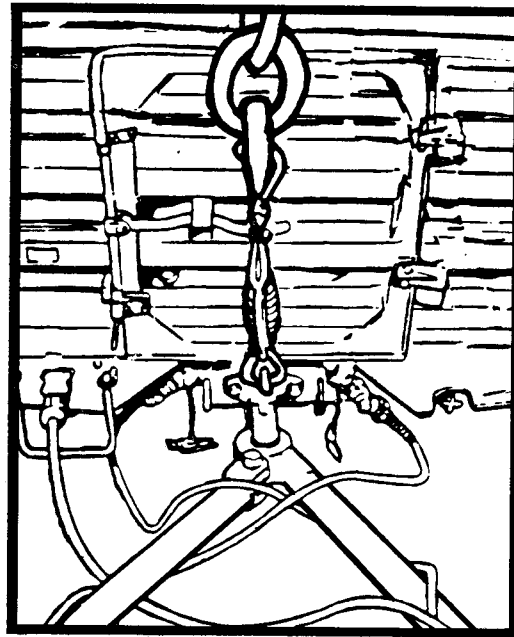


2. In what position should the towed vehicle's transmission be locked?
3. How should the towed vehicle's parking brake be set?
4. What is the maximum speed for towing a Goer?



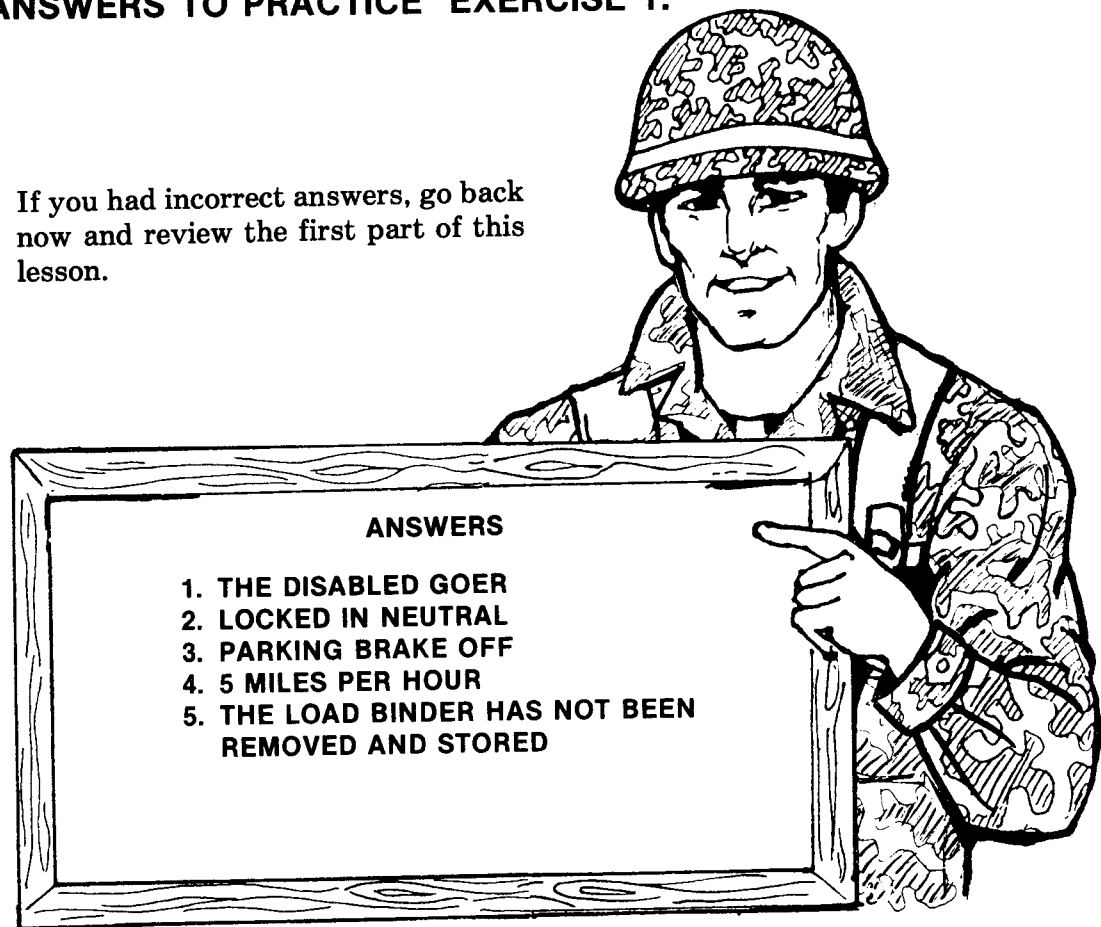
PRACTICE EXERCISE 1

5. Here is the back of the towing wrecker. What is wrong with the hook-up shown in the illustration?



ANSWERS TO PRACTICE EXERCISE 1.

If you had incorrect answers, go back now and review the first part of this lesson.



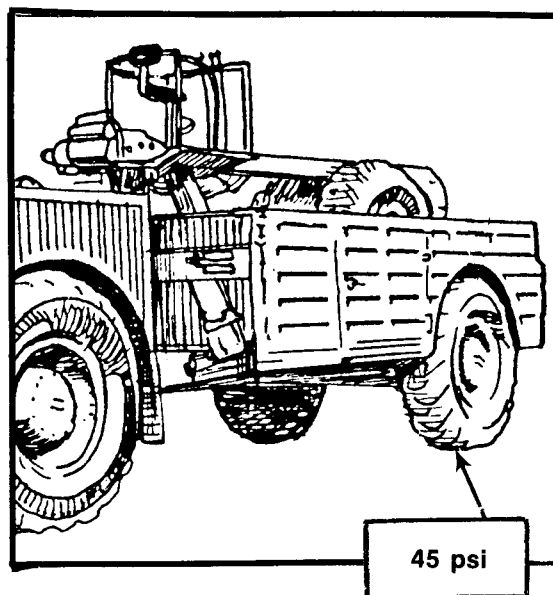
Now you may begin the procedures on lifting and towing another Goer.

Observe the note on lifting and towing.

NOTE

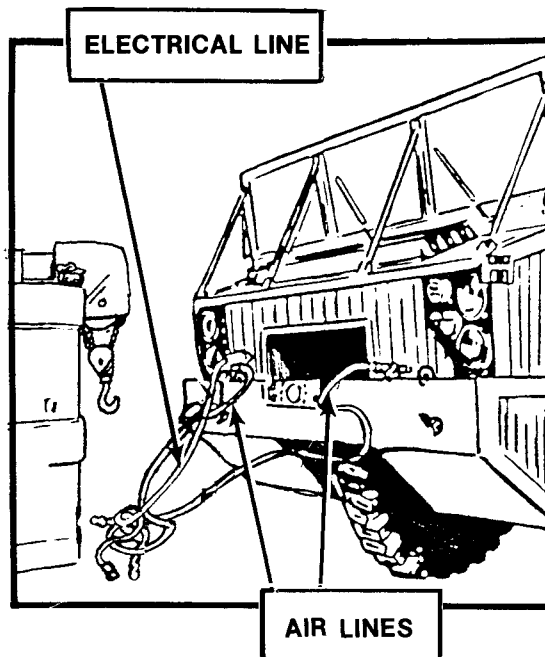
YOU CAN LIFT AND TOW ALL GOER TRUCKS FROM THE FRONT AND GOER CARGO AND TANKER TRUCKS FROM THE REAR. THIS PROCEDURE IS FOR **FRONT END TOWING**. REAR-END TOWING IS THE SAME EXCEPT THE TOWED VEHICLE IS CONNECTED AT THE WRECKER'S LOWER PINTLE POINT. TAKE CARE WHEN TOWING ANOTHER GOER VEHICLE FROM THE REAR USING A TOWBAR. IT IS POSSIBLE TO ROLL THE TIRES OFF THE RIMS OF THE VEHICLE IN MINIMUM RADIUS TURNS. IF POSSIBLE, TOW THE VEHICLE TO AN AREA WHERE TOWING CAN BE CHANGED FROM REAR TO FRONT.

Before beginning, inflate the towing wrecker's rear tires to 45 psi.



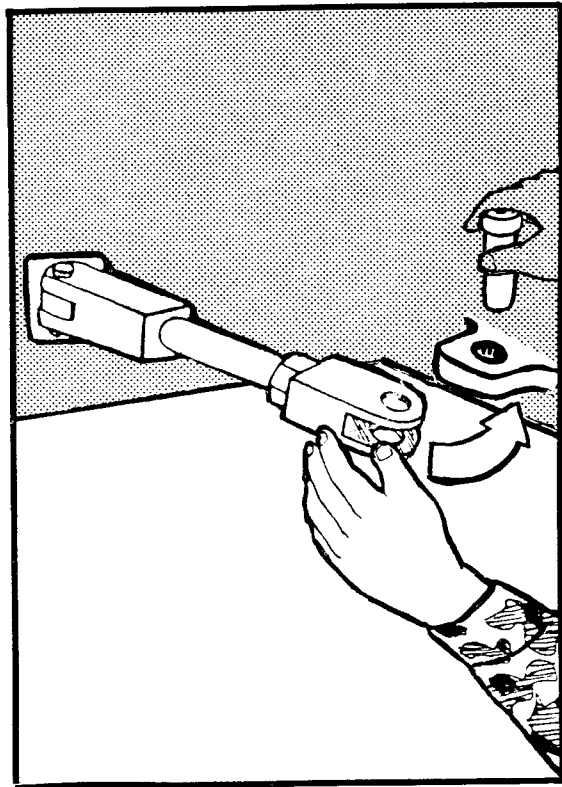
Connect the air and electrical lines to the front of the truck that you will tow. Connect the one air line to the service coupling on the right. Connect the other air line to the emergency coupling on the left.

Next, connect the electrical line to the auxiliary receptacle on the vehicle to be towed.

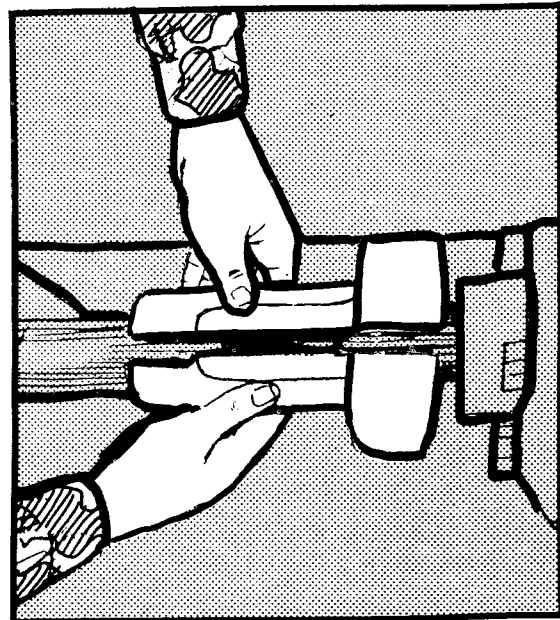


Swing the intervehicle lock on the towed truck into place, and secure it with the pin.

The intervehicle lock is found beneath the engine compartment on the driver's side of the vehicle.

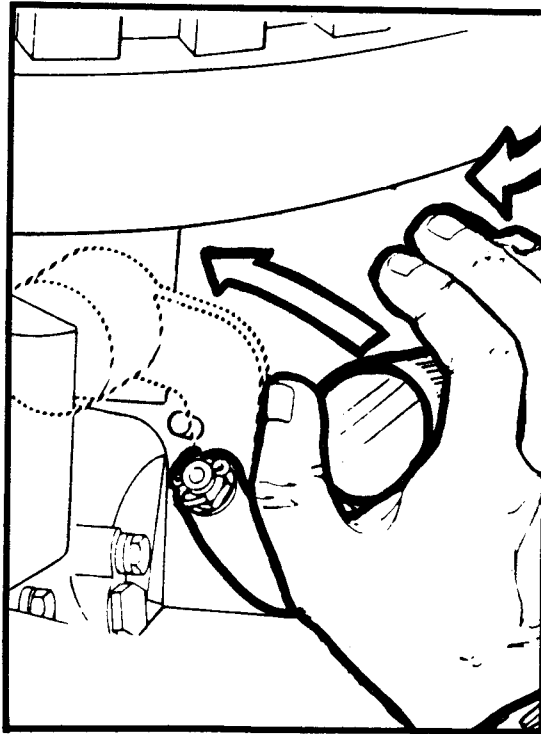


Then put the steering limit blocks on the towed wrecker steering cylinder.



Engage the oscillation stops (near the tractor-trailer couplings) on the towed truck by doing the following:

- a. Remove the cotter pins.
- b. Loosen the nuts at the pivot points, and push the stops up into position.
- c. Tighten the nuts securely, and replace the cotter pins.

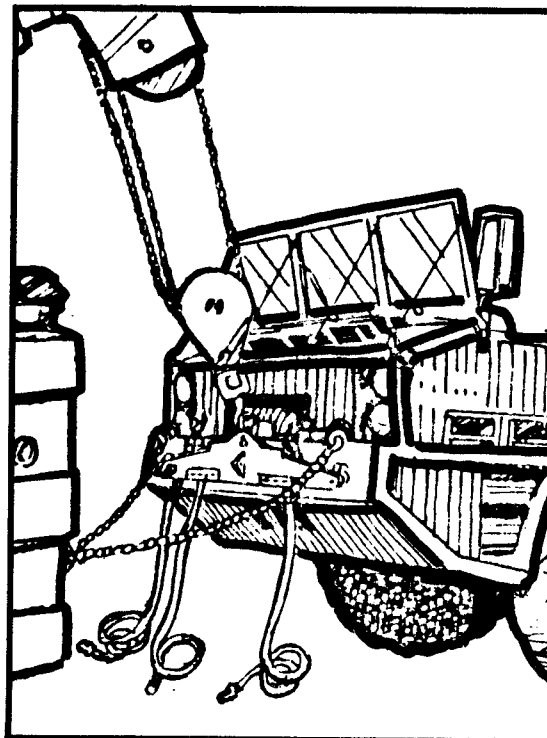


Now attach the right and left clevises to the towing eyes on the towed Goer. Make sure the extra eyelets on the clevises are on the outside of the front of the towed vehicle.

Attach the bar, lift and tow (lifting bar) to the clevises.

Then attach the safety chain to the lifting eyes of the towed vehicle and to the towing pintle of the towing wrecker.

Extend the boom support and lift the towed vehicle's front with the crane hook attached to the lifting eye on the lifting bar.



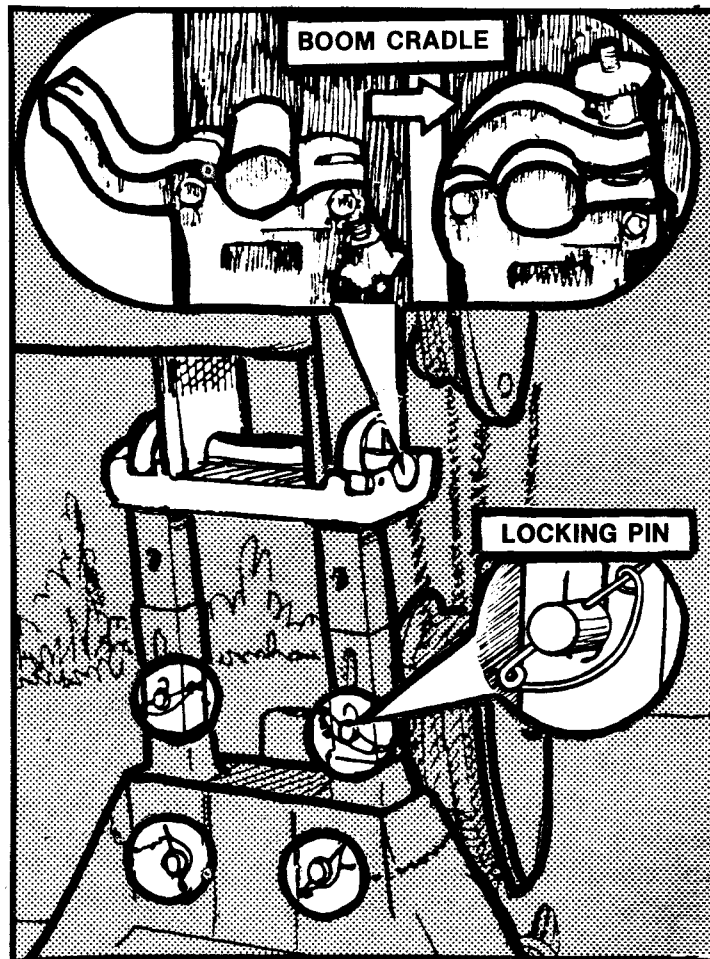
Now support the boom with the boom support by doing the following:

- a. Pull the locking pins from the cradle legs, and lift the cradle.
- b. If you need height, telescope the cradle legs. Then lock them in place with a second set of locking pins.

- c. When you get support at the height you want, secure the boom in the cradle.

NOTE

The boom support holds the boom while it is not in use or when it is being used for lifting and towing. When you are not using the support, swing it down out of the way.

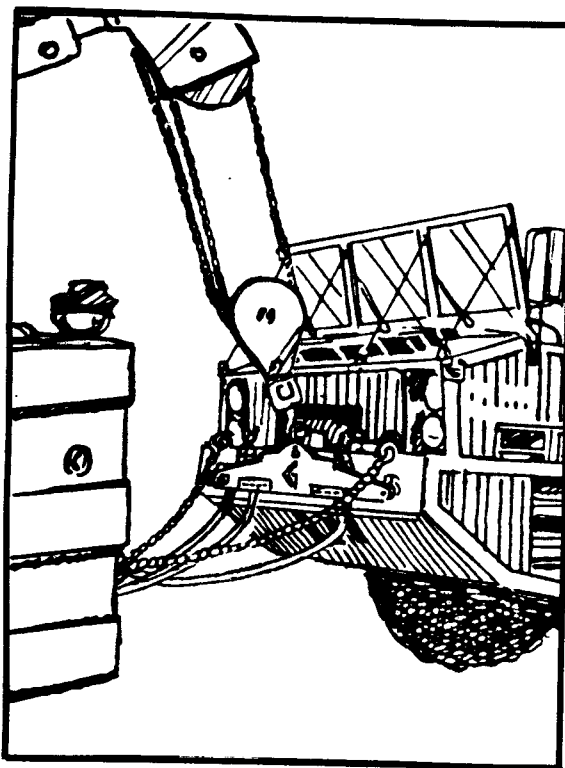


Connect the air and electrical lines to the towing wrecker.

First, connect the service air line to the coupling on the left. The emergency air line connects to the coupling on the right.

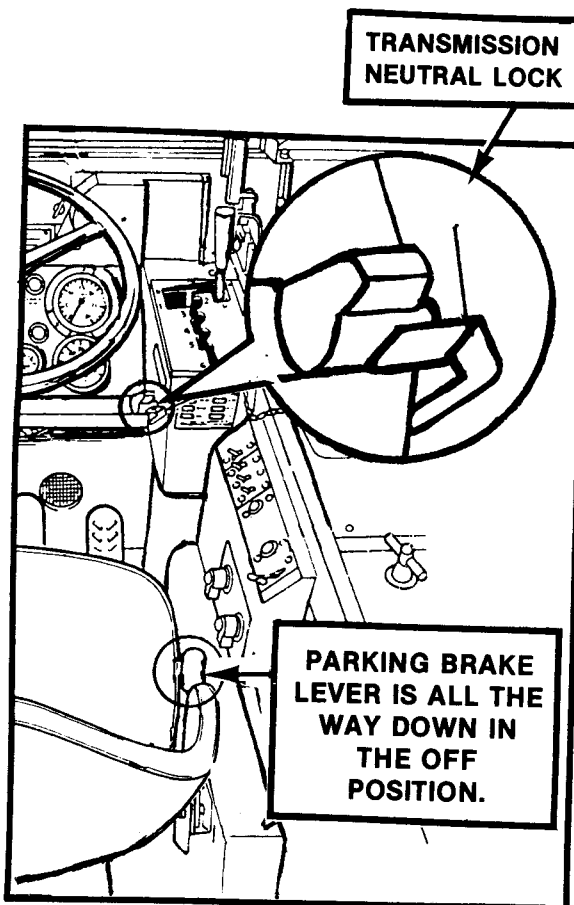
When the lines are completely connected, the lines will cross each other.

Next, connect the electrical line to the auxiliary receptacle on the towing wrecker.



Place the transmission of the truck you will tow in neutral.

Then place the parking brake in the truck you are towing in off position.



After towing operations:

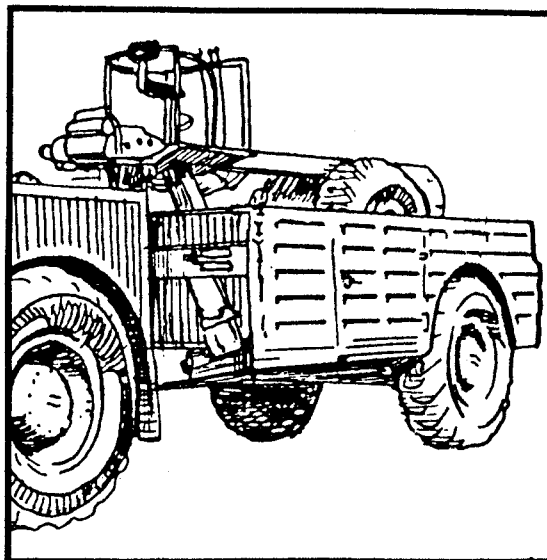
**Remove and store the
INTERVEHICLE LOCKS and
STEERING LIMIT BLOCKS
in their original positions
and disengage the
OSCILLATION STOPS on the
towed vehicle.**



**STOP. TAKE A PRACTICE
EXERCISE.**

PRACTICE EXERCISE 2

1. Inflate the rear tires of the towing wrecker to what psi?



2. Do you first connect the air and electrical lines to the towed vehicle or to the towing vehicle?

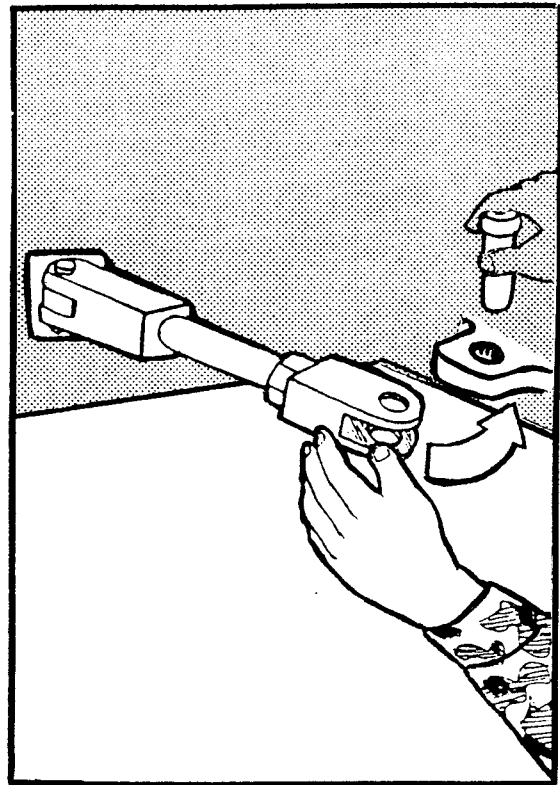
**Connect Air and Electrical
Lines to which vehicle first?**

- A. TOWED VEHICLE
B. TOWING VEHICLE**

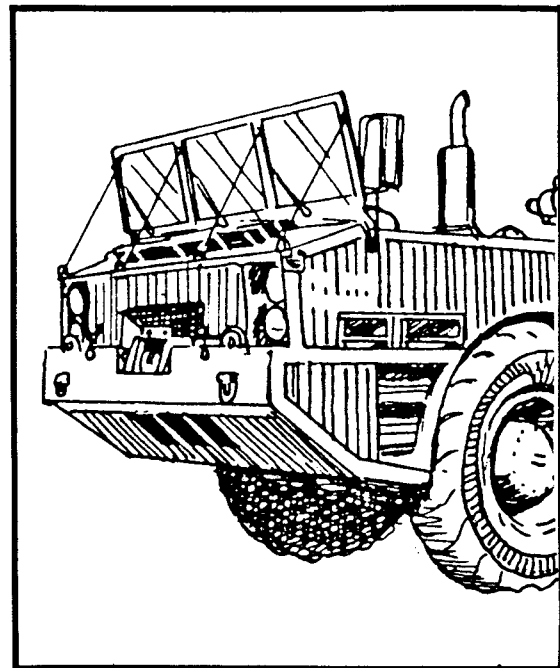


PRACTICE EXERCISE 2

3. What is this soldier doing?

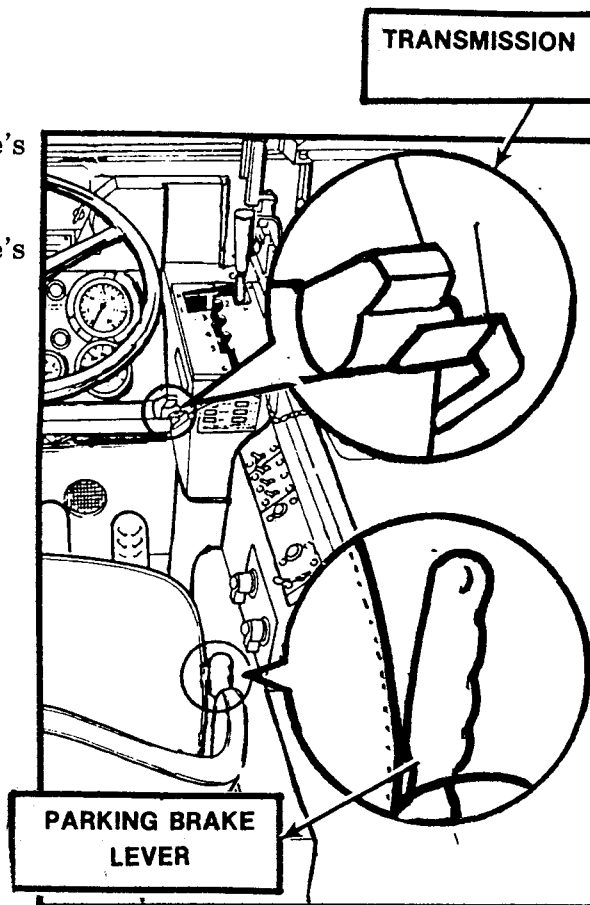


4. At what point on the towed vehicle is the bar, lift and tow (lifting bar) attached.



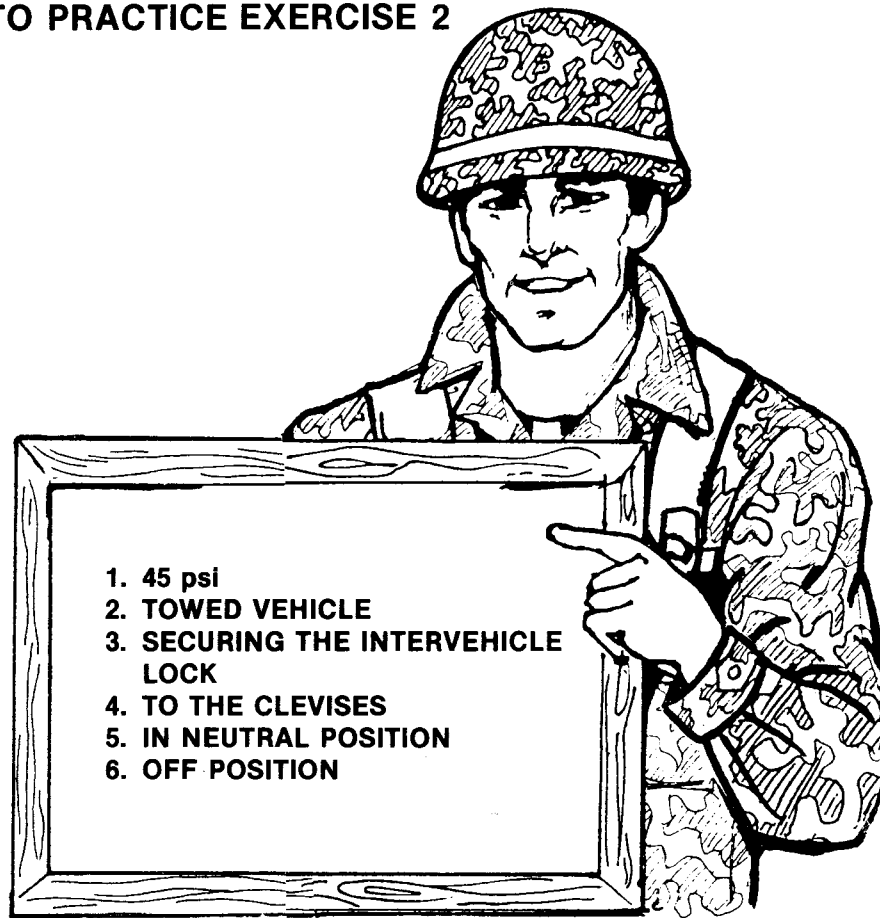
PRACTICE EXERCISE 2

5. How should the towed vehicle's transmission be set?
6. How should the towed vehicle's parking brake be set?



CHECK THE NEXT PAGE FOR YOUR ANSWERS.

ANSWERS TO PRACTICE EXERCISE 2



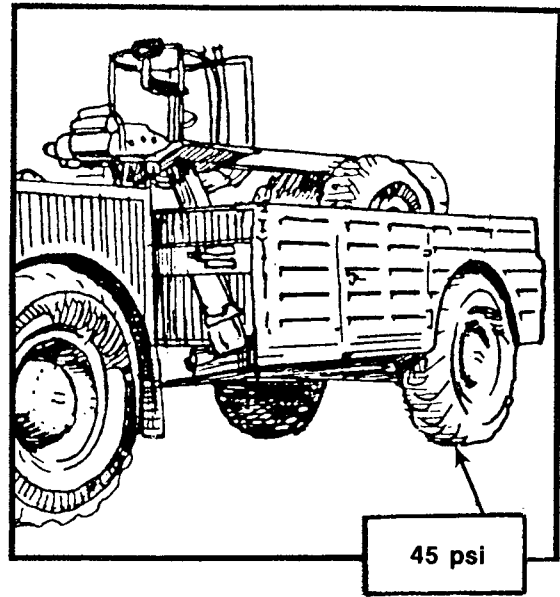
If you had incorrect answers, go back now and review this part of the lesson.

Now, look at the final procedure of this lesson, how to tow a vehicle other than a Goer.

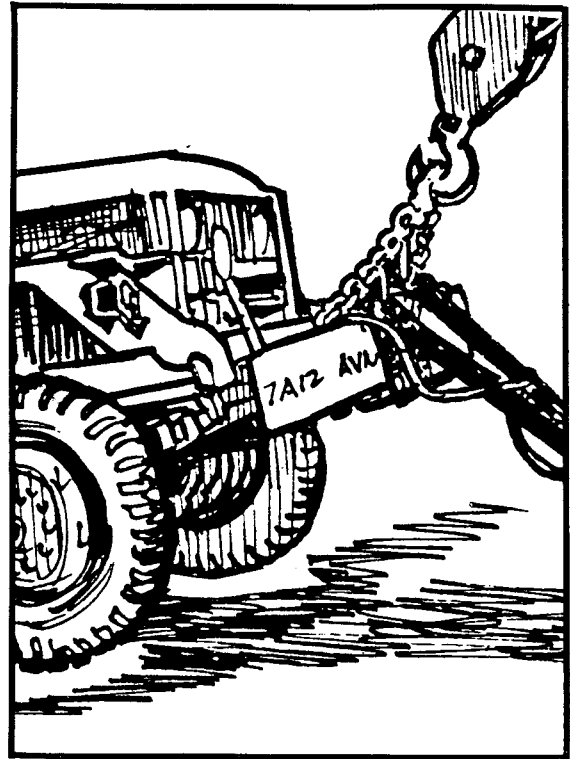
NOTE

YOU CAN TOW OTHER MILITARY VEHICLES USING THE STANDARD TOWBAR ARRANGEMENT OR BY LIFTING AND TOWING. WHEN YOU LIFT AND TOW, USE THE CRANE TO LIFT THE VEHICLE YOU WILL TOW. USE A SHORTER TOWBAR THAN FOR GOER TRUCKS SO THE SNATCH BLOCK LANDS DIRECTLY OVER THE PLACE WHERE THE TOWBAR IS ATTACHED TO THE VEHICLE.

Increase the air pressure in the wrecker's tires to 45 psi. Then attach the towbar to the Goer's towing pintle.



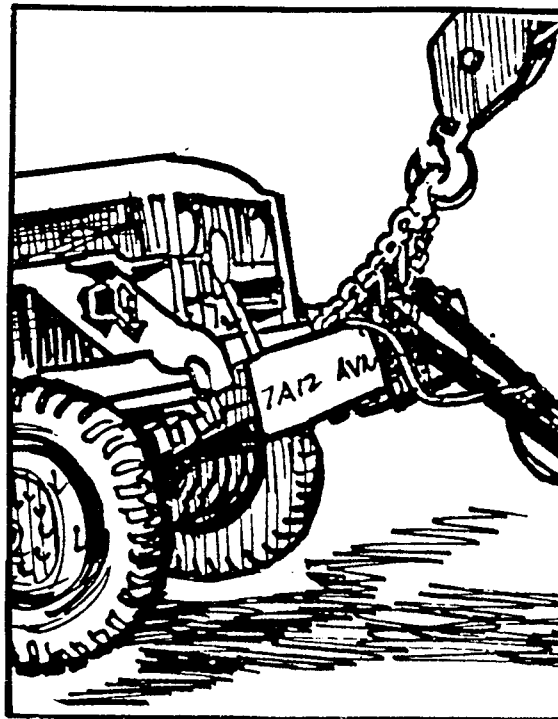
Next attach the towbar and safety chains to the vehicle to be towed, and use the crane hook to lift the vehicle.



Connect the interconnecting air lines and electrical cable.

Be sure the towed vehicle is in neutral and the parking brake is off.

On an articulated towed vehicle, secure the steering stop.

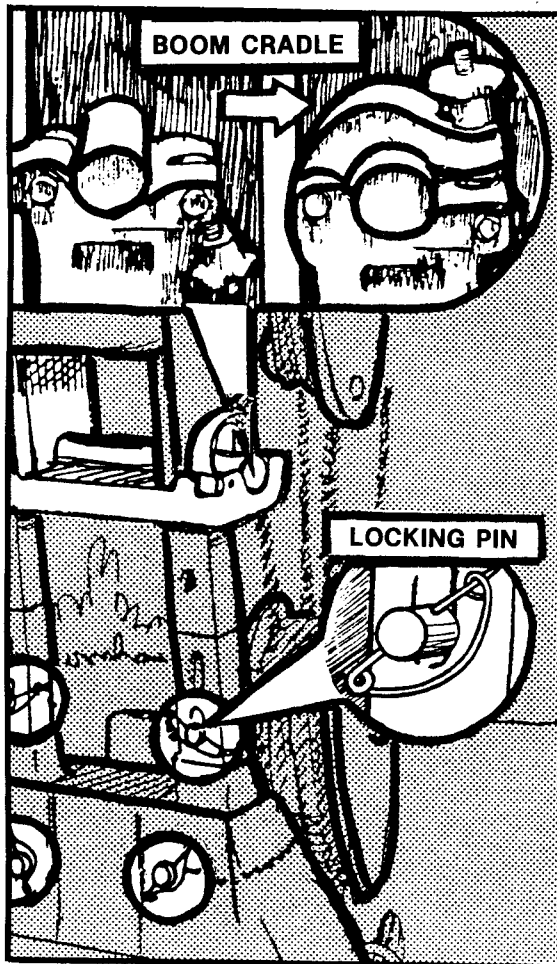


Now support the boom with the boom support by doing the following:

- a. Pull the locking pins from the cradle legs, and lift the cradle.
- b. If you need height, telescope the cradle legs. Then lock them in place with a second set of locking pins.
- c. When you get support at the height you want, secure the boom in the cradle.

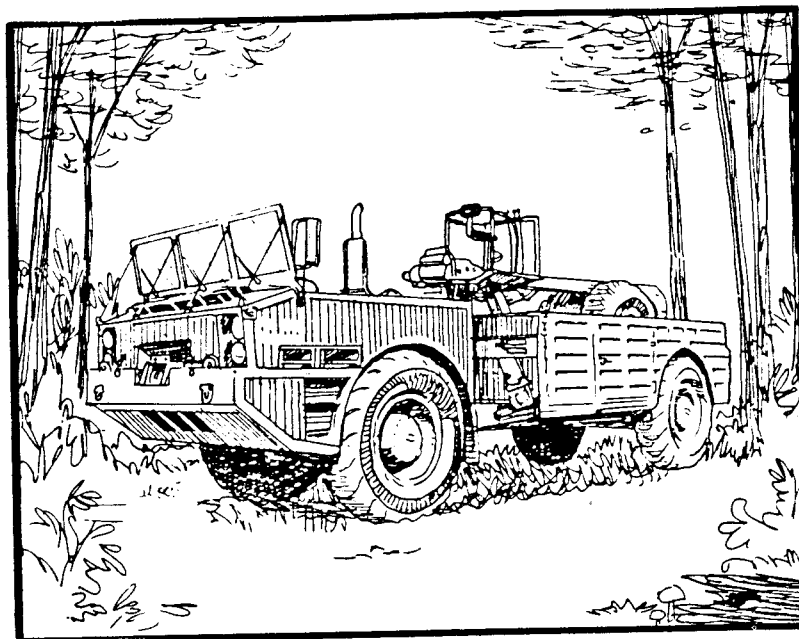
NOTE

The boom support holds the boom while it is not in use or when it is being used for lifting and towing. When you are not using the support, swing it down out of the way.

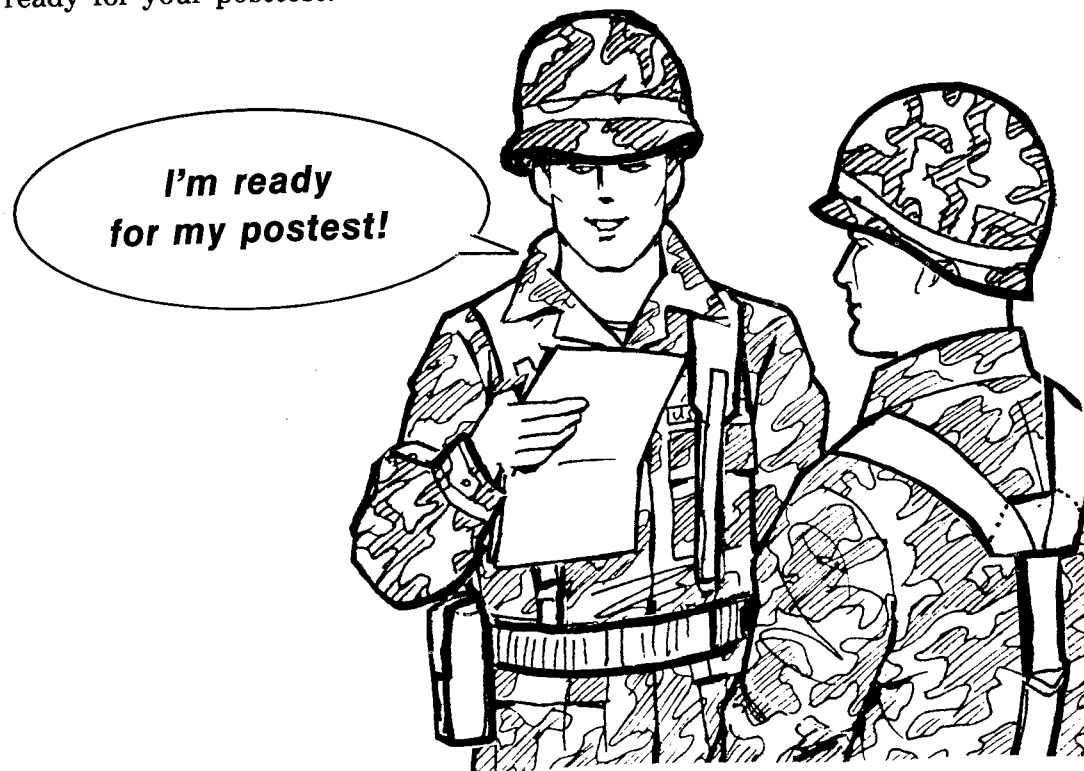


That ends this lesson on towing a disabled vehicle with a 10-ton wrecker. In this lesson, you learned to:

- Tow a disabled Goer.
- Lift and tow a disabled Goer.
- Lift and tow a vehicle other than a Goer.



Review any material you need to. Tell your supervisor when you are ready for your posttest.



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