TC 55-60-17

TRAINING PROGRAM FOR THE 50,000-POUND ROUGH-TERRAIN CONTAINER HANDLER

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HEADQUARTERS, DEPARTMENT OF THE ARMY

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TRAINING PROGRAM FOR THE 50,000-POUND ROUGH-TERRAIN CONTAINER HANDLER

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Preface

This TC provides a training program for the 50,000-pound Rough-Terrain Container Handler according to AR 600-55. It provides standardized training and testing in the operation, maintenance, and safety of this vehicle. It stresses hands-on training with very little classroom instruction and does not include any theater-unique requirements. Also during the development of this TC, it was assumed that each driver candidate would have a state driver's license, have completed accident avoidance training according to TC 21-305, and possess an OF 346 (stamped as a learner's permit).

The lesson content for this training program is arranged sequentially and separated into four chapters (Chapters 4, 5, 6, and 7). Chapter 4 contains training for the overall use of the 50,000-pound RTCH. Chapter 5 and Chapter 6 contain training for the 50,000-pound RTCH (Chapter 5 [with tophandler] and Chapter 6 [with containers]). Chapter 7 contains training for HAZCOM safety. Testing is contained in Chapter 8. Appendix A contains the paper transparencies cited throughout the lesson outlines and Appendix B contains the Force Protection Annex. All training should be annotated on DA Form 348 (or ULLS-generated DA Form 348-E) according to AR 600-55.

To provide effective training, each instructor should ensure his operators are trained and tested to the standards in this TC. Any deviation from the successful completion of these basic standards will only lessen the soldiers overall driving effectiveness.

Graduates of this training program (licensed drivers) should be supervised until they have gained the experience to safely operate the 50,000-pound Rough-Terrain Container Handler. They should not be placed in situations that may be above their skill level. Periodically, the supervisor should ride with each driver to observe safe operating procedures and to determine the need for additional training.

The proponent of this publication is HQ TRADOC. Submit changes for improving this publication on DA Form 2028 (Recommended Changes to Publications and Blank Forms) and forward it to Commander, USACASCOM, Training Directorate, Transportation Training Division, ATCL-AT, Fort Lee, Virginia 23801-1511.

The US Army's environmental strategy into the 21st century defines the Army's leadership commitment and philosophy for meeting present and future environmental challenges. It provides a framework to ensure that environmental stewardship ethic governs all Army activities. The Army's environmental vision is to be a national leader in environmental and natural resource stewardship for present and future generations, as an integral part of all Army missions. The Army's environmental vision statement communicates the Army's commitment to the environment.

Unless this publication states otherwise, masculine nouns and pronouns do not refer exclusively to men.

CHAPTER 1

RISK MANAGEMENT

1-1. GENERAL. This chapter explains risk management as it applies to rough terrain container handler training. Refer to FM 101-5, Appendix J, for more detailed risk management guidance.

1-2. BACKGROUND. Ground vehicle accidents cost the Army millions of dollars each year and significantly reduce mission capabilities. Leaders must develop techniques that will save resources. Since the Army must be prepared to operate worldwide, the training mission has become increasingly demanding and so have the risks inherent in that mission. This increase in risk requires leaders to balance mission needs with hazards involved and make wise risk decisions.

1-3. DEFINITIONS.

a. Risk Management. Risk management is the process of identifying and controlling hazards to protect the force. It is a step-by-step process that provides a framework for analyzing any mission or task. The following are the five steps of risk management:

(1) Step 1 – Identify Hazards. Identify hazards to the force. Consider all aspects of current and future situation, environment, and known historical problem areas.

(2) Step 2 – Assess Hazards. Assess hazards to determine risks. Assess the impact of each hazard in terms of potential loss and cost based on probability and severity.

(3) Step 3 – Develop Controls and Make Risk Decision. Develop control measures that eliminate the hazards or reduce its risk. As control measures are developed, risks are reevaluated until all risks are reduced to a level where benefits outweigh potential cost.

(4) Step 4 – Implement Controls. Put controls in place that eliminates the hazards or reduce their risk.

(5) Step 5 – Supervise and Evaluate. Enforce standards and controls. Evaluate the effectiveness of control and adjust/update as necessary.

b. Hazard. Any real or potential condition that can cause injury, illness, or death of personnel; or damage to or loss of equipment or property.

c. Risk. Chance of hazard or bad consequences; exposure to chance of injury or loss. Risk level is expressed in terms of hazard probability and severity.

d. Exposure. The frequency and length of time subjected to a hazard.

e. Probability. The likelihood that an event will occur.

f. Severity. The expected consequence of an event in terms of degree of injury, property damage, or other mission impairing factors (loss of combat power, adverse publicity, and so forth) that could occur.

g. Controls. Actions taken to eliminate hazards or reduce their risk.

h. Risk Assessment. The identification and assessment of hazards (first two steps of risk management process).

i. Residual Risk. The level of risk remaining after controls have been identified and selected for hazards that may result in loss of combat power. Controls are identified and selected until residual risk is at an acceptable level or until it cannot be practically reduced further.

j. Risk Decision. The decision to accept or not accept the risk(s) associated with an action.

1-4. RISK MANAGEMENT PROCESS. The following is the approach used in the risk management process.

a. Identify Hazards. Look for hazards in each phase of the training or operation.

b. Assess the Risk. Ask the following questions:

- What type of injury or equipment damage can be expected?
- What is the probability of an accident happening?

NOTE: A low probability of an accident and an expected minor injury equals low risk. A high probability of an accident and an expected fatality equals extremely high risk.

c. Develop Risk Control Alternatives and Make Risk Decisions. If you cannot eliminate the risk, then you must control it without sacrificing essential mission requirements. You can control some risks by modifying tasks, changing location, increasing supervision, wearing protective clothing, changing time of operation, and so on. Decisions take several forms:

- Selecting from available controls.
- Modifying the mission because risk is too great.
- Accepting risk because mission benefits outweigh potential loss.

d. Implement Risk Control Measures. You must integrate procedures to control risks into plans, orders, SOPs, and training. You must also ensure risk reduction measures are used during actual operations.

e. Supervise the Operations. Make sure leaders know what controls are in place, what standards are expected, and then hold those in charge accountable for implementation. This is the point when accident prevention actually happens.

1-5. RISK ASSESSMENT ELEMENTS. There are no hard and fast rules for assessing risk. Different training tasks involve different elements that can affect training safety. However, the following seven elements are central to safely completing most driver training tasks:

- Soldier qualification.
- Vehicle type.
- Weather.
- Terrain.
- Supervision.
- Equipment.
- Time of day.

Using matrices that assign a risk level to each of the elements is one way to quickly appreciate the overall risks. The following matrices (Tables 1-1 through 1-7, pages 1-3 through 1-6) are examples of risk assessments for the seven elements common to driver training missions.

NOTE: The factors are arbitrarily weighted. Modify them based on your particular mission and unit.

- Measure soldier qualification risk (Table 1-1) by comparing the level of task difficulty to the soldier's military driving experience.

Table 1-1. Soldier Qualification Risk Value

SOLDIER QUALIFICATION RISK VALUE			
	DRIVING EXPERIENCE		
TASK	LICENSED OVER 1 YEAR	LICENSED UNDER 1 YEAR	UNLICENSED
COMPLEX	Moderate	High	High
ROUTINE	Low	Moderate	High
SIMPLE	Low	Low	Moderate

EXAMPLE: Unlicensed drivers learning lifting procedures on the RTCH would be a high risk situation requiring instructor supervision.

- Measure vehicle type risk (Table 1-2) by comparing the vehicle configuration to the locations of the training tasks.

Table 1-2. Vehicle Type Risk Value

VEHICLE TYPE RISK VALUE		
LOCATION OF TRAINING	VEHICLE CONFIGURATION	
	RTCH w/FORKS	RTCH w/TOPHANDLERS
ROAD	High	High
TRAINING AREA	Low	Moderate
MOTOR POOL	Low	Low

EXAMPLE: Driving a RTCH over the road would have a high risk value.

- Measure weather risk (Table 1-3) by comparing road conditions with visibility.

Table 1-3. Weather Risk Value

WEATHER RISK VALUE			
ROAD CONDITIONS	VISIBILITY		
	CLEAR	REDUCED	RESTRICTED
UNFAVORABLE	High	High	High
ADEQUATE	Moderate	Moderate	High
FAVORABLE	Moderate	Moderate	High

EXAMPLE: Driving on icy roads in fog would have a high risk value.

- Measure terrain risk (Table 1-4) by comparing the physical features of the land with the existing road network.

Table 1-4. Terrain Risk Value

TERRAIN RISK VALUE			
TYPE OF TERRAIN	ROAD NETWORK		
	IMPROVED ROADS	SECONDARY ROADS	UNIMPROVED
MOUNTAIN	High	High	High
DESERT/JUNGLE	Moderate	Moderate	High
FLAT/ROLLING	Low	Low	Moderate

EXAMPLE: Driver training conducted at Fort Bragg, NC, over trails would have a moderate risk value.

- Measure supervision risk (Table 1-5) by comparing the level of supervision to the task location.

Table 1-5. Supervision Risk Value

SUPERVISION RISK VALUE			
	TASK LOCATION		
LEVEL OF SUPERVISION	MOTOR POOL	TRAINING AREA/ NONCONGESTED ROAD	OFF ROAD/ CONGESTED ROAD
NOT OBSERVING	High	High	High
OBSERVING	Low	Moderate	High
IN VEHICLE	Low	Low	Moderate

EXAMPLE: A student driving alone, but observed, in a training area would have a moderate risk value.

- Measure equipment risk (Table 1-6) by comparing the equipment's age to the time (months) since the last semiannual service. Equipment age is defined as follows:

  - Old is 15 years old or more.
  - Average is 5 to 15 years old.
  - New is 5 years old or less.

Table 1-6. Equipment Risk Value

EQUIPMENT RISK VALUE			
	LAST SEMIANNUAL SERVICE		
EQUIPMENT AGE	0 TO 2 MONTHS	+ 2 TO 4 MONTHS	+ 4 MONTHS
OLD	Moderate	Moderate	High
AVERAGE	Low	Moderate	High
NEW	Low	Low	Moderate

EXAMPLE: An eight-year-old RTCH serviced 3 months ago would have a moderate risk value.

- Measure time of day risk (Table 1-7) by comparing the level of light to familiarity with the route.

Table 1-7. Time of Day Risk Value

TIME OF DAY RISK VALUE			
	LIGHT LEVEL		
ROUTE FAMILIARITY	DAY	DAWN/DUSK	NIGHT
NEVER DRIVEN ROUTE	Moderate	High	High
DRIVEN ROUTE 1 TO 3 TIMES	Moderate	High	High
FAMILIAR ROUTE	Low	High	High

EXAMPLE: A driving task over a familiar route that starts during the day but ends at dusk would have a high risk value.

After assessing all the risks, the overall risk value equals the highest risk identified for any one element. Now is the time to focus on high risk elements and develop controls to reduce risks to an acceptable level. Control examples may include conducting training in a different location or at a different time of day, putting an instructor in the vehicle with the student, waiting for better weather, using a different vehicle, and so on.

1-6. DECISION AID. The level of the decision maker should correspond to the level of the risk. The greater the risk, the more senior the final decision maker should be. The matrix shown in Table 1-8 is a proposed decision aid to help determine the leadership decision-making level.

Table 1-8. Proposed Decision Aid

DECISION AID	
RISK	DECISION LEVEL
LOW	SENIOR INSTRUCTOR
MODERATE	COMPANY COMMANDER
HIGH	BATTALION COMMANDER

a. Moderate risk training warrants complete unit command involvement. For example, a moderate risk value in the weather element category indicates that soldiers are more susceptible to cold injuries and require closer supervision or a rescheduling of training. If you cannot reduce the risk level, the company commander should decide to train or defer the mission.

b. Operations with a high-risk value warrant battalion involvement. If you cannot reduce the risk level, the battalion commander should decide to train or defer the mission.

1-7. RISK CONTROL ALTERNATIVES. The following options can help control risk:

- Eliminate the hazard totally, if possible, or substitute a less hazardous alternative.
- Reduce the magnitude of the hazard by changing tasks, locations, times, and so forth.
- Modify operational procedures to reduce risk exposure consistent with mission needs.
- Train and motivate personnel to perform to standards to avoid hazards.

1-8. SUPERVISION. Leaders must monitor the training to ensure risk control measures are followed. Never underestimate a subordinate's ability to sidetrack a decision they do not understand or support. You must also monitor the impact of risk reduction procedures when they are implemented to see that they really work. This is especially true of new, untested procedures.

1-9. PAYOFFS. Risk management lets you use realistic training scenarios reducing personnel and equipment losses while training. Risk management is consistent with METT-T decision processes and can be used in battle to increase mission effectiveness.

SAMPLE RISK ASSESSMENT WORK SHEET FOR DRIVER TRAINING

TRAINING TASK: _____

RISK LEVEL: _____

_____1. SOLDIER QUALIFICATION

SOLDIER QUALIFICATION RISK VALUE			
	DRIVING EXPERIENCE		
TASK	LICENSED OVER 1 YEAR	LICENSED UNDER 1 YEAR	UNLICENSED
COMPLEX	Moderate	High	High
ROUTINE	Low	Moderate	High
SIMPLE	Low	Low	Moderate

_____2. VEHICLE TYPE

VEHICLE TYPE RISK VALUE			
	VEHICLE CONFIGURATION		
LOCATION OF TRAINING	RTCH w/o Tophandlers	RTCH w/Tophandlers	RTCH w/Forks
ROAD	Moderate	High	Moderate
TRAINING AREA	Low	Moderate	Low
MOTOR POOL	Low	Low	Low

_____3. WEATHER

WEATHER RISK VALUE			
	VISIBILITY		
ROAD CONDITIONS	CLEAR	REDUCED	RESTRICTED
UNFAVORABLE	Moderate	High	High
ADEQUATE	Low	Moderate	High
FAVORABLE	Low	Moderate	High

_____4. TERRAIN

TERRAIN RISK VALUE			
	ROAD NETWORK		
TYPE OF TERRAIN	IMPROVED ROADS	SECONDARY ROADS	UNIMPROVED
MOUNTAIN	Moderate	High	High
DESERT/JUNGLE	Low	Moderate	High
FLAT/ROLLING	Low	Low	Moderate

_____5. SUPERVISION

SUPERVISION RISK VALUE			
	TASK LOCATION		
LEVEL OF SUPERVISION	MOTOR POOL	TRAINING AREA/ NONCONGESTED ROAD	OFF ROAD/ CONGESTED ROAD
NOT OBSERVING	High	High	High
OBSERVING	Low	Moderate	High
IN VEHICLE	Low	Low	Moderate

_____6. EQUIPMENT

EQUIPMENT RISK VALUE			
	LAST SEMIANNUAL SERVICE		
EQUIPMENT AGE	0 TO 2 MONTHS	+ 2 TO 4 MONTHS	+ 4 MONTHS
OLD	Moderate	Moderate	High
AVERAGE	Low	Moderate	High
NEW	Low	Low	Moderate

_____7. TIME OF DAY

TIME OF DAY RISK VALUE			
	LIGHT LEVEL		
ROUTE FAMILIARITY	DAY	DAWN/DUSK	NIGHT
NEVER DRIVEN ROUTE	Moderate	High	High
DRIVEN ROUTE 1 TO 3 TIMES	Moderate	High	High
FAMILIAR ROUTE	Low	High	Moderate

_____OVERALL RISK LEVEL

DECISION AID	
RISK	DECISION LEVEL
LOW	SENIOR INSTRUCTOR
MODERATE	COMPANY COMMANDER
HIGH	BATTALION COMMANDER

APPROVED BY: _____ DATE: _____

CHAPTER 2

INSTRUCTIONAL AIDS

2-1. STUDENT REQUIREMENTS.

a. Vehicles Per Student. Vehicle to student ratio is contained in the instructional material and varies from 1:1 to 1:6.

b. Forms Per Student.

- DA Form 348. Equipment Operator's Qualification Record (Except Aircraft).
- DA Form 2404. Equipment Inspection and Maintenance Worksheet (or DA Form 5988-E, Equipment Inspection Maintenance Worksheet).
- OF 346. US Government Motor Vehicle Operator's Identification Card.

c. Publications Per Student. STP 55-88H1-SM, TM 10-3930-641-10, LO 10-3930-641-12, and DA Pamphlet 738-750.

d. Nonstandard Items.

- 50,000-pound RTCH with 20-, 35-, and 40-foot tophandlers.
- MILVAN container, 20- and 40-foot.
- Leather gloves.
- Helmet/hard hat.
- Safety boots.
- Hearing protection.

2-2. INSTRUCTOR REQUIREMENTS.

- One each of the above forms.
- One each of the above publications.
- Student Handout 453-103.

2-3. TRAINING FACILITIES.

- Classroom.
- Motor pool.
- Training area(s).

2-4. TRAINING AIDS AND DEVICES.

- Overhead projector.
- Projection screen.
- Television.
- Videocassette player.
- Paper.
- Pen/pencil.
- Transparencies (paper copies included with the instructional material).

CHAPTER 3

SAMPLE TRAINING SCHEDULE

WHEN	WHAT	WHERE	TASK NUMBER
VEHICLE FAMILIARIZATION			
DAY 1			
0800-1040	Use TM and Make Entries on DA Form 2404	Classroom	453-101-03
1045-1130	HAZCOM Safety Briefing	Classroom	453-118-01
1130-1230	Lunch		
1230-1320	Safety Procedures	Classroom	453-103-06
1325-1600	Preventive Maintenance Checks and Services	Classroom	452-105-07

VEHICLE FAMILIARIZATION			
DAY 2			
0800-1130	Preventive Maintenance Checks and Services	Classroom	452-105-07
1130-1230	Lunch		
1230-1320	Safety Procedures	Classroom	453-103-06
1325-1410	Starting/Stopping/Operating Engine Procedures	Classroom	453-108-13
1415-1600	Starting/Stopping/Operating Engine Procedures	Training Area	453-108-13

VEHICLE FAMILIARIZATION			
DAY 3			
0800-1600	Starting/Stopping/Operating Engine Procedures	Training Area	453-108-13

VEHICLE FAMILIARIZATION			
DAY 4			
0800-0950	Starting/Stopping/Operating Engine Procedures	Training Area	453-108-13
0955-1040	Safety Procedures	Training Area	453-103-06
1045-1600	Connecting/Disconnecting Tophandler	Training Area	453-111-11

WHEN	WHAT	WHERE	TASK NUMBER
VEHICLE FAMILIARIZATION			
DAY 5			
0800-1410	Connecting/Disconnecting Tophandler	Training Area	453-111-11
1415-1505	Safety Procedures	Training Area	453-103-06
1510-1600	Review	Training Area	

VEHICLE FAMILIARIZATION			
DAY 6			
0800-1600	Lifting and Transporting Containers	Training Area	453-113-08

VEHICLE FAMILIARIZATION			
DAY 7			
0800-0850	Safety Procedures	Training Area	453-103-06
0900-1600	Off-Loading/Stacking Containers	Training Area	453-115-22

VEHICLE FAMILIARIZATION			
DAY 8			
0800-0850	Safety Procedures	Training Area	453-103-06
0900-1600	Off-Loading/Stacking Containers	Training Area	453-115-22

VEHICLE FAMILIARIZATION			
DAY 9			
0800-1600	Off-Loading/Stacking Containers	Training Area	453-115-22

END OF COURSE TEST			
DAY 10			
0730-1130	End of Course Comprehensive Test	Classroom/ Training Area	All Tasks

CHAPTER 4

LESSON OUTLINES FOR THE 50,000-POUND ROUGH-TERRAIN CONTAINER HANDLER

LESSON TITLE: **VEHICLE FAMILIARIZATION**

TASK NUMBER: **551-726-1506 (Perform Starting Procedures On Rough-Terrain Container Handler)**

A. TRAINING OBJECTIVE.

TASK: Be familiar with the characteristics and identify the major components and control and instruments of the 50,000-pound Rough-Terrain Container Handler.
NOTE: Show Transparency 4-1 (Objective).

CONDITION: Given check-on-learning questions with class notes.

STANDARD: To receive a "GO" for this lesson unit, the student will correctly answer all the check-on-learning questions.

B. INTERMEDIATE TRAINING.

Intermediate Training Objective 1

TASK: After this lesson unit, the student will be able to identify the characteristics of the 50,000-pound RTCH.

CONDITION: Given TM 10-3930-641-10, the student will learn the purpose and capabilities and features of the equipment and identify the components of the RTCH.

STANDARD: To receive a "GO" for this lesson unit, the student will correctly answer all the check-on-learning questions.

Intermediate Training Objective 2

TASK: After this lesson unit, the student will be able to identify the major components of the 50,000-pound RTCH.

CONDITION: Given TM 10-3930-641-10 and check-on-learning questions.

STANDARD: To receive a "GO" for this lesson unit, the student will correctly answer all the check-on-learning questions.

Intermediate Training Objective 3

TASK:	After this lesson unit, the student will be able to identify the controls and instruments of the 50,000-pound RTCH.
CONDITION:	Given check-on-learning questions, class notes, and TM 10-3930-641-10.
STANDARD:	To receive a "GO" for this lesson unit, the student will correctly answer all check-on-learning questions.

C. ADMINISTRATIVE INSTRUCTIONS.

1. Training time: As scheduled.

2. Training location: Scheduled classroom.

3. Training type: Conference and practical exercise.

4. Students: Scheduled personnel.

5. Principal and assistant instructors required: One primary instructor for the class and one assistant instructor for every 20 students for the practical exercise.

6. Training aids and equipment: Overhead projector, projection screen, transparencies, and TM 10-3930-641-10 (1 per student).

7. References: STP 55-88H1-SM and TM 10-3930-641-10.

NOTE: Before class arrival, ensure that each student desk or table has a TM 10-3930-641-10 and STP 55-88H1-SM.

D. SEQUENCE OF ACTIVITY.

1. **INTRODUCTION.**

   a. Interest device.

   b. Tie-in.

   c. Lesson Objective (paragraph A).

d. Procedures.

(1) Explanation.

(2) Practical exercise.

(3) Summary**.**

2. **EXPLANATION AND DEMONSTRATION.** Demonstrate the controls and instruments of the 50,000-pound RTCH.

a. Familiarization of Characteristics.

Transparency 4-2

(1) Equipment purpose.

Transparency 4-3

(2) Handles ISO designation 1A or 1C cargo containers or sealand containers.

Transparency 4-4

(3) Handles and stacks containers (two high).

Transparency 4-5

(4) Loads and unloads flatbed trailers and railcars.

Transparency 4-6

(5) Makes over-the-shore landings.

Transparency 4-7

(6) Capabilities and features.

Transparency 4-8

(7) Operates over rough terrain including beaches, snow, mud, and cross country.

Transparency 4-9

(8) Fords up to 60 inches (5 feet) of salt water.

Transparency 4-10

(9) Comes with a 20-foot tophandler and may also have a 35-foot or 40-foot tophandler.

Transparency 4-11

(10) Raises, lowers, tilts forward or backwards, side shifts, or side tilts a container load.

Transparency 4-12

(11) Lifts a container from 12 inches (30 cm) below ground level to 118 inches (300 cm) above ground level (measured from ground to bottom of container).

Transparency 4-13

(12) Articulates for easy load handling (bends in center).

Transparency 4-14

(13) The RTCH can lift up to 50,000 pounds.

Transparency 4-15

(14) The RTCH is built by the Caterpillar Tractor Company. The Army purchased the RTCH in 1984 for $159,138 per RTCH.

Transparency 4-16

(15) Introduction to components.

Transparency 4-17

(16) This shows the RTCH with a 20-foot tophandler/container.

Transparency 4-18

(17) This is the access ladder to the cab. The ladder is on the left side mounted to the fuel tank. The tank holds 165 gallons (10 hours of operating time).

Transparency 4-19

(18) The ladder on the right is mounted to the hydraulic tank. The site gauge is used to check the hydraulic fluid.

Transparency 4-20

(19) There is only one door located on the left-hand side of the cab.

Transparency 4-21

(20) This shows the three compartments of the catwalk.

Transparency 4-22

(21) This is the transmission dipstick and filler tube.

Transparency 4-23

(22) This shows the implementation of the oil filter and some of the hydraulic lines of the vehicle.

Transparency 4-24

(23) This compartment gives access to the hydraulic tank and filler cap.

Transparency 4-25

(24) There are two doors in front of the engine giving you access to (left/right) engine oil filters, engine oil dipstick and filler tube, transmission oil filter, brake filter, air cleaner, fuel priming pump, and primary fuel filter.

Transparency 4-26

(25) The mast controls include the lift cylinder, the lift chains, and the hydraulic lines on the left and right side of mast.

Transparency 4-27

(26) The carriage includes the side shift cylinder, the side tilt cylinder (oscillator), and the carriage/forks.

Transparency 4-28

(27) There are two tilt cylinders located in front of the cab.

Transparency 4-29

(28) This shows the shipping link in its shipping position.

Transparency 4-30

(29) This shows two battery boxes (one on the left/one on the right) with two batteries per box.

Transparency 4-31

(30) This shows the inside of the cab and instrument panels.

Transparency 4-32

(31) This shows the five mast controls: Top row L/R: side shift, side tilt and lock/unlock lever. Bottom row L/R: raise/lower mast and tilt back/forward.

Transparency 4-33

(32) There are two heaters in the RTCH. The overhead (shown here) and the floor heater (not shown).

NOTE: Conduct a check-on-learning and summarize the learning activity.

Check-on-Learning

Q. How high can containers be stacked with the RTCH?
A. Two containers high.

Q. The RTCH will ford up to how many inches of water?
A. 60.

Q. What is the maximum lifting height, in inches, from the bottom of the container?
A. 118.

Q. What are the three sizes, in feet, of the tophandlers for the 50,000-pound RTCH?
A. 20, 35, and 40.

Q. How many hours of operating time do you have with a full tank of fuel?
A. Ten.

Q. How many heaters are in the RTCH?
A. Two.

Q. How many battery boxes are there on the RTCH?
A. Two.

b. Familiarization of Major Components.

Transparency 4-34

(1) Radiator.

- Provides engine coolant.
- Holds 28 gallons.

(2) Upper engine access panels.

- To panels on each side.
- Allows engine access for maintenance.

Transparency 4-35

(3) Hood.

- Two-piece unit.
- Removable for engine maintenance.

(4) Operator's cab.

- Rollover protective structure.
- Will withstand one rollover.

Transparency 4-36

(5) Tilt cylinders.

- Two cylinders for tilting.
- Tilts mast forward or backward.

(6) Mast.

- Moves to position the container.
- Will lift container 12 inches below ground level.
- Lifts to 118 inches high from bottom of container.
- Will stack containers two high.

Transparency 4-37

(7) Forks.

- Mounts and secures tophandlers.
- Two types of forks:
  - Tophandler forks.
  - Inverted forks.

(8) Wheels, axles, and final drive.

- Steers and propels vehicle.
- One tire and rim weighs 3,000 pounds and is 6 feet tall.
- Fording height is 5 feet.

Transparency 4-38

(9) Steering cylinder.

- One on each side.
- Acts as power steering.

(10) Hitch. Articulates for easy steering.

Transparency 4-39

(11) Hydraulic tank.

- Holds 78 gallons of hydraulic oil.
- Located on right side.

(12) Fuel tank.

- Holds 165 gallons of fuel.
- Located on left side.
- Normally 10 hours of operation.

Transparency 4-40

(13) Lower engine access panels. One on each side.

(14) Battery boxes.

- One on each side.
- One box holds two 24-volt batteries.

Transparency 4-41

(15) Counterweights.

- Provides stability for handling loads.
- Has a total of seven counterweights.

(16) Towing pintle is for towing vehicles.

Transparency 4-42

(17) Lift cylinder raises and lowers mast.

(18) Side shift cylinder.

- Shifts forks and tophandler left and right.
- Helps in aligning or stacking container.

Transparency 4-43

(19) Side tilt cylinder rotates forks and tophandler for loading and stacking.

(20) Container lock cylinders.

- Rotates locks to secure tophandler to container.
- One on 20-foot tophandler.
- Two on 35-foot and 40-foot tophandler.

Transparency 4-44

(21) Handles ISO designation 1A or 1C cargo containers or sealand containers.

(22) Twenty-foot tophandler.

- Is 230 inches long (from lock to lock).
- Weight is 3,800 pounds.
- Width is 95 1/2 inches without guide plates.

Transparency 4-45

(23) Thirty-five foot tophandler.

- Is 34 feet, 4 inches long (from lock to lock).
- Weight is 9,120 pounds.
- Width is 92 3/4 inches without guide plates.

(24) Forty-foot tophandler.

- Is 39 feet, 3 7/8 inches (from lock to lock).
- Weight is 9,930 pounds.
- Width is 92 3/4 inches without guide plates.

Transparency 4-46

(25) Operational weight.

- Without tophandler - 103,230 pounds.
- With 20-foot tophandler - 107,030 pounds.
- With 35-foot tophandler - 112,350 pounds.
- With 40-foot tophandler - 113,160 pounds.

(26) Maximum speed without load.

- Forward is 18.5 mph.
- Reverse is 19.4 mph.

NOTE: Conduct a check-on-learning and summarize the learning activity.

Check-on-Learning

Q. How many hours will a full tank of fuel last in the 50,000-pound RTCH?
A. 10.

Q. How many tilt cylinders are on the 50,000-pound RTCH?
A. Two.

Q. What is the coolant capacity, in gallons, of the radiator?
A. 28.

Q. What is the operational weight, in pounds, without tophandler?
A. 103,230.

Q. What are the two types of forks that fit with the 50,000-pound RTCH?
A. Tophandler and inverted.

c. Familiarization of Controls and Instruments.

NOTE: Have students turn to page 2-2 in TM and follow along.

Transparency 4-47

(1) Controls for the 50,000-pound RTCH.

Transparency 4-48

(2) Transmission range selector. This selector has three ranges (forward, reverse, and neutral) and four speeds (1 through 4).

(3) Column release knob. Releases column for operating.

(4) Column lock. Lock column in forward position.

(5) Parking brake control knob. Pull to apply and push to release.

Transparency 4-49

(6) Accelerator.

- Push to increase speed.
- Release to decrease speed.

(7) Horn switch. Is operated by pressing down with foot.

(8) Brake pedals.

- Left - Neutralizes the transmission and applies brake.
- Right - Applies brakes.

Transparency 4-50

(9) Mast controls. There are five mast controls.

- Side tilt (tilts container).
  - Pull to tilt clockwise.
  - Push to tilt counterclockwise.
- Side shift (shifts containers).
  - Pull to shift right.
  - Push to shift left.
- Lift (raises and lowers container).
  - Pull to raise.
  - Push to lower.
- Tilt (tilts mast forward and backward).
  - Pull to tilt up.
  - Push to tilt down.
- Container lock (locks container to tophandler).
  - Pull to lock.
  - Push to unlock.

Transparency 4-51

(10) Heater controls.

- Floor heater - adjust to control amount of heat (there are two heaters in cab).
- Heater temperature control.
- Fan speed control.
- Heat and defrost rotating vents.

(11) Dome light switch.

Transparency 4-52

(12) Operator's seat controls.

- Vertical (height) adjustments (up or down).
- Fore-aft adjustment (forward or backward).
- Seat cushion tilt adjustment.
- Damper control adjusts how much spring you want.

NOTE: Always wear the seat belt when operating vehicle.

Transparency 4-53

(13) Right hand instrument panel of the 50,000-pound RTCH.

- Water temperature gauge.
  - White - cold.
  - Green - normal.
  - Red - hot.
- Converter oil temperature gauge.
  - Green - normal.
  - Red - hot.
- Voltmeter.
  - Red (21 volts or lower).
  - Black and white (21 to 24 volts).
  - Black and green (24 to 26 volts).
  - Green (26 to 30 volts).
  - Red (30 volts or higher).
- Fuel pressure gauge.
  - Red - low.
  - Green - normal.
- Engine oil pressure gauge.
  - Red - low.
  - White - normal (low idle).
  - Green - normal (high idle).
- Start aid (ether). For extreme cold weather below 32 degrees.

- Alternator.
  - ON with panel test engine not running.
  - OFF with engine running.
- Panel light. Gives light for switches and fuses.
- Panel test. Tests for burned out bulbs.
- Power switch. This switch has three positions (on, off, and start).
- Fuses. Has four fuses on right hand panel.

Transparency 4-54

(14) Left hand instrument panel of the 50,000-pound RTCH.

- Fuel low indicator lamp.
  - ON when testing.
  - ON when fuel is 10 percent of tank capacity and engine is running.
- Fuel high indicator lamp.
  - ON when panel check is made.
  - ON only if enough fuel for 10 hours is in fuel tank with engine off.
  - OFF during normal operation.
- Low engine oil indicator lamp.
  - ON when testing.
  - ON when oil level is low, engine running.
  - OFF during normal operation.
- Low hydraulic oil indicator lamp.
  - ON when testing.
  - ON when hydraulic oil level in hydraulic tank is low and engine not running.
  - OFF during normal operation.
- Implement indicator lamp.
  - ON when testing and filter is plugged.
  - OFF during normal operation.

- Transmission oil filter lamp.
  - ON when testing and if transmission filter is plugged.
  - OFF during normal operation.
- Air cleaner indicator lamp.
  - ON when testing and when air filter is plugged.
  - OFF during normal operation.
- Pilot brake indicator lamp.
  - ON when testing and if brake oil filter is plugged.
  - OFF during normal operation.
- Supplementary steering indicator lamp on when testing panel lamps, engine running, and engine not running.
- No coolant flow indicator lamp.
  - ON when testing panel. Engine and horn will sound when coolant flow stops while engine is running.
  - OFF during normal operation.
- Low pressure brake lamp.
  - ON when testing panel.
  - ON and OFF when accumulator oil pressure is low.
- High temperature hydraulic oil lamp.
  - ON when testing panel and when hydraulic oil in tank is high with engine running.
  - OFF during normal operation.
- Park brake indicator lamp.
  - ON when testing and when park brake is engaged.
  - OFF during normal operation.
- Panel light gives light for fuses and switches for left hand panel.
- Fuses for lights and instrument panel has five fuses and a total of nine.
- Service meter.
  - Records service hours that the engine has been operated.
  - Shows operator when scheduled maintenance is due.

- Wiper washer.
- Light switches - five switches.
  - Floodlight.
  - Headlight.
  - Taillight.
  - Auxiliary floodlight.
  - Auxiliary switch.

Transparency 4-55

(15) Container lock indicator.

- Two ready-to-lock lights. Indicates that tophandler is ready to be locked on container.
- One lock light. Indicates that tophandler is locked to container.
- One lock light. Indicates that tophandler is unlocked from container.

NOTE: To test for burned out bulbs, press lenses inward.

Transparency 4-56

(16) Main disconnect switch.

- ON connects power to vehicle electrical system (clockwise).
- OFF removes all power to vehicle electrical systems (counterclockwise).

NOTE: Conduct a check-on-learning and summarize the learning activity.

Check-on-Learning

Q. How many transmission ranges are on the 50,000-pound RTCH?
A. Three.

Q. How many speeds are on the 50,000-pound RTCH?
A. Four.

Q. How many mast controls levers are on the 50,000-pound RTCH?
A. Five.

Q. How many heaters are in the cab of the 50,000-pound RTCH?
A. Two.

Q. How many fuses are on the 50,000-pound RTCH?
A. Nine.

Q. For what is the panel test switch used?
A. Burned out bulbs.

Q. What is the purpose of the hour meter?
A. Record service hours for scheduled maintenance.

Q. How many light switches are on the 50,000-pound RTCH?
A. Five.

Q. How do you test the container lock indicator light?
A. Test by pressing lenses.

Q. When is the start aid used?
A. In extreme cold weather below 32 degrees.

3. **PRACTICAL EXERCISE.** This task shows 1 hour for practical exercise.

4. **EVALUATE.** Students are evaluated by a check on learning.

5. **SUMMARY.** Show Transparency 4-57.

    a. Recap main points.

    b. Allow for questions.

    c. Clarify questions.

    d. Give closing statement.

6. **RETRAINING.** Retrain and retest NO-GOs after normal duty hours.

E. SAFETY RESTRICTIONS. None.

F. ENVIRONMENTAL CONSIDERATIONS. None.

G. ADDITIONAL COMMENTS AND INFORMATION. Recommended instructional time is 3.0 hours (2.0 hours for conference and 1.0 hour for practical exercise).

LESSON TITLE: **SAFETY PROCEDURES**

TASK NUMBER: **551-726-1507 (Communicate With Hand and Arm Signals When Operating Rough-Terrain Container Handler)**

A. TRAINING OBJECTIVE.

TASK: Identify all hand and arm signals used when operating the 50,000-pound Rough-Terrain Container Handler.
NOTE: Show Transparency 4-58 (Objective).

CONDITION: Given check-on-learning questions with class notes.

STANDARD: To receive a "GO" for this lesson unit, the student will correctly answer all the check-on-learning questions.

B. INTERMEDIATE TRAINING.

Intermediate Training Objective 1

TASK: After this lesson unit, the student will learn safety procedures.

CONDITION: Given check-on-learning questions and class notes.

STANDARD: To receive a "GO" for this lesson unit, the student will correctly answer all the check-on-learning questions.

Intermediate Training Objective 2

TASK: After this lesson unit, the student will be able to identify safety precaution/warning and caution signs and hand/arm signals.

CONDITION: Given student handout 453-103 and check-on-learning questions.

STANDARD: To receive a "GO" for this lesson unit, the student will correctly answer all the check-on-learning questions.

C. ADMINISTRATIVE INSTRUCTIONS.

1. Training time: As scheduled.
2. Training location: Scheduled classroom with chairs and a power source.
3. Training type: Conference and practical exercise.
4. Students: Scheduled personnel.

5. Principal and assistant instructors required: One primary instructor for the class.

6. Training aids and equipment: Overhead projector; TM 10-3930-641-10, Instructor's Guide, Lesson Plan (TSP) and transparencies (for the instructor) and STP 55-88H1-SM, paper, and pen/pencil (for the student).

7. References: STP 55-88H1-SM and TM 10-3930-641-10.

NOTE: Before class arrival, ensure that each student desk or table has a TM 10-3930-641-10 and STP 55-88H1-SM.

D. SEQUENCE OF ACTIVITY.

1. **INTRODUCTION.**

a. Interest device.

b. Tie-in.

c. Lesson Objective (paragraph A).

d. Procedures.

(1) Explanation.

(2) Practical exercise.

(3) Summary.

2. **EXPLANATION AND DEMONSTRATION.** Discuss safety precautions and operations when working around the RTCH and demonstrate how to communicate with hand and arm signals.

a. Familiarization of Safety Procedures.

Transparency 4-59

(1) Safety precautions and operations.

Transparency 4-60

(2) Vehicle is not made for assistant operator (such as, riding on catwalk).

- Stay out of pivot area when the RTCH is turning or running.
- Travel at a safe speed (for example, do not follow vehicle too closely).

Transparency 4-61

(3) Never coast because hydraulic pressure drops and steering becomes difficult. Load must be carried 18 to 22 inches from the ground.

Transparency 4-62

(4) The vehicle is 14 feet from the ground to top of the mast. Always be aware of electric wires and overhangs.

Transparency 4-63

(5) The weight of the RTCH with a 40-foot tophandler weighs 113,000 pounds. Always stay a safe distance from cliffs, deep excavations, or dangerous areas (such as soft sand and washed out roads).

Transparency 4-64

(6) Never operate the RTCH, more than 15 degrees, on a side slope.

Transparency 4-65

(7) Never operate the RTCH, more than 15 percent, on a downhill grade.

Transparency 4-66

(8) Always stop engine and lower mast before leaving the RTCH. Mast will lower with engine off.

Transparency 4-67

(9) Always know the size of the area in which you have to operate.

Transparency 4-68

(10) Never smoke around vehicles.

Transparency 4-69

(11) Release the radiator cap slowly when checking coolant.

Transparency 4-70

(12) Release hydraulic pressure before doing any work on the hydraulic system. Remove cap slowly to release pressure.

Transparency 4-71

(13) Install shipping link when working in pivot area or during shipment.

Transparency 4-72

(14) Make sure all safety guards and covers are in place before operating.

Transparency 4-73

(15) Ensure that the rollover protective structure is not damaged. A damaged rollover protective structure will not protect you during a rollover.

Transparency 4-74

(16) Never wear loose clothing or jewelry while operating vehicle.

Transparency 4-75

(17) Always wear hearing protection while operating or within 50 feet of the RTCH.

Transparency 4-76

(18) Keep all personnel clear of work site.

Transparency 4-77

(19) Be familiar with hazards in your work site.

Transparency 4-78

(20) Place transmission in neutral and apply the parking brake before stopping or starting engine.

Transparency 4-79

(21) Always test mast controls before beginning operations.

Transparency 4-80

(22) Never move vehicle without proper brake oil pressure.

Transparency 4-81

(23) Always wear seat belts.

Transparency 4-82

(24) Keep vehicle clean of grease, fuel, and oily rags. Place trash in driver's compartment.

Transparency 4-83

(25) WARNING! Carbon monoxide (exhaust fumes) can kill you. Therefore, always operate the vehicle with a window open.

NOTE: Conduct a check-on-learning and summarize the learning activity.

Check-on-Learning

Q. What is the height, in feet, of the vehicle from the ground to the top of the mast?
A. 14.

Q. What is the weight, in pounds, of the vehicle with a 40-foot tophandler?
A. 113,000.

Q. What is the maximum side slope, in degrees, that a vehicle can operate?
A. 15

Q. Who is authorized to ride on the 50,000-pound RTCH?
A. No one.

Q. How high, in inches, should you carry the load?
A. 15 to 22.

Q. What is the percentage of the maximum downhill grade that a RTCH can operate?
A. 15.

Q. When do you install the shipping link?
A. When working in the pivot area and during shipment.

b. Familiarization of Safety Precaution/Warning and Caution Signs and Hand/Arm Signals.

Transparency 4-84

(1) Safety precautions.

Transparency 4-85

- Wear hard hats, ear plugs, safety boots, and work gloves at all times.
- Do not jump from or off of machine.
- Never walk between the RTCH and container.
- Always operate vehicle with lights on.
- Sound horn twice and look over both shoulders before shifting to reverse.

Transparency 4-86

- Ground guides should always stand where operator can see them at all times.
- Always keep a safe distance between vehicles (at least two vehicles apart).
- No horse playing or running in motor pool or training area.
- Never stand under forks or on tophandler (except during PMCS).
- Never stand behind the machine while engine is running.

NOTE: Refer to Student Handout 453-103.

Transparency 4-87

(2) Warning and caution signs.

Transparencies 4-88 through 4-92

- ROPS canopy warning sign. Located above door on left side.
- Hearing protection sign. Located on right-hand side of dash.
- Hand warning sign. Located on rear center mast.
- Standing on or under forks sign. Located on each side of fork assembly.
- No clearance for turning vehicle sign. Located at frame articulation on each side of the vehicle.

Transparency 4-93

(3) Hand and arm signals.

Transparencies 4-94 through 4-101

- Stop or discard last command. Right arm above head with forearm bent at elbow with fist clenched.
- Slow down. Right arm to waist level and wave arm in a sweeping motion from right to left several times.
- Lower load. Arm bent at elbow, forearm lowered, and point forefinger downward.
- Lift load. Raise right arm above head with arm bent at elbow, with forefinger upward.
- Tilt load forward. Arm bent at elbow, forearm lowered, and point forefinger and middle finger downward.
- Tilt load back. Raise right arm above head with arm bent at elbow with forefinger and middle finger upward.
- Tilt load to side. With hands on hips, tilt body in direction the load should tilt.

NOTE: Give demonstration of the following.

- Side shift load. Both arms bent at elbow, extend either hand with finger pointing the way the load should be shifted.

NOTE: Instructor demonstrates/instructs the following hand/arm signals.

- Turn the steering wheel.
    - Direction of extended arm indicates the turning direction.
    - May be used for either direction.
    - May be used while vehicle is moving or at a halt.

- Move forward or backwards.

  - Direction of palm indicates the direction of desired movement.
  - Be sure that the way is clear before backing up.

Transparency 4-102

(4) Nighttime hand and arm signals.

Transparency 4-103

- Lift load. Raise one light above head with light pointing upward.

Transparency 4-104

- Lower load. One light pointing toward the ground.

Transparency 4-105

- Tilt load forward. Two lights in a vertical position toward the ground.

Transparency 4-106

- Tilt load backward. Two lights in a vertical position above the head.

Transparency 4-107

- Side shift the load. With arm extended across chest pointing light in the direction the load will shift.

Transparency 4-108

- Oscillate the load. Ground guide tilts arm in the direction the load should tilt with the lower arm being in the direction the load should go.

Transparency 4-109

- Moving forward. Light in the upward position bring arms down to a horizontal position and return to a vertical position.

Transparency 4-110

- Moving backward. Two lights in a downward position and raising arms in an upward position.

Transparency 4-111

- Shutdown. Light positioned horizontally across throat and using back and forth motion.

Transparency 4-112

- Left turn. Extend left arm horizontally in the direction of movement.

Transparency 4-113

- Right turn. Extend right arm horizontally in the direction of movement.

Transparency 4-114

- Lock load. Raise flashlights above head making a slow circular motion with the light.

Transparency 4-115

- Unlock load. Point flashlight toward the ground making a slow circular motion with the light.

Transparency 4-116

- Stop. Raise lights above head and then cross lights to form a cross or X.

Transparency 4-117

- Slow down. Lower light to waist level and wave in a sweeping motion from right to left across body and turn several times.

NOTE: Conduct a check-on-learning and summarize the learning activity.

Check-on-Learning

Q. What should you do before shifting into reverse?
A. Sound horn twice and look over both shoulders.

Q. When can you stand under the forks or on tophandler?
A. During PMCS only.

Q. How many vehicles apart should you be when following another RTCH?
A. At least two vehicles.

Q. Where is the sign "no clearance when turning" located?
A. Where machine articulates.

Q. Where is the sign "hearing protection required" located?
A. On right hand side of dash.

Q. Where is the sign "no standing under forks" located?
A. On each side of mast.

Q. What is the correct hand signal for lifting the load?
A. Raise right arm above head with arm bent at elbow with forefinger pointing upward.

Q. What is the correct hand signal for tilting the load to the side?
A. With hands on hips, tilt body in direction the load should tilt.

Q. What is the correct hand signal, at night, for lowering the load?
A. One light pointing downward toward the ground.

Q. What is the correct hand signal, at night, for shutdown?
A. Light positioned horizontally across throat and using back and forth motion.

3. **PRACTICAL EXERCISE.** This task shows 4 hours for practical exercise.

4. **EVALUATE.** Students are evaluated by a check on learning.

5. **SUMMARY.** Show Transparency 4-118.

    a. Recap main points.

    b. Allow for questions.

    c. Clarify questions.

    d. Give closing statement.

6. **RETRAINING.** Retrain and retest NO-GOs after normal duty hours.

E. SAFETY RESTRICTIONS. None.

F. ENVIRONMENTAL CONSIDERATIONS. None.

G. ADDITIONAL COMMENTS AND INFORMATION. Recommended instructional time is 6.0 hours (2.0 hours for conference and 4.0 hours for practical exercise).

LESSON TITLE: **PREVENTIVE MAINTENANCE CHECKS AND SERVICES ON THE 50,000-POUND RTCH**

TASK NUMBER: **551-726-1505 (Preventive Maintenance Checks and Services on the 50,000-pound Rough-Terrain Container Handler)**

A. TRAINING OBJECTIVE.

TASK: Know the procedures for operator's preventive maintenance and conduct pre-operational checks and make operator entries on DA Form 2404.
NOTE: Show Transparency 4-119 (Objective).

CONDITION: Given a written situation, a blank DA Form 2404, and TM 10-3930-641-10.

STANDARD: To receive a "GO" for this lesson unit, the student will properly fill out all operator's entries on DA Form 2404.

B. INTERMEDIATE TRAINING.

Intermediate Training Objective 1

TASK: After this lesson unit, the student will be able to complete DA Form 2404 and record deficiencies.

CONDITION: Given a written situation, a blank DA Form 2404, and TM 10-3930-641-10.

STANDARD: To receive a "GO" for this lesson unit, the student will properly fill out all operator entries on DA Form 2404.

Intermediate Training Objective 2

TASK: After this lesson unit, the student will answer questions about the lubrication order (LO 10-3930-641-12) for the 50,000-pound RTCH.

CONDITION: Given check-on-learning questions and a lubrication order.

STANDARD: To receive a "GO" for this lesson unit, the student will correctly answer all the check-on-learning questions.

C. ADMINISTRATIVE INSTRUCTIONS.

1. Training time: As scheduled.

2. Training location: Scheduled classroom.

3. Training type: Conference and practical exercise.

4. Students: Scheduled personnel.

5. Principal and assistant instructors required: One primary instructor is required for the class.

6. Training aids and equipment: Overhead projector, projection screen, transparencies, DA Form 2404, and TM 10-3930-641-10 (1 per student).

7. References: DA Pamphlet 738-750 and TM 10-3930-641-10.

NOTE: Before class arrival, ensure that each student desk or table has a TM 10-3930-641-10, a LO 10-3930-641-12, and a blank DA Form 2404.

D. SEQUENCE OF ACTIVITY.

1. **INTRODUCTION.**

   a. Interest device.

   b. Tie-in.

   c. Lesson Objective (paragraph A).

   d. Procedures.

      (1) Explanation.

      (2) Summary.

2. **EXPLANATION AND DEMONSTRATION.** Properly fill out DA Form 2404.

a. Completing DA Form 2404.

Transparency 4-120

(1) DA Form 2404 (Equipment Inspection and Maintenance Worksheet).

- Purpose of the form is to report faults on equipment that cannot be corrected by the operator.
- Preparing of DA Form 2404.

NOTE: The sample DA Form 2404 is for training purposes only.

Transparency 4-121

(2) Top part of DA Form 2404.

- Block 1, Organization - 368th Transportation Company.
- Block 2, Nomenclature and model - 50,000-pound truck RTCH.
- Block 3, Registration/Serial/NSN - 7600075.
- Block 4a, Miles - leave blank.
- Block 4b, Hours - shows hours on meter.
- Block 4c, Rounds fired - leave blank.
- Block 4d, Hot starts - leave blank.
- Block 5, Date - today's date.
- Block 6, Type inspection - indicate whether daily, weekly, or monthly.
- Block 7, Applicable reference.
  - TM number - 10-3930-641-10.
  - TM date - May 81.
  - TM number - If appropriate.
  - TM date - If appropriate.
- Block 8a, Signature.
  - Print last name, first, and rank.
  - Payroll signature.
- Block 8b, Time - Time finished inspection.
- Block 9a, 9b, and block 10 - Only use when required by local instructions.

Transparency 4-122

(3) Bottom part of DA Form 2404.

- Block a, TM item number - The number that the TM gives that item.
- Block b, Status - Enter the status symbol that applies to the fault.

NOTE: During this training, you will not use the status symbol.

- Block c, Deficiencies and shortcomings. A brief description of the fault. You may skip up to three lines between faults.
- Block d, Corrective action. Action taken to correct or take care of the fault.
- Block e, Initial when corrected. Insert initials when deficiencies are corrected. Leave blank if deficiencies have not been corrected.

NOTE: Have students turn to page 2-17, item 1-5, in TM 10-3930-641-10.

b. Preventive Maintenance Checks and Services Letters. There are five columns in the PMCS list**.**

- B is the before operations check.
- D is the during operations check.
- A is the after operations checks.
- W is the weekly checks.
- M is the monthly checks.

NOTE: Turn to page 2-19 in TM 10-3930-641-10.

Transparency 4-123

c. Leakage Definitions for PMCS.

- Class I leak. Seepage of fluid (as indicated by wetness or discoloration) and not great enough to form a drop.
- Class II leak. Leakage of fluid great enough to form a drop but not enough to cause drops to fall from item being checked/inspected.
- Class III leaks.

  ■ Leakage of fluid great enough to form a drop that falls from the item being checked/inspected.
  ■ Equipment operation is allowable with class I or class II leaks. However, a class III leak is unacceptable.

NOTE: Conduct a check-on-learning on the following situation.

SITUATION: You are the operator of a RTCH 67Y0075 during JLOTS operations. The RTCH has 343.3 hours on the meter. You are going to do a before operations check on the RTCH. You have done a walk around check and found a coolant leak coming from the lower radiator hose, the seat belt is frayed almost to the breaking point, the right rear tire has a 2-inch cut on the side wall, and the engine oil is low.

Check-on-Learning

Q. What would be entered in block 3 of DA Form 2404?
A. 67Y005.

Q. What would be entered in block 4b of DA Form 2404?
A. 343.3.

Q. What do you find in item 1?
A. Coolant leak from lower radiator hose.

Q. What do you find in item 14?
A. Seat belt badly frayed.

Q. What do you find in item 2?
A. Right rear tire has a 2-inch cut on side wall.

Q. What do you find in item 7?
A. Engine oil level low.

NOTE: Turn to page 2-20 in TM 10-3930-641-10.

Transparency 4-124

d. Before Operation Checks on the 50,000-pound RTCH.

Transparency 4-125

- Item 1. Walk around and check for the following:
  - Leaks on or under the vehicle.
  - Loose wires and damaged lines and hoses.
  - Loose or damaged parts.
- Item 2. Tires.
  - Check for cuts, abrasions, missing valve caps, and general condition.
  - Visually check for low air pressure on tires.
- Item 3. Exterior of machine.
  - Check for damage to fenders, mirrors, ladders, engine covers, and guards.
  - Check for missing or damaged parts on tophandler hydraulic cylinders, twisted locks, container lock cylinders, forks, carriage, lift chains, and mast cylinders.

Transparency 4-126

- Item 4. Hydraulic steering.
  - Check cylinders and hoses for obvious damage.
  - Check linkage for missing or damaged parts.
- Item 5. Fuel tank. If low fuel indicator comes on, notify organizational maintenance.
- Item 7: Engine (not running).
  - Check engine oil level.
  - Check all visible oil lines for leaks and damage.
- Item 9: Engine pre-cleaner/air cleaner. Check for clogging or debris.
- Item 12: Hydraulic tank. Check hydraulic level at sight gauge.

Transparency 4-127

- Item 13: Rollover protective structure. Check for damage and looseness.
- Item 14: Operator's cab. Check seat belt for wear, damage, or loose mounting.
- Item 17: Steering column lock.
  - Adjust wheel and column position.
  - Release the lock button.

Transparency 4-128

e. During Operation Checks on the 50,000-pound RTCH.

Transparency 4-129

- Item 3: Exterior of machine. Check condition of the following:
  - Windshield and windows.
  - Windshield wiper and blades.
- Item 5: Fuel tank. If low fuel indicator comes on, notify organizational maintenance.

- Item 14: Operator's cab.
  - Lights and gauges.
  - Container lights.
  - Low fuel indicator.
  - Check heater and defroster.
- Item 15: Light system.
  - Check operation of all lights.
  - Check lenses for damage.

Transparency 4-130

- Item 16: Parking brake.
  - Pull out to engage; parking brake indicator light comes on.
  - Push in to disengage; parking brake light goes out.

NOTE: Light will come on and horn will sound if brake is on with transmission engaged.

NOTE: Before starting engine, move gear selection to neutral, engage parking brake, and lock steering column.

- Item 18: Indicator lights. Start engine, check to ensure the following lights are off.
  - Low engine oil indicator.
  - Low hydraulic oil indicator.
  - No coolant flow indicator.
  - Implement filter indicator.
  - Transmission filter indicator.
  - Air filter indicator.
  - Pilot filter indicator.
  - High temperature hydraulic oil indicator.
  - Low pressure brake indicator.
  - Supplemental steering indicator.

Transparencies 4-131 and 4-132

- Item 19: Gauges (Indicators).
  - Engine oil pressure. Needle should be in green range within 10 seconds after engine starts.
  - Fuel pressure:
    - Green range - normal operation.
    - Red - stop machine.

- Water temperature:

  - Green range - normal operation.
  - Red - stop machine and investigate problem.

- Converter oil temperature:

  - Green range - normal operation.
  - Red - stop machine and check transmission oil level.

- Volts:

  - Green range - normal operation.
  - Charge or battery range:

    -- Stop engine.
    -- Inspect charging system.

- Item 20: Transmission.

  - Check oil level with engine warm.
  - Engine running, low idle.
  - Between low and full mark on dipstick.

- Item 21: Control levers.

  - Lift control.
  - Tilt control.
  - Side tilt control.
  - Container lock lever.

    - Unlock - push lever forward.
    - Lock - pull lever back.

Transparency 4-133

- Item 22: Service brakes.

  - If low-pressure brake light comes on within five pedal applications, the accumulator requires service.
  - In a clear area, apply service brake and shift transmission in second gear forward, machine must not move.
  - If machine moves, notify first line supervisor.

- Item 23: Transmission range selector.

  - Operate vehicle.
  - Use all four speeds.

NOTE: Stop vehicle before shifting from forward to reverse.

Transparency 4-134

f. After Operation Checks on the 50,000-pound RTCH.

- Item 5: Fuel tank. Have fuel tank filled at end of work day.

NOTE: Conduct a check-on-learning and summarize the learning activity.

Check-on-Learning

Q. What does TM item number 16 check?
A. Parking brake.

Q. What does TM item number 20 check?
A. Transmission.

Q. The control levers are checked by which TM item number?
A. 21.

Q. Service brakes are checked by which TM item number?
A. 22.

Q. TM item number 5 tells the operator to do what during after operation PMCS?
A. Have fuel tank filled.

g. Lubrication of the 50,000-pound RTCH.

NOTE: Turn to page 1-11 in LO 10-3930-641-12.

Transparency 4-135

- Lubrication points on the 50,000-pound RTCH.

Transparency 4-136

- Drive shaft support bearing - 1 lube point.
- Drive shaft spline - 1 lube point.
- Front drive shaft universal joint and spline - 2 lube points.
- Center drive universal joints - 2 lube points.
- Rear drive shaft universal joints - 2 lube points.
- Transmission drive shaft universal joint - 2 lube points.

Transparency 4-137

- Fan drive and belt tightener pulley lube point - 2 lube points.
- Front and rear steering cylinder bearings - 3 lube points.
- Rear axle trunnion and left rear steering cylinder bearing - 3 lube points.
- Upper and lower steering points - 2 lube points.

Transparency 4-138

- Tophandler twist locks, guide rods, and operating bearings.

  - Four lube points on twist locks.
  - Guide rods.
  - Operating shaft bearings.

    -- Two lube points on 20-foot tophandler.
    -- Six lube points on 35-foot and 40-foot tophandler.

- Tilt cylinders - 4 lube points.
- Mast mounting hinges - 2 lube points.
- Mast rollers - 4 lube points.
- Carriage rollers - 4 lube points.

h. Cleaning Solvent. The type of cleaning solvent for this machine is SD-2 solvent.

Check-on-Learning

Q. How many lube points are there on the drive shaft support bearing?
A. One.

Q. How many lube points are there on the transmission drive shaft universal?
A. Two.

Q. How many lube points are there on the tilt cylinders?
A. Four.

Q. How many lube points are on the center drive universal joint?
A. Two.

Q. What type of solvent is used to clean lube points?
A. SD-2.

3. **PRACTICAL EXERCISE.** This task shows 4 hours of practical exercise.

4. **EVALUATE.** Students are evaluated by a check on learning.

5. **SUMMARY.** Show Transparency 4-139.

    a. Recap main points.

    b. Allow for questions.

    c. Clarify questions.

    d. Give closing statement.

6. **RETRAINING.** Retrain and retest NO-GOs after normal duty hours.

E. SAFETY RESTRICTIONS. None.

F. ENVIRONMENTAL CONSIDERATIONS. None.

G. ADDITIONAL COMMENTS AND INFORMATION. Recommended instructional time is 7.0 hours (2.0 hours for conference, 1.0 hour for discussion, and 4.0 hours of practical exercise.).

LESSON TITLE: **STARTING/STOPPING/OPERATING ENGINE PROCEDURES**

TASK NUMBER: **551-726-1514 (Perform After-Operation Shutdown Procedures on the 50,000-pound RTCH)**

A. TRAINING OBJECTIVE.

TASK: As a forklift operator, you will need to know how to correctly start, drive, park, and stop the 50,000-pound RTCH. RTCH operation also includes performing PMCS before starting the RTCH.
NOTE: Show Transparency 4-140 (Objective).

CONDITION: Given check-on-learning questions and class notes.

STANDARD: To receive a "GO" for this lesson unit, the student will be familiar with the correct starting/stopping/operating engine procedures of the 50,000-pound RTCH.

B. INTERMEDIATE TRAINING.

Intermediate Training Objective 1

TASK: After this lesson unit, the student will learn how to start, drive, park, and stop the 50,000-pound RTCH.

CONDITION: Given TM 10-3930-641-10, check-on-learning questions, and class notes..

STANDARD: To receive a "GO" for this lesson unit, the student will be able to identify the correct procedures for starting, driving, parking, and stopping of the 50,000-pound RTCH.

C. ADMINISTRATIVE INSTRUCTIONS.

1. Training time: As scheduled.
2. Training location: Scheduled classroom with table, chairs, and a power source.
3. Training type: Conference and practical exercise.
4. Students: Scheduled personnel.
5. Principal and assistant instructors required: One primary instructor is required for the class.

6. Training aids and equipment: Overhead projector, projection screen, transparencies, 50,000-pound RTCH, and TM 10-3930-641-10 (1 per student).

7. References: TM 10-3930-641-10 and STP 55-88H1-SM.

NOTE: Before class arrival, ensure that each student desk or table has a TM 10-3930-641-10, STP 55-88H1-SM, paper, and pen/pencil.

D. SEQUENCE OF ACTIVITY.

1. **INTRODUCTION.**

a. Interest device.

b. Tie-in.

c. Lesson Objective (paragraph A).

d. Procedures.

(1) Explanation.

(2) Summary.

2. **EXPLANATION AND DEMONSTRATION.** Learn how to correctly start, drive, park, and stop the 50,000-pound RTCH.

Transparency 4-141

a. Before Starting Procedures.

Transparency 4-142

- Do all before operation preventive maintenance checks and services before starting vehicle.
- Turn main disconnect switch to the ON position. Never turn main disconnect switch OFF while engine is running.

Transparency 4-143

- Turn power switch to ON position.
- The following six indicator lights should be on (all others off):
  - High fuel.
  - No coolant flow.
  - Supplemental steering.
  - Low press brake.
  - Park brake.
  - Alternator.
- Panel test switch "Press Down." All indicator lights should come on. If indicator light does not come on, fuse or bulb may be blown.

Transparency 4-144

b. Starting Procedures.

Transparency 4-145

- Parking brake "ENGAGED."
- Steering column unlocked and lowered to desired position.
- Transmission range selector "NEUTRAL."
- Accelerator pedal. Press down 25 percent and hold.

Transparency 4-146

- Turn power switch to "START" position and release when engine starts. Also release accelerator pedal. If engine does not start after 30 seconds, let starter cool for 2 minutes, then try again.
- Engine runs at idle for 5 minutes. Do not engage hydraulic controls. Oil pressure gauge should read in green range.
- Engine oil level. Check for proper reading.

Transparency 4-147

- Transmission oil level. Check for proper reading.
- Right hand instrument panel. Check for proper reading.
- Left hand instrument panel. Check for proper reading.
- All lights off except fuel high and park brake indicators.

NOTE: Turn on all lights.

Transparency 4-148

c. Driving Procedures.

Transparency 4-149

- Controls - Check for proper operations.
- Right brake pedal - Press and hold.
- Parking brake - "PUSH" to release.

NOTE: Horn will sound if parking brake is engaged while machine is in gear.

Transparency 4-150

- Transmission range selector - Move to desired direction of travel.

NOTE: Rotate range selector to change gears for more speed.

- Right brake pedal - Release.
- Accelerator - "PRESS" to move vehicle.

NOTE: While operating vehicle, frequently check the instrument panel for proper functioning of lights and gauges.

Transparency 4-151

d. Parking Procedures.

Transparency 4-152

- Accelerator - "RELEASE."
- Right brake pedal - Press to stop vehicle.
- Transmission range selector - Move to neutral.
- Parking brake - "ENGAGED."
- Forks/Tophandler - Slowly move to lowest position.

NOTE: Turn off all lights.

Transparency 4-153

e. Stopping Engine Procedures.

Transparency 4-154

- Engine.
  - Operate at half speed for 5 minutes.
  - Operate at low idle for 30 seconds.

- Power Switch.
  - Turn off.
  - Remove key.
- Steering Column.
  - Hold steering wheel.
  - Pull out and hold COLUMN RELEASE lever.
  - Slowly move steering column as far forward as it will go.

Transparency 4-155

- Steering Column Lock.
  - Lock.
  - Remove steering column key.
- Main Disconnect.
  - Turn off.
  - Remove key when parking overnight or for long periods of time.
- Wheels. Block if parked on a slope.

NOTE: Conduct a check-on-learning and summarize the learning activity.

Check-on-Learning

Q. What is the first step in starting the 50,000-pound RTCH?
A. All before operations PMCS.

Q. During starting, if the engine does not start after 30 seconds, how many minutes should you let the starter cool?
A. 2.

Q. After starting, what two indicator lights should be on the left-hand instrument panel?
A. Fuel high and parking brake indicator.

Q. How far down should you press the accelerator when starting the 50,000-pound RTCH?
A. 25 percent.

Q. How many minutes do you let the engine idle at half speed during shutdown procedures?
A. 5.

3. **PRACTICAL EXERCISE.** This task shows 4 hours of practical exercise.

4. **EVALUATE.** Students are evaluated by exam 9G5-301-08.

5. **SUMMARY.** Show Transparency 4-156.

    a. Recap main points.

    b. Allow for questions.

    c. Clarify questions.

    d. Give closing statement.

6. **RETRAINING.** Retrain and retest NO-GOs after normal duty hours.

E. SAFETY RESTRICTIONS. None.

F. ENVIRONMENTAL CONSIDERATIONS. None.

G. ADDITIONAL COMMENTS AND INFORMATION. Recommended instructional time is 13.0 hours (1.0 hour for conference, 4.0 hours of practical exercise, and 8.0 hours for exam.).

CHAPTER 5

LESSON OUTLINE FOR THE 50,000-POUND ROUGH-TERRAIN CONTAINER HANDLER (WITH TOPHANDLER)

LESSON TITLE: **ATTACHING/DISCONNECTING TOPHANDLER**

TASK NUMBER: **551-726-1509 (Attach Container Tophandler to Rough-Terrain Container Handler)**
551-726-1513 (Disconnect Container Tophandler from Rough-Terrain Container Handler)

A. TRAINING OBJECTIVE.

TASK: Correctly attach and disconnect the tophandler to the 50,000-pound RTCH.
NOTE: Show Transparency 5-1 (Objective).

CONDITION: Given demonstration with class notes.

STANDARD: To receive a "GO" for this lesson unit, the student will correctly attach and disconnect the tophandler.

B. INTERMEDIATE TRAINING.

Intermediate Training Objective 1

TASK: After this lesson unit, the student will be able to attach and disconnect the tophandler to the 50,000-pound RTCH.

CONDITION: Given demonstration and class notes.

STANDARD: To receive a "GO" for this lesson unit, the student will correctly attach and disconnect the tophandler.

C. ADMINISTRATIVE INSTRUCTIONS.

1. Training time: As scheduled.
2. Training location: Scheduled classroom with chairs and a power source.
3. Training type: Demonstration and practical exercise.
4. Students: Scheduled personnel.

5. Principal and assistant instructors required: One primary instructor for the class.

6. Training aids and equipment: Overhead projector; TM 10-3930-641-10, Instructor's Guide, Lesson Plan (TSP) and transparencies (for the instructor) and STP 55-88H1-SM, paper, and pen/pencil (for the student).

7. References: STP 55-88H1-SM and TM 10-3930-641-10.

NOTE: Before class arrival, ensure that each student desk or table has a TM 10-3930-641-10 and STP 55-88H1-SM.

D. SEQUENCE OF ACTIVITY.

1. **INTRODUCTION.**

a. Interest device.

b. Tie-in.

c. Lesson Objective (paragraph A).

d. Procedures.

(1) Explanation.

(2) Practical exercise.

(3) Summary.

2. **EXPLANATION AND DEMONSTRATION.** Demonstrate the correct way to attach and disconnect the tophandler.

Transparency 5-2

a. Attaching Tophandler.

- Approach tophandler slowly, approach must be direct and straight.
- Insert forks into opening of tophandler.
- Inch forward until forks are fully inserted into tophandler.
- Shut down engine.
- Install and secure both safety chains.
- Hook up electrical connector.
- Connect both hydraulic connectors.

Transparency 5-3

b. Disconnecting Tophandler.

- Shut down engine.
- Disconnect both hydraulic connectors.
- Disconnect electrical connector.
- Remove both safety chains.
- Start engine.
- Back slowly and directly away from tophandler until forks are cleared.

3. **PRACTICAL EXERCISE.** This task shows 10.5 hours for practical exercise.

4. **EVALUATE.** Students are evaluated by exam 9G5-301-08.

5. **SUMMARY.** Show Transparency 5-4.

   a. Recap main points.

   b. Allow for questions.

   c. Clarify questions.

   d. Give closing statement.

6. **RETRAINING.** Retrain and retest NO-GOs after normal duty hours.

E. SAFETY RESTRICTIONS. None.

F. ENVIRONMENTAL CONSIDERATIONS. None.

G. ADDITIONAL COMMENTS AND INFORMATION. Recommended instructional time is 11.0 hours (0.5 hours for demonstration and 10.5 hours for practical exercise).

CHAPTER 6

LESSON OUTLINES FOR THE 50,000-POUND ROUGH-TERRAIN CONTAINER HANDLER (WITH CONTAINERS)

LESSON TITLE: **LIFTING AND TRANSPORTING CONTAINERS**

TASK NUMBER: **551-726-1510 (Lift Container Using Rough-Terrain Container Handler)**
551-726-1511 (Drive the Rough-Terrain Container Handler With a Container Attached)

A. TRAINING OBJECTIVE.

TASK: Be able to correctly lift a container and drive the RTCH with a container attached.
NOTE: Show Transparency 6-1 (Objective).

CONDITION: Given demonstration with class notes.

STANDARD: To receive a "GO" for this lesson unit, the student will lift a container and drive the RTCH with a container attached.

B. INTERMEDIATE TRAINING.

Intermediate Training Objective 1

TASK: After this lesson unit, the student will be able to lift a container and drive the RTCH with a container attached.

CONDITION: Given a RTCH with a tophandler and a container.

STANDARD: To receive a "GO" for this lesson unit, the student will correctly lift a container and drive the RTCH with the container attached.

C. ADMINISTRATIVE INSTRUCTIONS.

1. Training time: As scheduled.
2. Training location: Scheduled classroom with chairs and a power source.
3. Training type: Demonstration and practical exercise.
4. Students: Scheduled personnel.

5. Principal and assistant instructors required: One primary instructor for the class.

6. Training aids and equipment: Overhead projector; projection screen, TM 10-3930-641-10, Instructor's Guide, Lesson Plan (TSP) and transparencies (for the instructor) and STP 55-88H1-SM, paper, and pen/pencil (for the student). Also a 50,000-pound RTCH, tophandler, container cargo, and semitrailer and low bed (6 wheel).

7. References: STP 55-88H1-SM and TM 10-3930-641-10.

NOTE: Before class arrival, ensure that each student desk or table has a TM 10-3930-641-10 and STP 55-88H1-SM.

D. SEQUENCE OF ACTIVITY.

1. **INTRODUCTION.**

a. Interest device.

b. Tie-in.

c. Lesson Objective (paragraph A).

d. Procedures.

(1) Explanation.

(2) Practical exercise.

(3) Summary.

2. **EXPLANATION AND DEMONSTRATION.** Demonstrate the correct way to lift containers.

Transparency 6-2

- Lifting containers.
  - Center and level tophandler.
  - Position front of vehicle to broadside of container.
  - Position locks of tophandler over corners of container.
  - Lower locks into fittings.
  - Ensure both "ready-to-lock" lights come on.

Transparency 6-3

- Lift container to minimum traveling height.

  - 18 to 22 inches minimum carrying height.
  - Tilt back to stabilize load.

- Center load for carrying.

3. **PRACTICAL EXERCISE.** This task shows 7.5 hours for practical exercise.

4. **EVALUATE.** Students are evaluated by exam 9G5-301-08.

5. **SUMMARY.** Show Transparency 6-4.

   a. Recap main points.

   b. Allow for questions.

   c. Clarify questions.

   d. Give closing statement.

6. **RETRAINING.** Retrain and retest NO-GOs after normal duty hours.

E. SAFETY RESTRICTIONS. None.

F. ENVIRONMENTAL CONSIDERATIONS. None.

G. ADDITIONAL COMMENTS AND INFORMATION. Recommended instructional time is 8.0 hours (0.5 hours for demonstration and 7.5 hours for practical exercise).

LESSON TITLE: **OFF-LOADING AND STACKING CONTAINERS**

TASK NUMBER: **551-726-1512 (Off-Load A Container With Rough-Terrain Container Handler)**

A. TRAINING OBJECTIVE.

TASK: Be able to correctly off-load and stack a container.
NOTE: Show Transparency 6-5 (Objective).

CONDITION: Given demonstration with class notes.

STANDARD: To receive a "GO" for this lesson unit, the student will correctly off-load and stack containers.

B. INTERMEDIATE TRAINING.

Intermediate Training Objective 1

TASK: After this lesson unit, the student will be able to off-load and stack containers.

CONDITION: Given a RTCH with a tophandler, two containers, and a ground guide.

STANDARD: To receive a "GO" for this lesson unit, the student will correctly off-load and stack containers.

C. ADMINISTRATIVE INSTRUCTIONS.

1. Training time: As scheduled.

2. Training location: Scheduled classroom with chairs and a power source.

3. Training type: Demonstration and practical exercise.

4. Students: Scheduled personnel.

5. Principal and assistant instructors required: One primary instructor for the class.

6. Training aids and equipment: Overhead projector; projection screen, TM 10-3930-641-10, Instructor's Guide, Lesson Plan (TSP) and transparencies (for the instructor) and STP 55-88H1-SM, paper, and pen/pencil (for the student). Also a 50,000-pound RTCH with tophandler and two container cargo, semitrailer, low bed, 6 wheel, and truck, tractor, 5-ton, 6x6, M931.

7. References: STP 55-88H1-SM and TM 10-3930-641-10.

NOTE: Before class arrival, ensure that each student desk or table has a TM 10-3930-641-10 and STP 55-88H1-SM.

D. SEQUENCE OF ACTIVITY.

1. **INTRODUCTION.**

a. Interest device.

b. Tie-in.

c. Lesson Objective (paragraph A).

d. Procedures.

(1) Explanation.

(2) Practical exercise.

(3) Summary.

2. **EXPLANATION AND DEMONSTRATION.** Demonstrate the correct way to off-load and stack containers.

Transparency 6-6

a. Off-Loading Containers.

- Center and level tophandler.
- Stop 3 to 4 feet from container.
- Raise to maximum height and level tophandler.
- Position locks of tophandler over corners of container.
- Lower locks into fittings.
- Ensure both "ready-to-lock" lights come on.

Transparency 6-7

- Lock tophandler to container.
- Lift container to maximum height.
- Tilt back to stabilize load.
- Back away 3 to 4 feet from other containers.
- Lower container to minimum carrying height (which is 18 to 22 inches).

Transparency 6-8

b. Stacking Containers.

- Center and level container.
- Tilt back to stabilize load.
- Align containers using ground guide.
- Stop 3 to 4 feet from other containers.
- Raise to maximum height.
- Move forward over other containers.

Transparency 6-9

- Lower container squarely over corner of other containers within 3 inches.
- Make any adjustments.
- Set down container on other container.
- Unlock tophandler and raise to clear container.
- Tilt back to clear tophandler from container.
- Back away from container and lower.

3. **PRACTICAL EXERCISE.** This task shows 21 hours for practical exercise.

4. **EVALUATE.** Students are evaluated by exam 9G5-301-08.

5. **SUMMARY.** Show Transparency 6-10.

   a. Recap main points.

   b. Allow for questions.

   c. Clarify questions.

   d. Give closing statement.

6. **RETRAINING.** Retrain and retest NO-GOs after normal duty hours.

E. SAFETY RESTRICTIONS. None.

F. ENVIRONMENTAL CONSIDERATIONS. None.

G. ADDITIONAL COMMENTS AND INFORMATION. Recommended instructional time is 22.0 hours (1.0 hour for demonstration and 21.0 hours for practical exercise).

CHAPTER 7

LESSON OUTLINE FOR HAZCOM SAFETY BRIEFING FOR THE 50,000-POUND ROUGH-TERRAIN CONTAINER HANDLER

LESSON TITLE: **HAZCOM SAFETY BRIEFING**

TASK NUMBER: **453-118-01**

A. TRAINING OBJECTIVE.

TASK: Learn established HAZCOM standards.
NOTE: Show Transparency 7-1 (Objective).

CONDITION: Given check-on-learning questions, classroom instruction, and class notes.

STANDARD: To receive a "GO" for this lesson unit, the student will correctly answer all check-on-learning questions.

B. INTERMEDIATE TRAINING.

Intermediate Training Objective 1

TASK: After this lesson unit, the student will be knowledgeable of established HAZCOM standards.

CONDITION: Given check-on-learning questions, classroom instruction, and class notes.

STANDARD: To receive a "GO" for this lesson unit, the student will correctly answer all check-on-learning questions.

C. ADMINISTRATIVE INSTRUCTIONS.

1. Training time: As scheduled.
2. Training location: Scheduled classroom with chairs and a power source.
3. Training type: Conference and television tape.
4. Students: Scheduled personnel.
5. Principal and assistant instructors required: One primary instructor for the class.

6. Training aids and equipment: Overhead projector, transparencies, videocassette player, and television.

7. References: Tape 00759 and 29 CFR 1910.1200.

D. SEQUENCE OF ACTIVITY.

1. **INTRODUCTION.**

a. Interest device.

b. Tie-in.

c. Lesson Objective (paragraph A).

d. Procedures.

(1) Explanation.

(2) Summary.

2. **EXPLANATION AND DEMONSTRATION.** Discuss HAZCOM standards.

Transparency 7-2

- The federal government is working to reduce the risk of injury or illness caused by hazardous chemicals in the work place. Accomplishing this goal requires information and communication. Everyone needs to know about the hazardous chemicals they work with, whether the material poses a risk to safety or health, and how to reduce any such risks.

Transparency 7-3

- Show and discuss the following HAZCOM tapes.
  - Introduction to HAZCOM.
  - Physical Hazards and Health Hazards.
  - Main Routes of Exposure.
  - Physical Hazards.
  - Health Hazards.
  - Reproductive Hazards.
  - Methods of Controlling Chemical Hazards.

NOTE: Conduct a check-on-learning and summarize the learning activity.

Check-on-Learning

Q. What does OSHA stand for?
A. Occupational Safety and Health Administration.

Q. What is the purpose of OSHA?
A. Reduce the incidences of injury and illness caused by hazardous chemicals in the work place.

Q. What are physical and health hazards?
A. Physical hazards are chemicals that cause explosions, violent chemical reactions, or other hazardous situations. Health hazards are chemicals that can cause illness or injury when inhaled, swallowed, or through contact with the skin or eyes.

Q. What are the four main routes of exposure?
A. Breathing/inhalation, skin/eye contact, skin/absorption, and swelling/ingestion.

Q. What are the four physical hazards?
A. Compressed gases, explosives, fire hazards, and unstable/reactive chemicals.

Q. What do health hazards include?
A. Irritants that cause reddening, itching, or other irritation on contact with any part of the body. Corrosives that burn or eat away body tissues on contact. Cryogenics that freeze body on contact. Chemicals that damage a specific organ or system. Reproductive hazards that target the reproductive system. Sensitizers that cause an allergic-like response in many people who are repeatedly exposed. Carcinogens that cause cancer.

Q. What do Reproductive Hazards include?
A. Mutagens that damage genes in egg or sperm cells. Teratogens that damage the fetus during development.

Q. What are the basic methods of controlling chemical hazards?
A. Engineering controls, personal protective equipment, and administrative controls.

3. **PRACTICAL EXERCISE.** None.

4. **EVALUATE.** Students are evaluated by exam 9G5-301-08.

5. **SUMMARY.** Show Transparency 7-4.

    a. Recap main points.

    b. Allow for questions.

    c. Clarify questions.

    d. Give closing statement.

6. **RETRAINING.** Retrain and retest NO-GOs after normal duty hours.

E. SAFETY RESTRICTIONS. None.

F. ENVIRONMENTAL CONSIDERATIONS. None.

G. ADDITIONAL COMMENTS AND INFORMATION. Recommended instructional time is 1.0 hour (30 minutes for conference and 30 minutes for television tapes).

CHAPTER 8

END OF COURSE COMPREHENSIVE TEST

LESSON TITLE: END OF COURSE COMPREHENSIVE TEST (EOCCT)

TASK NUMBER: All previously taught tasks.

A. TRAINING OBJECTIVE.

TASK: Pass the EOCCT.

CONDITIONS: Given an examination booklet, pencil, DD Form 1970 (or ULLS generated DA Form 5987-E), DA Form 2404 (or ULLS generated DA Form 5988-E), TM 9-2320-272-10, equipment records folder, rags, lubricants, coolant, a 50,000-pound RTCH with BII, road test route, and a suitable off road training area.

STANDARD: Pass all written and performance tests.

B. INTERMEDIATE TRAINING.

Intermediate Training Objective 1

TASK: Pass a written examination.

CONDITIONS: Given an test booklet and pencil.

STANDARD: Answer correctly 21 of 30 questions within 40 minutes. Use either the primary written test or the alternate written test.

Intermediate Training Objective 2

TASK: Pass the driver's road test.

CONDITIONS: Given DD Form 1970 (or ULLS generated DA Form 5987-E), DA Form 2404 (or ULLS generated DA Form 5988-E), pencil, TM 9-2320-272-10, equipment records folder, rags, lubricants, coolant, road test route, a 50,000-pound RTCH with BII, and road test route.

STANDARD: Achieve a score of 75 or higher. Use the driver's performance test (road test) instructions and the driver's road test score sheet (DA Form 6125-R).

Intermediate Training Objective 3

TASK:	Operating the 50,000-pound RTCH (off road).
CONDITIONS:	Given DD Form 1970 (or ULLS generated DA Form 5987-E), DA Form 2404 (or ULLS generated DA Form 5988-E), TM 9-2320-272-10, equipment records folder, rags, lubricants, coolant, a suitable off road training area, a 50,000-pound RTCH with BII, and a requirement to operate the RTCH off road (to include ditches, marshes, gullies, ravines, steep grades, woods, mud, rocky terrain, and shallow streams [30 inches or less]) during daylight hours.
STANDARD:	Operate the vehicle safely at reduced speeds, taking precautions not to damage the RTCH while driving over rough terrain and receive all GOs on the performance test checklist.

C. ADMINISTRATIVE INSTRUCTIONS.

1. Training time: As scheduled.

2. Training location: Classroom, motor pool, road test route, and off road training area(s) as scheduled.

3. Training type: Performance evaluation.

4. Students: Scheduled personnel.

5. Principal and assistant instructors required: One primary instructor for the class for the written tests and one assistant instructor for every student for the performance tests.

6. Training aids and equipment: Hearing protection, rags, lubricants, coolant, examination booklet, pencil, DD Form 1970 (or ULLS generated DA Form 5987-E), DA Form 2404 (or ULLS generated DA Form 5988-E), DA Form 6125-R, TM 9-2320-272-10, equipment records folder, and a 50,000-pound RTCH with BII for every student.

7. References: AR 385-55, AR 600-55, DA Pamphlet 738-750, FM 21-305, and TM 9-2320-272-10.

D. SEQUENCE OF ACTIVITY.

1. Introduction:

   a. Interest device.

   b. Tie-in.

   c. Lesson objective (paragraph A).

d. Procedures.

(1) Performance testing.

(2) Evaluation.

(3) Summary.

2. Performance testing:

NOTE: The driver will test in the order listed below and will not do the next test until he successfully passes the previous test.

a. Intermediate training objective 1 (written test).

b. Intermediate training objective 2 (road test).

c. Intermediate training objective 3 (off road driving).

3. Evaluate: Check written test results, road test score sheets, and performance test checklists.

4. Summary:

a. Recap main points.

b. Allow for questions.

c. Clarify questions.

d. Give closing statement.

5. Retraining: Retrain and retest NO-GOs.

E. SAFETY RESTRICTIONS.

1. Ensure that all chock blocks are in place when vehicles are parked or maintenance is to be performed.

2. Ensure the transmission is in N, the parking brake is set, and the engine is shut off before leaving the vehicle, when the vehicle is parked, or maintenance is being performed.

3. Ensure all personnel remove all wristwatches, rings, bracelets, ID tags, neck chains, and any other jewelry before working in or around the vehicle.

4. Ensure all personnel pay particular attention to the cautions and warnings listed in the operator’s manual.

5. Ensure the driver and ground guides know and understand the hand and arm signals, especially the signal to stop, as outlined in FM 21-305.

6. Ensure ground guide(s) are used when backing.

7. Ensure all backing is conducted at a speed of 5 mph or less.

8. Hearing protection is required for all personnel working in and around the vehicle while the engine is running.

9. Inspect all seat belts for damage and ensure all occupants wear seat belts while the vehicle is in operation.

10. Ensure personnel maintain at least three points of contact when mounting or dismounting the vehicle (to include performing PMCS).

11. Ensure all personnel are clear of vehicle before engine start is attempted. Operator must visually check to see that all areas of the RTCH are clear of personnel before attempting to start the engine. Failure to do so could result in serious injury or death to personnel.

12. Extreme care should be taken when removing the surge tank filler cap if the temperature gauge reads above 175° F. Steam or hot coolant under pressure will cause injury such as serious burns.

13. The exhaust pipe and muffler can become very hot during vehicle operation. Be careful not to touch these parts with your bare hands or allow the body to come in contact with the exhaust pipe or muffler. Exhaust system parts can become hot enough to cause serious burns.

14. Reemphasize the removal of all jewelry such as rings, ID tags, or bracelets before working around batteries. Be careful not to short out battery terminals. If jewelry or tools contact the battery terminal, a direct short may occur resulting in instant heating, damage to equipment, or injury to personnel. Do not smoke or use open flame near batteries. Batteries may explode from a spark. Battery acid is harmful to skin and eyes.

15. Fuel is very flammable and can explode easily. To avoid serious injury or death, keep fuel away from open fire and keep a fire extinguisher within easy reach when working with fuel. Do not work on the fuel system when the engine is hot. Fuel can be ignited by the hot engine. When working with fuel, post signs that read: “NO SMOKING WITHIN 50 FEET OF VEHICLE”.

16. Alcohol used in alcohol evaporator is flammable, poisonous, and explosive. Do not smoke when adding fluid and do not drink fluid. Failure to do this will result in injury or death.

17. Do not use hand throttle while driving. When brakes are applied, the hand throttle does not automatically disengage. Using the hand throttle as a cruise control device could result in injury or death.

18. Apply brakes gradually when slowing or stopping and pump brakes gradually when slowing or stopping the vehicle on ice, snow, or wet pavement. A panic stop will cause the vehicle wheels to lock and the engine to stall. Power steering will be lost. Failure to apply brakes gradually can result in injury or death.

19. Rapid operation repeatedly of service brakes will consume compressed air supply and cause automatic spring brake application. Failure to follow proper service brake operating procedures may cause serious injury or death to personnel.

20. Never use the parking brake for normal braking. The wheels will lock up causing a severe skid. A skidding vehicle could result in serious injury or death.

21. Excessive use of the service brake to control downhill speed will result in the loss of braking power because of heat buildup.

22. Do not put the vehicle in motion until the low air pressure warning light goes out and the alarm (buzzer) stops sounding. Air pressure gauges should indicate at least 90 psi. If warnings continue beyond three minutes, and/or pressure gauges do not reach 90 psi, turn the ignition switch and battery switch to OFF positions and notify unit maintenance. Failure to do this could result in injury or death.

23. When raising the vehicle hood, ensure it is secured from falling. Do this by securing the hood retaining bar to the bumper bracket with the safety pin. Failure to do so may damage the vehicle or cause injury or death to personnel

F. ENVIRONMENTAL CONSIDERATIONS.

1. Ensure that all hazardous materials and wastes are stored and labeled properly.

2. Ensure that spill kits are within reach when changing or adding vehicle fluids or in the case of vehicle failures. Spill kits should enable the soldiers to contain a spill on land or in water.

3. Ensure that drip pans remain under parked vehicles.

4. Ensure that containers are the proper size and type for draining vehicle fluids.

G. ADDITIONAL COMMENTS AND INFORMATION. Recommended testing time is 4.0 hours.

INTERMEDIATE TRAINING OBJECTIVE 1

WRITTEN TEST (PRIMARY)

NAME _____ RANK _____ DATE _____

Instructions for Test

A. This test consists of 30 multiple choice questions.

B. Read all questions and answers carefully; then write the answer that is MOST correct on the blank line to the left.

C. Any unanswered questions will be scored as incorrect responses.

_____1. How high can containers be stacked with the RTCH?

a. Five.

b. Four.

c. Three.

d. Two.

_____2. The RTCH will ford up to how many inches of water?

a. 40.

b. 50.

c. 60.

d. 70.

_____3. What is the maximum lifting height, in inches, from the bottom of the container?

a. 115.

b. 116.

c. 117.

d. 118.

_____4. What are the three sizes, in feet, of the tophandlers for the 50,000-pound RTCH?

a. 20, 35, and 40.

b. 35, 40, and 45.

c. 40, 45, and 50.

d. 45, 50, and 55.

_____5. How many hours of operating time do you have with a full tank of fuel?

a. Five.

b. Ten.

c. Fifteen.

d. Twenty.

_____6. How many heaters are in the RTCH?

a. Four.

b. Three.

c. Two.

d. One.

_____7. How many battery boxes are there on the RTCH?

a. One.

b. Two.

c. Three.

d. Four.

_____8. What is the coolant capacity, in gallons, of the radiator?

a. 28.

b. 30.

c. 35.

d. 40.

_____9. What is the operational weight, in pounds, without tophandler?

a. 105,550.

b. 104,500.

c. 104,250.

d. 103,230.

_____10. How many transmission ranges are on the 50,000-pound RTCH?

a. Two.

b. Three.

c. Four.

d. Five.

_____11. How many speeds are on the 50,000-pound RTCH?

a. Two.

b. Three.

c. Four.

d. Five.

_____12. How many mast controls levers are on the 50,000-pound RTCH?

a. Five.

b. Four.

c. Three.

d. Two.

_____13. How many fuses are on the 50,000-pound RTCH?

a. Six.

b. Seven.

c. Eight.

d. Nine.

_____14. For what is the panel test switch used?

a. Oil pressure check.

b. Burned out bulbs.

c. Tire pressure check.

_____15. When can you stand under the forks or on tophandler.

a. Never.

b. At any time.

c. During PMCS only.

_____16. At least how many vehicles apart should you be when following another RTCH?

a. Two.

b. Three.

c. Four.

d. Five.

_____17. Where is the sign "hearing protection required" located?

a. Center of dash.

b. Both sides of the dash.

c. Left hand side of dash.

d. Right hand side of dash.

_____18. Where is the sign "no standing under forks" located?

a. On left side of mast.

b. On each side of mast.

c. On right side of mast.

_____19. What is the correct hand signal, at night, for lowering the load?

a. Two lights pointing upward.

b. One light point upward.

c. One light pointing downward toward the ground.

d. Two lights pointing downward toward the ground.

_____20. How many lube points are there on the transmission drive shaft universal?

a. Two.

b. Three.

c. Four.

d. Five.

_____21. How far down should you press the accelerator when starting the 50,000-pound RTCH?

a. 50 percent.

b. 40 percent.

c. 35 percent.

d. 25 percent.

_____22. How many minutes do you let the engine idle at half speed during shutdown procedures?

a. Five.

b. Four.

c. Three.

d. Two.

_____23. When attaching the tophandler, how should you insert the forks?

a. Partially.

b. Fully.

c. Halfway.

_____24. When disconnecting the tophandler, how should you back up until the forks are cleared?

a. Fast.

b. Moderately.

c. Slow.

_____25. When lifting a container what lights must you be sure come on?

a. Ready-to-lock.

b. Brake.

c. Interior.

_____26. What is the minumum traveling height, in inches, when lifting a container?

a. 5 to 10.

b. 10 to 15.

c. 15 to 20.

d. 18 to 22.

_____27. When off-loading, how far away should you stop from the container?

a. 1 to 2 feet.

b. 3 to 4 feet.

c. 5 to 6 feet.

_____28. When stacking, what should you use when aligning containers?

a. Ground guide.

b. Rear view mirror.

c. Designated point.

_____29. When stacking, what should you do to clear tophandler from the container?

a. Lower forks.

b. Tilt forward.

c. Tilt back.

_____30. What is the purpose of OSHA?

a. Review the incidences of injury and illness caused by hazardous chemicals in the work place.

b. Report the incidences of injury and illness caused by hazardous chemicals in the work place.

c. Eliminate the incidences of injury and illness caused by hazardous chemicals in the work place.

d. Reduce the incidences of injury and illness caused by hazardous chemicals in the work place.

INTERMEDIATE TRAINING OBJECTIVE 1

WRITTEN TEST ANSWER SHEET (PRIMARY)

1. d
2. c
3. d
4. a
5. b
6. c
7. b
8. a
9. d
10. b
11. c
12. a
13. d
14. b
15. c
16. a
17. d
18. b
19. c
20. a
21. d
22. a
23. b
24. c
25. a
26. d
27. b
28. a
29. c
30. d

INTERMEDIATE TRAINING OBJECTIVE 1

WRITTEN TEST (ALTERNATE)

NAME _____ RANK _____ DATE _____

Instructions for Test

A. This test consists of 30 multiple choice questions.

B. Read all questions and answers carefully; then write the answer that is MOST correct on the blank line to the left.

C. Any unanswered questions will be scored as incorrect responses.

_____1. When can you stand under the forks or on tophandler.

a. Never.

b. At any time.

c. During PMCS only.

_____2. Where is the sign "no standing under forks" located?

a. On left side of mast.

b. On each side of mast.

c. On right side of mast.

_____3. When stacking, what should you use when aligning containers?

a. Ground guide.

b. Rear view mirror.

c. Designated point.

_____4. How high can containers be stacked with the RTCH?

a. Five.

b. Four.

c. Three.

d. Two.

_____5. How many lube points are there on the transmission drive shaft universal?

a. Two.

b. Three.

c. Four.

d. Five.

_____6. How many battery boxes are there on the RTCH?

a. One.

b. Two.

c. Three.

d. Four.

_____7. What are the three sizes, in feet, of the tophandlers for the 50,000-pound RTCH?

a. 20, 35, and 40.

b. 35, 40, and 45.

c. 40, 45, and 50.

d. 45, 50, and 55.

_____8. The RTCH will ford up to how many inches of water?

a. 40.

b. 50.

c. 60.

d. 70.

_____9. When lifting a container what lights must you be sure come on?

a. Ready-to-lock.

b. Brake.

c. Interior.

_____10. How far down should you press the accelerator when starting the 50,000-pound RTCH?

a. 50 percent.

b. 40 percent.

c. 35 percent.

d. 25 percent.

_____11. How many speeds are on the 50,000-pound RTCH?

a. Two.

b. Three.

c. Four.

_____12. How many hours of operating time do you have with a full tank of fuel?

a. Five.

b. Ten.

c. Fifteen.

d. Twenty.

_____13. When stacking, what should you do to clear tophandler from the container?

a. Lower forks.

b. Tilt forward.

c. Tilt back.

_____14. How many minutes do you let the engine idle at half speed during shutdown procedures?

a. Five.

b. Four.

c. Three.

d. Two.

_____15. For what is the panel test switch used?

a. Oil pressure check.

b. Burned out bulbs.

c. Tire pressure check.

_____16. Where is the sign "hearing protection required" located?

a. Center of dash.

b. Both sides of the dash.

c. Left hand side of dash.

d. Right hand side of dash.

_____17. What is the correct hand signal, at night, for lowering the load?

a. Two lights pointing upward.

b. One light point upward.

c. One light pointing downward toward the ground.

d. Two lights pointing downward toward the ground.

_____18. When off-loading, how far away should you stop from the container?

a. 1 to 2 feet.

b. 3 to 4 feet.

c. 5 to 6 feet.

_____19. What is the operational weight, in pounds, without tophandler?

a. 105,550.

b. 104,500.

c. 104,250.

d. 103,230.

_____20. When attaching the tophandler, how should you insert the forks?

a. Partially.

b. Fully.

c. Halfway.

_____21. How many heaters are in the RTCH?

a. Four.

b. Three.

c. Two.

d. One.

_____22. What is the purpose of OSHA?

a. Review the incidences of injury and illness caused by hazardous chemicals in the work place.

b. Report the incidences of injury and illness caused by hazardous chemicals in the work place.

c. Eliminate the incidences of injury and illness caused by hazardous chemicals in the work place.

d. Reduce the incidences of injury and illness caused by hazardous chemicals in the work place.

_____23. At least how many vehicles apart should you be when following another RTCH?

a. Two.

b. Three.

c. Four.

d. Five.

_____24. How many fuses are on the 50,000-pound RTCH?

a. Six.

b. Seven.

c. Eight.

d. Nine.

_____25. When disconnecting the tophandler, how should you back up until the forks are cleared?

a. Fast.

b. Moderately.

c. Slow.

_____26. How many mast controls levers are on the 50,000-pound RTCH?

a. Five.

b. Four.

c. Three.

d. Two.

_____27. What is the maximum lifting height, in inches, from the bottom of the container?

a. 115.

b. 116.

c. 117.

d. 118.

_____28. What is the coolant capacity, in gallons, of the radiator?

a. 28.

b. 30.

c. 35.

d. 40.

_____29. What is the minumum traveling height, in inches, when lifting a container?

a. 5 to 10.

b. 10 to 15.

c. 15 to 20.

d. 18 to 22.

_____30. How many transmission ranges are on the 50,000-pound RTCH?

a. Two.

b. Three.

c. Four.

d. Five.

INTERMEDIATE TRAINING OBJECTIVE 1

WRITTEN TEST ANSWER SHEET (ALTERNATE)

1. c
2. b
3. a
4. d
5. a
6. b
7. a
8. c
9. a
10. d
11. c
12. b
13. c
14. a
15. b
16. d
17. c
18. b
19. d
20. b
21. c
22. d
23. a
24. d
25. c
26. a
27. d
28. a
29. d
30. b

INTERMEDIATE TRAINING OBJECTIVE 2

DRIVER'S PERFORMANCE TEST (ROAD TEST) INSTRUCTIONS

1. GENERAL.

a. This test is to be conducted according to the guidelines set forth in AR 600-55. The specific directions for this test are to be followed without deviation. No omissions or changes in the wording of these directions are permitted.

b. The purpose of the road test is to evaluate the driver's ability to drive safely in most on-the-road situations. It serves as the basis for the issuance of an operator's permit and provides a means for instructional reinforcement and counseling. Driving weaknesses that surface as a result of the test should be called to the attention of the examinee so that specific steps can be taken to eliminate these weaknesses.

c. Final evaluations will be recorded on DA Form 348 (or ULLS generated DA Form 348-E). Once this transfer of information has been accomplished, the completed DA Form 6125-R will be destroyed.

d. The examiner will be a thoroughly qualified operator of the 50,000-pound RTCH. He will also be familiar with the road test route and the testing procedures as set forth in AR 600-55 and this TC. Before administering the test to any examinees, he must practice administering the test to a regular licensed driver qualified on the 50,000-pound RTCH. This practice administration will help him become acquainted with the test route and testing procedures.

e. The road test will consist of three scored phases: the PMCS test, the vehicle control test, and the on-the-road driving test. The driver will be tested on these phases in the order listed and will not move on to the next phase until successfully passing the previous phase. If the driver fails any phase of the test, the entire road test will be terminated at that point and the examiner will annotate the DA Form 6125-R and conduct an AAR with the driver. This procedure will help to ensure that only safe and proficient drivers get behind the wheel of the 50,000-pound RTCH.

2. SETTING UP THE ROAD TEST. For the road test, the driver drives a predetermined route. To set up the test, the examiner must plan the route to be used. Once a route is established (in a given locality) it should be used for all examinees who are to be tested on the 50,000-pound RTCH. Should it prove necessary to vary the route, care should be taken that the different kinds of route requirements, as well as the number of requirements remain the same. Every road test route will meet the following requirements (to the extent possible):

a. An area to conduct PMCS.

(1) The site should be a flat parking area suitable for heavy vehicles.

(2) There should be at least 8 feet of open space around the vehicle. This will give the driver room to conduct the inspection and the examiner room to observe the driver's inspection performance.

(3) The site should be quiet enough that the examiner can hear the driver explain what he is doing during the inspection.

(4) Avoid using a parking space on a street or any place where traffic is passing close by.

b. A vehicle control test area with the following maneuvers:

(1) Forward stop (see Figure 6-5). Pull vehicle forward through a straight alley and then stop the vehicle so that the frontmost part of the vehicle is within 2 feet of the forward stop line.

(2) Straight line backing (see Figure 6-5). Back the vehicle through a straight alley and then stop the vehicle so that the frontmost part of the vehicle is within 2 feet of the stop line.

(3) Right turn (see Figure 6-6). Drive the vehicle forward about 30 to 50 feet, and then turn the vehicle right around a cone or other point. Bring the rear tires of the vehicle within 18 inches from the cone without touching it.

(4) Alley dock (see Figure 6-7). Pull the vehicle forward past the alley, keeping the alley entrance on the left. Back in a curved path into the alley without touching the sides and stop the rear of the vehicle within 2 feet of the stop line at the rear of the alley.

c. On-the-road driving test with the following maneuvers:

(1) Eight left turns and eight right turns. Include turns at traffic lights, stop signs, and uncontrolled intersections. The turns should range from easy to somewhat difficult for a heavy vehicle. Get a mixture of types of intersections so that they vary in complexity.

(2) A straight section of urban business streets. The section should be 1 to 2 miles long with moderate traffic density. It should contain through intersections and intersections with traffic lights. Try to get a section where the driver can make lane changes somewhere along the route. The section should be one that lets the examiner see how the driver copes with traffic in a typical business area.

(3) Two through intersections and two intersections where a stop has to be made. If possible, these intersections should be included in the urban section.

(4) Two railway crossings. Try to get at least one uncontrolled crossing. The crossing should have enough sight distance for the examiner to see if the driver makes head search movements when approaching each crossing. The driver's attempt to look left and right down the

track will often be the only way to tell if the driver noticed the crossing. If the area does not have any railway crossings, simulate this exercise.

(5) Two curves, one to the left and one to the right. Try to get curves tight enough to produce noticeable off-tracking.

(6) A two-lane rural or semirural road. This section should be about 2 miles long. If there is no rural road near the motor pool, an industrial street with few entrances and a higher speed limit is a good substitute. An undeveloped suburban road is another good substitute. In general, use any road that has characteristics similar to a rural road.

(7) A section of expressway. The section should start with a conventional ramp entrance and end with a conventional ramp exit. The section should be long enough for the 50,000-pound RTCH to make two lane changes. A section of four-lane highway can be used if there is no expressway is available.

(8) A downgrade. The grade should be steep enough and long enough to require gearing down and braking. A steep short hill is the next best choice if a long grade cannot be found. If the local area does not have any steep grades, simulate this exercise.

(9) An upgrade. The grade should be steep enough and long enough to require gear changing to maintain speed. A steep short hill is the next best choice if a long grade cannot be found. If it is hard to find steep grades in the local area, use the same grade for both the downgrade and the upgrade.

(10) A downgrade for stopping. This is a grade where a vehicle can safely stop (or pull off) and park for a minute or so. The grade only needs to be steep enough to cause a vehicle to roll if the driver does not park properly. If the local area does not have any steep grades, simulate this exercise.

(11) An upgrade for stopping. This is another grade where a vehicle can safely stop and park for a minute or so. If needed, use the same grade as was used for the downgrade stop.

(12) One underpass or low clearance and one bridge. The underpass should have a posted clearance height. The bridge should have a posted weight limit. If the local area does not have underpasses or bridges with posted limits, use ones that do not have posted limits. If needed, substitute a bridge for an underpass or an underpass for a bridge. If the local area does not have any low clearances or bridges, look for places that have signs a 50,000-pound RTCH driver should see. Examples of such signs are “No Commercial Vehicles after 11:00 PM” or “Bridge with 12 Ton Weight Limit in 2 Miles.”

d. Route design.

(1) When designing a route, try to include all of the specified maneuvers. If there is not an ideal example for a maneuver, find the closest substitute. Do not drop a maneuver because there is not an ideal example. The most important thing is to have a route that tests the driver in as wide a variety of situations as possible.

(2) There is no minimum length for a route and no minimum amount of time that a route must take. A route is acceptable whenever it has all the specified maneuvers. It is a good idea to have at least two routes available so that there is an alternate route if construction or traffic prevents using the primary route.

3. ADMINISTERING THE ROAD TEST.

a. Preventing accidents.

(1) Road tests should normally NOT be given if road or weather conditions present a hazard such as ice, snow, rain, or blowing dust. The exception is when testing is specifically for driving under such conditions.

(2) The examiner must always watch traffic conditions and warn the examinee of dangers which he may not see. If the driver becomes involved in a dangerous or unlawful moving traffic incident or an accident, terminate the test immediately. The examiner will drive the vehicle back to the start point once on-scene responsibilities are fulfilled.

b. Beginning the road test.

(1) Fill in the driver's name and your name (examiner's) on the front of the Road Test Score Sheet. (A sample of a completed DA Form 6125-R is shown in Figure 8-1, page 8-26 and Figure 8-2, page 8-27). A reproducible DA Form 6125-R is located at the back of AR 600-55. Read the following instructions to the driver at the beginning of the test:

DURING THE ROAD TEST, I WILL GIVE YOU DIRECTIONS AS WE GO ALONG.

I WILL ALWAYS GIVE DIRECTIONS FOR TURNS, AND SO ON, AS FAR IN ADVANCE AS POSSIBLE.

THERE WILL BE NO TRICK DIRECTIONS TO GET YOU TO DO SOMETHING ILLEGAL OR UNSAFE.

KEEP IN MIND THAT YOU ARE ALWAYS IN CHARGE OF THE VEHICLE. DO NOT FOLLOW A DIRECTION IF IT TURNS OUT AT THE LAST MINUTE TO LEAD TO AN UNSAFE ACT.

AS WE GO ALONG, I WILL BE MAKING VARIOUS MARKS ON THE SCORING FORM. WHEN YOU SEE THIS, IT DOES NOT NECESSARILY MEAN YOU HAVE DONE ANYTHING WRONG. IT IS BEST FOR YOU TO CONCENTRATE ON DRIVING AND NOT WORRY ABOUT WHAT I AM DOING.

YOUR SCORED TEST BEGINS WITH BEFORE-OPERATIONS PREVENTIVE MAINTENANCE CHECKS AND SERVICES. IF YOU ARE SUCCESSFUL IN THAT PORTION OF THE TEST, YOU WILL PROCEED TO THE VEHICLE CONTROL TEST, AND FINALLY TO THE ON-THE-ROAD DRIVING TEST.

ARE THERE ANY QUESTIONS?

ROAD TEST SCORE SHEET
For use of this form, see AR 600-55; the proponent agency is OCSA

DATE: 7 MAR 99

NAME OF DRIVER: BROOKS, CHARLES

NAME OF EXAMINER: RAIMONDE, JOHN

SSAN: 000-00-0000

SCORE: -22

ROUTE: PRIMARY

SAMPLE

STOP/START ON GRADE

Approach

	Up	Down
Traffic check	⊘	○
Signal On	○	⊘
Moves to proper lane	○	⊘
Smooth deceleration	○	○
Does not coast to stop	○	○

Stop

Vehicle parallel to curb	○	○
Vehicle does not roll	○	○
Signal off/4-ways on	⊘	○
Parking brake on	⊘	○

Resume

Traffic check	○	○
4-ways off/signal on	○	○
Release parking brake	○	○
Did not stall engine	○	○
Traffic check	○	○
Accelerate to traffic fow	○	○
SEARCH	○	○
DIRECTION	○	○
SPEED	○	○
No errors	-	-

EXPRESSWAY

Merge On

Traffic check	○
Signal On	○
Maintains spacing	○
Avoids stopping	○
Smooth merge	○
Cancel signal	○

Lane Changes

	Left	Right
Traffic check	○	○
Signal on	○	⊘
Adequate spacing	○	⊘
Smooth lane change	○	○
Cancel signal	○	○

Exit

Traffic check	○
Signal on	○
Smooth merge to exit lane	⊘
Decelerate in exit lane	○
Adequate spacing	○
Correct ramp speed	○
Cancel signal	○
SEARCH	○
DIRECTION	○
SPEED	○
No errors	-

DRIVING UP GRADE

In proper gear	○
Stays in right lane	○
Uses 4-ways if slow	○
Traffic check	○
SEARCH	○
DIRECTION	○
SPEED	○
No errors	✓

DRIVING DOWN GRADE

Clear brakes	○
In proper gear	○
Steady braking on grade	○
Does not ride clutch	⊘
Maintain steady speed	⊘
Traffic check	○
SEARCH	○
DIRECTION	○
SPEED	⊘
No errors	⊘

GENERAL DRIVING BEHAVIOR

Use clutch properly *(to shift, double clutched, didn't ride)*	⊘
Used gears properly *(not over-rev/lug engine, clash gears, coast)*	○
Used brakes properly *(no hard braking, no riding or pumping brake)*	○
Proper steering *(both hands on wheel, not over/under steer)*	⊘
Obeyed all traffic signs and signals	○
Drove without an accident	○
Never put vehicle over sidewalks, lane markings, stop lines, etc.	○
Examiner was never thrown to left, right, or forward	○
Driver was never forced to take evasive action	○
Wore seat belt	○
Yielded right of way to pedestrians	○
Yielded right of way to other vehicles, as appropriate	○
No errors	-

NOTES

Before-operations PMCS satisfactory.

DA FORM 6125-R, AUG 93 EDITION OF MAR 65 IS OBSOLETE. USAPPC V1.00

Figure 8-1. DA Form 6125-R, Road Test Score Sheet (Front)

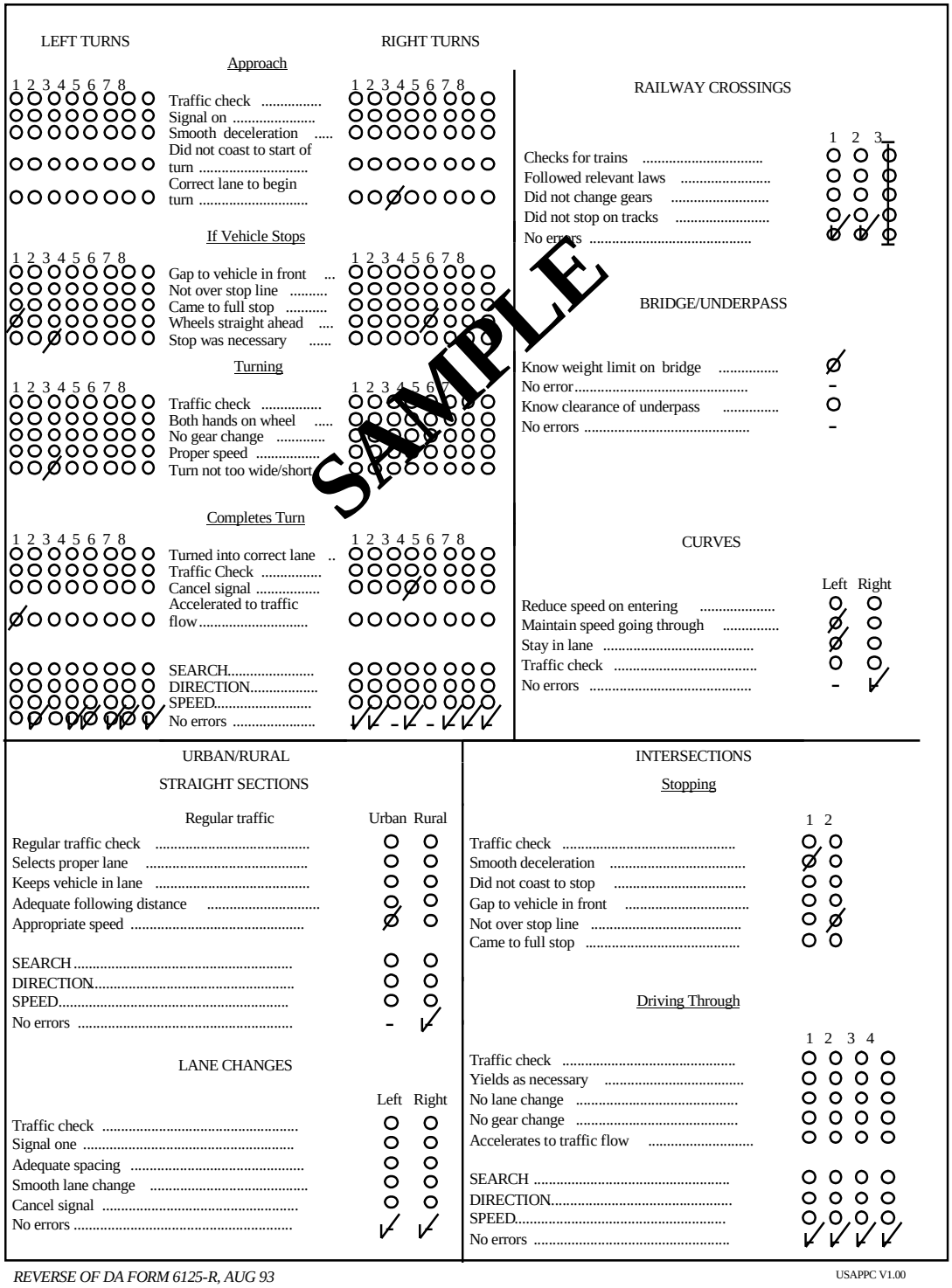


Figure 8-2. DA Form 6125-R, Road Test Score Sheet (Back)

(2) The road test actually begins when the driver starts his before-operations PMCS. If the driver performs the PMCS to appropriate standards, the examiner will annotate in the NOTES section of the DA Form 6125-R "Before-operations PMCS satisfactory." If he does not perform PMCS to the examiner's satisfaction, the examiner will stop the road test at that point and fail the driver. In this situation, the examiner will annotate "Before-operations PMCS unsatisfactory" in the NOTES section, list specific deficiencies if any, and refer the driver for further training. The examiner will follow the same procedures for grading during- and after-operations PMCS.

(3) If the driver successfully completes the before-operations PMCS, he will proceed to the vehicle control test. It is important to ensure that the driver is proficient in basic vehicle control skills before taking him on the road with other traffic.

(a) Upon arrival at the vehicle control test site, give the driver an overview of all four exercises (forward stop, straight line backing, right turn, and alley dock). Use a diagram of the site to show the driver what to do, and explain that he will get detailed instructions for each exercise as it comes up. When he is ready, the driver gets into the vehicle and proceeds to the first exercise for instructions.

(b) The examiner will evaluate the exercises from the ground and observe the driver's ability to control the vehicle during each maneuver. If the driver demonstrates satisfactory vehicle control skills, the examiner will indicate in the NOTES section "Vehicle control test satisfactory." If the driver is unable to satisfactorily negotiate the course, the examiner will stop the road test and fail the driver at that point. The examiner will indicate in the NOTES section "Vehicle control test unsatisfactory," indicate specific weaknesses if any, and refer the driver for further training.

(4) If the driver satisfactorily completes the vehicle control test, he will proceed to the driving portion of the road test. When the driver is ready, get into the vehicle with the driver and start giving directions for following the road test route. Give the directions in this form: At the (location), make (maneuver). For example, "At the next intersection, turn right," or "At the stop sign, turn left."

(5) If necessary, give combined directions. For example, "Immediately after you complete your right turn, you will have to turn left into that road over there."

(6) Avoid using commercial signs or buildings as landmarks for directions unless there is no alternative. Do not assume that the driver is familiar enough with the area that he knows such landmarks.

(7) Give directions well before the maneuver is to be performed. Always give a direction at a point where the driver can see where he will do the maneuver. However, give the directions close enough to the location so the driver can be sure of where to do the maneuver. For example, do not tell the driver to turn at the next intersection if there is another intersection before the one where you want the driver to turn.

(8) In addition to directions for getting the driver around the route, there are some directions to give for the expressway, urban straight, and rural sections.

(a) At the beginning of the expressway section say, "We will be driving along this expressway for about (2 or however many) miles. When it is safe to do so, make a lane change to the left. Then when it is safe to do so, make a lane change to the right."

(b) At the beginning of the urban straight section, say, "We will be driving along this street for about (2 or however many) miles. When it is safe to do so, make a lane change to the left. Then when it is safe to do so, make a lane change back to the right. When we get near the end of this section, I will tell you what to do next."

(c) At the beginning of the rural section, say, "We will be driving along this road for about (2 or however many) miles. When we get near the end, I will tell you what to do next."

(9) In general, give all directions in a way that avoids distracting the driver. Also, avoid unnecessary conversation.

4. SCORING THE ROAD TEST.

a. The scoring form for the road test is DA Form 6125-R, a two-sided single sheet. (A sample of a completed DA Form 6125-R is at Figures 8-1 and 8-2). A reproducible DA Form 6125-R is located at the back of AR 600-55. The main headings in the boxes give the names of the different maneuvers. Each maneuver has a list of driver behaviors to be scored. Beside each behavior is a letter "O" used for marking the driver for the behavior. In cases where a maneuver is done several times on the route, there is a column of O's for each time the maneuver appears on the route.

b. To score a behavior, draw a stroke through the O whenever the driver's performance is unsatisfactory. Make no mark if the driver performs the behavior correctly. For each maneuver, there is a "No Errors" category at the bottom of the list of behaviors. There is a space beside "No Errors" where you can put a check mark if the driver is satisfactory on all behaviors. These check marks will show that you scored the driver even if the driver made no errors.

c. The only other marking that needs to be done on the test is to indicate maneuvers that were not done. A maneuver might not be done because you missed it for some reason or because there was no opportunity for it on the route. To show that a maneuver was not performed, draw a vertical line down through the entire column of O's used for marking that maneuver.

d. To score the maneuver, follow these steps:

(1) Find the maneuver on the score sheet and be ready to mark it.

(2) Check the driver and the traffic. When the driver can pay attention, give the directions for the next maneuver.

(3) Watch the driver perform the maneuver.

(4) Mark the score sheet.

e. Mark the driver's score sheet immediately after each maneuver. Do not try to remember what the driver did and mark the sheet later on in the route or back at the office.

f. The following paragraphs describe how to mark the score sheet for each type of maneuver:

(1) Stop/start on a grade. There are two columns of O's to mark: one for the upgrade stop and one for the downgrade stop. The columns are labeled "Up" and "Down." The behaviors are organized in three groups: approach, stop, and resume. Score each group separately as the driver does them. Score the approach as soon as the driver comes to a stop. Then check the stop behaviors and score them before telling the driver to continue. After the driver pulls away, score the rest of the behaviors.

(2) Expressway. Score the expressway section in three phases: merge on, lane changes, and exit. Mark each phase as the driver completes it. There are two columns of O's for the lane changes. Mark the one labeled "Left" for the lane change to the left. Mark the one labeled "Right" for the lane change to the right.

(3) Driving upgrade and driving downgrade. Driving up a grade and driving down a grade are scored separately. Observe how the driver handles the grade and score the behaviors listed. It is especially important that the driver uses the proper gear and appropriate signals and speed on grades because these can affect other traffic.

(4) General driving behavior. General behaviors such as gear changing should be marked at the end of the test. Specific actions such as traffic violations can be marked when they happen. There is also space to write notes. Use this space to make notes of things that do not fit into any scoring categories or to record any unusual events during the test. Remember to draw a vertical line through behaviors that are not graded, such as use of clutch when grading on the 50,000-pound RTCH.

(5) Turns. There are eight columns of O's on the left of the box; eight columns of O's on the right (see Figure 8-2). The columns on the left are for left turns. The ones on the right are for right turns. The columns are numbered according to the order in which the turns occur on the route. Column 1 of the left turn columns is for the first left turn on the route, column 2 is for the second turn, and so on. The first few times an examiner uses a route, it is a good idea to write the names of the locations of the turns at the tops of the columns. This will help keep track of the turns until the route is completely memorized.

(a) Mark a turn in four steps: "Approach," "If Vehicle Stops," "Turning," and "Completes Turn." Mark the "If Vehicle Stops" section only if the driver has to make a legal stop before starting the turn, such as at a traffic light, a stop sign, or yield sign. Do not mark this section if the driver stops for some other reason, such as being blocked by other vehicles part way around the turn.

(b) It is important to observe whether the driver is aware of his vehicle position throughout the turn, because it can affect other traffic. If there is more than one left turn lane, the driver should start his turn from the rightmost turn lane.

(6) Railway crossing. This section has three columns for scoring. The ones labeled "1" and "2" are for actual railway crossings on the route. The one labeled "S" is for the simulated crossing. Vehicles transporting passengers or hauling hazardous cargo are required by law to stop between 15 and 50 feet from the nearest railroad crossing and take whatever actions are necessary (for example an open window) to look and listen for trains.

(7) Bridge/underpass. There is one space for marking a bridge and one for marking an underpass.

(8) Curves. There are two columns for scoring curves. The one labeled "Left" is for a curve that turns to the left. The column labeled "Right" is for a curve that turns to the right. Drivers should reduce to a safe speed before entering the curve, then maintain that speed during the curve.

(9) Urban/rural straight sections. This section has two columns. Use the one labeled "Urban" for the urban section. Use the one labeled "Rural" for the rural section. In most cases you will mark the driver when he gets to the end of the section. However, if you see the driver make an error while driving along the section, such as driving in the wrong lane, mark the error as soon as you see it. The driver should drive in the right lane if it is clear or in the center lane if the right lane is blocked or has a large volume of merging traffic.

(10) Lane changes. The column labeled "Left" is for a lane change to the left. The column labeled "Right" is for a lane change to the right. The lane changes are part of the urban section (in addition to the expressway section). Mark each lane change as soon as the driver makes it.

(11) Intersections. There are four columns for marking the driver on intersections. Columns 1 and 2 are for intersections where the driver has to make a legal stop; for example, at a traffic light or a stop sign. Columns 3 and 4 are for marking intersections that the driver goes straight through. There are two phases to marking a stop intersection, stopping and driving through. For a stop intersection, driving through items cover the time from when the driver starts off from the stop to when the driver resumes normal traffic speed. For a driving through intersection, you only mark columns 3 and 4. The urban straight section normally has more than enough intersections to score. Start scoring the intersections as soon as the examinee begins driving along the section. Score stop and through intersections in whatever order they come up in. It does not matter if an intersection with traffic lights is sometimes scored as a stop intersection and sometimes scored as a through intersection.

(12) Search, direction, and speed. Most of the grading blocks discussed above have areas for grading search, direction, and speed in addition to the other behaviors listed. These are general categories which the examiner should be monitoring through each exercise.

(a) Search. At all times during the road test the driver must be constantly checking the front, sides, and rear of his vehicle for traffic, pedestrians, obstructions, emergencies, and so forth. During each maneuver, the examiner must observe whether the driver is checking around him and yields right of way to other road users when appropriate.

(b) Direction. The driver must be aware of the position of his vehicle at all times. During each maneuver, the examiner must observe the vehicle position in the lane, whether the vehicle is in the correct lane, and whether the driver maintains the appropriate distance from traffic, stop lines, and so on.

(c) Speed. The driver must be aware not only of his speed in comparison with the speed limit, but how his speed affects other traffic. During each maneuver the examiner must watch to see that the driver maintains posted speed limits, accelerates and decelerates smoothly, uses the proper gear for his speed, and blends in with the traffic flow. The examiner must also observe that the driver does not lug or race the engine, coast the vehicle, change gears or brake on tracks or in the middle of intersections, stall the engine, and so forth.

(13) Driver errors at nonmarking locations. Since the examiner scores at predetermined locations, there will be occasions when the driver makes an error at some place other than one of these locations. Score the error in the General Driving Behavior section of the form if appropriate. Otherwise, ignore the error. If the route has a lot of places where the examiner cannot score the driver, the route is probably inefficient. If the driver makes errors in places where the examiner does not score, the driver will likely make errors in places where scoring can be done. Do not decide where to score a driver based on when the driver makes an error. Stick to scoring at the predetermined locations.

5. COMPUTING THE DRIVER'S SCORE.

a. Road test score sheet. At the end of the test, make sure all driver and examiner information is completed. Check that everything is marked clearly and correctly. Be sure to cross out maneuvers that were not done on the test. Review the scored maneuvers for repeated errors and score errors in the general driving behavior. Carefully add the number of marked letter O's and write the total in the "Score" space on the front of the form. A passing score is 25 errors or less. The driver fails the road test if he makes 26 or more errors (errors accumulated on the vehicle control test DO NOT count toward the score on the driving portion of the road test). If the score is close to a failing score, double-check that you have added correctly.

b. Failures. Annotate reason for failure in the Notes section; for example, "Examinee exhibited undue nervousness." The following are some reasons for failures:

(1) Any unsafe driving act.

(2) Failure to properly perform PMCS.

(3) Not knowing location and function of gauges and controls.

(4) Unsatisfactory performance on vehicle control test.

(5) Undue nervousness.

(6) Failure to achieve minimum passing score.

NOTE: If the individual scores 25 errors or less, but the examiner feels that the individual needs additional training, the examiner has the right not to issue a license.

c. After-action review. Whether the driver passes or fails, the examiner will review the results of the road test with him and bring to his attention any weaknesses that require further practice or training. If the driver failed, tell him what caused him to fail. Advise him that an standard Army OF 346 cannot be issued and he will have to retake the entire performance test at a later date. Whether pass or fail, the results must be recorded on the DA Form 6125-R.

INTERMEDIATE TRAINING OBJECTIVE 3

PERFORMANCE TEST - OPERATING THE 50,000-POUND RTCH (OFF ROAD DRIVING)

INTRODUCTION

SECTION I: DIRECTIONS TO INSTRUCTOR

1. **BEFORE THE TEST PERIOD.**

a. Personnel requirements: The test requires one instructor per student.

b. Equipment needed: Special equipment required for specific tests is noted in the instructor materials for that specific test.

c. Test set up: The test is to be administered in a drivers training area environment. The proctor is to explain the following information to students.

(1) Proctor's name, course, class number, and examination number.

(2) Number of pages in the examination book.

(3) Total possible raw points.

(4) Total examination time, with start and stop.

(5) Any additional information required. (Publications to be used, deleted questions, corrected wording, or special requirements.)

2. **DURING THE TEST PERIOD.**

a. Prepare students for the next test. Assign each student a time to take the test. Explain that the examination will be given in a drivers training area. Inform students that they must report to the training area with their student test booklets.

b. Management functions.

(1) Advise students that questions relating to the interpretations of a question will not be permitted during the conduct of the examination.

(2) Inform the student how many minutes will be given to complete the examination. Time remaining will be given prior to the conclusion of the examination.

(3) Students who complete the examination prior to the elapsed time will turn in their test booklets to the proctor and leave the training area until all students have finished or the examination time has expired.

(4) If a student has to leave the training area for any reason, ensure he/she will not have access to information pertaining to the test.

(5) Ask the students if they have any questions on administration.

(6) Pass out the examination materials.

(7) Read the instructions (Section II) to the students.

(8) During the test, answer only those questions which deal with administrative procedures. Do not attempt to interpret a question for the student.

(9) Circulate throughout the training area to maintain control.

(10) At the end of the allotted time, stop the test. Any students still taking the test will turn in their booklets at this time. Ensure all materials and equipment are collected.

(11) Any student suspected of cheating is to be dealt with IAW USATALS Memo 350-15.

c. Scoring instructions. Tests are to be scored IAW attached solution sheets.

3. **AFTER THE TEST PERIOD.**

a. Brief students on the outcome of the test. Counsel as necessary.

b. Calculate test scores and enter in students permanent records.

c. Collect and return all equipment used during the test. Ensure all test material is accounted for and that all scrap paper is correctly disposed.

SECTION II: DIRECTIONS TO STUDENTS

1. The test administrator will record performance scores in your test booklet.

2. You will be given 105 minutes to complete the test. Time remaining will be given at intervals prior to the conclusion of the test.

3. You are authorized assistance during the test.

4. If you require the instructor during the test, raise your hand. Do not leave your test station.

5. You are warned that disciplinary action will be taken against any student given or receiving unauthorized information.

6. Check your test booklets to ensure there are 15 pages and that all questions are legible. Once this is done, place your name SSN, rank, and course number in the upper right hand corner of the test booklet and all related materials. (DO THIS NOW).

7. When you have completed the test, ensure your name and all other identification are placed on all test-related material. Hand your test booklet and all work sheets to the instructor.

8. After submitting your test materials, you have to leave the examination area and do not return until all students have completed the test or the examination time has expired.

9. If you have any questions, ask them now.

10. You may begin the test.

SECTION III: DIRECTIONS FOR SCORING AND GRADING

1. **SCORING.**

a. Total scoring is based on 100 percent, with a minimum of 70 percent required to pass the test.

b. Points are to be awarded for each correct answer IAW attached solution sheet.

c. Each answer is to be assessed on a GO/NO GO basis. Partial credit will not be given.

d. The total number of raw points is to be calculated to represent the percentile value.

2. **GRADING.**

a. Calculate test scores and enter in students permanent records.

b. Inform the senior instructor of all failures for counseling requirement.

GENERAL INSTRUCTION

SCORER INSTRUCTIONS FOR HANDS-ON COMPONENT

1. You must consider every element of each major section of the test when you give the student an overall rating for the section. You must grade each task on a GO/NO GO basis, following the performance standards established in each section. Evaluation sheets are provided.

2. In grading each soldier, decide whether or not performance deficiency is due to factors such as test anxiety, lack of experience, or poor attitude.

a. If the deficiency is due to lack of experience, you may give the soldier a GO, knowing he/she will get the necessary experience in a unit.

b. Never assign a GO due to lack of skills and knowledge.

3. Ask if there are any questions. If there are none, begin the test, following the procedures outlined in each section.

4. Record grades on soldier's score sheet.

TIME REQUIREMENT FOR TESTING

TASK	TIME
Engine Starting	5 min
Driving Procedures	5 min
Disconnect Tophandler	10 min
Attach Tophandler	10 min
Lifting Containers	30 min
Off-Loading/Stacking Containers	30 min
Parking/Shutdown Procedures	15 min
Total Time:	105 min

NOTE: All evaluations for performance components are done with a 1-to-1 student/instructor ratio.

ENGINE STARTING

TASK AREA: RTCH engine starting.

1. Given a RTCH and TM 10-3930-641-10, the student will perform the following engine starting procedures.

Starting Procedures.

a. Turn main disconnect switch on.

b. Adjust seat belt.

c. Ensure parking brake is engaged.

d. Ensure steering column is unlocked and lowered to desired position.

e. Check transmission range selector lever, and ensure the range selector is in neutral position.

f. Turn ignition key to ON position.

g. Ensure the high fuel, no coolant flow, supplemental steering, low pressure brake, alternator indicator lights are on.

h. Press panel test switch and ensure all indicator lights come on.

i. Press accelerator pedal down 1/4 of the way.

j. Turn ignition to start position; release accelerator and turn ignition to the RUN position once engine starts.

k. Turn on all lights.

2. Students will have 5 minutes to complete task.

ROUGH TERRAIN CONTAINER HANDLER

PERFORMANCE TEST

Student Name_____Class_____Date_____

HANDS-ON EVALUATION		Date	
Task Title ROUGH TERRAIN CONTAINER HANDLER			
Item	SECTION I ENGINE STARTING	Max Raw Points	Earned Points
A.	Turn main disconnect switch on.	10	
B.	Adjust seat and seat belt.	10	
C.	Ensure parking brake is engaged.	10	
D.	Ensure steering column is unlocked and lowered into desired position.	15	
E.	Check transmission range selector lever and ensure it is in neutral position.	20	
F.	Turn ignition key to ON position.	10	
G.	Ensure the high fuel, no coolant flow, supplemental steering, low pressure brake, park brake, alternator indicator lights are on.	20	
H.	Press panel test switch and ensure all indicator lights come on.	15	
Evaluator's Name		Unit	
Student's Name		Status Go___ No Go____	

HANDS-ON EVALUATION		Date	
	ENGINE STARTING (continued)	Max Raw Points	Earned Points
I.	Press accelerator pedal down 1/4 way.	20	
J.	Turn ignition to start, release accelerator and ignition to the run position once engine starts.	10	
K.	Turn on lights.	15	
Evaluator's Name		Unit	
Student's Name		Status Go___ No Go____	

DRIVING PROCEDURES

TASK AREA: RTCH driving procedures.

1. Given a RTCH and TM 10-3930-641-10, the student will perform the following driving procedures:

    a. Operate mast controls.

    b. Apply service brake.

    c. Release parking brake.

    d. Place transmission control lever in desired position, forward or reverse.

    e. Release service brake and accelerate slowly.

2. Student will have 5 minutes to complete task.

HANDS-ON EVALUATION		Date	
Item	SECTION II DRIVING PROCEDURES	Max Raw Points	Earned Points
A.	Operate mast controls.	10	
B.	Apply service brake.	10	
C.	Release parking brake.	10	
D.	Transmission control lever in desired position, forward or reverse.	10	
E.	Release service brake and accelerate slowly.	10	
Evaluator's Name		Unit	
Student's Name		Status Go___ No Go____	

DISCONNECT TOPHANDLER

TASK AREA: Disconnect RTCH 20-foot and 40-foot tophandlers.

1. Given a RTCH w/20-foot and 40-foot tophandlers and TM 10-3930-641-10, the student will disconnect tophandlers from the RTCH by performing the following procedures.

   a. Center and level tophandler.

   b. Place tophandler on MILVAN correctly.

   c. Place transmission in NEUTRAL.

   d. Apply parking brake.

   e. Shut down engine.

   f. Relieve pressure by lock/unlock lever.

   g. Disconnect both hydraulic connectors.

   h. Disconnect electrical connector.

   i. Remove safety chains.

   j. Back the RTCH away safely.

2. Student will have 10 minutes to complete task.

HANDS-ON EVALUATION		Date	
Item	SECTION III DISCONNECT TOPHANDLER	Max Raw Points	Earned Points
A.	Center and level tophandler.	20	
B.	Place tophandler on MILVAN correctly.	15	
C.	Place transmission in NEUTRAL.	20	
D.	Apply parking brake.	20	
E.	Shut down engine.	10	
F.	Relieve pressure by lock/unlock lever.	20	
G.	Disconnect both hydraulic connectors.	20	
H.	Disconnect electrical connectors.	20	
I.	Remove safety chains.	20	
J.	Back the RTCH away safely.	10	
Evaluator's Name		Unit	
Student's Name		Status Go___ No Go____	

ATTACH TOPHANDLER

TASK AREA: Attach RTCH 20-foot and 40-foot tophandlers.

1. Given a RTCH w/20 foot and 40 foot tophandlers and TM 10-3930-641-10, the student will attach tophandlers to the RTCH by performing the following procedures.

    a. Center and level tophandler.

    b. Insert forks into opening of the tophandler.

    c. Place transmission in NEUTRAL.

    d. Apply parking brake.

    e. Shut down engine.

    f. Install and secure safety chains.

    g. Connect electrical connector.

    h. Connect both hydraulic connectors.

2. Student will have 10 minutes to complete task.

HANDS-ON EVALUATION		Date	
Item	SECTION IV ATTACH TOPHANDLER	Max Raw Points	Earned Points
A.	Center and level forks.	15	
B.	Insert forks into opening of the tophandler.	10	
C.	Place transmission in NEUTRAL.	15	
D.	Apply parking brake.	15	
E.	Shut down engine.	10	
F.	Install and secure safety chains.	15	
G.	Connect the electrical connector.	15	
H.	Connect both hydraulic connectors.	15	
Evaluator's Name		Unit	
Student's Name		Status Go___ No Go____	

LIFTING CONTAINERS

TASK AREA: Lifting containers with the RTCH w/tophandlers attached.

1. Given a RTCH w/20-foot and 40-foot tophandlers attached, containers, and TM 10-3930-641-10, the student will lift containers using the following procedures.

a. Center and level tophandler.

b. Position the lock of the tophandler.

c. Ensure transmission is in NEUTRAL.

d. Lower the locks of the tophandler.

e. Check to see if both READY-TO-LOCK lights come on.

f. Lock the tophandler into the container.

g. Ensure that the green light is on before attempting to lift containers.

h. Raise the container to minimum traveling height before attempting to move the machine.

i. Drive to a designated point executing left and right turns correctly.

2. Student will have 30 minutes to complete task.

HANDS-ON EVALUATION		Date	
Item	SECTION V LIFTING CONTAINERS	Max Raw Points	Earned Points
A.	Center and level the tophandler.	15	
B.	Position the locks of the tophandler directly over corners of container.	15	
C.	Ensure transmission is in neutral position.	10	
D.	Lower the locks of the tophandler into the fittings of the container.	15	
E.	Observe that both ready-to-lock lights come on.	15	
F.	Lock the tophandler into the container.	15	
G.	Ensure that the green light is on before attempting to lift container.	10	
H.	Raise the container to minimum traveling height before attempting to move the machine.	10	
I.	Drive to a designated point executing left to right turns correctly.	15	
Evaluator's Name		Unit	
Student's Name		Status Go___ No Go___	

OFF-LOADING/STACKING CONTAINERS

TASK AREA: Off-loading/stacking containers with RTCH w/tophandlers attached.

1. Given a RTCH w/20-foot and 40-foot tophandlers attached, containers, and TM 10-3930-641-10, the student will off-load/stack containers using the following procedures.

a. Off-Loading.

(1) Lift one container off another, and back away with caution.

(2) Position the container and lower it into predetermined place at drop-off point.

(3) Ensure that the red UNLOCK light is on so that tophandler can be unlocked from container.

(4) Clear the tophandler from container.

(5) Center and level the tophandler after backing away from load.

b. Stacking.

(1) Approach container with caution, center and level the tophandler.

(2) Ensure transmission is in the NEUTRAL position.

(3) Lower the locks into the fittings of the container.

(4) Ensure that both READY-TO-LOCK lights come on before locking tophandler to the container.

(5) Ensure that load green LOCK lights are on before lifting container.

(6) Lift container and lower onto another container.

2. Student will have 30 minutes to complete task.

HANDS-ON EVALUATION		Date	
Item	SECTION VI OFF-LOADING CONTAINERS	Max Raw Points	Earned Points
A.	Lifts one container from another, and backs away with caution.	15	
B.	Positions the container, and lowers it into place at the drop-off point.	15	
C.	Ensures that the unlocked (red) light is on to unlock tophandler from container.	15	
D.	Clears the tophandler from container.	15	
E.	Center and level the tophandler after backing away from load.	15	
Item	STACKING CONTAINERS		
A.	Approach container with caution, center and level the tophandler.	10	
B.	Ensure transmission is in neutral position.	10	
C.	Lower the locks into the fittings of the container.	10	
D.	Ensure that both ready-to-lock lights come on before locking tophandler to the container.	15	
E.	Ensure that load lock (green) lights are on before lifting container.	15	
F.	Lift container and lower onto another container.	15	
Evaluator's Name		Unit	
Student's Name		Status Go___ No Go____	

PARKING/SHUTDOWN PROCEDURES

TASK AREA: RTCH parking/shutdown procedures.

1. Given a RTCH and TM 10-3930-641-10, the student will perform the following parking/shutdown procedures.

a. Parking.

(1) Release accelerator.

(2) Apply service brake.

(3) Place transmission in NEUTRAL.

(4) Apply parking brake.

(5) Lower forks.

(6) Turn off lights.

b. Sutdown.

(1) Operate at half speed for 5 minutes.

(2) Operate at low idle for 30 seconds.

(3) Turn ignition switch to OFF position.

(4) Move steering column as far forward as it will go and lock it.

(5) Turn the main disconnect switch to the OFF position and remove key.

2. Student will have 15 minutes to complete task.

HANDS-ON EVALUATION		DATE	
Item	SECTION VII PARKING PROCEDURES	Max Raw Points	Earned Points
A.	Release accelerator.	10	
B.	Apply service brakes.	10	
C.	Transmission in NEUTRAL.	10	
D.	Apply parking brake.	10	
E.	Lower forks.	10	
F.	Turn off lights.	15	
Item	SHUTDOWN PROCEDURES		
A.	Operate at half speed for 5 minutes.	10	
B.	Operate at low idle for 30 seconds.	10	
C.	Turn ignition switch to off position.	10	
D.	Move steering column as far forward as it will go and lock it.	10	
E.	Turn the main disconnect switch off and remove key.	10	
Evaluator's Name		Unit	
Student's Name		Status Go___ No Go____	

APPENDIX A

PAPER TRANSPARENCIES

A-1. These paper transparencies are to be replicated as plastic transparencies for use with an overhead projection system.

A-2. Each transparency is numbered at the bottom right. That number is identified in the body of each lesson outline.

Objective

AFTER THE COMPLETION OF THIS LESSON, THE STUDENT WILL BE FAMILIAR WITH THE CHARACTERISTICS OF THE 50,000-POUND RTCH. THE STUDENT WILL ALSO BE ABLE TO IDENTIFY THE MAJOR COMPONENTS AND CONTROLS AND INSTRUMENTS OF THE 50,000-POUND RTCH.

Transparency 4-1

EQUIPMENT PURPOSE

Transparency 4-2

HANDLES INTERNATIONAL STANDARDS ORANIZATION (ISO) DESIGNATION 1A OR 1C CARGO CONTAINERS OR SEALAND CONTAINERS.

Transparency 4-3

HANDLES AND STACKS CONTAINERS (TWO HIGH).

Transparency 4-4

LOADS AND UNLOADS FLATBED TRAILERS AND RAILCARS.

Transparency 4-5

MAKES OVER-THE-SHORE LANDINGS.

Transparency 4-6



CAPABILITIES AND FEATURES

Transparency 4-7

OPERATES OVER ROUGH TERRAIN INCLUDING BEACHES, SNOW, MUD, AND CROSS COUNTRY.

Transparency 4-8

FORDS UP TO 60 INCHES OR 5 FEET OF SALT WATER.

Transparency 4-9

COMES WITH A 20-FT TOPHANDLER AND MAY ALSO HAVE A 35-FT OR 40-FT TOPHANDLER.

Transparency 4-10

RAISES, LOWERS, TILTS FORWARD OR BACKWARDS, SIDE SHIFTS, OR SIDE TILTS A CONTAINER LOAD.

Transparency 4-11

LIFTS A CONTAINER FROM 12 INCHES (30 CM) BELOW GROUND LEVEL TO 118 INCHES (300 CM) ABOVE GROUND LEVEL (MEASURED FROM GROUND TO BOTTOM OF CONTAINER).

Transparency 4-12

ARTICULATES FOR EASY LOAD HANDLING (BENDS IN THE CENTER).

Transparency 4-13

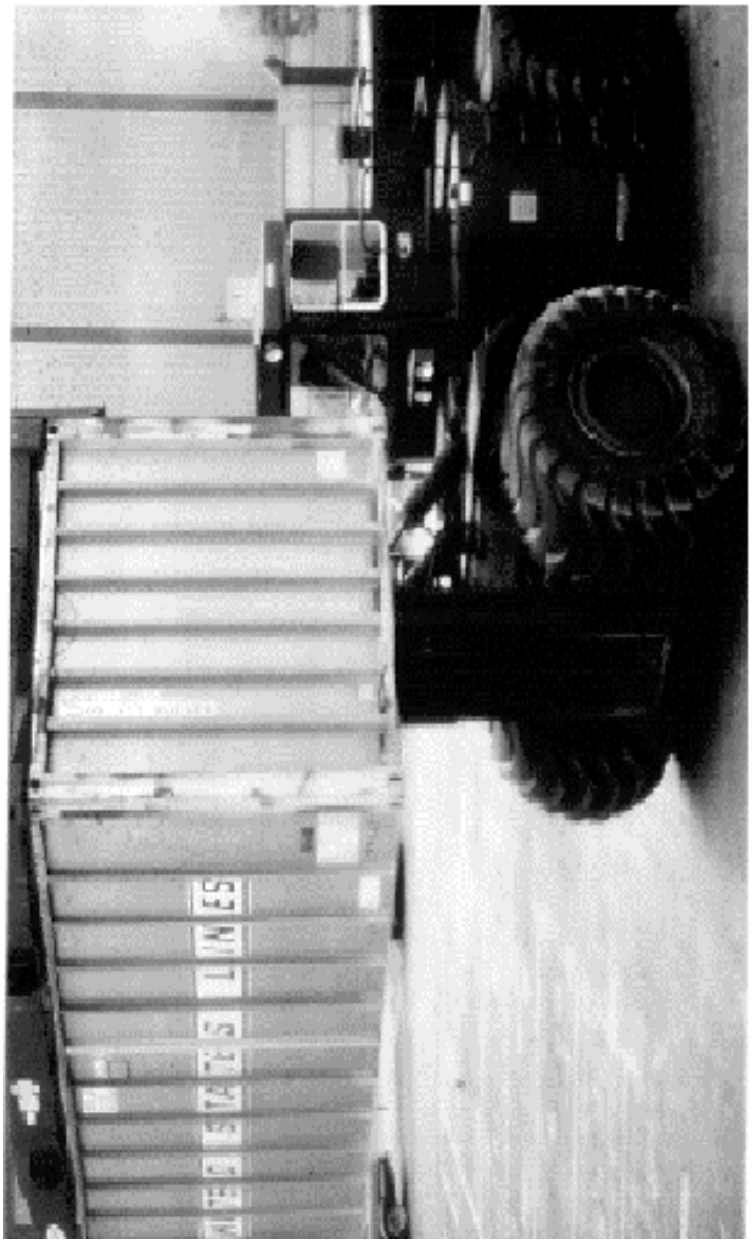
RTCH CAN LIFT UP TO 50,000 POUNDS.

Transparency 4-14

THE RTCH IS BUILT BY THE CATERPILLAR TRACTOR CO. THE ARMY PURCHASED THE RTCH IN 1984 FOR $159,138 PER RTCH.

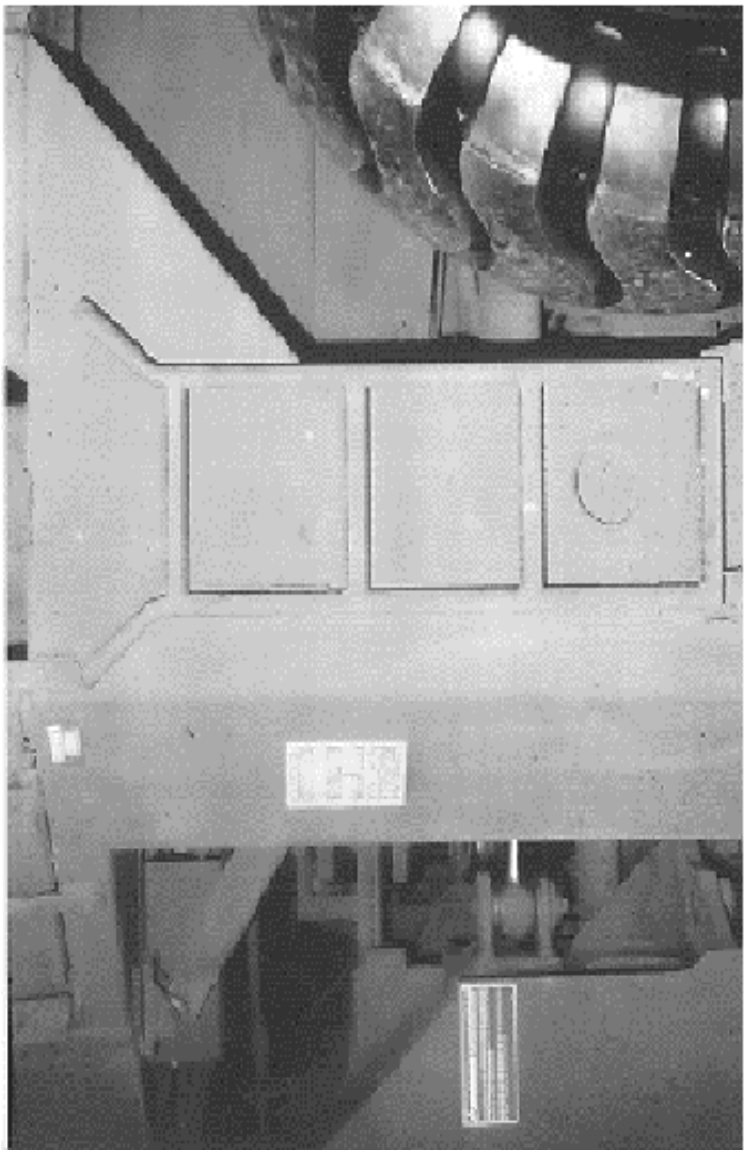
INTRODUCTION TO COMPONENTS

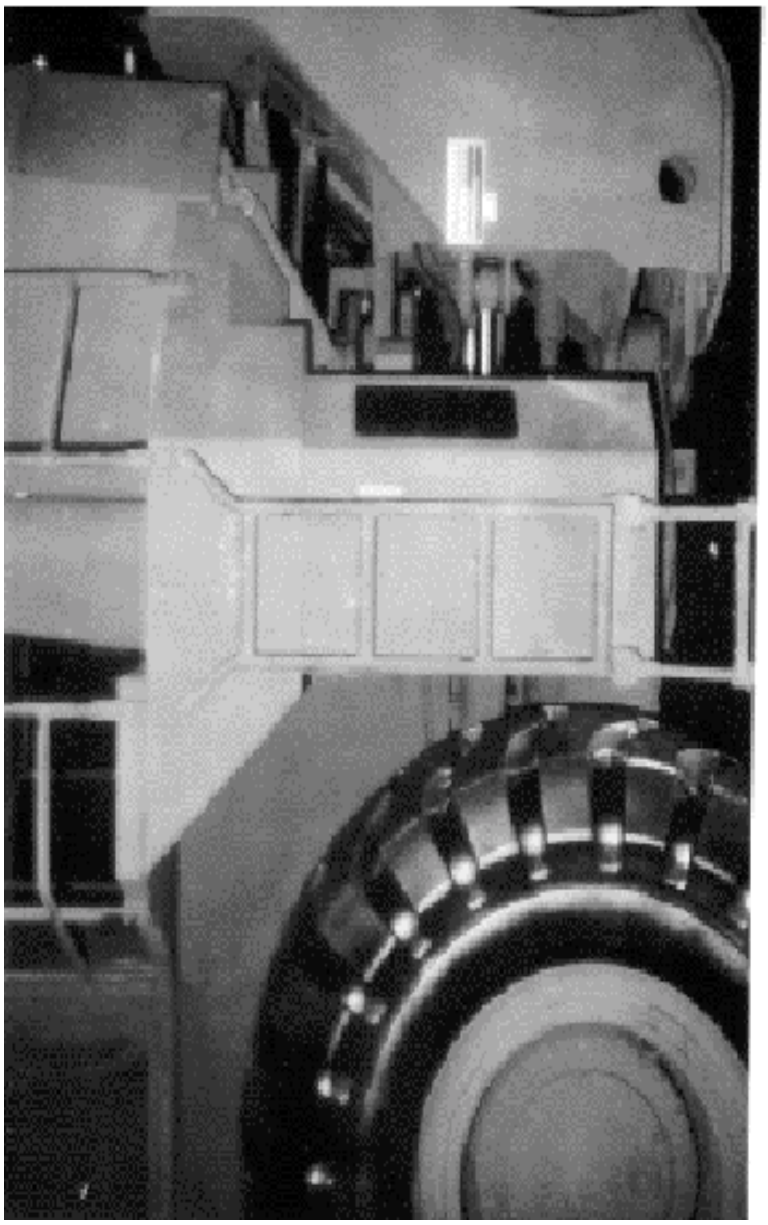
Transparency 4-16



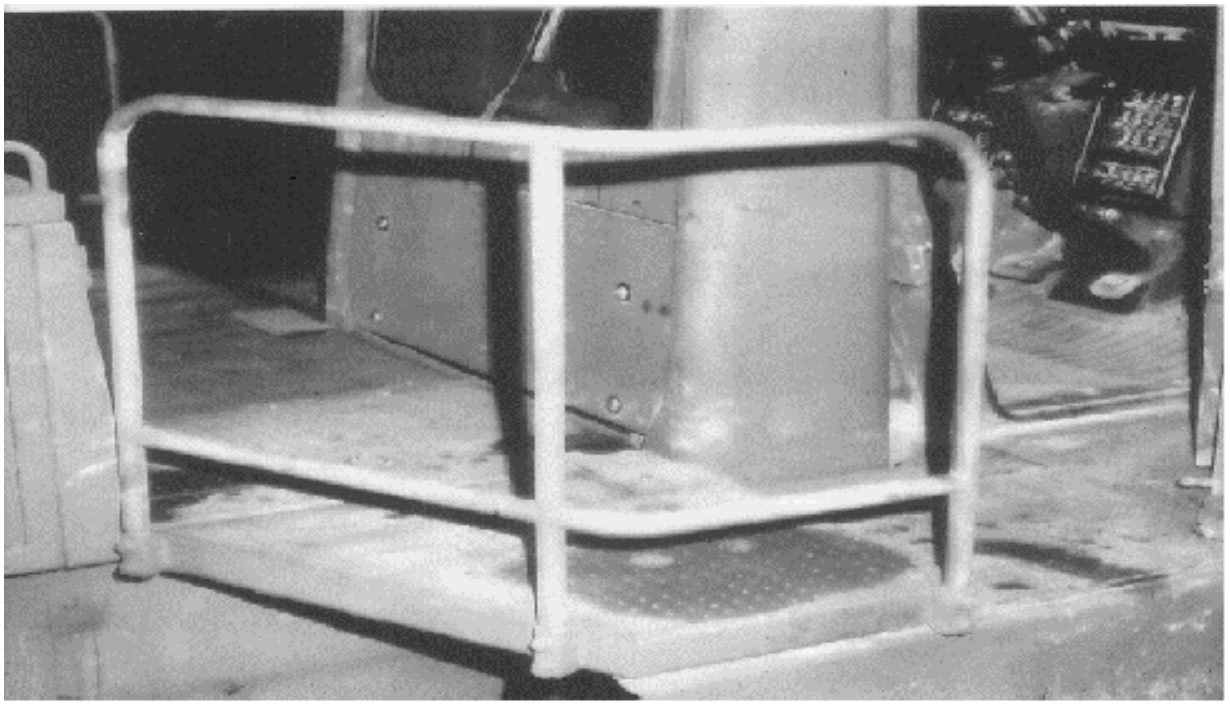
Transparency 4-17

Transparency 4-18





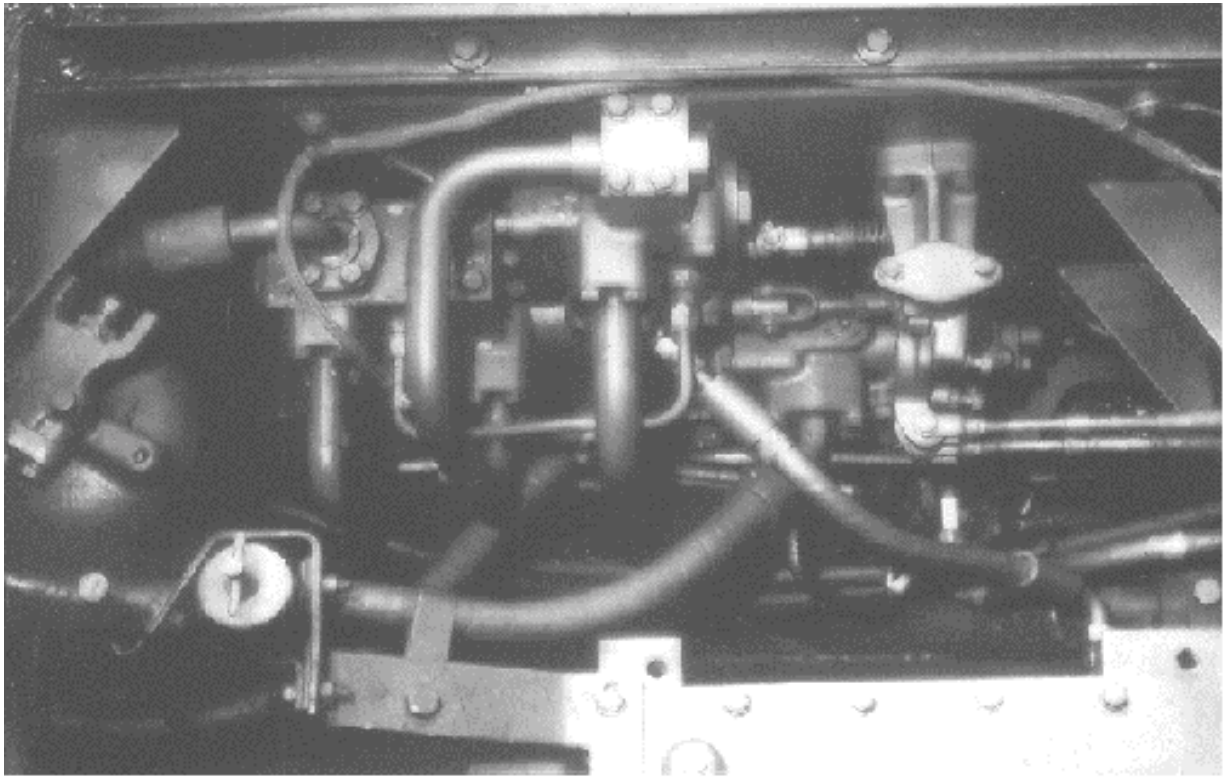
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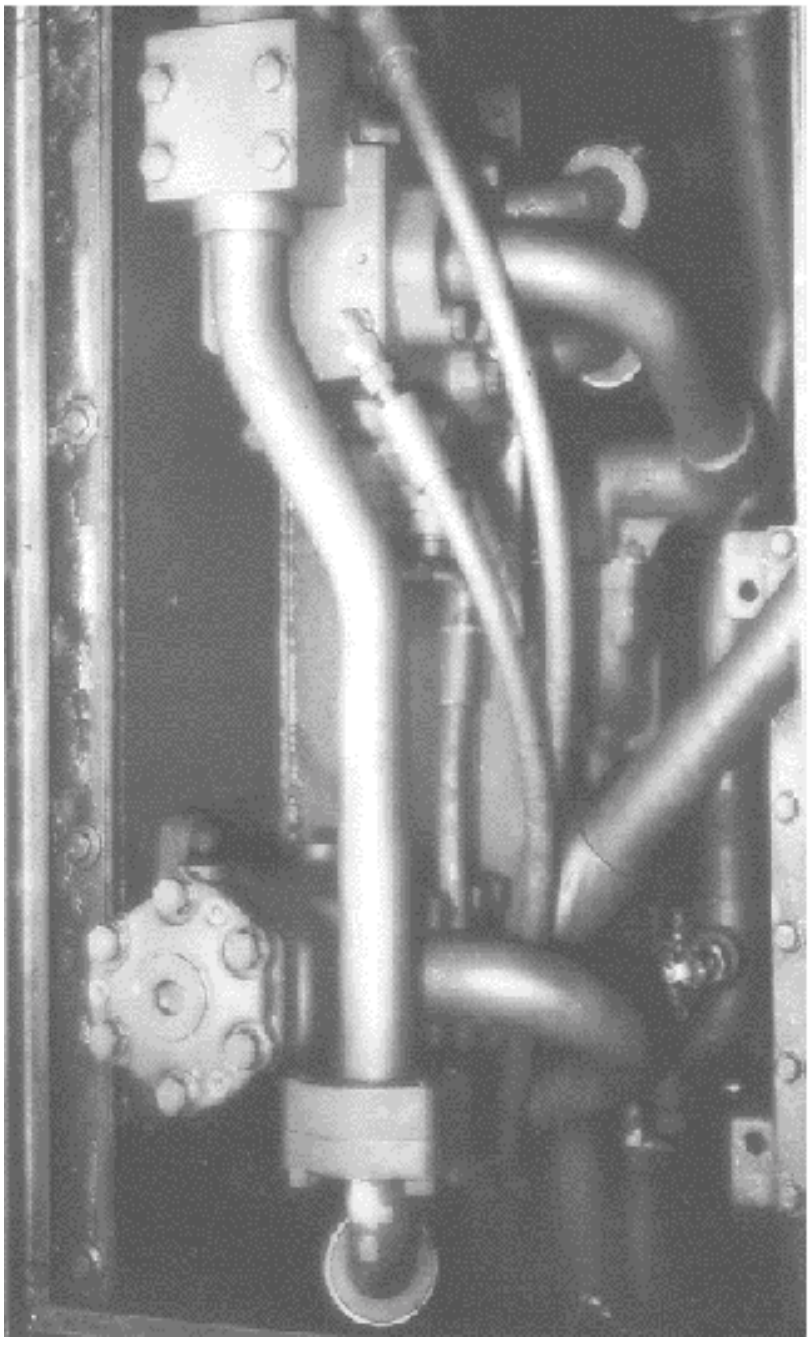
Transparency 4-20



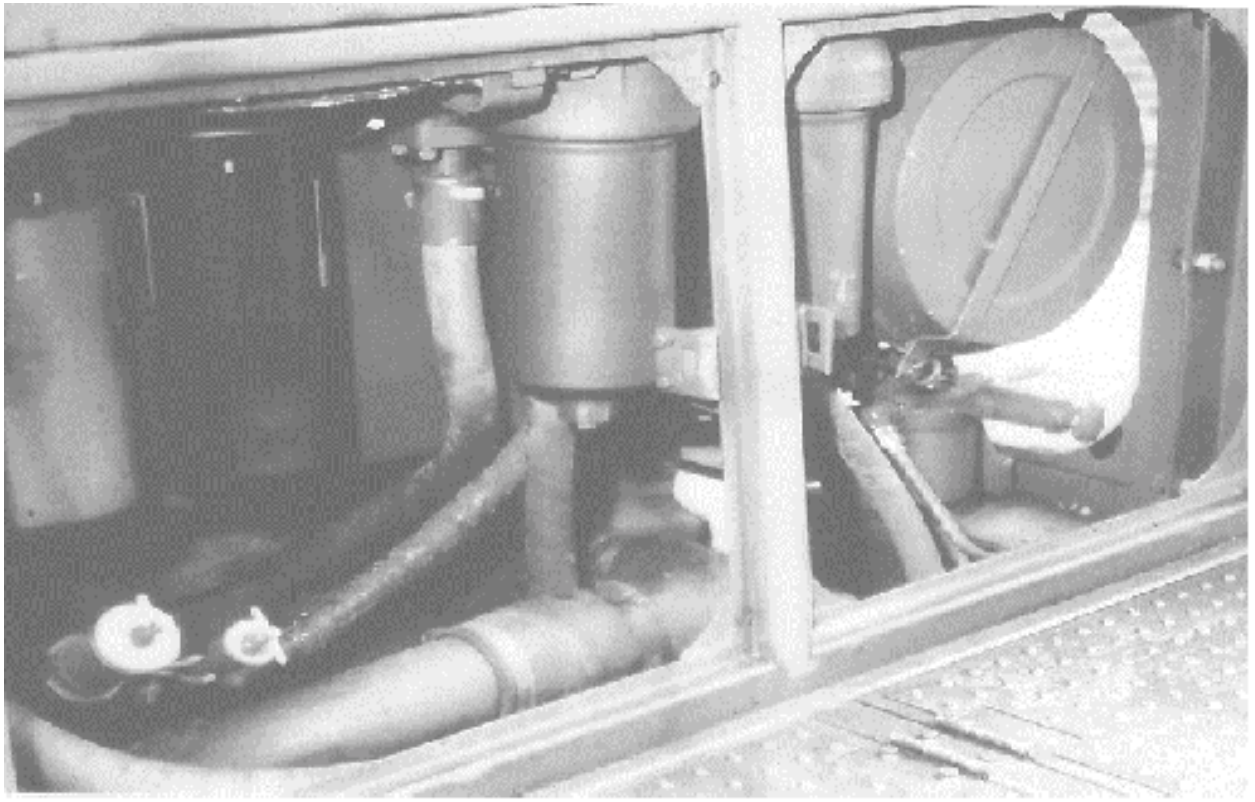
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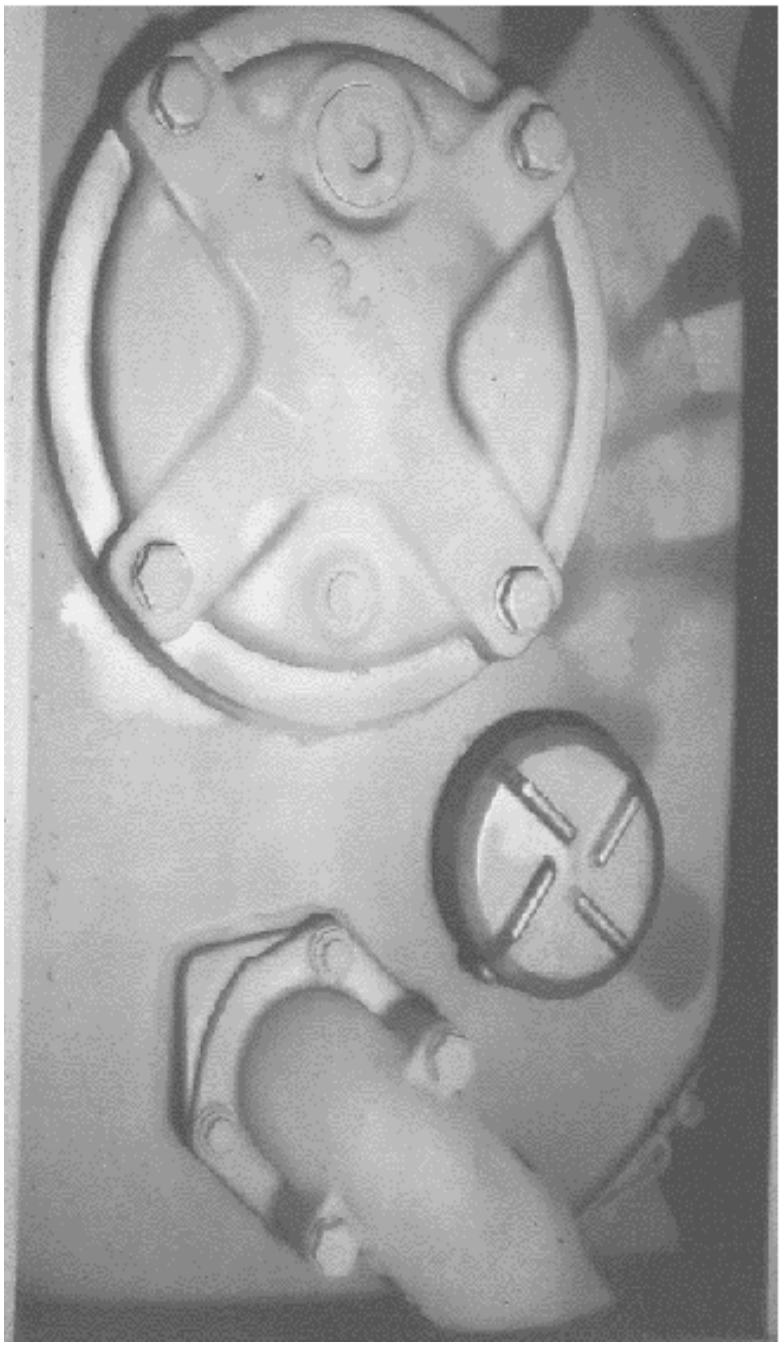
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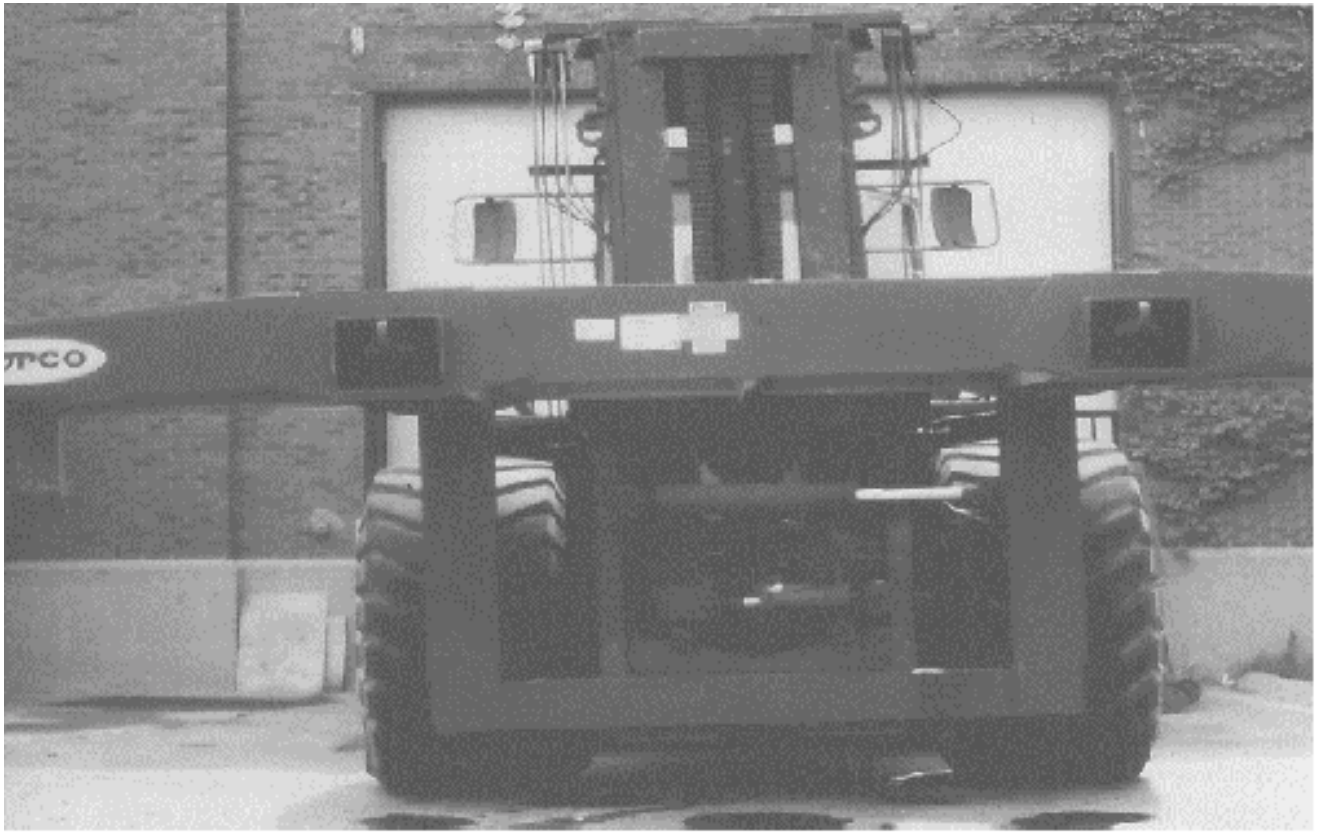
Transparency 4-23



Transparency 4-24



Transparency 4-25



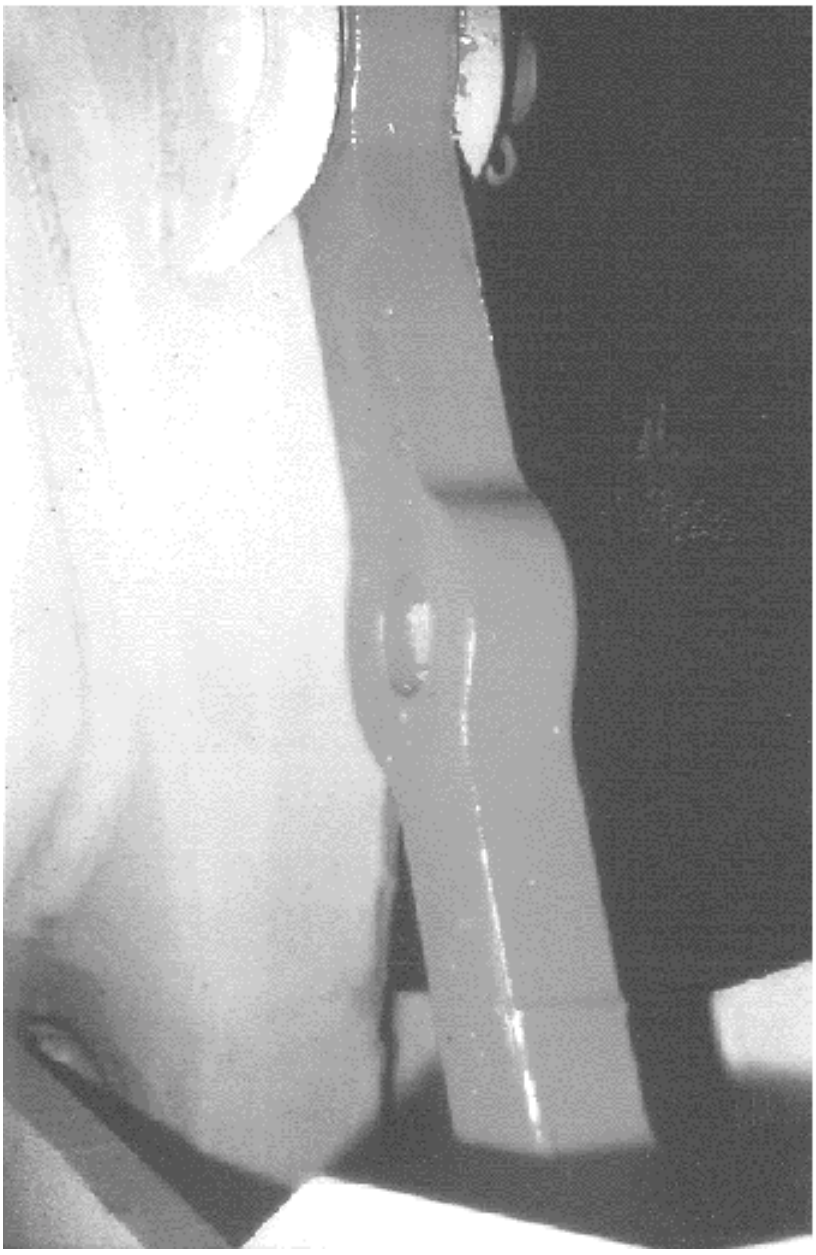
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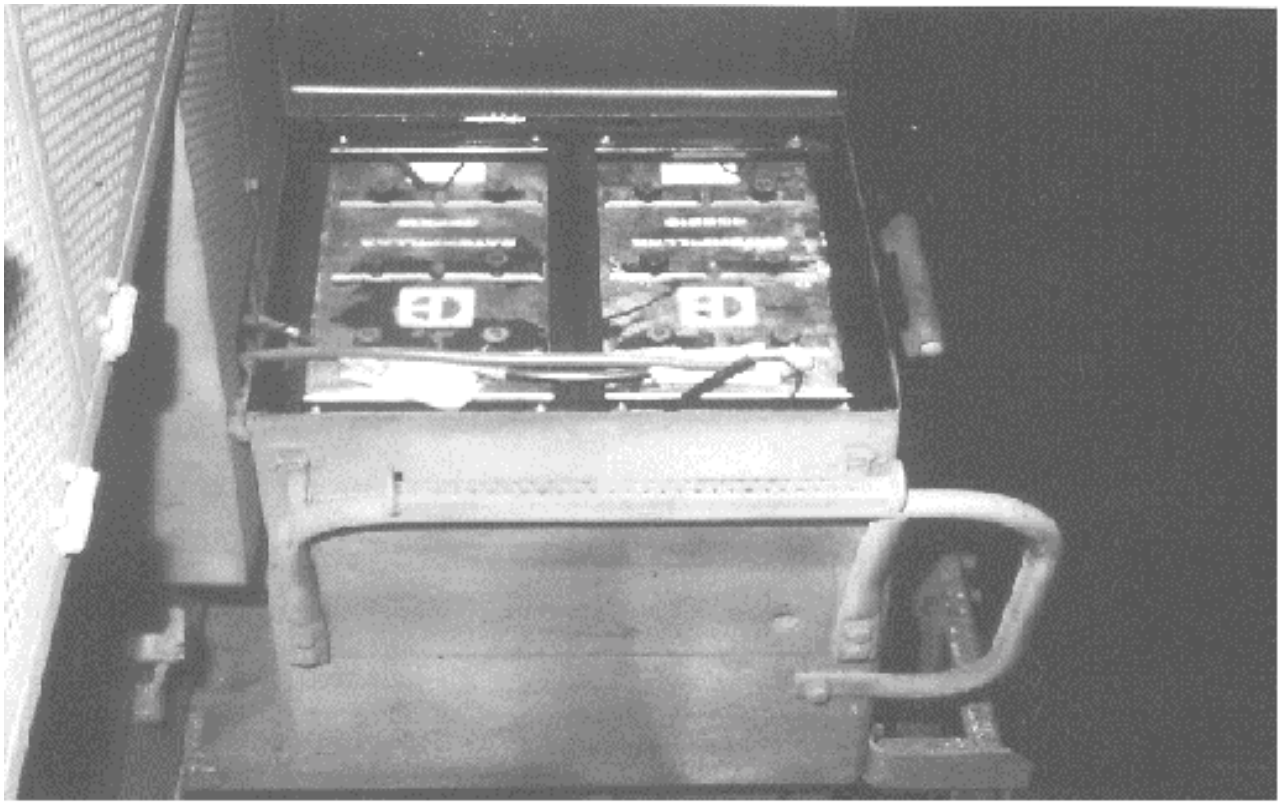
Transparency 4-27



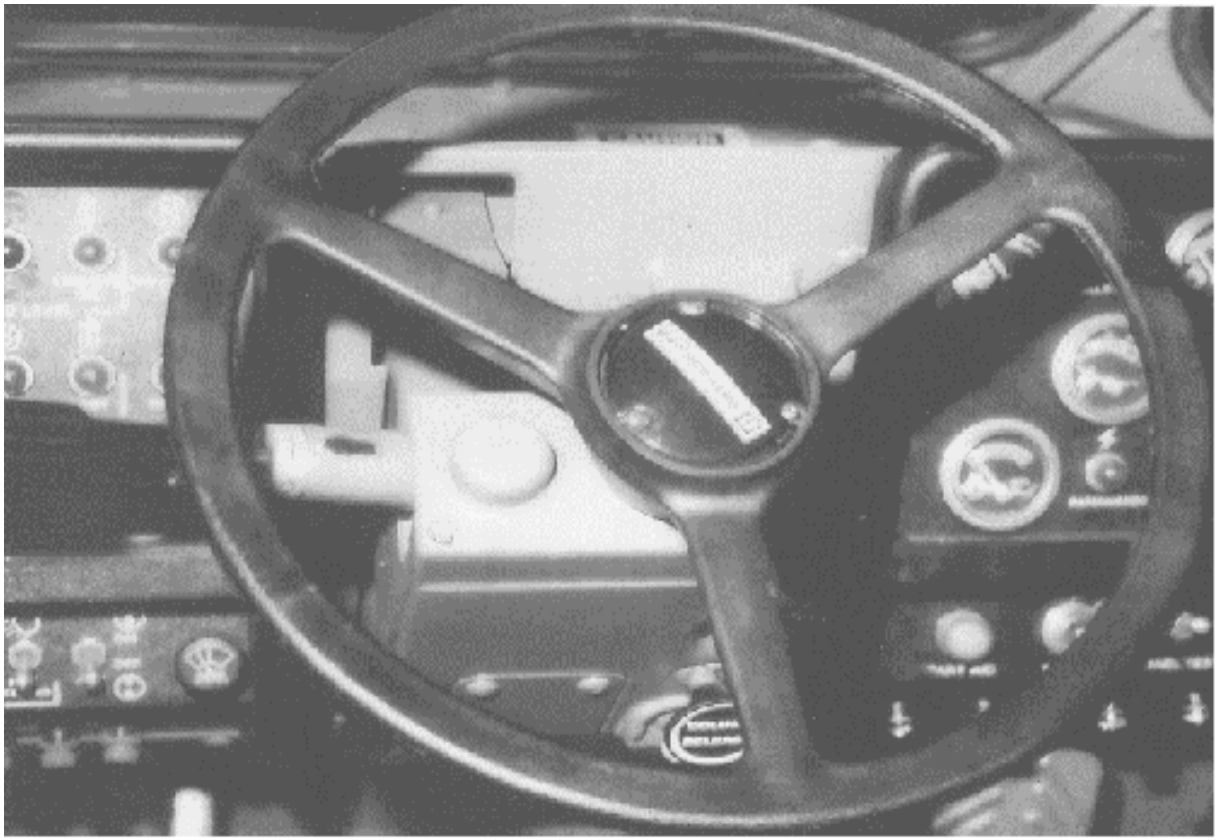
Transparency 4-28



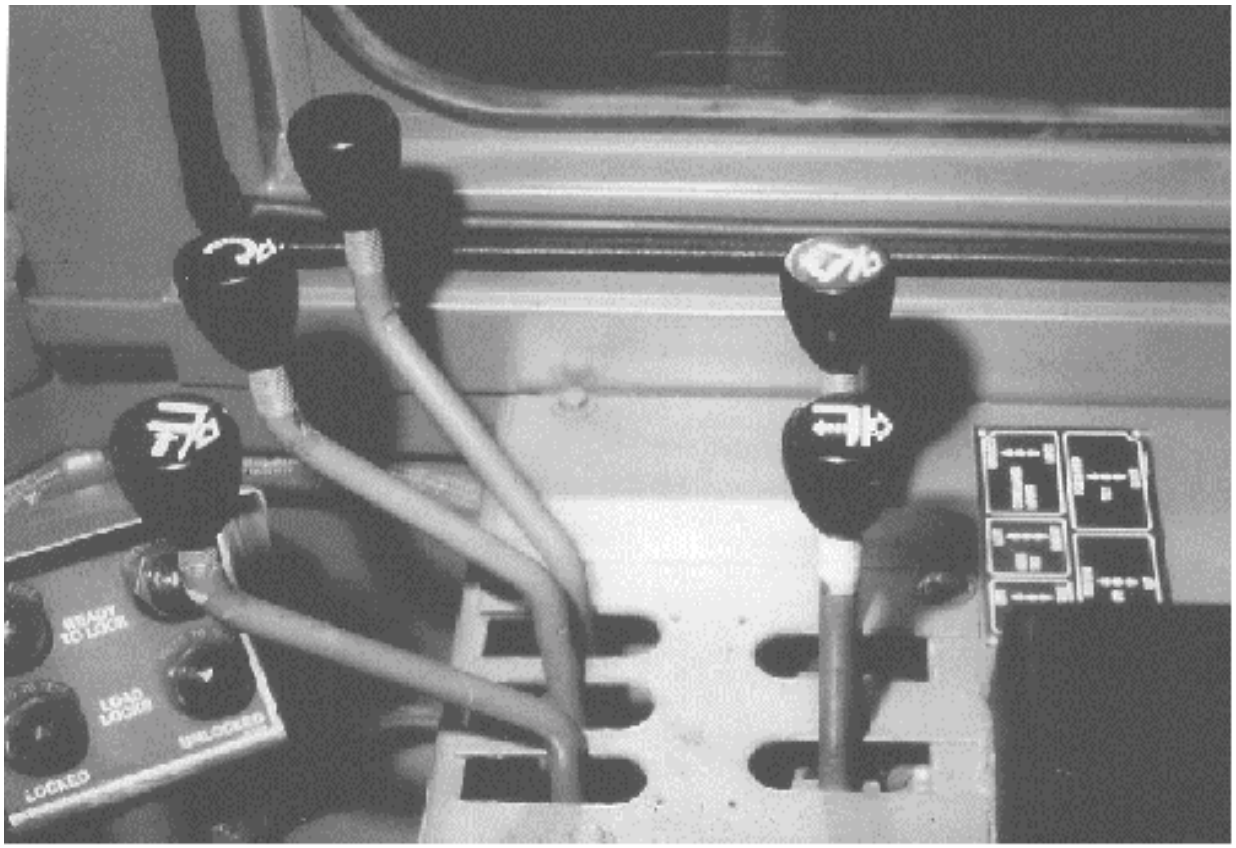
Transparency 4-29



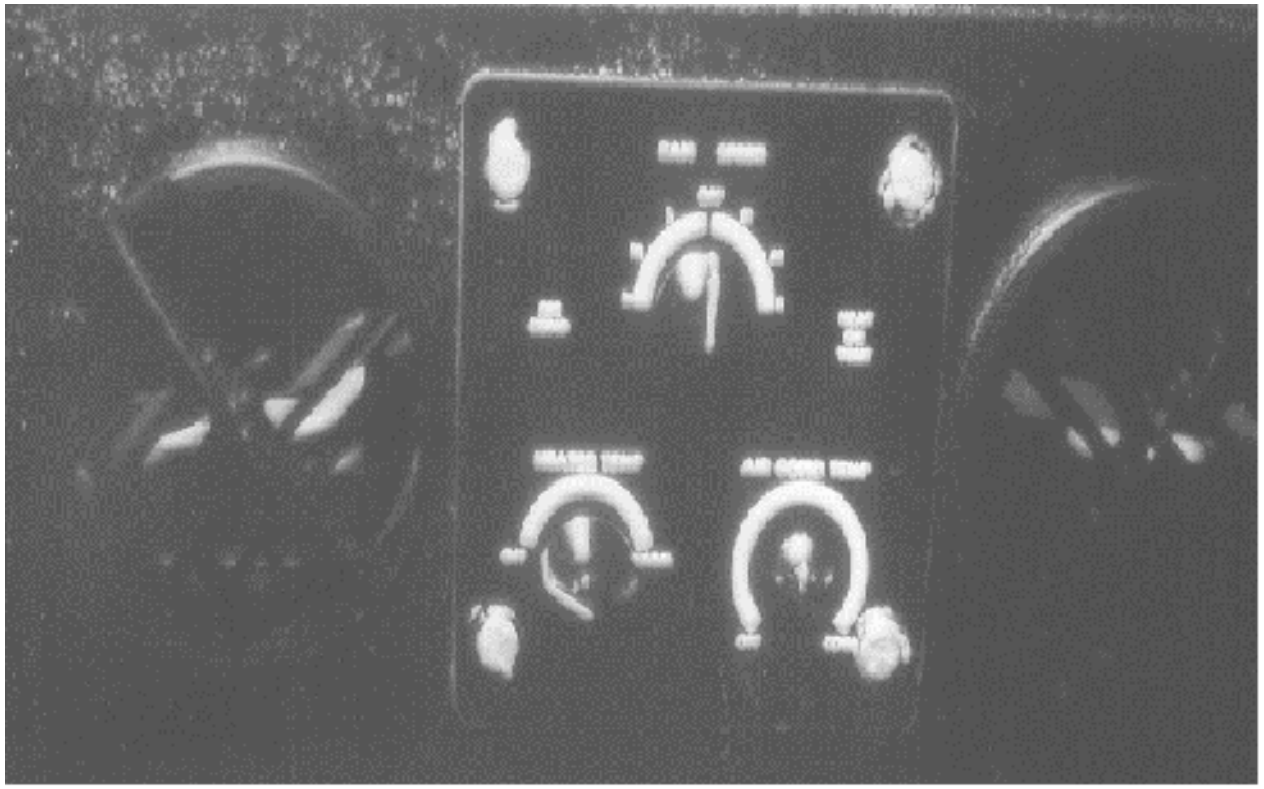
Transparency 4-30



Transparency 4-31



Transparency 4-32



Transparency 4-33

- **Radiator.**
  - **Provides engine coolant.**
  - **Holds 28 gallons.**

- **Upper engine access panels.**
  - **To panels on each side.**
  - **Allows engine access for maintenance.**

Transparency 4-34

- **Hood.**
  - **Two piece unit.**
  - **Removable for engine maintenance.**

- **Operator's cab.**
  - **Rollover protective structure.**
  - **Will withstand one rollover.**

Transparency 4-35

- **Tilt cylinders.**
  - **Two cylinders for tilting.**
  - **Tilts mast forward or backward.**

- **Mast.**
  - **Moves to position the container.**
  - **Will lift container 12 inches below ground level.**
  - **Lift to 118 inches high from bottom of container.**
  - **Will stack containers two high.**

Transparency 4-36

- **Forks.**
  - **Mounts and secures tophandlers.**
  - **Two types of forks.**
    - **Tophandler forks.**
    - **Inverted forks.**
- **Wheels, axles, and final drive.**
  - **Steers and propels vehicle.**
  - **One tire and rim weighs 3,000 pounds and is 6 feet tall.**
  - **Fording height is 5 feet.**

Transparency 4-37

- **Steering cylinder.**
  - **One on each side.**
  - **Acts as power steering.**

- **Hitch. Articulates for easy steering.**

Transparency 4-38

- **Hydraulic tank.**
  - **Holds 78 gallons of hydraulic oil.**
  - **Located on right side.**
- **Fuel tank.**
  - **Holds 165 gallons of fuel.**
  - **Located on left side.**
  - **Normally 10 hours of operation.**

Transparency 4-39

- **Lower engine access panels. One on each side.**

- **Battery boxes.**
  - **One on each side.**
  - **One box holds two 24-volt batteries.**

Transparency 4-40

- **Counterweights.**
  - **Provides stability for handling loads.**
  - **Has seven counterweights total.**

- **Towing pintle is for towing vehicles.**

Transparency 4-41

- **Lift cylinder raises and lowers mast.**

- **Side shift cylinder.**
  - **Shifts forks and tophandler left and right.**
  - **Helps in aligning or stacking container.**

Transparency 4-42

- **Side tilt cylinder rotates forks and tophandler for loading and stacking.**

- **Container lock cylinders.**
  - **Rotates locks to secure tophandler to container.**
  - **One on 20-foot tophandler.**
  - **Two on 35-foot and 40-foot tophandler.**

Transparency 4-43

- **Handles ISO (International Standards Organization) designation 1A or 1C cargo containers or sealand containers.**

- **Twenty-foot tophandler.**
  - **Is 230 inches long (from lock to lock).**
  - **Weight is 3,800 pounds.**
  - **Width is 95 1/2 inches without guide plates.**

Transparency 4-44

- **Thirty-five foot tophandler.**
  - **Is 34 feet, 4 inches long (from lock to lock).**
  - **Weight is 9,120 pounds.**
  - **Width is 92 3/4 inches without guide plates.**

- **Forty-foot tophandler.**
  - **Is 39 feet, 3 7/8 inches (from lock to lock).**
  - **Weight is 9,930 pounds.**
  - **Width is 92 3/4 inches without guide plates.**

Transparency 4-45

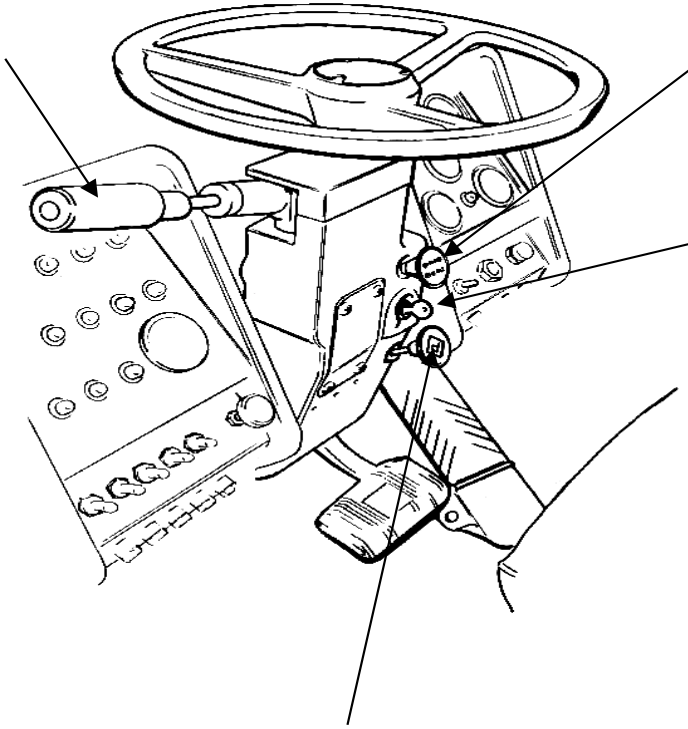
- **Operational weight.**
  - **Without tophandler - 103,230 pounds.**
  - **With 20-foot tophandler - 107,030 pounds.**
  - **With 35-foot tophandler - 112,350 pounds.**
  - **With 40-foot tophandler - 113,160 pounds.**

- **Maximum speed without load.**
  - **Forward is 18.5 mph.**
  - **Reverse is 19.4 mph.**

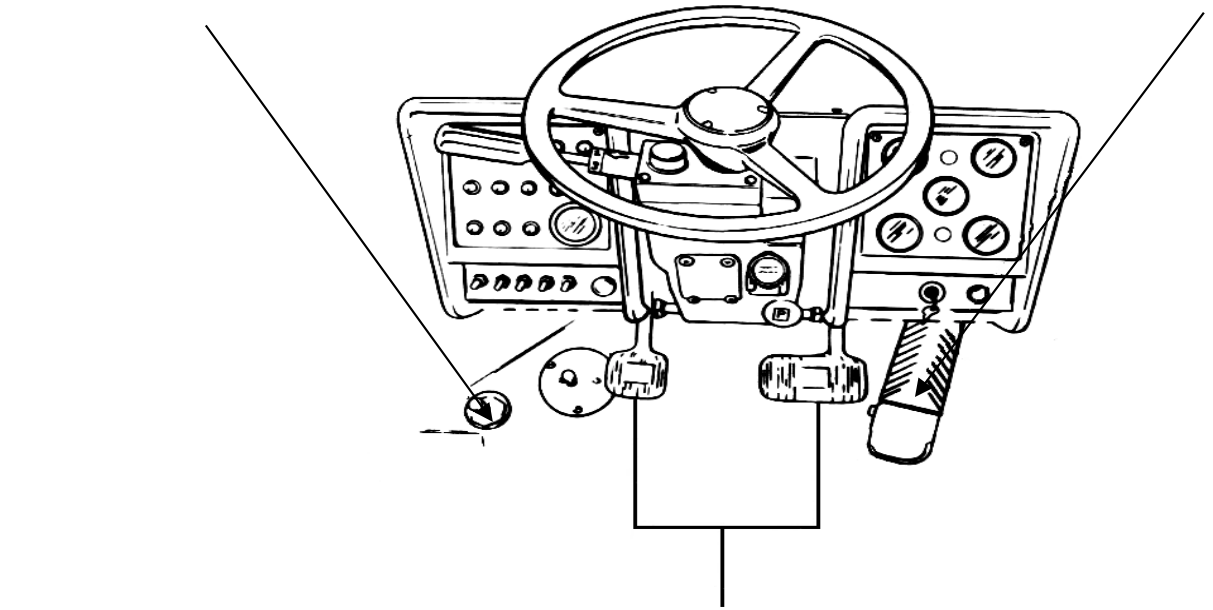
Transparency 4-46

CONTROLS FOR THE 50,000-POUND RTCH

Transparency 4-47

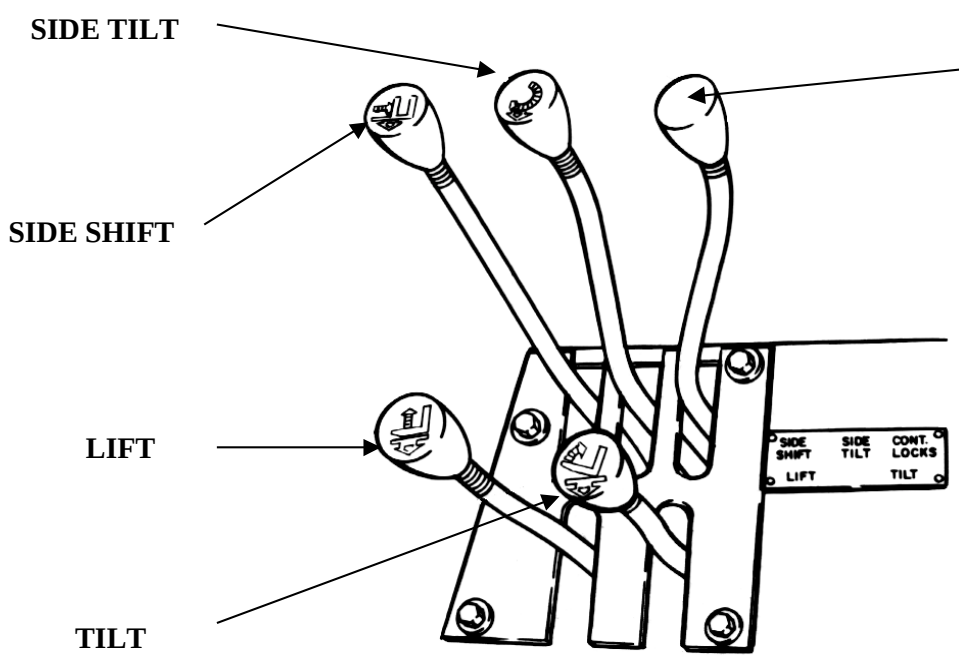


Transparency 4-48

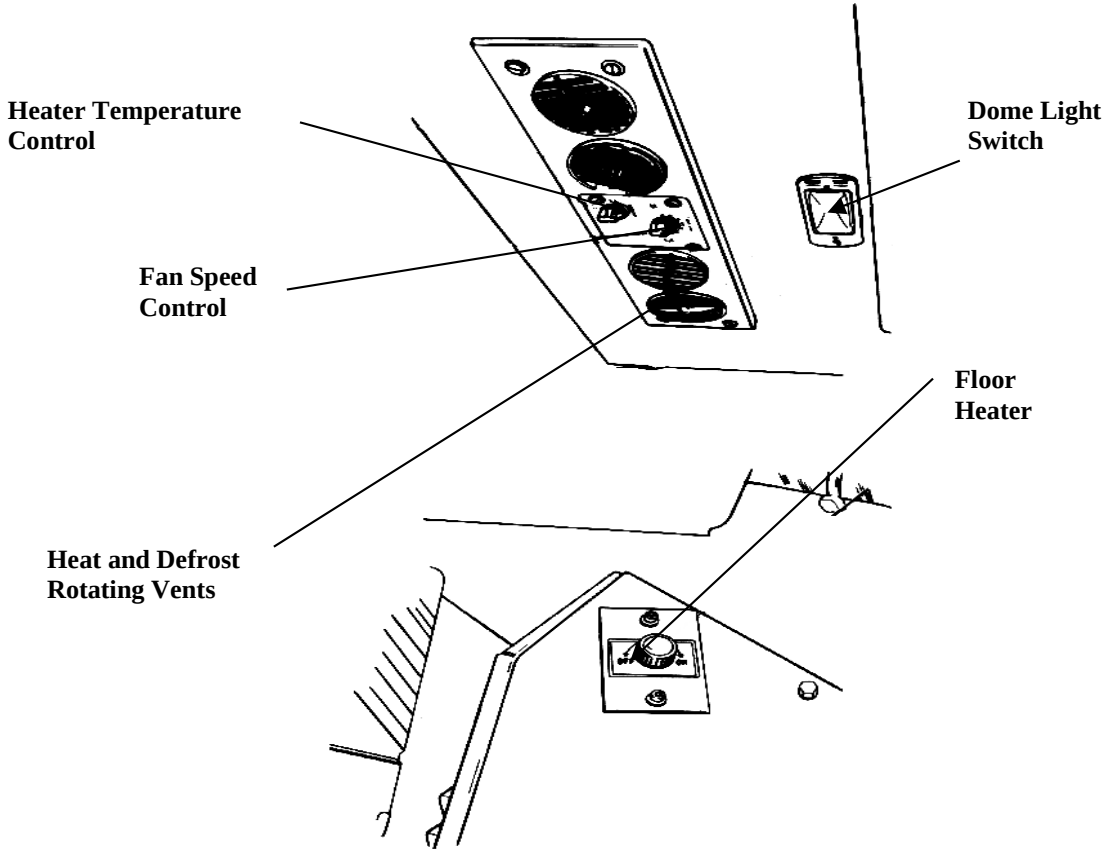


LEFT AND RIGHT BRAKE PEDALS

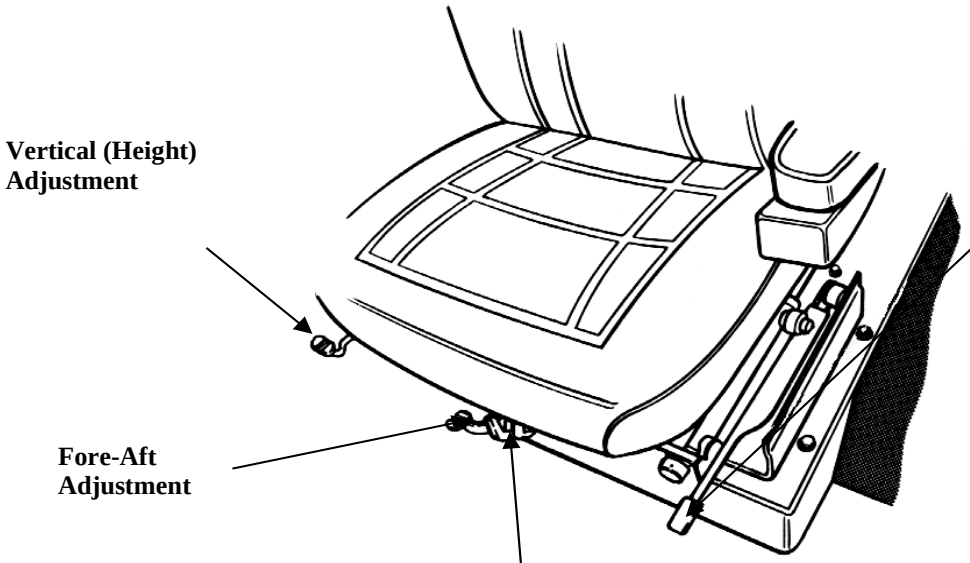
Transparency 4-49



Transparency 4-50

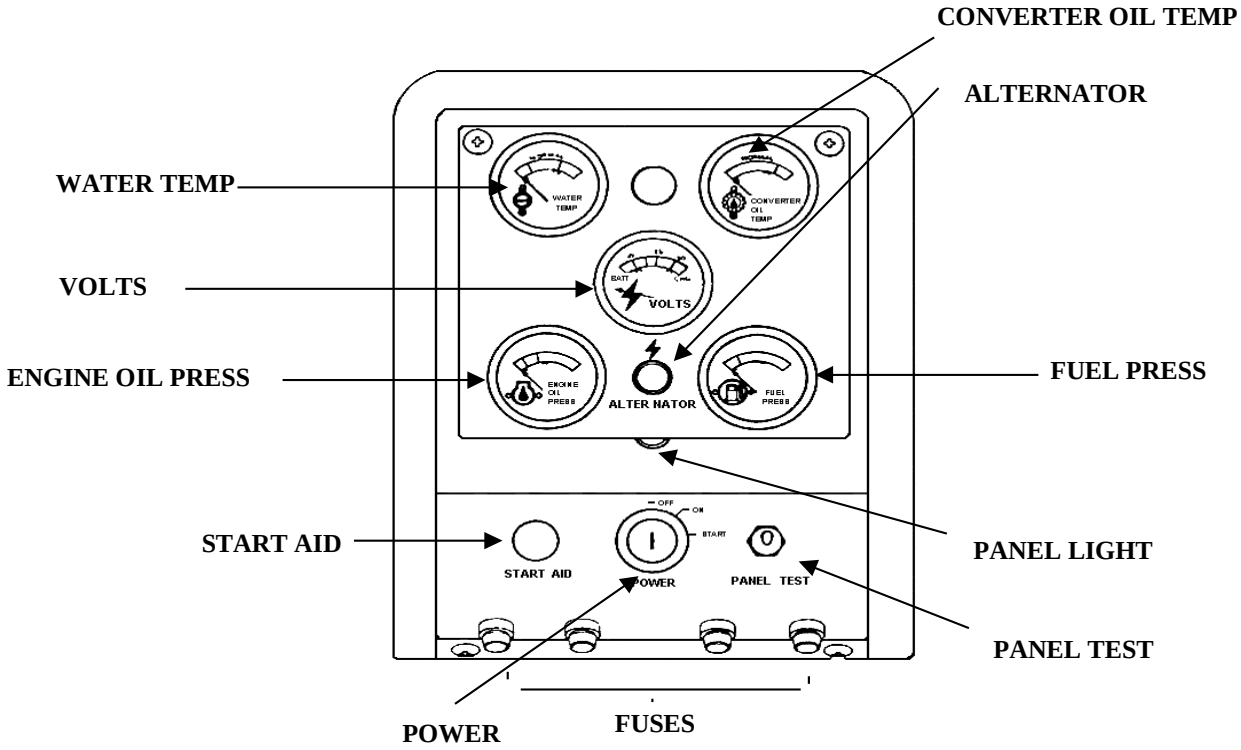


Transparency 4-51



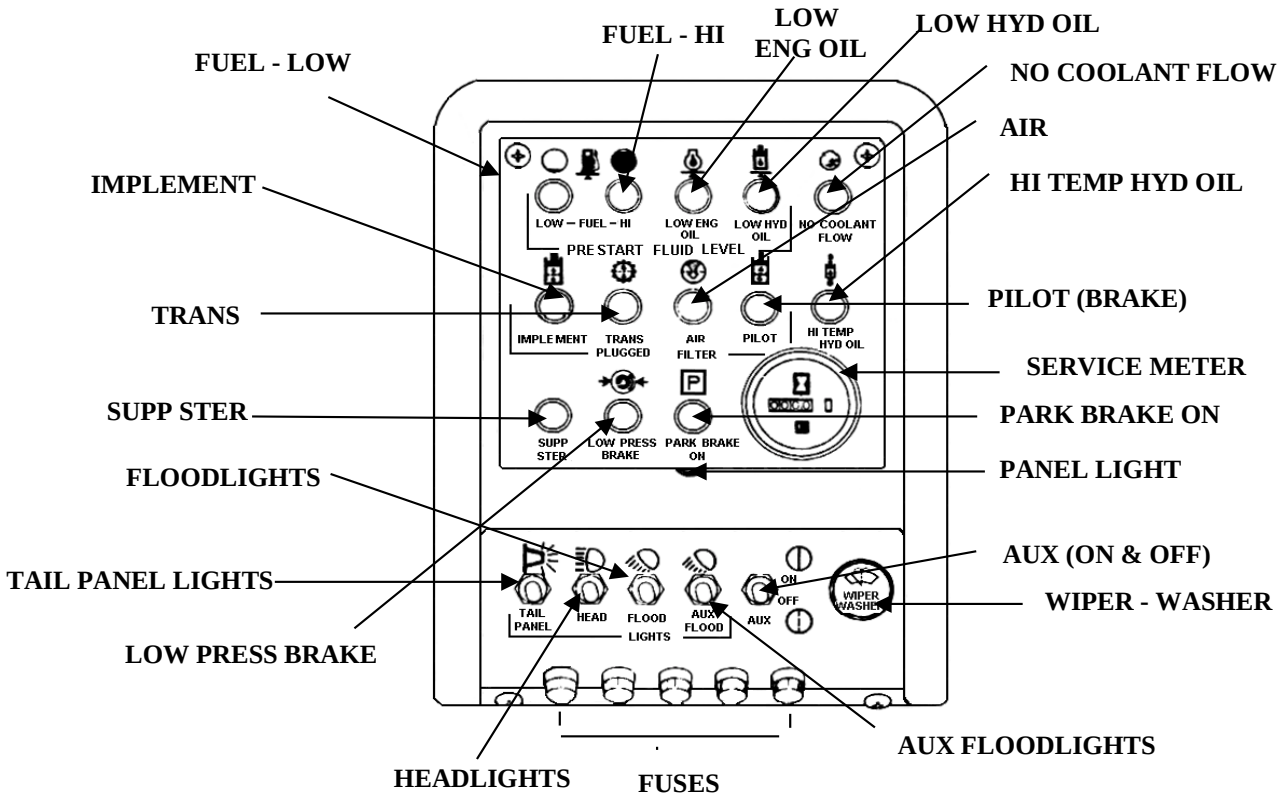
Transparency 4-52

Right Hand Instrument Panel

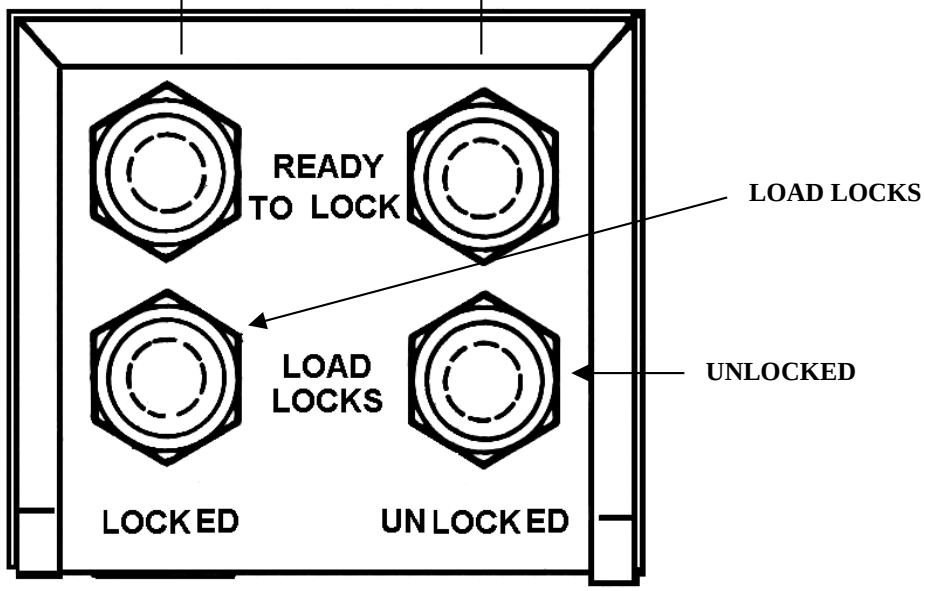


Transparency 4-53

Left Hand Instrument Panel

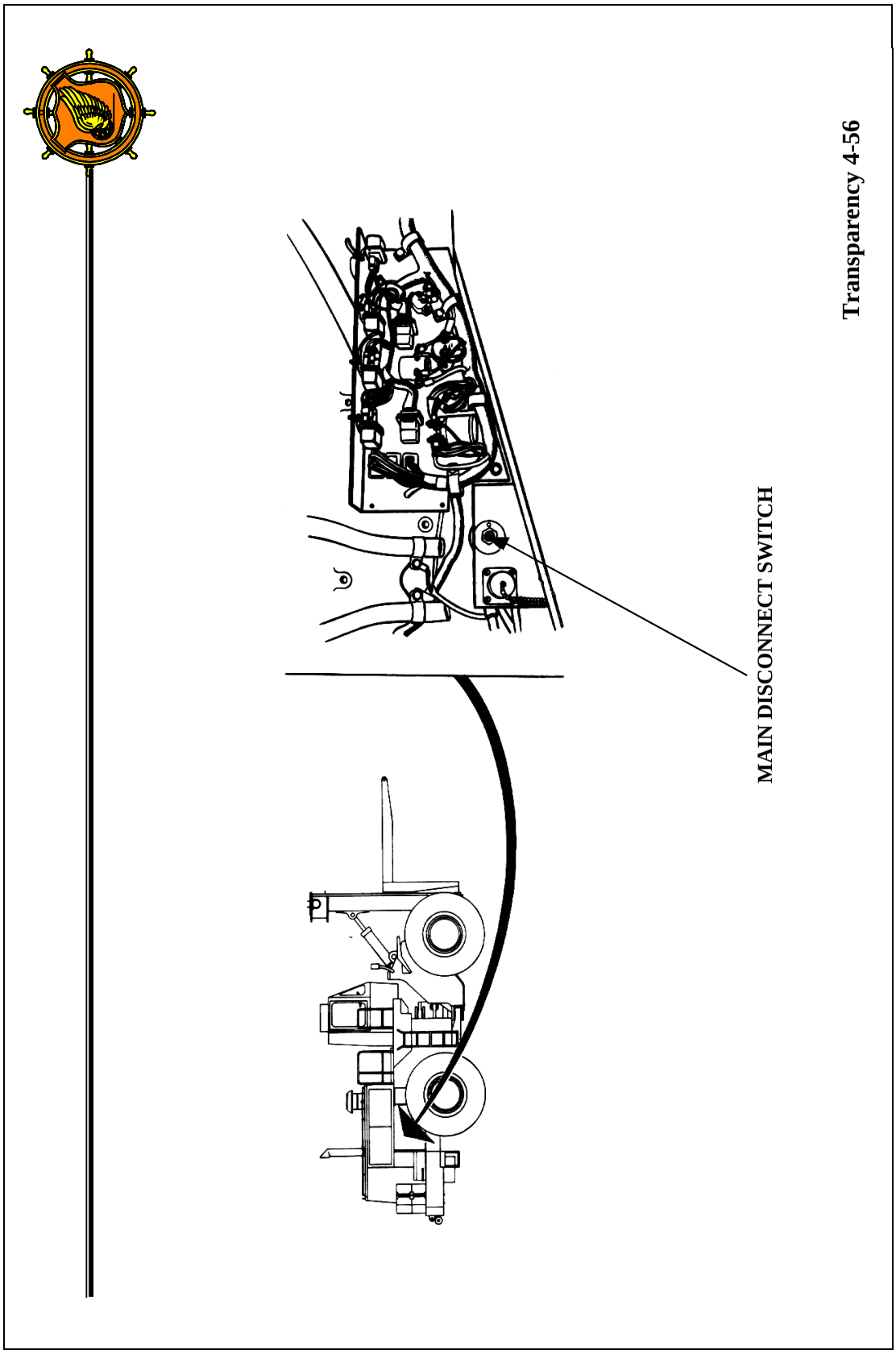


Transparency 4-54



CONTAINER LOCK INDICATOR PANEL

Transparency 4-55



Transparency 4-56

Summary

THE STUDENT SHOULD BE FAMILIAR WITH ALL THE COMPONENTS AND CAPABILITIES OF THE 50,000-POUND RTCH. THE STUDENT SHOULD ALSO BE ABLE TO PERFORM PMCS AND PREOPERATIONAL CHECKS.

Objective

AFTER THE COMPLETION OF THIS LESSON, THE STUDENT WILL BE ABLE TO IDENTIFY SAFETY PRECAUTIONS AND OPERATIONS, WARNING AND CAUTION SIGNS, AND COMMUNICATE WITH HAND AND ARM SIGNALS.

Transparency 4-58



SAFETY PRECAUTIONS AND OPERATIONS

Transparency 4-59

THIS VEHICLE IS NOT DESIGNED FOR AN ASSISTANT OPERATOR (SUCH AS RIDING THE CATWALK).

- **STAY OUT OF PIVOT AREA WHEN THE VEHICLE IS TURNING.**
- **TRAVEL AT A SAFE SPEED (DO NOT FOLLOW TOO CLOSELY).**

Transparency 4-60

NEVER COAST, ALWAYS CARRY LOAD CLOSE TO THE GROUND.

Transparency 4-61

THE HEIGHT OF THIS VEHICLE IS 14 FT (4.3 M) FROM THE GROUND TO THE TOP OF THE MAST. STAY CLEAR OF ELECTRIC WIRES AND OVERHANGS.

Transparency 4-62

THE WEIGHT OF THIS VEHICLE IS 113,000 LBS (51,000 KG) WITH 40-FT TOPHANDLER ATTACHED.
ALWAYS STAY A SAFE DISTANCE FROM CLIFFS, DEEP EXCAVATIONS, OR OTHER DANGEROUS AREAS.

Transparency 4-63

NEVER OPERATE THE RTCH ON A SIDE SLOPE THAT IS MORE THAN 15 DEGREES.

Transparency 4-64

NEVER OPERATE THE RTCH ON A DOWNHILL GRADE OF MORE THAN 15 PERCENT.

Transparency 4-65

ALWAYS STOP ENGINE AND LOWER MAST BEFORE LEAVING THE RTCH. MAST WILL LOWER WITH ENGINE OFF.

Transparency 4-66

ALWAYS KNOW THE SIZE OF THE AREA IN WHICH YOU HAVE TO OPERATE.

Transparency 4-67

DO NOT SMOKE WHEN REFUELING, OPERATING, OR PULLING MAINTENANCE ON THE RTCH.

Transparency 4-68

RELEASE RADIATOR CAP SLOWLY TO RELEASE PRESSURE. YOU COULD BE SCALDED BY STEAM OR INJURED BY A FLYING RADIATOR CAP.

Transparency 4-69

MAKE SURE HYDRAULIC PRESSURE IS RELEASED BEFORE ANY MAINTENANCE IS PERFORMED ON THE HYDRAULIC SYSTEM.

Transparency 4-70

MAKE SURE THE SHIPPING LINK, LOCATED IN THE LOWER CENTER OF VEHICLE, IS DISCONNECTED BEFORE OPERATING VEHICLE. ALSO MAKE SURE SHIPPING LINK IS INSTALLED BEFORE SHIPMENT OR WHEN WORKING IN THE PIVOT AREA.

Transparency 4-71

MAKE SURE ALL SAFETY GUARDS AND COVERS ARE IN PLACE.

Transparency 4-72

MAKE SURE THE ROPS IS NOT DAMAGED OR ALTERED. A STRUCTURALLY DAMAGED ROPS WILL NOT PROTECT YOU IN A ROLLOVER ACCIDENT.

Transparency 4-73

NEVER WEAR LOOSE CLOTHING OR JEWELRY THAT COULD CATCH IN CONTROLS.

Transparency 4-74

WEAR HEARING PROTECTION WHEN OPERATING WITH WINDOWS OPEN. ALWAYS WEAR HEARING PROTECTION WHEN WITHIN 50 FT OF AN OPERATING RTCH.

Transparency 4-75

MAKE SURE ALL PERSONNEL STAY CLEAR OF WORK AREA WHEN OPERATING RTCH.

Transparency 4-76

BE FAMILIAR WITH ALL HAZARDS AND HAZARDOUS AREAS IN YOUR WORK SITE.

Transparency 4-77

PLACE RANGE SELECTOR IN NEUTRAL AND ENGAGE PARKING BRAKE BEFORE STOPPING ENGINE.

Transparency 4-78

ALWAYS TEST MAST CONTROLS FOR PROPER OPERATION BEFORE BEGINNING OPERATION.

Transparency 4-79

NEVER MOVE VEHICLE WITHOUT PROPER BRAKE OIL PRESSURE.

Transparency 4-80

ALWAYS WEAR YOUR SEAT BELT.

Transparency 4-81

KEEP VEHICLE CLEAN OF GREASE, FUELS, AND OILY RAGS.

Transparency4-82

WARNING: CARBON MONOXIDE (EXHAUST FUMES) CAN KILL YOU.

Transparency 4-83

SAFETY PRECAUTIONS

Transparency 4-84

- **Wear hard hats, ear plugs, safety boots, and work gloves at all times.**
- **Do not jump from on or off of machine.**
- **Never walk between the RTCH and container.**
- **Always operate vehicle with lights on.**
- **Always sound horn twice and look over both shoulders before shifting to reverse.**

Transparency 4-85

- **Ground guides should always stand where the operator can see them at all times.**
- **Always keep a safe distance between vehicle (at least two vehicles apart).**
- **No horse playing or running in motor pool or training area.**
- **Never stand under forks or on tophandler (except during PMCS).**
- **Never stand behind the machine while engine is running.**

Transparency 4-86

WARNING AND CAUTION SIGNS

Transparency 4-87

CENTERED ABOVE DOOR ON LEFT HAND SIDE OF ROPS CANOPY

WARNING:

TO AVOID POSSIBLE WEAKENING OF THIS ROPS, CONSULT A CATERPILLAR DEALER BEFORE ALTERING THIS ROPS IN ANY WAY. THE PROTECTION OFFERED BY THIS ROPS WILL BE IMPAIRED IF IT HAS BEEN SUBJECTED TO STRUCTURAL DAMAGE OR HAS BEEN INVOLVED IN AN OVERTURN INCIDENT.

THIS ROPS, WHEN PROPERLY INSTALLED ON A MACHINE WHICH IS NOT ALTERED TO EXCEED THE ROPS CERTIFICATION TEST WEIGHT MEETS, AT THE TIME OF INSTALLATION, CRITERIA ESTABLISHED BY:

OSHA REGULATIONS 29 CFR 1926.1001, 5 APRIL 72

U.S. ARMY CORPS OF ENGINEERS EM 385-1-1, 1 JUNE 77

SAE J231 SAE J394 SAE J1040b ISO 3471 ISO 3449

ROPS CERTFICATION TEST WEIGHT:

MODEL NO.	POUNDS	KILOGRAMS
988B	**113,000**	**51235**

CATERPILLAR TRACTOR CO.

GENERAL OFFICES

PEORIA, ILLINOIS 3V7334 2

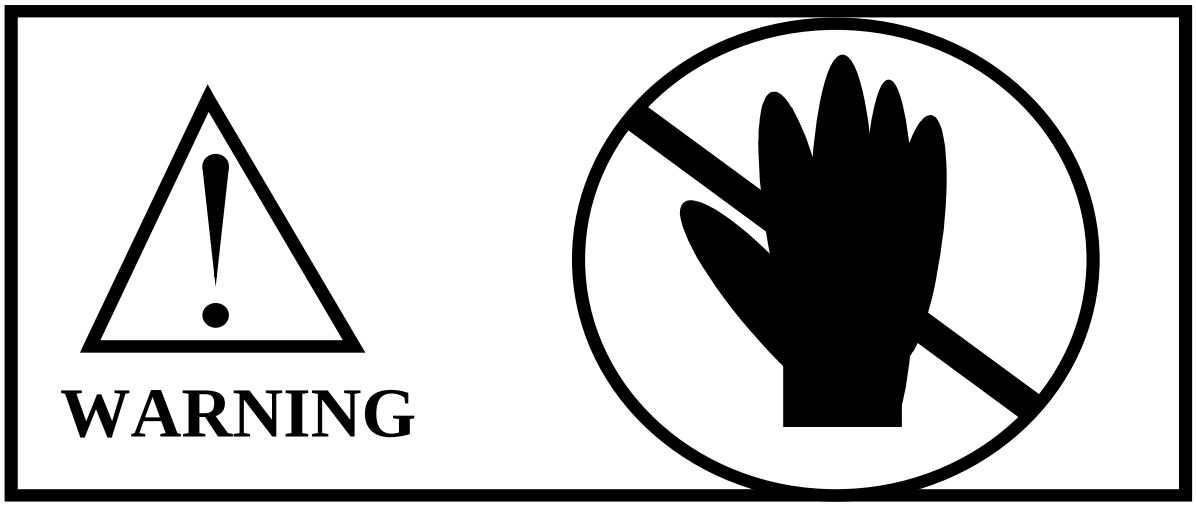
Transparency 4-88

RIGHT HAND SIDE OF DASH

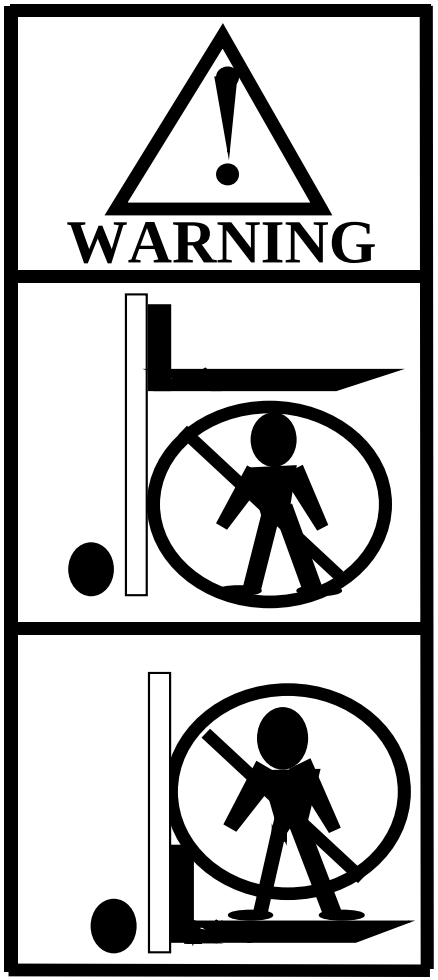


Transparency 4-89

REAR CENTER OF MAST CROSS BAR



Transparency 4-90



ON EACH SIDE TOP OF FORK ASSEMBLY

Transparency 4-91

AT FRAME ARTICULATION ON EACH SIDE OF VEHICLE



Transparency 4-92

HAND AND ARM SIGNALS

Transparency 4-93

Use the following signal to indicate STOP or DISREGARD LAST COMMAND



Raise right arm above head with forearm bent at elbow with fist clenched.

Transparency 4-94

Use the following signal to indicate

SLOW DOWN



Lower right arm to waist level and wave arm in a sweeping motion from right to left, and turn several times.

Transparency 4-95

Use the following signal to indicate LOWER LOAD



With right arm bent at the elbow and forearm lowered, point fore-finger downward.

Transparency 4-96

Use the following signal to indicate LIFT LOAD



Raise the right arm above the head with arm bent at elbow and with forefinger pointing upward.

Transparency 4-97

Use the following signal to indicate TILT LOAD FORWARD



With right arm bent at the elbow and forearm lowered, point middle fingers downward.

Transparency 4-98

Use the following signal to indicate TILT LOAD BACK



Raise the right arm above the head with arm bent at elbow and with forefinger and middle finger pointing upward.

Transparency 4-99

Use the following signal to indicate TILT LOAD TO THE SIDE



Place hands on hips and tilt (oscillate) the body in the direction the load should be tilted.

Transparency 4-100

Use the following signal to indicate SIDE SHIFT THE LOAD



Bend both arms at the elbows and extend the arms forward at waist level. Then extend either the left or right hand with fingers extended and joined and point with forefinger of the other hand toward the open palms in the direction in which the load is to be shifted.

Transparency 4-101

NIGHT TIME
HAND
AND
ARM SIGNALS

Transparency 4-102

Use the following signal to indicate LIFT LOAD



RAISE ONE LIGHT ABOVE HEAD WITH LIGHT POINTING UPWARD.

Transparency 4-103

Use the following signal to indicate LOWER LOAD



ONE LIGHT POINTING

TOWARD THE GROUND.

Transparency 4-104

Use the following signal to indicate TILT LOAD FORWARD



TWO LIGHTS IN A VERTICAL POSITION TOWARD THE GROUND.

Transparency 4-105

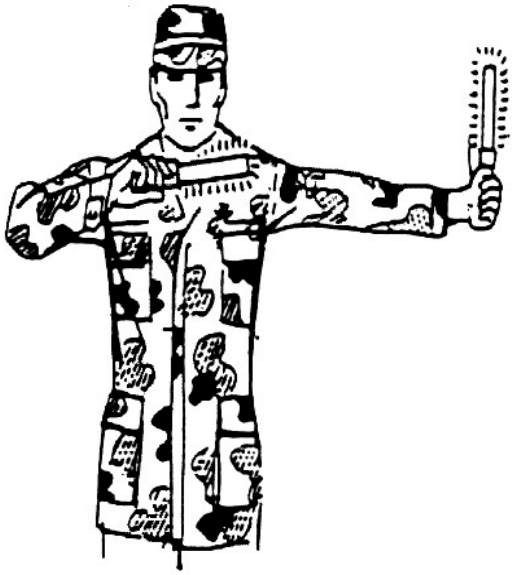
Use the following signal to indicate TILT LOAD BACKWARD



TWO LIGHTS IN A VERTICAL POSITION ABOVE THE HEAD.

Transparency 4-106

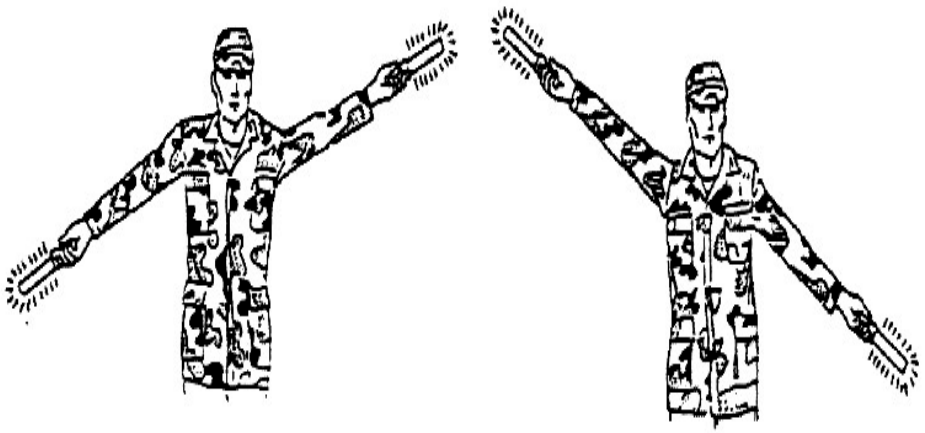
Use the following signal to indicate SIDE SHIFT THE LOAD



WITH ARM EXTENDED ACROSS CHEST, POINT LIGHT IN THE DIRECTION OF MOVEMENT.

Transparency 4-107

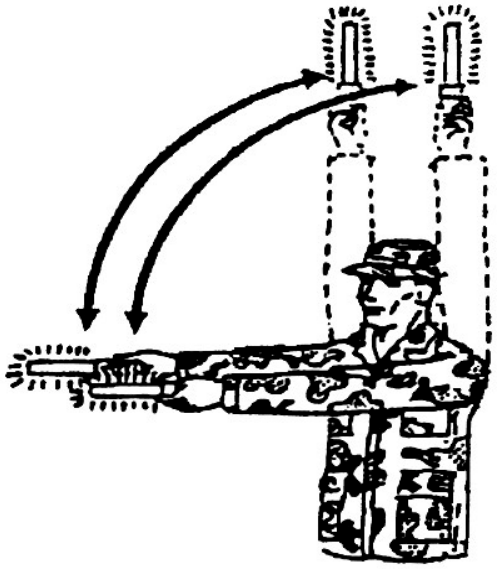
Use the following signals to indicate OSCILLATE THE LOAD



GROUND GUIDES TILT ARMS IN THE DIRECTION THE LOAD SHOULD BE GOING.

Transparency 4-108

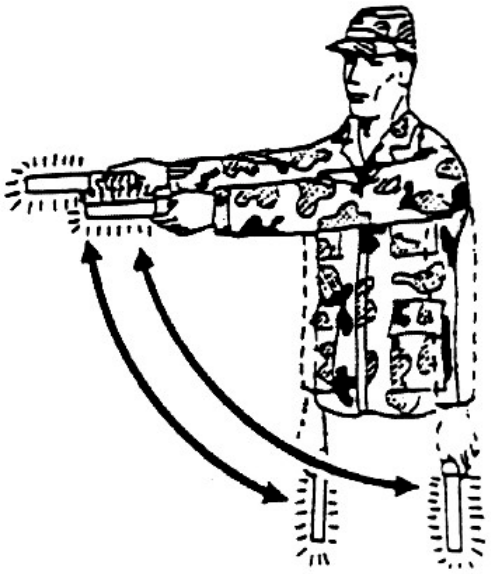
Use the following signal to indicate MOVE FORWARD



LIGHTS IN AN UPWARD POSITION BRINGING ARM DOWN TO A HORIZONTAL POSITION AND RETURN TO VERTICAL POSITION.

Transparency 4-109

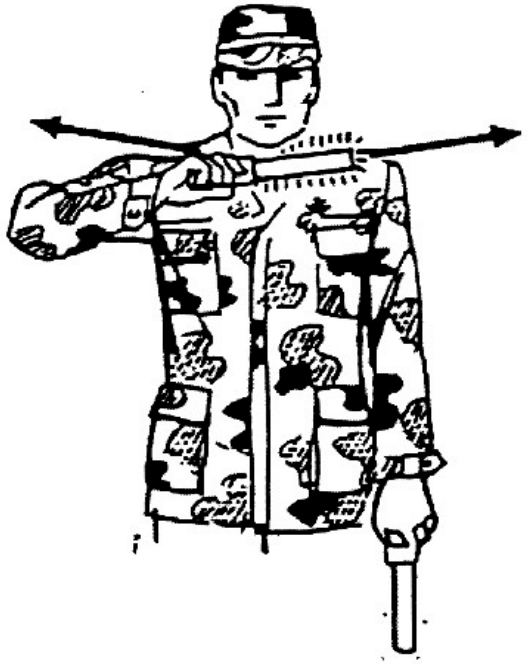
Use the following signal to indicate MOVE BACKWARD



TWO LIGHTS IN A DOWNWARD POSITION AND RAISING ARMS IN AN UPWARD MOTION.

Transparency 4-110

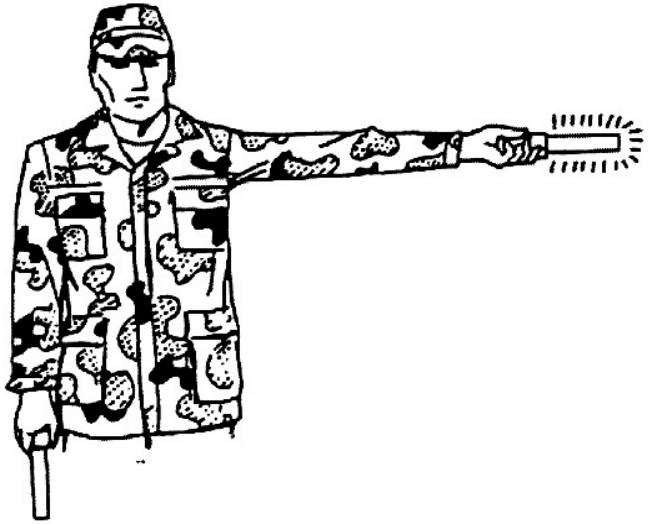
Use the following signal to indicate SHUTDOWN



LIGHT POSITIONED HORIZONTALLY ACROSS THROAT AND USING A BACK AND FORTH MOTION.

Transparency 4-111

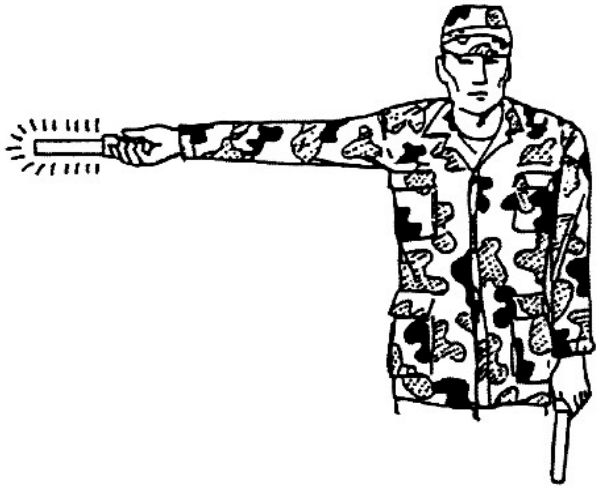
Use the following signal to indicate LEFT TURN



EXTEND LEFT ARM HORIZONTALLY IN THE DIRECTION OF MOVEMENT.

Transparency 4-112

Use the following signal to indicate RIGHT TURN



EXTEND RIGHT ARM HORIZONTALLY IN DIRECTION OF MOVEMENT.

Transparency 4-113

Use the following signal to indicate LOCK LOAD



FLASHLIGHT ABOVE HEAD MAKING A SLOW CIRCULAR MOTION.

Transparency 4-114

Use the following signal to indicate UNLOCK LOAD



POINT FLASHLIGHT TOWARD THE GROUND AND ROTATE IN A SLOW CIRCULAR MOTION

Transparency 4-115

Use the following signal to indicate STOP



HOLD ARMS

CROSSED OVERHEAD.

DO NOT MOVE.

Transparency 4-116

Use the following signal to indicate SLOW DOWN



LOWER RIGHT ARM TO WAIST LEVEL AND WAVE IN A SWEEPING MOTION FROM RIGHT TO LEFT, TURNING SEVERAL TIMES.

Transparency 4-117

Summary

THE STUDENT SHOULD BE FAMILIAR WITH SAFETY PRECAUTIONS WHEN WORKING AROUND THE RTCH AND ALL WARNING/CAUTION SIGNS AND HAND/ARM SIGNALS.

Transparency 4-118

Objective

AFTER THE COMPLETION OF THIS LESSON, THE STUDENT WILL BE ABLE TO PROPERLY FILL OUT A DA FORM 2404, RECORD DEFICIENCIES, AND DO PREVENTIVE MAINTENANCE CHECKS AND SERVICES ON THE EQUIPMENT.

DA FORM 2404
(EQUIPMENT INSPECTION AND MAINTENANCE WORKSHEET)

Transparency 4-120



EQUIPMENT INSPECTION AND MAINTENANCE WORKSHEET

For use of this form, see DA PAM 738-750 and 738-751; the proponent agency is DCSLOG

1. ORGANIZATION					2. NOMENCLATURE AND MODEL	
368th Transportation Company					50,000 LB TRK RTCH	
3. REGISTRATION/SERIAL/NSN	4*a.* MILES	*b.* HOURS	*c.* ROUNDS FIRED	*d.* HOT STARTS	5. DATE	6. TYPE INSPECTION
7600075					xxOctober20xx	Daily/weekly/monthly

7. APPLICABLE REFERENCE

TM NUMBER	TM DATE	TM NUMBER	TM DATE
10-3930-641-10	May 1981		

COLUMN a - Enter TM item number.

COLUMN b - Enter the applicable condition status symbol.

COLUMN c - Enter deficiencies and shortcomings.

COLUMN d - Show corrective action for deficiency or shortcoming listed in Column c.

COLUMN e - Individual ascertaining completed corrective action initial in this column.

STATUS SYMBOLS

"X" - Indicates a deficiency in the equipment that places it in an inoperable status.

CIRCLED "X" - Indicates a deficiency, however, the equipment may be operated under specific limitations as directed by higher authority or as prescribed locally, until corrective action can be accomplished.

HORIZONTAL DASH "(-)" - Indicates that a required inspection, component replacement, maintenance operation check, or test flight is due but has not been accomplished, or an overdue MWO has not been accomplished.

DIAGONAL "(/)" - Indicates a material defect other than a deficiency which must be corrected to increase efficiency or to make the item completely serviceable.

LAST NAME INITIAL IN BLACK, BLUE-BLACK INK, OR PENCIL - Indicates that a completely satisfactory condition exists.

FOR AIRCRAFT - Status symbols will be recorded in red.

ALL INSPECTIONS AND EQUIPMENT CONDITIONS RECORDED ON THIS FORM HAVE BEEN DETERMINED IN ACCORDANCE WITH DIAGNOSTIC PROCEDURES AND STANDARDS IN THE TM CITED HEREON.

8*a.* SIGNATURE *(Person(s) performing inspection)*	8*b.* TIME	9*a.* SIGNATURE *(Maintenance Supervisor)*	9*b.* TIME	10. MANHOURS REQUIRED

Transparency 4-121

TM ITEM NO. *a*	STATUS *b*	DEFICIENCIES AND SHORTCOMINGS *c*	CORRECTIVE ACTION *d*	INITIAL WHEN CORRECTED *e*
PMCS		Brake line broken	Replaced brake line	

DA FORM 2404, APR 79 Replaces edition of 1 Jan 64, which will be used USAPPC V1.10

Transparency 4-122

LEAKAGE DEFINITIONS FOR PMCS

1. Class I leak. Seepage of fluid (as indicated by wetness or discoloration) and NOT great enough to form a drop.

2. Class II leak. Leakage of fluid great enough to form a drop but not enough to cause drops to fall from item being checked/inspected.

3. Class III leaks:

- **Leakage of fluid great enough to form a drop that falls from the item being checked/inspected.**
- **Equipment operation is allowable with Class I or Class II leaks, however a Class III is unacceptable.**

Transparency 4-123

BEFORE OPERATION CHECKS ON THE 50,000-POUND RTCH

Transparency 4-124

Item 1. Walk around and check for the following:

- **Leaks on or under the vehicle.**
- **Loose wires, damaged lines, and hoses.**
- **Loose or damaged parts.**

Item 2. Check tires for the following:

- **Cuts, abrasions, missing valve caps, and general condition.**
- **Obvious low tires.**

Item 3. Check exterior of machine for the following:

- **Damage to fenders, mirrors, ladders, engine covers, and guards.**
- **Mission or damaged parts on tophandler hydraulic cylinders, twisted locks, container lock cylinders, forks, carriage, lift chains, and mast cylinders.**

Transparency 4-125

Item 4. Check hydraulic steering for the following:

- **Cylinders and hoses for obvious damage.**
- **Linkage for missing or damaged parts.**

Item 5. Check fuel tank. If low fuel indicator comes on, notify organizational maintenance.

Item 7. Check engine (when not running) for the:

- **Engine oil level.**
- **All visible oil lines and leaks and damage.**

Item 9. Check engine pre-cleaner/air cleaner for clogging or debris.

Item 12. Check hydraulic tank hydraulic level at sight gauge.

Transparency 4-126

Item 13. Check rollover protective structure for damage and looseness.

Item 14. Check operator's cab seat for wear, damage, or loose mounting.

Item 17. Check steering column lock.

- **Adjust wheel and column position.**
- **Release the lock button.**

DURING OPERATION CHECKS ON THE 50,000-POUND RTCH

Transparency 4-128

Item 3. Check the exterior of the machine for the following:

- **Windshield and windows.**
- **Windshield wiper and blades.**

Item 5. Check fuel tank. If low fuel indicator comes on, notify organizational maintenance.

Item 14. Check operator's cab for the following:

- **Lights and gauges.**
- **Container lights.**
- **Low fuel indicator.**
- **Check heater and defroster.**

Item 15. Check light system for the following:

- **Operation of all lights.**
- **Lenses for damage.**

Transparency 4-129

Item 16. Check the parking brake.

- **Pull out to engage; parking brake indicator light comes on.**
- **Push in to disengage; parking brake light goes out.**

Note: Light will come on and horn will sound if brake is on with transmission engaged.

Note: Before starting engine, move gear selection to neutral, engage parking brake, and lock steering column.

Item 18. Check indicator lights. Start engine to check to ensure the following lights are off:

- **Low engine oil indicator.**
- **Low hydraulic oil indicator.**
- **No coolant flow indicator.**
- **Implement filter indicator.**
- **Transmission filter indicator.**
- **Air filter indicator.**
- **Pilot filter indicator.**
- **High temperature hydraulic oil indicator.**
- **Low pressure brake indicator.**
- **Supplementary steering indicator.**

Transparency 4-130

Item 19. Check the following gauges (indicators):

- **Engine oil pressure. Needle should be in green range within 10 seconds after engine starts.**
- **Fuel pressure:**
  - **Green range - normal operation.**
  - **Red - stop machine.**
- **Water temperature.**
  - **Green range - normal operation.**
  - **Red - stop machine and investigate problem.**
- **Converter oil temperature.**
  - **Green range - normal operation.**
  - **Red - stop machine and check transmission oil level.**

Transparency 4-131

Item 19. Check the following gauges (indicators) (continued):

- **Volts.**

  - **Green range - normal operation.**
  - **Charge or battery range.**

Item 20. Check transmission.

- **Check oil level with engine warm.**
- **Engine running low idle.**
- **Between low and full mark on dipstick.**

Item 21. Check the following control levers:

- **Lift control.**
- **Tilt control.**
- **Side tilt control.**
- **Container lock lever**

  - **Unlock - push lever forward.**
  - **Lock - pull lever back.**

Transparency 4-132

Item 22. Check the service brakes.

- **If low pressure brake light comes on within 5 pedal applications, the accumulator requires service.**
- **In a clear area, apply service brake and shift transmission in second gear forward, machine must not move.**
- **If machine moves, notify first line supervisor.**

Item 23. Check transmission range selector.

- **Operate vehicle.**
- **Use all 4 speeds.**

Note: Stop vehicle before shifting from forward to reverse.

Transparency 4-133

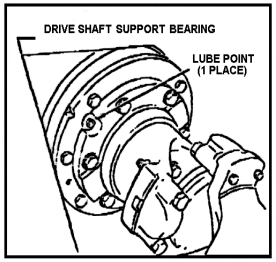
AFTER OPERATION CHECKS ON THE 50,000-POUND RTCH

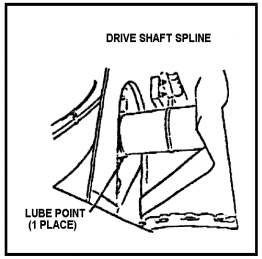
Item 5. Check fuel tank. Have fuel tank filled at end of work day.

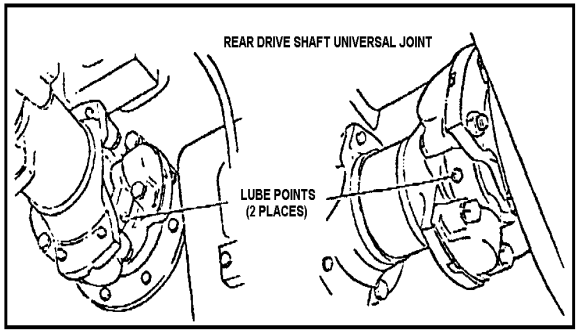
Transparency 4-134

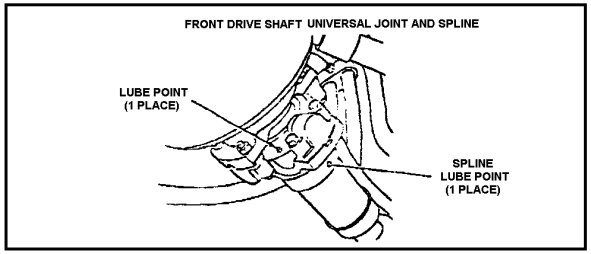
LUBRICATION POINTS ON THE 50,000-POUND RTCH

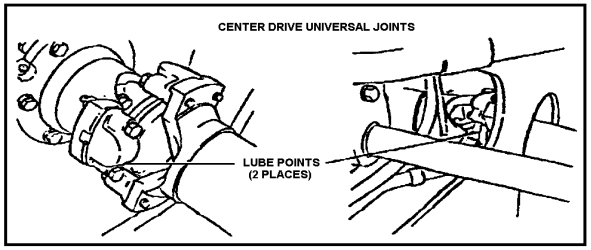
Transparency 4-135

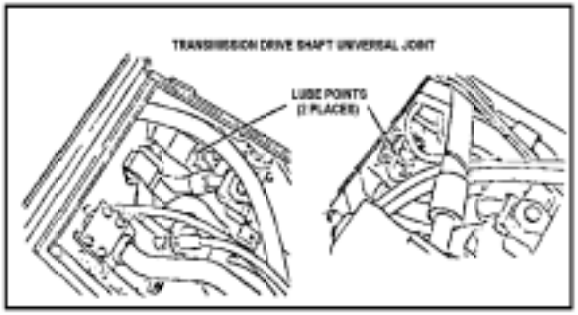




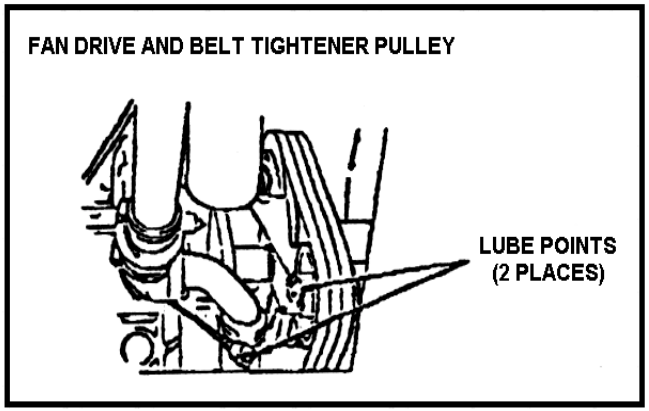


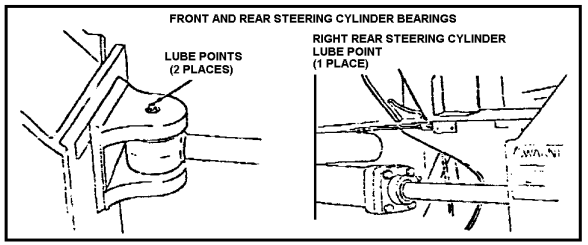


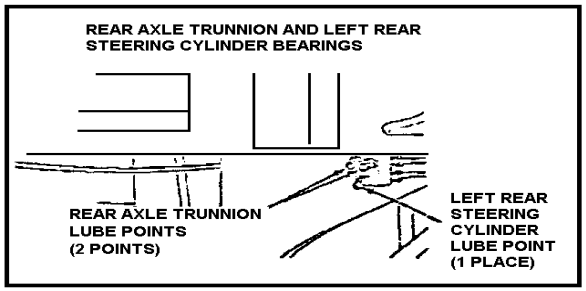


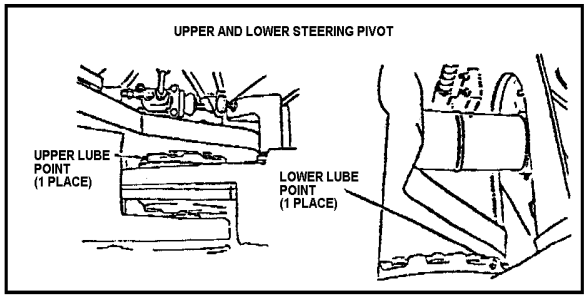


Transparency 4-136

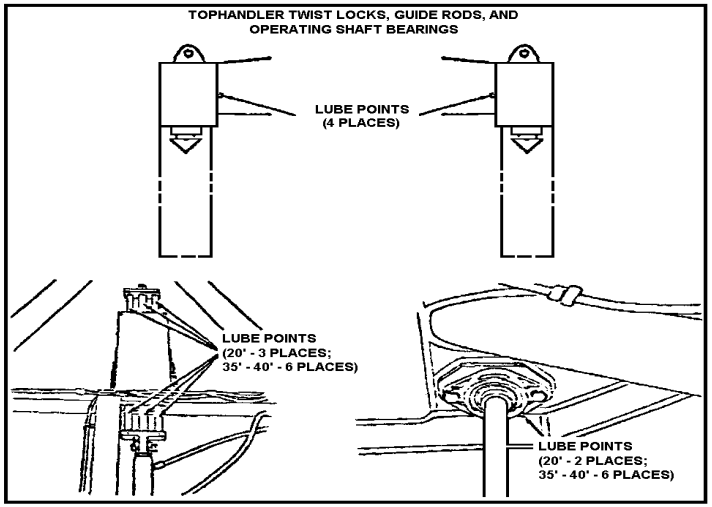


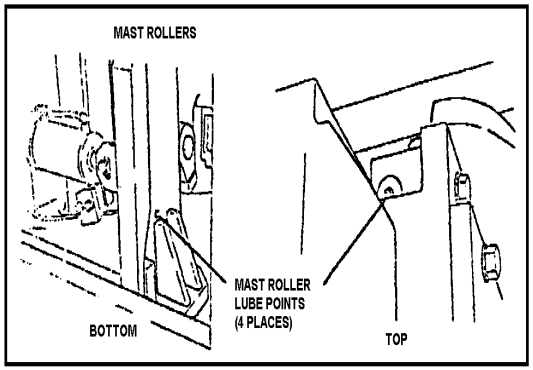


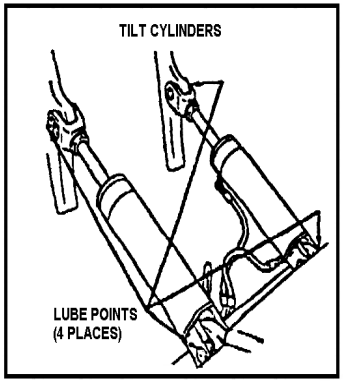


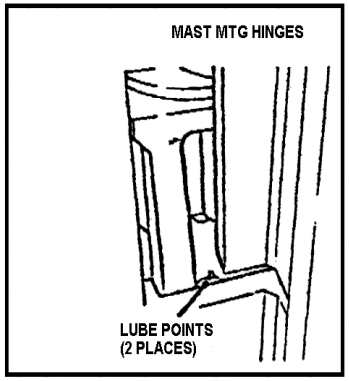


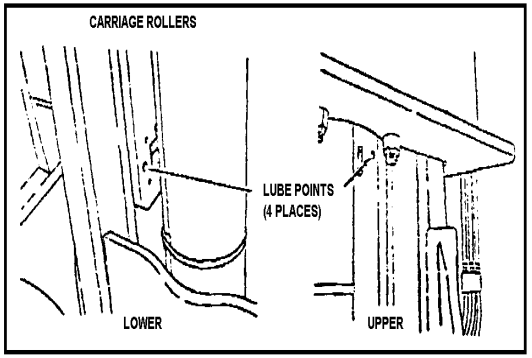
Transparency 4-137











Transparency 4-138

Summary

THE STUDENT SHOULD BE FAMILIAR WITH HOW TO CORRECTLY FILL OUT DA FORM 2404 AND TO RECORD DEFICIENCIES.

Objective

AFTER THE COMPLETION OF THIS LESSON, THE STUDENT WILL LEARN HOW TO START, DRIVE, PARK, AND STOP THE 50,000-POUND RTCH.

Transparency 4-140

BEFORE STARTING PROCEDURES

Transparency 4-141

- **Do all before operation preventive maintenance checks and services.**

- **Turn main disconnect switch to the ON position. Never turn main disconnect switch OFF while engine is running.**

- **Turn power switch to ON position.**

- **Ensure the following indicator lights are on:**

  - **High fuel.**
  - **No coolant flow.**
  - **Supplemental steering.**
  - **Low pressure brake.**
  - **Parking brake.**
  - **Alternator.**

- **Press down the test switch to ensure all indicator lights come on. If indicator lights do not come on, fuse or bulb may be blown.**

Transparency 4-143



STARTING PROCEDURES

Transparency 4-144

- **Ensure parking brake is “ENGAGED.”**
- **Ensure steering column is unlocked and lowered to desired position.**
- **Ensure transmission range selector is in “NEUTRAL.”**
- **Press down accelerator pedal 25 percent and hold before trying to start.**

Transparency 4-145

- **Turn switch to "START" position and release when engine starts and release accelerator pedal. If engine does not start after 30 seconds, let starter cool for 2 minutes, then try again.**

- **Let engine run at idle for 5 minutes. Do not engage hydraulic controls. Oil pressure gauge should read in green range.**

- **Check engine oil level for proper reading.**

- **Check transmission oil level for proper reading.**

Transparency 4-146

- **Check right hand instrument panel for proper reading.**

- **Check left hand instrument panel for proper reading.**

- **Ensure lights are off except the fuel high and park brake indicators.**

NOTE: Turn on all lights.

Transparency 4-147

DRIVING PROCEDURES

Transparency 4-148

- **Controls - check for proper operations.**
- **Right brake pedal - press and hold.**
- **Parking brake - “PUSH” to release.**

NOTE: Horn will sound if parking brake is engaged while machine is in gear.

Transparency 4-149



- **Transmission range selector - Move to desired direction of travel.**

NOTE: Rotate range selector to change gears for more speed.

- **Right brake pedal - release.**

- **Accelerator - “PRESS” to move vehicle.**

NOTE: Check the instrument panel while operating vehicle.

Transparency 4-150

PARKING PROCEDURES

Transparency 4-151

- **Accelerator - “RELEASE”.**
- **Right brake pedal - Press to stop vehicle.**
- **Transmission range selector - Move to neutral.**
- **Parking brake - “ENGAGED”.**
- **Forks/Tophandler - Slowly lower to lowest position.**

NOTE: Turn off all lights.

Transparency 4-152

STOPPING ENGINE PROCEDURES

Transparency 4-153

- **Engine:**
  - **Operate at half speed for 5 minutes.**
  - **Operate at low idle for 30 seconds.**

- **Power Switch:**
  - **Turn off.**
  - **Remove key.**

- **Steering Column:**
  - **Hold steering wheel.**
  - **Pull out and hold COLUMN RELEASE lever.**
  - **Slowly move steering column as far forward as it will go.**

Transparency 4-154

- **Steering Column Lock:**
  - **LOCK.**
  - **Remove steering column key.**

- **Main Disconnect:**
  - **Turn off.**
  - **When parking overnight or for long periods of time, remove key.**

- **Wheels - Use blocks if parked on a slope.**

Transparency 4-155

Summary

THE STUDENT SHOULD BE FAMILIAR ON HOW TO PERFORM PMCS BEFORE STARTING THE 50,000-POUND RTCH AND ALSO HOW TO CORRECTLY START, DRIVE, PARK, AND STOP THE RTCH.

Objective

AFTER THE COMPLETION OF THIS LESSON, THE STUDENT WILL BE ABLE TO CONNECT/ DISCONNECT THE TOPHANDLER TO/FROM THE 50,000-POUND RTCH.

Transparency 5-1

- **Attaching Tophandler:**
  - **Approach tophandler slowly, approach must be direct and straight.**
  - **Insert forks into opening of tophandler.**
  - **Inch forward until forks are fully inserted into tophandler.**
  - **Shut down engine.**
  - **Install and secure both safety chains.**
  - **Hook up electrical connector.**
  - **Connect both hydraulic connectors.**

Transparency 5-2

- **Disconnecting Tophandler:**
  - **Shut down engine.**
  - **Disconnect both hydraulic connectors.**
  - **Disconnect electrical connector.**
  - **Remove both safety chains.**
  - **Start engine.**
  - **Back slowly and directly away from tophandler until forks are cleared.**

Transparency 5-3

Summary

THE STUDENT SHOULD BE FAMILIAR ON HOW TO ATTACH AND DISCONNECT THE TOPHANDLER TO/FROM THE 50,000-POUND RTCH.

Transparency 5-4

Objective

AFTER THE COMPLETION OF THIS LESSON, THE STUDENT WILL BE ABLE TO LIFT A CONTAINER AND DRIVE THE 50,000-POUND RTCH WITH A CONTAINER ATTACHED.

Transparency 6-1

- **Lifting Containers:**
  - **Center and level tophandler.**
  - **Position front of vehicle to broadside of container.**
  - **Position locks of tophandler over corners of container.**
  - **Lower locks into fittings.**
  - **Ensure both “ready-to-lock” lights come on.**

Transparency 6-2

- **Lift container to minimum traveling height:**
  - **18 to 22 inches mimimum carrying height.**
  - **Tilt back to stabilize load.**

- **Center load for carrying.**

Transparency 6-3

Summary



THE STUDENT SHOULD BE FAMILIAR ON HOW TO LIFT A CONTAINER AND DRIVE THE 50,000-POUND RTCH WITH A CONTAINER ATTACHED.

Transparency 6-4

Objective

AFTER THE COMPLETION OF THIS LESSON, THE STUDENT WILL BE ABLE TO CORRECTLY OFF-LOAD AND STACK CONTAINERS.

Transparency 6-5

- **Off-Loading Containers:**
  - **Center and level tophandler.**
  - **Stop 3 to 4 feet from other containers.**
  - **Raise to maximum height and level tophandler.**
  - **Position locks of tophandler over corners of container.**
  - **Lower locks into fittings.**
  - **Ensure both “ready-to-lock” lights come on.**

Transparency 6-6

- **Lock tophandler to container.**
- **Lift container to maximum height.**
- **Tilt back to stabilize load.**
- **Back away 3 to 4 feet from other containers.**
- **Lower container to minimum carrying height (which is 18 to 22 inches).**

Transparency 6-7

- **Stacking Containers:**
  - **Center and level container.**
  - **Tilt back to stabilize load.**
  - **Align containers using ground guide.**
  - **Stop 3 to 4 feet from other containers.**
  - **Raise to maximum height.**
  - **Move forward over other containers.**

Transparency 6-8

- **Lower container squarely over corner of other containers within 3 inches.**
- **Make any adjustments.**
- **Set down container on other container.**
- **Unlock tophandler and raise to clear container.**
- **Tilt back to clear tophandler from container.**
- **Back away from container and lower.**

Transparency 6-9

Summary



THE STUDENT SHOULD BE FAMILIAR ON HOW TO OFF-LOAD AND STACK CONTAINERS.

Transparency 6-10

Objective

AFTER THE COMPLETION OF THIS LESSON, THE STUDENT WILL KNOW THE ESTABLISHED HAZCOM STANDARDS.

Transparency 7-1



• **The federal government is working to reduce the risk of injury or illness caused by hazardous chemicals in the work place. Accomplishing this goal requires information and communication. Everyone needs to know about the hazardous chemicals they work with, whether the material poses a risk to safety or health, and how to reduce any such risks.**

Transparency 7-2

- **Show and discuss the following HAZCOM tapes:**
  - **Introduction to HAZCOM.**
  - **Physical Hazards and Health Hazards.**
  - **Main Routes of Exposure.**
  - **Physical Hazards.**
  - **Health Hazards.**
  - **Reproductive Hazards.**
  - **Methods of Controlling Chemical Hazards.**

Transparency 7-3

Summary



THE STUDENT SHOULD BE FAMILIAR WITH ESTABLISHED HAZCOM STANDARDS.

Transparency 7-4

APPENDIX B

FORCE PROTECTION ANNEX

1. Hard hats, ear plugs, safety boots, and work gloves will be worn at all times.
2. No horse playing or running in motor pool or training site.
3. Always know your work area (such as building, fire hydrants, and so on).
4. Never smoke while working around or operating vehicle.
5. Never wear loose clothing or jewelry while working on or operating a vehicle.
6. Never stand under forks or tophandler except during PMCS.
7. No jumping off vehicle.
8. Keep vehicle clean of grease, fuel, and oil rags (for example, trash in operator's cab).
9. Release radiator cap slowly when checking coolant to keep from getting burned by scalding fluid.
10. Install shipping link when working in pivot/articulation area or shipment.
11. Release hydraulic pressure before doing any work on hydraulic system. (Take cap off slowly to release pressure.)
12. Make sure all safety guards and covers are in place before operating vehicle, unless necessary maintenance purposes.
13. The rollover protective structure will not protect you during a rollover if it is damaged.
14. Keep all personnel clear of work area.
15. Vehicle is not made for assistant operator (such as riding on catwalk).
16. Place range selector in neutral and apply parking brake before stopping.
17. Always test mast controls before beginning operation.
18. Never move vehicle without proper brake oil pressure.
19. **WARNING** – Carbon Monoxide (exhaust fumes) can kill you. ALWAYS operate vehicle with the windows open.
20. Always wear your **SEAT BELT.**

GLOSSARY

AR	Army regulation
AAR	after action report
BII	basic issue items
CFR	code of federal regulation
cm	centimeters
Co.	company
D.C.	District of Columbia
DA	Department of the Army
DD	Department of Defense
EOCCT	end of course comprehensive test
F	Fahrenheit
FM	field manual
FT	feet/foot
HAZCOM	hazard communication
HQ	headquarters
IAW	in accordance with
ID	identification
ISO	international standards organization
JLOTS	joint logistics-over-the-shore
KG	kilogram(s)
L	left
LBS	pounds
LO	lubrication order
M	meter(s)
MAX	maximum
METT-T	mission, enemy, terrain, troops, and time available
MILVAN	military-owned demountable container
min	minute(s)
mph	miles per hour

N	neutral
NC	North Carolina
No.	number
OF	optional form
OSHA	Occupational Safety and Health Administration
PMCS	preventive maintenance checks and services
R	right
ROPS	rollover protective structure
RTCH	rough-terrain container handler
SM	soldier's manual
SOP	standing operating procedures
SSN	social security number
STP	soldier training publication
TC	training circular
TM	technical manual
TRADOC	United States Army Training and Doctrine Command
TSP	training support package
ULLS	Unit Level Logistics System
US	United States (of America)
USACASCOM	United States Army Combined Arms Support Command
USATALS	United States Army Transportation and Aviation Logistics Schools
w	with
w/o	without

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By Order of the Secretary of the Army:

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