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APPENDIX C  
ITEM WRITERS' GUIDE FOR  
TRUCK DRIVING:  
A PRELIMINARY OUTLINE

- Prepared by -

Thomas L. McDole  
Wallace G. Berger

HIGHWAY SAFETY RESEARCH INSTITUTE  
The University of Michigan  
Ann Arbor, Michigan 48105

- Prepared for -

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A Compendium of Tasks Associated With  
Operating and Maintaining Straight  
Trucks Over 24,000# GVW, School and  
Commercial busses and Combination Vehicles

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## INTRODUCTION

This "Item Writers' Guide for Truck Driving" was developed to assist the authors in the identification of those aspects of truck driving which appear to be different from the operation of smaller trucks and passenger cars. It was subsequently used to develop candidate knowledge test items for licensing purposes for the item pools being developed by HSRI for the National Highway Traffic safety Administration under contract FH-11-7616.

An extensive search of the available literature revealed that not much has been written about truck driving. That material which is available speaks about truck driving in general terms or spells out detail rules and regulations, but says little or nothing about the tasks required in day-to-day operation. Thus it became apparent that a source document was necessary which detailed the procedures associated with a large number of truck driving tasks.

Industry representatives and educators in the field of truck driving were interviewed to obtain much of the material incorporated in the document. In addition, material from state driver licensing handbooks and license tests reflecting trucker tasks was incorporated. The American Trucking Association's Fleet Safety Service Manual proved to be a reliable source for information on the general rules and regulations governing truck driving. The Bureau of Motor Carrier Safety's Rules and Regulations were reviewed and incorporated where possible. The Uniform Vehicle Code was used as a basis for the many legal

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regulations reflected as "tasks" in this trucker task description.

In reading the Truck Driving Guide, several points should be kept in mind:

1. The guide lists only those tasks associated with safe and efficient operation of a truck on the road.
2. Those tasks which are similiar to or identical with passenger car operation, as described in the HumRRO Driver Education Task Analysis, were not repeated here-- Thorough knowledge of driving and maintaining passenger cars is assumed.
3. The Guide, as reproduced here in working-paper form, represents only a beginning in the development of a comprehensive truck driving task outline.

It is hoped that this guide will prove to be a useful source document for those developing truck driver training, courses of study and examinations and will provide the impetus for a more comprehensive study of the truck driving task.

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## 1. Pre-Operative Procedures

### 11.0 Pre-Trip Vehicle Inspection and Procedures

- 11.0.1 Prior to driving any vehicle, the driver is required to inspect it and satisfy himself that the following parts are in good working order as outlined below.
- \*Service brakes, including trailer connections
  - Parking (Hand) Brake
  - Steering mechanism
  - Lights and Reflectors
  - Tires
  - Horn
  - Windshield Wipers
  - Mirrors
  - \*Coupling Devices
- 11.0.2 The inspection should be made by completely circling the vehicle.
- 11.0.3 When approaching vehicle, note general condition. Look for leakage of water, fuel, or lubricants under vehicle.
- 11.0.4 Under the hood check water and crankcase oil levels. Check fan and compressor belts for cracks and excessive slack and wear. Inspect general condition of engine and accessories. Check also for fluid level in windshield washer, fill if needed.
- 11.0.5 Switch on headlights, turn signals, clearance and identification lights. Test headlights for both high and low beam.
- 11.0.6 Inspect and clean all headlights, turn signals, clearance and identification lights, emergency flashers, \*and reflectors. Check stop light by applying the trailer hand valve.
- 11.0.7 Inspect wheels, tires, lugs, and studs. Check for grease leaks in wheel hub area.
- 11.0.8 Inspect door latches, hinges, window glass, mirrors, and mirror brackets.
- 11.0.9 Make visual check of drive line and fuel tanks.
- 11.0.10 \*Inspect tractor-trailer electrical light cord, air brake hoses, tubing and connections. Be sure all lines are properly secured.

\* Indicates that the entire statement or a portion thereof is applicable only to combination (license class A) vehicles.

- 11.0.11 \*Inspect hookup: fifth wheel jaws, fifth wheel jaw release lever, and check for space between top of fifth wheel and trailer plate.
- 11.0.12 \*Raise trailer landing gear assembly and/or supports to the highest position. Inspect landing gear assembly for defects, and secure handles and supports.
- 11.0.13 Inspect: mud flaps and spare tire, making sure they are in place and secured.
- 11.0.14 Check for: hydraulic jack, tow chain, fire extinguisher, three pot torches (and fusees) or emergency reflectors, three red warning flags, spare bulbs, spare fuses (where circuit breakers are not used).
- 11.0.15 Clean windshield, mirrors and windows if necessary.
- 11.0.16 Report all defects to the shop or garage in writing and have them corrected before departure.

Special Requirements for Inspecting Doubles.

- 11.0.17 \*Make the normal pre-trip inspection on the tractor and semi-trailer. Also check the converter gear (dolly) and second trailer.
- 11.0.18 \*Give special attention to the following items.
- 11.0.19 \*After hookup is completed, check air lines and valves between the two trailers. Valve positions must be as follows: Valves at rear of lead trailer - OPEN. Valves at front of second trailer - OPEN. Valves at rear of second trailer - CLOSED. Air tank valve on dolly - CLOSED.
- 11.0.20 \*Be sure air lines are properly hooked. Emergency lines at front of dolly to:
  1. Emergency gladhand at rear or lead trailer.
  2. Emergency gladhand at front of second trailer.
  3. Emergency line at rear of dolly.
- 11.0.21 \*Make same check of Service lines. Check brake operation to be sure that all brakes apply and release properly.
- 11.0.22 \*If spare tire is carried on dolly, check to see that it is properly secured.
- 11.0.23 \*Be sure that pintle-eye of dolly is properly in place in pintle-hook of lead trailer and that pintle-hook is properly latched.



- 11.0.24 \*Be sure that safety chains or cables required by State and Federal regulations are properly secured to points of attachment on lead trailer.
- 11.0.25 \*Be sure dolly light cords are firmly in sockets on both front and rear trailers.
- 11.0.26 \*Be sure that two chock-blocks are available on unit at all times.

## 12.0 After Entering Vehicle

- 12.0.1 Adjust the seat.
- 12.0.2 Adjust the mirrors.
- 12.0.3 Look for and secure loose objects.
- 12.0.4 Inspect the following equipment: emergency equipment, horns, windshield wipers, steering wheel action.
- 12.0.5 Check visibility and clearances.
- 12.0.6 Just prior to starting the enging - set the hand brake.
- 12.0.7 Check that doors are sealed and locked.

## 13.0 Starting Engine

### Starting the Gasoline Engine:

- 13.0.1 Be sure transmission is in neutral.
- 13.0.2 Pull choke part way out. In cold weather full choke may be needed. In warm weather little or no choking will be required. Do not use choke more than necessary to keep engine running smoothly.
- 13.0.3 Depress clutch pedal to relieve starting motor of the drag of the transmission.
- 13.0.4 Turn ignition on and operate starter. Do not operate starter continuously for more than 10 seconds. If engine does not start in that time, turn ignition off and wait several seconds before trying again.
- 13.0.5 When engine starts, watch gauges to be sure they register properly. Pay special attention to oil pressure.
- 13.0.6 Control engine with foot throttle until it begins to run fairly smoothly. Do not run engine any faster than necessary to keep it going. Push choke in as far as possible to do and still have engine run smoothly.
- 13.0.7 When engine will run without close attention, set hand throttle at fast idle and allow to warm up to about one-half to three-quarters of normal operating temperature before attempting to move unit.

### Starting the Diesel Engine:

- 13.0.8 If the engine is equipped with a "Stop" button, this must be pushed in firmly, or engine cannot be started.
- 13.0.9 The "switch-key" must always be turned "on" before starting the engine. This is necessary on engines with electric starters so that current will flow to the starting motor. It should be made a matter of driver habit on vehicles with air starters because the charging circuit is controlled by the key. If it is not turned "on" current will not go to the battery and the battery will be discharged.
- 13.0.10 Clutch pedal must be depressed to relieve starting motor of transmission drag.

- 13.0.11 Electric starting motor must not be operated continuously for more than 10 seconds at a time. If engine does not start, key should be turned off and another attempt should be made after 45-60 seconds.
- 13.0.12 Driver must be instructed in procedure for recharging air starter-reservoir.

Stopping the Diesel Engine:

- 13.0.13 Engine must be allowed to return to idling speed before it is stopped.
- 13.0.14 On engines so equipped, pull out "stop" button to stop engine. Only use the "Emergency Stop" button if the engine cannot be stopped by any other means. On some types of engines, turning the key to the "off" position also stops engine.
- 13.0.15 As a matter of driver habit, "switch key" should be turned off whenever engine is stopped. The key controls the charging circuit. If it is left on, the battery is likely to become discharged, and the discharge of current may cause voltage regulator points to stick so that the circuit will not charge.

## 14.0 After Starting Engine

- 14.0.1 When engine fires, driver must hold speed at fast idle until it smooths out and gradually reduce to normal idling speed as it warms up. Use choke and hand throttle to control speed.
- 14.0.2 Driver should check all gauges during warm-up with special attention to adequate oil pressure. If oil pressure does not register within 2-3 seconds, engine should be shut down and cause of the condition must be ascertained.
- 14.0.3 Engine must be warmed up, and air pressure for brakes must be at normal level before unit is moved - at least 60 psi.

### Checking the brakes.

- 14.0.4 Place tractor protection valve in "normal" position.
- 14.0.5 \*Apply and release trailer brakes using hand valve; exhausting air can be heard from rear of trailer when brakes are released.
- 14.0.6 \*If exhausting air is heard inside of tractor cab, air brake hoses are improperly connected.
- 14.0.7 \*Place tractor protection valve in "emergency" position. Trailer brakes will then apply automatically. Place tractor protection valve in "normal" position and pump brakes to reduce air pressure. When air pressure drops to 50 percent of maximum operating air pressure, low air pressure warning device will activate. (Light, buzzer, semifore flag). Continue pumping brakes to further reduce air pressure. When air pressure is reduced to between 45 and 20 pounds, tractor protection valve will activate automatically to emergency position, and apply the trailer brakes.
- 14.0.8 To further check for air leaks, shut off engine when air pressure gauge indicates maximum air pressure has been reached (between 100 and 120 psi). Watch air pressure gauge, with all brakes off, and there should be no air loss. Apply foot brake and hold. The application will use from 10 to 15 pounds. There should be very little drop thereafter. If air pressure drops rapidly, listen for and locate air leaks, correct any defects before leaving.
- 14.0.9 \*If the trailer brakes do not release with all levers in the tractor in the release position, this indicates that the air lines may be crossed.

14.0.10 Apply parking brake to be certain that it will hold the vehicle or combination on any grade on which it is operated.

14.0.11 Make sure parking and other brakes are released before moving.

Putting vehicle into motion - testing the hook-up.

14.0.12 \*Place transmission in reverse and partially engage clutch and speed up engine to make power unit go backward in short sharp jerk. This is know as "hitting the pin".

14.0.13 \*If power unit is equipped with trailer hand control valve, pull handle down to set trailer brakes, Place transmission in lowest forward gear (do not use underdrive on vehicle equipped with auxiliary transmission) and partially engage clutch and speed up engine to pull forward against locked trailer brakes.

14.0.14 \*If power unit is not equipped with trailer hand valve, place transmission in lowest forward gear (do not use underdrive on auxiliary transmission) and partially engage clutch to give unit light forward jerk.

Operating the tractor without a trailer

14.0.15 \*When driving a tractor without a trailer hooked to it, place the tractor protection valve in the emergency position.

## 15.0 Navigation and Trip Planning

### Planning:

- 15.1 Prepares maps and route cards.
  - 15.1.1 The driver, once he receives his orders for a particular run, should prepare his route.
  - 15.1.2 If he does not know his route, then he should look at maps (both standard road maps and special highway maps which give him special information such as weight limits, roadway width, obstruction clearances, and the like).
  - 15.1.3 Note the route on strip maps, and also make some notes on cards to which he can quickly refer.
  
- 15.2 Obtains route approval.
  - 15.2.1 Certain carriers are limited by their authority to operate on certain route. The driver should be aware that unless emergency circumstances arise he is not permitted to deviate from this particular route.
  - 15.2.2 If the carrier has authority to operate on irregular routes, then it will be necessary for the driver to obtain approval of his route from the dispatcher.
  
- 15.3 Prepares for urban driving.
  - 15.3.1 In preparing for urban driving the truck driver should obtain his delivery sheets and plan his route such that it takes him in the most direct manner to his various stops.
  
- 15.4 Prepares for long trip.
  - 15.4.1 In preparing for a long trip the truck driver should estimate the locations where he will have to stop for food, fuel, and rest.
  - 15.4.2 He should also note the varying weather conditions through which he might pass.
  
- 15.5 Prepares for driving on ice and snow.
  - 15.5.1 It may be necessary that he will have to take chains, or have a different type of tires placed on his vehicle for driving through conditions such as ice or snow.

## 16.0 Navigation

### 16.1 Location and route awareness.

16.1.1 The truck driver should maintain an awareness of where he is in his route; through prior planning and looking for certain landmarks.

16.1.2 When in unfamiliar territory, route awareness will reduce the number of hours that he must spend on the road and reduce possible traffic conflicts.

### 16.2 Proposed route changes.

16.2.1 The terminal should be notified as soon as possible of any route changes that are made by the driver.



## 2. Basic Knowledge

### 21.0 Shifting gears

#### 21.1 Standard

- 21.1.1 When starting a truck equipped with two-speed axle, put selector button in low range position.
- 21.1.2 \*Release tractor emergency brake, then trailer brakes as clutch is being released.
- 21.1.3 Use double clutching unless you have a synchromesh transmission.
  - Push down on clutch pedal and release accelerator. Disengage clutch slightly ahead of releasing accelerator.
  - While engine speed is dropping, move gearshift lever to neutral.
  - Release clutch pedal to engage clutch.
  - Quickly disengage clutch by pushing down pedal and move gearshift lever to next gear.
  - Release clutch pedal and speed engine up at the same time.
- 21.1.4 When shifting up through the gears (main transmission); sufficient speed must be built up to avoid lugging engine in that gear and speed must be sufficient so that engine will not be lugged when the next highest gear is reached. With a loaded unit, engine must be brought close to maximum speed in each gear before shifting into next higher gear.
- 21.1.5 Continue shifting up through gears until permissible road speed is reached.

#### 21.2 Automatic

#### 21.3 Downshifting when necessary

- 21.3.1 The driver should anticipate conditions requiring downshifting and not wait until the engine starts to lug.
- 21.3.2 The driver should begin downshifting at top of downgrade so as not to burn out the brakes. The driver should downshift near or before the beginning of an upgrade. Follow double clutch procedure as previously outlined except: the driver must accelerate the engine after the clutch is released and the gearshift is in neutral.

21.4      Difficulty Shifting

- 21.4.1    The driver should not risk clashing gears by attempting to force transmission into next gear. If transmission cannot be shifted smoothly due to improper timing in double-clutching, release clutch pedal and speed up engine again then push down the clutch and try again. If transmission cannot be shifted after 2 or 3 tries stop in a safe place and start over.

## 22.0 Lane usage

### 22.1 General

22.1.1 Drivers should check local city ordinances on lane use. On expressways trucks may be restricted to the right lane. Trucks are either required to stay in that particular lane for the duration of the time they are on that stretch of highway or they are requested to stay in that particular lane unless it becomes necessary for them to pass and they can do so safely and without blocking other traffic.

22.1.2 Trucks normally have less lane margin since they are closer to the legal limit in width than are passenger \*cars. Therefore the truck driver must be extra careful to make sure that his vehicle is tracking at all times.

### 22.2 Multi Lane

22.2.1 Drivers should be careful of getting caught in an exit lane when staying on right. On multi lane roads, trucks should generally stay in the right lane except to pass or make left turn.

### 22.3 Special Truck Lanes

22.3.1 See section 44.1, Negotiating Hills, Upgrades.

## 23.0 Following

### 23.1 Following distance.

- 23.1.1 The truck drivers should maintain a following distance equal in time to one second for each 10 feet of \*vehicle length. For a semi tractor-trailer combination 50 feet in length, this would mean that the driver should maintain five seconds of following time. This is determined by noting some marker ahead that the lead vehicle is opposite and then counting, one thousand-one, one thousand-two, one thousand-three, etc. until getting to the marker.
- 23.1.2 It is safer to follow a pack of vehicles at a safe distance than to lead a pack of vehicles. The leader of a pack of vehicles must observe and do the seeing for all of the vehicle operators in that particular pack. When following, there is less of a visual responsibility, since some clues can be picked up from the vehicle ahead.
- 23.1.3 Always leave enough space between the vehicle ahead to allow faster traffic to pass and get back into the right lane.

### 23.2 Speed adjustments.

- 23.2.1 Begin to slow down if the driver notices the lead vehicle taking evasive action.
- 23.2.3 The driver can pass slower vehicles when he can do so safely. Should he overtake another vehicle with the intention of passing it, but find that he cannot immediately do so for any reason, DROP BACK ENOUGH SO THAT OTHER DRIVERS, PARTICULARLY PASSENGER CAR DRIVERS CAN PASS HIM AND GET BACK INTO THE RIGHT LANE.
- 23.2.3 Check speed limit signs for legal speed limits for trucks.

## 24.0 Hauling and towing loads

### 24.1 General

24.1.1 The truck driver is required to make certain that special identification is placed on the vehicle, such as "wide load" signs or the placards for special cargo such as explosives or flammable liquids or compressed gases are prominently displayed on the vehicle.

24.1.2 \*Any coupling device must not permit the trailer to swing dangerously from side to side.

24.1.3 Check the condition of the freight and note such on handling bill.

24.1.4 Maximum legal weights and lengths of vehicles and loads, are governed by state regulations.

### 24.2 Loading the vehicle or trailer

24.2.1 No driver shall drive a vehicle which is improperly loaded, or in which the load is so improperly distributed or secured as to be likely to cause an accident.

24.2.2 No part of the load shall interfere with the driver's safe operation of the vehicle, with access to emergency equipment, or with ready exit from the cab.

24.2.3 \*When loading or unloading, shift trailer duals all the way back to prevent tipping due to overloading the overhang.

24.2.4 If the vehicle has been loaded by someone other than the driver, the driver should then make a visual inspection of the entire load to determine its placement, weight, general size, and determine how it is secured.

24.2.5 Local weight limits should be checked against the estimated gross vehicle weight before the vehicle is loaded.

24.2.6 The driver should supervise the loading such that he will not be over-weight on various axles, and such that he will have an even load distribution so that the vehicle will not break down nor will the load cause him problems during transit.

24.2.7 No open-flame heater used in loading or unloading the commodity being transported shall be in operation while the vehicle is in motion.

- 24.2.8 \*The center of gravity is the center of the semi trailer body (or midway between the back of the cab and the tailgate in a straight truck). (May depend somewhat on tire and axle configuration).
- In straight trucks place heavy part of load near rear axle.
  - Keep load low and symmetrically distributed - make sure load will not tip the semitrailer when it is on its landing wheels.
  - In all cases in loading hazardous materials precautions against cigarette smoking and open flames must be taken, as these can cause the cargo to ignite.
  - Special loading precautions for other types of hazardous materials must likewise be followed, and are generally prescribed either by the bureau of motor carrier safety or by the rules and regulations of the company transporting the material.

24.3 Securing the load

24.3.1 The load should be secured by tying or blocking, or otherwise fastened to the vehicle such that it will not shift.

24.3.2 Check load such that none can leak or spill onto the road.

24.3.3 Once the unit is completely loaded, the driver should then close, lock and seal the load

24.4 Hauling the load in the vehicle (van type, dump, etc. body).

24.4.1 Care must be exercised in hauling since rapid stops will cause a load to shift forward.

24.4.2 Luggage on a bus must be secured in overhead racks or in the baggage compartment.

24.5 Hauling the load on top of the vehicle (car or flat bed, stake, etc. body).

24.5.1 If the load is secured by means of rapping chains and/or toggle clamps, these should be checked to make sure that they are not cracked and that they are in good condition.

24.5.2 There must be sufficient number of chains and/or toggle clamps holding the load in place.

24.5.3 If the load is covered with a tarpaulin or other type of cover, the driver should make sure that this is

securely and firmly fastened down such that it will not flap in the breeze or tear or blow off.

24.5.4 Projecting loads must have a warning flag or lantern placed on the end of the load.

24.6 Hooking up and uncoupling

Hooking up

24.6.1 \*Fifth wheel jaws fully open.

24.6.2 \*Tilt fifth wheel back.

24.6.3 \*Block or brake semi trailer wheels.

24.6.4 \*Check brake hoses and light cords to see if clear.

24.6.5 \*Check trailer height. The kingpin should be in line with the fifth wheel jaws.

24.6.6 \*Connect air hose and apply trailer brakes, then check trailer brakes and block wheels as extra precaution. Back tractor under trailer (slowly and straight) until contact is made and jaws lock around kingpin.

24.6.7 \*Apply tractor parking brake and check tractor air hoses (if not already done) and electrical light cord to front of trailer. (see pre-trip inspection)

24.6.8 \*Place tractor protection valve in normal position to supply air to trailer brake system. Tractor air gauge will show a drop in air pressure of at least 10 pounds.

24.6.9 \*Be certain air pressure is brought back up to about 90 pounds.

24.6.10 \*Place tractor in lowest forward gear and give a slight pull forward.

24.6.11 \*Inspect hook-up making certain:  
- tractor fifth wheel release lever is in locked position.  
- no gap exists between top of tractor fifth wheel and trailer kingpin plate.  
- a visual check from rear of fifth wheel to assure tractor fifth wheel locking jaws are locked around trailer kingpin.

24.6.12 \*Remove trailer blocks and raise landing gear assembly and/or supports to highest position. Secure handles and/or supports.

- 24.6.13 \*Driver operating tow bar operation will be required to make certain his tow bar meets the regulations of various states, also that the extra lights necessary on back of towed vehicle are in place, connected and running.

Hooking up doubles

- 24.6.14 \*Hook up tractor and first semitrailer in the manner prescribed for a tractor-semitrailer combination.  
(Note: For safe handling on the road, the more heavily-loaded semitrailer should always be in first position.)
- 24.6.15 \*Pull the dolly into position in front of the second semitrailer. If distance is not too great, the driver may move dolly into position manually; if not, follow steps below:
- To hook up to dolly, bring tractor and first semitrailer into position so that pintle-hook of trailer is as close as possible to pintle-eye of dolly. Complete hook-up manually, lock pintle-hook and secure dolly support in raised position before moving equipment. If dolly is to be moved on the road, brakes, lights and safety chains must be hooked up.
  - Bring dolly into position as close as possible to second semitrailer. Lower dolly support, unhook dolly from first semitrailer and wheel it into position in front of second semitrailer in line with the kingpin.
- 24.6.16 \*After dolly is in position, back tractor and first semitrailer into position so that pintle-hook is lined up as closely as possible with pintle-eye of dolly. Hook-up of dolly to first semitrailer making sure that pintle-hook of first semitrailer is latched.  
(Note: Driver may be able to back dolly into position without unhooking it.) Be sure fifth wheel jaws of dolly are open. Secure dolly support in raised position.
- 24.6.17 \*Before attempting to hook up to second semitrailer, the brakes should be in the applied position until brake lines are connected and the system is charged.  
(Spring brakes)
- 24.6.18 \*The second semitrailer must be checked at both wheels to prevent movement, or air brake system must be charged to set brakes. (No spring brakes)
- 24.6.19 \*To set brakes on second semitrailer for hook-up, proceed as follows:
- Hook up "Emergency" brake line from first semitrailer to dolly and from dolly to "Emergency" line of second semitrailer.
  - Open "Emergency" line shutoff valve at rear of first semitrailer. Check to make sure air is flowing to the tank of the second semitrailer.



- When tank of second semitrailer is charged, close shutoff valve at rear of first semitrailer and break "Emergency" line at front of second semitrailer to set its brakes.
- When brakes are set to hold second semitrailer, be sure lines are in the clear, so they will not be damaged, before attempting to complete hookup.
- Release dolly brakes so dolly can be moved to complete the hookup.

24.6.20 \*After second semitrailer is secured, back combination of tractor, first semitrailer, and dolly under second semitrailer to accomplish hookup. Test coupling by gently pulling against pin of second semitrailer. Also, make a visual check at second semitrailer to be sure that dolly fifth-wheel jaws are completely around kingpin, that dolly fifth-wheel release lever is locked and that there is full contact between fifth-wheel and trailer plate.

24.6.21 \*Complete hookup by correctly connecting air lines and light cords between first semitrailer, the dolly, and second semitrailer. Be sure that all shutoffs on the air brake system are open, except those at the rear of second semitrailer.

#### Uncoupling

24.6.22 \*Have trailer and tractor in straight line.

24.6.23 \*Check surface conditions and lower landing gear on plank if necessary.

24.6.24 \*Block trailer wheels.

24.6.25 \*Unhook cables and hoses and make sure they are clear.

24.6.26 \*Release fifth-wheel locking device.

24.6.27 \*Slowly pull out from under trailer.

24.6.28 \*Disengage fifth-wheel.

24.6.29 \*Apply tractor parking brake and place tractor protection valve into emergency position.

24.6.30 \*Disconnect air hoses. The trailer brakes should come on and stay on. Disconnect the electrical cord also.

24.6.31 \*Secure air lines and light cord socket to dummy couplings.

24.6.32 \*Check front and rear trailer wheel blocks.

24.6.33 \*Release tractor parking brake and drive forward.

## Uncoupling Doubles

- 24.6.34 \*Lower landing gear of second semitrailer. It is recommended that wheels be blocked unless trailer is equipped with spring brakes.
- 24.6.35 \*Close air shutoffs at rear of first semitrailer, or on dolly (if equipped) and secure the lines. Hook glad-hands together to keep out dirt and water or fasten to "dummies", if available.
- 24.6.36 \*Release dolly fifth-wheel latch. Bleed dolly air tank if necessary to release brakes on dolly.
- 24.6.37 \*Slowly pull tractor, first semitrailer and dolly out from under second semitrailer. Remove dolly to storage area, or as otherwise required by local conditions.
- 24.6.38 \*When unhooking dolly, lower landing gear. Disconnect brake lines, light cord and safety chains from first semitrailer and secure them. Be sure air shutoffs at rear of first semitrailer are tightly closed.
- 24.6.39 \*Unless dolly is equipped with spring-brakes, dolly wheels should be blocked. Release pintle-hook of first semitrailer and slowly pull clear of dolly. Manually move dolly to final parked position if necessary.
- 24.6.40 \*Second semitrailer should not be dropped with dolly attached.

## 24.7 Towing trailers

- 24.7.1 \*The maximum number of units in combination is 2. i.e.: tractor and 2 trailers.
- 24.7.2 \*Check the state requirements on the maximum number of units permitted to be towed by a:
  - saddle mount
  - tow bar
- 24.7.3 Safety chains are required when using a ball type hitch or a eye and pintle to control the trailer if the coupling fails.
- 24.7.4 Check state regulations on towing requirements when using a cable.
- 24.7.5 \*Be mindful of the greater overall length of "doubles" equipment and make necessary allowances. This is

particularly important when passing slower traffic  
and when crossing intersections or railroad crossings.

- 24.7.6 \*Remember that a "doubles" combination has three points  
of articulation:
- At the tractor fifth-wheel.
  - At the pintle-hook and eye at the rear of the first  
trailer.
  - At the kingpin of the second trailer.

## 25.0 Carrying Passengers

### 25.1 Picking up and discharging passengers

- 25.1.1 It is prohibited in many places and generally discouraged to stop and pick up passengers or hitchhikers along the road.
- 25.1.2 No driver may transport a passenger on his truck without written permission from the management, except as follows:
- Employees assigned to a vehicle.
  - Persons being transported in an emergency.
  - Livestock attendants.
- 25.1.3 In the case of an emergency a report should be filed with the company indicating the circumstances for picking up a passenger. An entry must be made in the log book.
- 25.1.4 Except in an emergency, no person other than an authorized driver may drive any vehicle operated by his company.

### School and Commercial Buses

- 25.1.5 When picking up or discharging passengers the bus driver should activate his signal lights in accordance with state law, and slow and stop the vehicle.
- 25.1.6 In the event that the bus must stop alongside the road to pick up or discharge passengers, the driver should check to make sure that oncoming and following traffic will not present a problem.
- 25.1.7 Whenever possible the driver should pull well off the roadway so as not to present a hazard to other vehicle operators.
- 25.1.8 He should caution his passengers to wait until the vehicle has come to a complete standstill before they attempt to board or to alight.

### 25.2 Seating Passengers

- 25.2.1 The passengers should be seated in their seats before the vehicle is put into motion, and should remain there until it comes to a stop.
- 25.2.2 Students generally are prohibited from standing in the aisles of school buses.
- 25.2.3 All passengers must stand behind the line on the floor to permit the driver clear vision to the right.

- 25.2.4 The driver should see that all luggage is securely placed either under the seat or in overhead racks or in the appropriate luggage compartment such that sudden motions or stopping of the bus will not cause the packages or baggage to slide around and perhaps strike someone or himself.
- 25.2.5 The driver should wait until the passengers are completely across the road before continuing.
- 25.2.6 The driver should then look carefully in his mirrors--all of them--to see that no one is lingering either in front or behind the bus.
- 25.3 Discipline and control
- 25.3.1 Bus driver is responsible for discipline and control of the passengers (or students) while they are on his bus.

## 26.0 Direction Control

### 26.1 Steering general

- 26.1.1 In making a turn, the rear of the vehicle follows a shorter path than the front of the vehicle. This is called off-track.
- 26.1.2 The greater the distance between the front and rear wheels and the sharper the turn, the greater the off-track.
- 26.1.3 On the open highway the driver must be trained to keep the front of the vehicle toward the center of the road on a right curve so that the rear will not run off the road.
- 26.1.4 On a left curve, the front of the vehicle must be held toward the outside of the curve so that the rear will not cut short into a lane of opposing traffic.

### 26.2 Turning (See also section 48, Backing up)

- 26.2.1 Get into the proper lane well in advance.
- 26.2.2 Signal well in advance to alert overtaking and on-coming vehicles of intent to turn.
- 26.2.3 Check traffic conditions and turn only when way is clear.
- 26.2.4 Do not swing wide or cut short while turning.
- 26.2.5 Do not make a wide swing on the street from which you are turning so other vehicles can cut in.
- 26.2.6 At the ordinary right-angle urban intersection, it may be necessary to pull straight into an intersection for a distance before beginning to turn, so that the rear of the vehicle will follow a proper path without cutting too short.
- 26.2.7 Wait until there is ample time to complete the turn.
- 26.2.8 Before making a right turn:
  - The proper turn signal should be given well in advance of the turn.
  - The vehicle must be in the extreme right lane.
  - As the vehicle approaches the intersection, do not allow more than four feet distance between the right rear side of the vehicle and the curb.

- 26.2.9 \*As right turn is negotiated, use caution not to allow rear wheels of trailer to run up over curb.
- 26.2.10 \*If additional roadway is required to complete the turn, tractor should cross center line of road into which turn is being made after traffic has cleared.
- 26.2.11 \*The right rear of trailer must be watched as closely as possible during complete turn.
- 26.2.12 \*Turn tractor back to right lane immediately upon clearance or rear of trailer at corner.
- 26.2.13 Before making a left turn:
- The proper turn signal should be given well in advance of the turn.
  - If turn is being made from multiple lane roadway, vehicle should be in extreme left lane.
  - Do not allow more than four feet distance between left rear of vehicle and the edge of roadway (or center line if 2-way undivided road)
  - During the turn watch the left rear side of vehicle to be certain no other vehicles are alongside and also to be certain there is no danger of hitting a pedestrian, sign, etc.

## 27.0 Speed Control

### 27.1 Starting on a hill

- 27.1.1 \*Activate trailer brake hand valve to apply trailer brakes, otherwise set parking brakes.
- 27.1.2 Place transmission in lowest forward gear.
- 27.1.3 Then with right foot apply the accelerator.
- 27.1.4 Slowly release the brakes and engage the clutch simultaneously allowing the vehicle to proceed forward.
- 27.1.5 Increase engine rpm and forward motion sufficiently to shift into next higher gear without lugging engine.

### 27.2 Starting on snow or ice

- 27.2.1 For better traction on slippery streets start slowly and smoothly.
- 27.2.2 For better traction start in a higher gear than normal.

### 27.3 Accelerating - general (See also section 54, Skid Control)

- 27.3.1 Disengage clutch and place transmission in lowest \*forward gear. If vehicle is equipped with trailer hand control, pull it down to set trailer brakes to keep unit from rolling. If hand control is not present, leave tractor parking brake set. When starting, gradually release clutch and at the same time release hand control valve or parking brake as clutch engages. At the same time, engine must be speeded up gradually to prevent stalling and to move load. Continue to release clutch and speed up engine smoothly until clutch is fully engaged. When vehicle is in motion with clutch engaged, take left foot completely off clutch pedal until ready to shift gears or stop.
  - 27.3.2 Avoid downshifting, especially with heavy loads if it is safe to do so.
  - 27.3.3 Too much acceleration at slow speed in a high gear may cause the truck to lug and jerk.
- ### 27.4 Speed control - normal (See also section 21, Shifting Gears)
- 27.4.1 The driver should determine if there are special restrictions on his speed as a function of the type of cargo he is hauling.



- 27.4.2 Attempt to maintain a constant speed.
- 27.4.3 The driver should know the speed limit and drive accordingly.
- 27.4.4 Uses gears, engine braking power, throttle and brakes to control speed.
- 27.4.5 Adjust speed properly to road, weather, traffic conditions, legal limits.
- 27.4.6 When descending steep grades care must be taken to keep the engine speed under the governed speed of the vehicle. This is accomplished by shifting gears to match the engine speed range and the vehicle speed.
- 27.5 Speed control - slow speed
- 27.5.1 See section on road and weather conditions.
- 27.5.2 Slow speed should be avoided if possible as it invites rear end collision.
- 27.6 Coasting in neutral
- 27.6.1 Coasting in neutral is undesirable because there is a complete loss on control in terms of engine braking, which is critical on long downgrades, and the inability to rapidly get back into gear such that the driver will have the acceleration capability of the vehicle to aid in control.

## 28.0 Braking and Stopping

### 28.1 Technique and procedures

#### 28.1.1 Proper stops on dry road surfaces:

- Make sure that all wheels are on the same surface condition before braking, since with different surface conditions under different wheels can cause
- \* stopping, jackknifing and related problems.
- Driver should remember that an empty truck will slide quicker than a loaded truck.
- \*- Use hand valve (brake) only in emergencies or under hazardous road conditions.
- Apply steady pressure on foot brake while beginning to stop.
- Do not fan brakes as this wastes air pressure.
- Do not disengage clutch until the vehicle has slowed to almost the idling speed of the engine.
- Just before vehicle comes to a complete stop, brakes should be released slightly to avoid jerk and rebound and then applied again to hold vehicle while it is stopped.
- Brakes should be firmly applied while the vehicle is in stopped position.

28.1.2 See also section 44, Negotiating Hills, Downgrades.

### 28.2 Distances

28.2.1 Loaded trucks take longer to stop than empty trucks.

28.2.2 Most trucks take longer to stop than passenger cars.

28.2.3 Braking distance depends upon the load, speed, road, and brake conditions.

28.2.4 See section 23, Following.

28.3 Emergency (See also section 21, Shifting Gears, and section 64, On-Road Emergencies).

28.3.1 \*In emergencies or bad road conditions use semi trailer hand brake and then foot brake.

28.3.2 \*As control is established release hand brake and apply foot brake.

28.3.3 \*Hand and foot brakes may be used intermittently to align and control the units (to avoid jackknifing)

- 28.4      When driving backwards
- 28.4.1    See section 48, Backing Up.
- 28.5      Special stops required
- 28.5.1    See the Uniform Vehicle Code

## 29.0 Driver Perception and Communication

### Surveillance

#### 29.1 General

- 29.1.1 The truck driver should watch for signs of motion or impending motion in other vehicles. These signs include a driver sitting behind the wheel, someone getting into a car, exhaust smoke coming out of the tailpipe, wheels being turned as in steering or in moving forward.
- 29.1.2 The truck driver is able to see things beyond other cars but he cannot see beyond other trucks. Thus his visibility is somewhat restricted if he is in heavy truck traffic.
- 29.1.3 Clearances:
- Bridges, tunnels, alleys and similar obstructions demand special care on the part of the driver to avoid accidents and damage to equipment.
  - Road repairs, rough roads, ice, snow, floods, and empty equipment may cause difficulty where clearance is otherwise adequate.
  - Width of many bridges and tunnels will not permit two trucks or a truck and a car to meet safely. If there is any doubt, let the other driver go first.
  - Know your height. Watch posted clearances on bridges and underpasses. Where posted clearance exceeds the height of your unit by 6 inches or less, slow down to avoid bouncing into an obstruction on rough roads.
  - Watch for fire escapes, shutters, open windows or other overhead obstructions in alleys or near the curblines. Beware of low tree limbs.
- 29.1.4 \*The truck driver of a box rig cannot see directly behind him for a distance of 50 or 60 feet beyond the end of his trailer.
- 29.1.5 \*A second serious blind spot is on the right hand side of the rig approximately even with the rearview mirror and extending back to some point about a third of the way back on the trailer.
- 29.1.6 \*The driver may weave the rig slightly in order to see if someone is occupying these blind spots.
- 29.1.7 Mirrors:
- The field of view of a mirror is more limited than the area which can be seen with the human eye.

- This means that an object close to the mirror is more likely to be out of sight than an object farther away.
- A right-side mirror will not give as large a field of view as the left-side mirror. Thus, objects on the right side of the vehicle are less likely to be seen.
- Convex mirrors have the property of making objects appear smaller and farther away than they actually are and the driver must learn to accurately judge distance when using this type of mirror or he must develop the habit of checking between the convex mirrors and the cab mirrors which are of plain glass to determine the actual position of objects viewed.
- \*- A mirror reflects only those objects which are behind it. This must be borne in mind when operating combination units. When the power and towed units are not in approximately a straight line, one mirror will fail to show objects in relation to the vehicle and the other mirror will show only the side of the towed vehicle. When this happens, the driver must look to the rear to see if the way is clear.
- Mirrors should be adjusted to show the area alongside the unit. Mirrors are properly adjusted when rear corners of body are just visible in inside lower corners of mirrors, either when sitting in normal position behind steering wheel or by inclining head slightly.

## 29.2 Traffic

- 29.2.1 In relation to traffic the driver can see over the crest of hills slightly sooner than can other drivers and hence may begin to pull out to pass more quickly since he does have a slight edge in visibility.
- 29.2.2 Because of the trucks height the driver can see situations developing ahead and hence begin to plan evasive action or other maneuvers sooner than can passenger car operators.

29.2.3 See also section 23, Following.

## 29.3 Traffic controls

- 29.3.1 See the Uniform Vehicle Code

## 29.4 Vehicle interior and operating conditions

- 29.4.1 Driver should periodically monitor his vehicle while it is in operation, taking special note of the various gauges and instruments to determine that the vehicle is functioning properly.

29.4.2 Of particular importance is the air pressure gauge and low air warning device. Both should show normal operation at all times.

29.5 Observes for Curves

29.5.1 See section 29.2, Traffic.

## 31.0 Signals and Signaling

- 31.0.1 Drivers should not use turn signals as a way of acquiring the right-of-way to a new lane, they must wait until there is ample time to make the lane change without interfering with other traffic.
- 31.0.2 The use of lights as a signaling device i.e.: blinking lights when it is okay to pass, etc., is not permitted as it is a dangerous practice.
- 31.0.3 See also section 26.2, Turning.

## 4. Maneuvers

### 41.0 Entering and leaving traffic

#### 41.1 Entering traffic

41.1.1 When pulling out onto the highway a group of trucks should allow for time intervals between each one to quickly establish the proper spacing.

#### 41.2 Leaving traffic

41.2.1 See the Uniform Vehicle Code

#### 41.3 Entering and leaving off street areas (See also: Freeway driving, on and off ramps)

41.3.1 See the Uniform Vehicle Code

41.3.2 See also section 50.0, Driving in Off-Street Areas



## 42.0 Negotiating intersections

### 42.1 Approaching intersections

- 42.1.1 All intersections must be approached at a safe and prudent speed.
- 42.1.2 Adjust speed to permit stopping if necessary.
- 42.1.3 Check for cross traffic regardless of traffic controls.
- 42.1.4 Check the Uniform Vehicle Code and local regulations for the interpretation of traffic control devices i.e., signs, signals, markings, etc.
- 42.1.5 Because of the length of the vehicle it is sometimes necessary to swing to make a turn or to pull part way into the intersection and then make the turn. This is particularly a problem on right turns.
- 42.1.6 When approaching a green traffic light be alert and prepared to make a smooth stop.
- 42.1.7 The driver may attempt to roll with the traffic light to avoid stopping and slow starts i.e.: to time the traffic light so that he will not have to come to a complete stop. However he should not impede other traffic or cause a safety problem when performing this maneuver.

### 42.2 Traversing intersections

- 42.2.1 If the driver stops he should not begin moving again until he has given the right-of-way to pedestrians and to approaching traffic.
- 42.2.2 Do not insist on the right-of-way at any intersection even though you may have the legal right-of-way.
- 42.2.3 The driver should remember that it will take him longer to traverse an intersection than shorter vehicles.
- 42.2.4 See the Uniform Vehicle Code for legal regulations in the intersection.
- 42.2.5 See also section 26.2, Turning.

## 43.0 Negotiating curves

### 43.1 Approaching curves

43.1.1 To avoid shifting the load the driver must know the composition of the load he is carrying and judge the approximate center of gravity such that he can determine safe speeds for negotiating curves.

43.1.2 Curves and turns must always be negotiated at reduced speed consistent with the available sight distance, the sharpness of the curve or turn and other prevailing road and traffic conditions. Reduce speed before entering any curve or turn.

43.1.3 See also section 26, Directional Control.

### 43.2 Driving through curves

43.2.1 \*In making turns the truck driver must be aware of the amount of overhang and hence the amount of swing of the rear of the trailer.

43.2.2 \*When the rear axles are moved forward it is easier to maneuver the truck. However, there is more overhang on the trailer and hence the back of the trailer will swing wider on curves.

43.2.3 \*When the axles are all the way back the truck is harder to maneuver, but there is less overhang on the trailer.

43.2.4 \*The driver must be in a position to correct for the wind factor on his rig when going around a curve.

43.2.5 \*When negotiating curves on the open highway, be sure to stay entirely within the lane. Do not swing wide or cut across lanes. To do so, puts the vehicle into the opposing traffic lane and creates a hazard.

43.2.6 \*Extreme care in steering must be taken when driving doubles: no braking in curves; the more heavily loaded trailer should be first in position. Any braking may cause the second trailer to dip dangerously and possibly turn over.

### 43.3 Leaving Curves

43.3.1 See section 27, Speed Control

## 44.0 Negotiating hills

### 44.1 Upgrades

- 44.1.1 Keep well to the right when going up hills, let others pass before you begin you begin up the hill.
- 44.1.2 On a long upgrade a slow moving truck may pull off and allow traffic that is backed up behind it to pass if there is sufficient shoulder width and the shoulder is solid.
- 44.1.3 If it is available in the highway design, the truck driver should pull over to a special truck lane which has been created for him.
- 44.1.4 Leave room between the vehicle ahead so that other vehicles can pass or pull in between.

### 44.2 Downgrades

- 44.2.1 Drivers should use the same gear in descending a long grade as they would use in climbing it.
- 44.2.2 Drivers must use engine speed as the principal means of controlling speed on long grades and in mountainous terrain.
- 44.2.3 The driver must not ride his brakes all the way down the hill, as this will create heat causing the brakes to fade rapidly, also there will be a loss of air pressure.
- 44.2.4 To reduce his speed, the driver should reduce it by means of braking to below his desired speed, then releasing the brakes.
- 44.2.5 \*The driver must also attempt to keep the unit straight, as going downhill with the application of the various tractor and trailer brakes can cause the unit to slide and jackknife.
- 44.2.6 \*The driver may accelerate down the hill and attempt to gain additional momentum so that when reaching the bottom of the hill and beginning the next upgrade the truck will have some momentum.

45.0 Lane changing

45.1 Prepares to change

45.1.1 See the Uniform Vehicle Code for signaling regulations.

45.1.2 Check blindspots and intended position (new lane).

45.1.3 See also section 46, Passing.

45.2 Completes change

45.2.1 Changes lanes one at a time, when safe to do so.

45.2.2 \*Extreme smoothness is necessary in steering under all conditions. Any jerking or whipping of the steering wheel when changing lanes is greatly magnified at the second trailer. This will cause the second trailer to whip dangerously and may cause it to overturn in extreme cases.

46.0 Passing

46.1 Prepares to pass

46.1.1 Do not attempt to pass unless there is sufficient difference between your speed and the speed of the slower vehicle so that you can pass without undue delay.

46.2 Changes lanes

46.2.1 See section 45, Lane Changing.

46.3 Passes vehicle

46.3.1 See the Uniform Vehicle Code for signaling regulations.

46.3.2 Realize that other truck drivers may not be able to hear the horn.

46.3.3 May flick headlights from low to high beam at night.

46.3.4 Caution should be taken as large vehicles require more distance for overtaking and passing.

46.3.5 Never pull to the left if approaching on-coming vehicles.

46.3.6 Pass one vehicle at a time.

46.4 Returns to driving lane

46.4.1 Pass and return to proper lane without interfering with other traffic.

46.4.2 See also section 45, Lane Changing.

## 47.0 Turnabouts

### 47.1 U-turns

47.1.1 Since most roads that are wide enough to permit U-turns for a long truck are relatively high volume, high speed roads, the execution of a U-turn is not recommended.

### 47.2 Y-turns

47.2.1 \*Not recommended for combination vehicles.

47.2.1 Permissible for straight vehicles. Usually the smaller vehicles can accomplish this maneuver more easily than the larger ones.

### 47.3 Other turnabouts

47.3.1 Going around the block (3 right turns, one left) is the best alternative to either the U or Y turn as you are not blocking traffic.

47.3.2 See also section 48, Backing up.

## 48.0 Backing up

### 48.1 Avoids unless essential

48.1.1 Truck drivers should generally avoid backing up unless it is absolutely necessary.

48.1.2 \*Drivers should avoid backing double bottom rigs.

### 48.2 Prepares to back up

48.2.1 Driver should watch for overhead wires, the sides of buildings, telephone poles, tip-out windows on buildings, garbage cans, people, kids, and anything else that may be in the way before backing up.

48.2.2 If at all possible driver should use a helper who can stand behind the rig and not only direct him, but also look for other hazards such as cars, overhead wires, etc.

48.2.3 Be sure helper has a clear view if he is directing you in backing up.

48.2.4 The driver should use his mirrors as an aid in backing up.

48.2.5 The driver should make sure that the van doors are closed and will not interfere when backing up.

48.2.6 Always try to back up to the left when possible.

48.2.7 See also section 29.1, Surveillance - general.

### 48.3 Backs up

48.3.1 The control of a single-unit truck while backing is the same as for a passenger car. The steering wheel is turned in the direction in which it is desired to move the back end of the vehicle.

48.3.2 \*In backing a tractor-semitrailer turn the wheel in the direction opposite the desired heading until the trailer is headed in the desired direction. Then turn the wheel in the same direction as the direction of travel in order to line up the tractor.

### 48.4 In off-street areas

48.4.1 See section 50, Driving in off-street areas.

## 49.0 Parking

### 49.1 General

- 49.1.1 Avoid parking on a steep grade. If necessary, block all wheels.
- 49.1.2 Check the condition of the parking space for ability to hold the truck.
- 49.1.3 \*Do not use trailer brake hand valve to secure parked vehicle.
- 49.1.4 \*Do not use tractor protection valve in place of parking brake.
- 49.1.5 No driver shall stop or park a vehicle in such a position as to cause interference with other traffic. Whenever possible, stop or park off the traveled portion of the highway.
- 49.1.6 Stopping or parking on the open highway shall be avoided whenever possible.
- 49.1.7 If necessary to park on the highway, driver shall pull his unit as far to the right as he can, completely off the traveled portion of the road if possible.
- 49.1.8 Set the hand brake securely.
- 49.1.9 Place transmission in lowest forward gear or reverse.
- 49.1.10 Block wheels.
- 49.1.11 If on a grade - turn front wheels in appropriate direction.
- 49.1.12 If at night, turn on parking lights.
- 49.1.13 If vehicle is equipped with high or low range transmission or axle, the control must be in low range when the vehicle is parked.
- 49.1.14 If the steepness of the grade or other factors greatly increases the danger of a runaway unit, all wheels must be blocked. Never park on steep grades unless it is absolutely unavoidable.
- 49.1.15 \*Block the wheels when leaving a trailer spotted alone.
- 49.1.16 See also section 49.8, parking disabled vehicles.



49.2      Legal regulations

49.2.1    See the Uniform Vehicle Code.

49.3      Parallel

49.4      Angle

49.5      Perpendicular

49.6      Securing vehicle

49.6.1    No driver shall leave a vehicle unattended without taking all reasonable precautions to prevent the movement of the vehicle.

49.6.2    The driver should see that the vehicle is locked and otherwise secure against unauthorized movement.

49.7      Leaving space

49.8      Disabled vehicle

49.8.1    See sections 49.2, Legal regulations, and 41.1,2, Entering and leaving traffic.

49.9      At edge of roadway

49.9.1    Activate 4 way flashers.

- 49.9.2 See also sections 41.1,2, Entering and leaving traffic, and 49.8, Disabled vehicles.
- 49.10 For loading and unloading
- 49.10.1 \*When parking for loading or unloading where the tractor will extend into the street, jackknife the unit.
- 49.10.2 \*When spotting a rig or truck at a platform watch out for rollaways. Always block the wheels.

50.0 Driving in Off-Street Areas (parking lots,  
loading areas, delivery areas, etc.)

- 50.1.1 Plan your route to keep backing at a minimum. Never back into traffic if you can avoid it.
- 50.1.2 \*Use extreme care in going over any curb, or making a turn on an incline or dip. Such maneuvers may result in snagging the landing gear of the trailers, the dolly stiff-legs, or may cause the top of the trailers to hit. If such turns are made too fast, the second trailer could be overturned.
- 50.1.3 See also: Section 41.3, Entering and Leaving Off-Street Areas.

51.0 Road surface and obstructions

51.1 Surface type

51.1.1 If on soft ground, keep the truck moving, downshifting if necessary.

51.2 Surface Irregularities

51.2.1 Slow down for rough roads, for the sake of safety and to avoid cargo damage.

51.3 Road cover

51.3.1 To keep traction on slippery surfaces, drive at a slow, steady pace with no abrupt changes in velocity.

51.3.2 The driver should check to see if he is permitted to operate under the prevailing road surface conditions.

51.4 Road cover

51.5 Roadway obstructions

## 52.0 Weather conditions

### 52.1 Visibility

52.1.1 Drivers shall reduce speed and operate with extreme caution whenever driving conditions are made hazardous by rain, snow, ice, sleet, fog, mist, smled dust or other conditions which adversely affect traction or visibility. When conditions become sufficiently hazardous, drivers shall stop in the safest available place and remain there until conditions permit safe travel. Driver should also notify the terminal of the problem.

52.1.2 At night and when fog or other conditions restrict visibility, speed shall be reduced to a point which will enable the driver to stop within the distance he can see ahead.

52.1.3 In the rain the driver should try to avoid passing cars since this reduces the car driver visibility.

### 52.2 Temperature

52.2.1 When operating on excessively hot days, particularly at high speeds, the truck driver must be extra alert for tire fires, even when the tires are in good condition.

### 52.3 Wind

52.3.1 \*The operator of special cargoes such a mobile homes and other extra long or extra wide loads should check to see if there are any restrictions on his traveling during high winds.

52.3.2 Be extra careful of pedestrians alongside the road and motorcycles when traveling at high speeds so as not to "suck them in" toward the moving vehicle.

52.3.3 The truck driver, when approaching other larger on-coming vehicles, should move over to the right as much as possible.

52.3.4 The gusting or the breaks in the wind caused by going past a large building, etc., can pose a serious \*problem to the truck, particularly box styles or enclosed trucks. Gusting causes the rear of the vehicle or trailer to swing back and forth.

- 52.3.5 \*A steady wind which is uninterrupted either by gusting or by the action of buildings or bridges or other wind breaks may cause the trailer to set over slightly such that the rear wheels of the trailer do not track with the wheels of the tractor.
- 52.3.6 \*When it is gusting it may cause the back of the rig to swing around as the truck driver must try to control this tracking and not allow the unit to drift too much.
- 52.3.7 \*The problem of wind and tail swing is particularly predominant when towing double bottoms.
- 52.3.8 \*Operating a semi rig around a curve on a windy day can also create problems since you are changing direction with respect to the wind. Therefore the driver must judge how his rig will react to the new wind direction and wind pressures on the rig.

## 53.0 Vehicle emergencies

### 53.1 On road - critical

#### Fire prevention

- 53.1.1 Keep fuses and pot torches only in the racks provided for them.
- 53.1.2 \*Do not smoke in the cargo space of trucks or trailers.
- 53.1.3 Do not smoke in bed on sleeper berth equipment.
- 53.1.4 Be sure that matches, cigarettes, cigars, or pipe ashes are out before disposing of them. If the truck is equipped with an ashtray use it rather than throwing "smokes" out of the window.
- 53.1.5 Be sure brakes release completely and do not drive with dragging brakes.

#### Prevention of Tire Fires

- 53.1.6 Check tires for proper inflation before the start of every trip. Replace all valve caps.
- 53.1.7 Check tires for proper inflation at least every 100 miles. Check tire temperature by holding back of hand against sidewall. If tire is too hot, it should be removed.
- 53.1.8 Avoid excessive use of service brakes which may cause overheating and fire in the brakes, wheel bearings or tire.
- 53.1.9 Never drive on a soft or flat tire or on a tire with a loose tread section. Stop in a safe place and change it.
- 53.1.10 Do not leave a vehicle unattended with a hot tire. It may burst into flame in the driver's absence. Take the tire off and replace it.
- 53.1.11 Do not put a hot tire in the spare tire rack until it is cool and cannot burst into flames.

#### Fire Fighting - General

- 53.1.12 Always investigate promptly any unusual smoke or the odor of burning material. Use mirrors to detect smoke coming from rear brakes or tires or from the rear of the cargo space.

- 53.1.13 Fire is extinguished by:  
-Cooling (lower the fuel below its ignition temperature);  
-Smothering (to cut off the supply of oxygen);  
-Removing the fuel. The fire extinguishers carried on trucks depend primarily on smothering for their effectiveness.
- 53.1.14 All fire extinguishers are equipped with plates or decals setting forth the procedures necessary to operate the extinguisher together with other important information concerning the operation and maintenance of the extinguisher. The driver should familiarize himself with this information before the need for using the extinguisher arises.
- 53.1.15 Fire extinguishers, particularly those carried on trucks, have a limited capacity and can be quickly exhausted. When using a fire extinguisher, this fact should be kept in mind and the extinguishing agent should be conserved as much as possible.
- 53.1.16 The driver should fight the fire with the wind at his back, if possible. Extinguishing agent should be aimed at the base of the flames, beginning at the edge and working inwards and back and forth across the burning area. Be sure that all the fire is out to prevent reflash. Reflash is a particularly serious hazard with burning petroleum products.
- 53.1.17 If flammable liquid is afire, play stream against container to keep container cool and put out fire near source so as to prevent explosion of container. Spillage will soon burn up or go out if fire is blanketed out at tank or drum.
- 53.1.18 Avoid breathing fumes and smoke as much as possible.
- 53.1.19 Summon fire department assistance, if possible, or drive to the fire department or to a source of water.
- 53.1.20 When fighting fire under the hood, hood should be opened as little as possible to minimize the danger of a flare-up from air reaching the fire. On engine fires, shoot extinguisher material through hood louvers, radiator or up under engine.
- 53.1.21 \*When driving a combination unit, power unit should be unhooked and driven a safe distance away if it can be done safely.



- 53.1.22 In the event of an electrical fire, battery cables should be unhooked to cut off power and prevent re-ignition. Never use water on an electrical fire.
- 53.1.23 Do not use water on burning petroleum products except as a fine spray or fog (this requires special equipment). Where a flow of flammable liquid or gas is involved, this must be cut off at its source.
- 53.1.24 Be sure fire is completely out before discontinuing fire fighting efforts. Scrape away burned material and dispose of it where it cannot start another fire. If insulation on wiring has been burned, be sure that no short circuit can occur.
- 53.1.25 No driver is expected to risk his personal safety in fighting a fire.
- 53.1.26 Every fire must be reported regardless of the cause, the size of the fire or the amount of damage involved. Whenever a driver makes use of his fire extinguisher, this fact must be reported so that the extinguisher can be inspected and recharged.

#### Tire Fires

- 53.1.27 Water is the best extinguisher for tire fires, because great cooling power is necessary to cool the whole tire below its ignition temperature. If a source of water is nearby, drive to it.
- 53.1.28 The extinguisher carried on the truck will not put out a burning tire but it can be used to control the flames for a short period. When using an extinguisher, do so intermittently to control the flames and make the extinguishing agent last as long as possible.
- 53.1.29 Dirt or snow can be shoveled onto a burning tire to control flames.
- 53.1.30 A smoking tire can be removed with safety by the driver if he has adequate tire changing equipment. When a tire is smoking, it generally indicates that the tube and flap are on fire. Heat at the outer surface of the tire is not a great hazard, if the smouldering condition is detected at an early stage. Never leave a smouldering tire on the unit waiting for it to cool down because the continued build up of internal heat will eventually cause the tire to burst into flame.

### Cargo Fires

- 53.1.31 Cargo fires will generally be detected by the appearance of smoke around the doors of a closed van or by direct observation of fire on open equipment.
- 53.1.32 Drive to fire department, if possible, or summon help.
- 53.1.33 Do not open doors of a closed van until the vehicle has been moved to a safe spot and help is available or a supply of water is at hand.
- 53.1.34 When doors are opened, remove cargo to a safe location until the burning portion is reached to save as much as possible from fire and water damage.
- 53.1.35 Know what is in your load and advise the fire department in case special techniques must be used in fighting the fire.

### Loss of Air Pressure

- 53.1.36 \*If air pressure warning device is activated, stop vehicle before trailer goes into emergency condition.
- 53.1.37 \*Loss of air pressure may be caused by a line rupture or a trailer break-away and cause the tractor protective valve to activate. Drain air tank of trailer to release the brakes.

### Other Vehicle Emergencies

- 53.1.38 Brake failure may be caused by wet brakes. Be sure to dry them after going through deep water.
- 53.1.39 Stalled vehicle. If your vehicle stalls on the road, stay nearby to warn other traffic.

### 53.2 On Road - Non-Critical

- 53.2.1 Flat tire. (See section 64.3, Reacting to Collision and Emergencies.)
- 53.2.2 Breakdown. (See section 64.3, Reacting to Collision and Emergencies.)

### 53.3 Preparations for Possible Emergencies

53.4        Emergency downshift

53.4.1     See section 21, Shifting gears.

53.5        Emergency stop

53.5.1     See sections 28, Stopping, and 54, Skid control.

53.6        Seeks emergency assistance for disabled vehicle

53.6.1     See sections 64, Reacting to traffic, 72.2, Road-side service, and 49, Parking.

54.0 Skid control

54.1 Preventive measures

54.1.1 The chief cause of skidding is driving too fast for conditions.

54.1.2 See also section 28, Braking and Stopping.

54.2 Detects skidding

54.3 Arrests skid

54.4 Deceleration

55.0 On-road emergencies

See section 64, Reacting to traffic.

## 6. Driving Situations

### 61.0 Urban Driving

#### 61.1 General

61.1.1 In some urban areas the trucks are required by law to stay in the right hand lane and/or follow certain routes. Generally truck drivers are permitted off of these routes for one or two blocks only to make a delivery. They cannot use these streets as a short cut to their destination.

61.1.2 \*The driver of a rig should be particularly careful to watch for parked cars opening their doors into the trailer after the cab has passed. Driver should give parked vehicles a wide berth.

#### 61.2 Commercial areas

61.2.1 Parking regulations should be checked before stopping in commercial areas.

#### 61.3 Residential areas

61.3.1 Truck drivers should be particularly observant to look for "truck prohibited" signs, particularly when turning off from main thoroughfares onto residential side streets.

61.3.2 Engine braking is discouraged in residential areas because of the noise.

#### 61.4 Narrow streets and alleys

61.4.1 The driver must check all clearances and potential hazards before entering such areas.

61.4.2 Very slow speeds should be used when driving in areas.

## 62.0 Highway Driving

### 62.1 General highway driving

62.1.1 In many areas truck drivers are required to follow lower speed limits than other vehicles, and hence they must be extra careful, particularly for people who are approaching at high speed from the rear and wishing to pass.

62.1.2 In highway driving and freeway driving trucks must stay to the right. They can move to the left for left exit and to pass.

62.1.3 On straightaways and curves oncoming traffic can cause changes in wind pressure, particularly large \*trucks. The driver must therefore be aware of the fact that his trailer may swing and be ready to correct it when being passed by large trucks in either direction.

### 62.2 Rural highways

62.2.1 Special caution must be used in leaving the road, since the shoulder may be too soft to support the truck or too narrow to accommodate it. (e.g., rural highways.

62.2.2 The driver should avoid raising dust when pulling off the road especially if other vehicles are near by.

### 62.3 Mountainous terrain

62.3.1 See section 44, Negotiating hills.

## 63.0 Freeway Driving

### 63.1 On-ramps

63.1.1 The more a truck is loaded, the more time is required for it to accelerate to highway speeds.

63.1.2 On short acceleration ramps the truck may not be able to gain speed for entering the highway at the legal minimum speed.

### 63.2 Entering main roadway

63.2.1 With short acceleration ramps or under heavy loads the driver must wait for larger gaps in the traffic before entering the main road.

### 63.3 Moving with traffic

63.3.1 See section 22, Lane usage.

### 63.4 Approaching and passing interchanges

### 63.5 Leaving the main roadway

### 63.6 Off ramps

63.6.1 Truck braking is excellent as compared to acceleration, and therefore, off-ramps generally do not present a problem.

63.6.2 When approaching an exit that is associated with a steep upgrade the driver must be careful not to slow down so as to present a safety hazard.



64.0 Reacting to traffic and general on road emergencies

64.1 Reacting to other vehicles

64.1.1 Never use the size of your vehicle to assert your right-of-way.

Being passed

64.1.2 When being passed by another vehicle, drivers shall keep well to the right and, if necessary, reduce speed to facilitate safe passing. Never speed up to prevent another driver from passing.

64.1.3 Be alert for the driver who tries to pass in an unsafe place. Don't try to block him, but be ready to do anything that may be necessary to avoid being involved in an accident.

64.1.4 Do not signal others to pass.

64.1.5 Truck driver should not acknowledge any signal and should not attempt to communicate with the passenger car operator.

64.1.6 When the vehicle has been passed the truck driver should not signal that it is clear to pull in.

64.1.7 At night, dim your lights after being passed to avoid creating objectionable glare in the other driver's mirror.

64.2 Reacting to pedestrians

64.2.1 Driver should yield to pedestrian in intersection.

64.2.2 If pedestrian is in road or near the road be prepared to stop and avoid them.

64.2.3 If an animal is in the road, avoid if possible.

64.2.4 See section 49.2, Legal regulations.

64.3 Reacting to collisions and emergencies

64.3.1 If an oncoming vehicle is approaching on the drivers side of the road, slow down, pull as far to the right as safely possible and stop. Never pull to the left in an attempt to avoid an oncoming vehicle.

- 64.3.2 \*If one of the steering wheels or front wheels on the tractor goes flat, this presents a definite control problem in terms of directional control and stability of the vehicle.
- 64.3.3 If one of the rear tires blows, particularly one of the dual rear tires, the problem of loss of control is not as serious; however the problem of fire is.
- 64.3.4 \*A flat tire will affect the braking ability and traction characteristics of the rig, and a rig with a flat tire is more likely to skid or slide.
- 64.3.5 Because of the dangers of driving with a flat tire the driver should stop as soon as possible and make the necessary repairs.
- 64.3.6 No driver shall drive a vehicle which has been damaged by accident or other cause until the vehicle has been inspected by a qualified individual and found safe for operation.
- 64.3.7 If a vehicle is found to be in such a hazardous condition while on the highway, it shall not be operated beyond the point where necessary repairs can be made, and even such limited operation shall not be attempted unless greater danger would result from stopping the vehicle along the highway.
- 64.3.8 Never leave the truck or let others drive it unless they are authorized to do so or it is an extreme emergency.
- 64.3.9 A driver who stops to respond to an emergency or help another should make sure that his own rig is parked at a safe distance and will not interfere with other traffic.

65.0 Night Driving

65.1 General

65.1.1 All required lights and reflectors must be kept clean and they must not be obscured by any part of the load or by any part of the vehicle.

65.1.2 The driver should be sure that his braking distance does not exceed the range of his headlights.

65.1.3 The driver must be aware of all of the regulations governing the use of lights.

65.2 Urban

65.3 Rural

65.4 Dusk - dawn and dark days

65.4.1 Headlights must be used whenever conditions warrant, see the Uniform Vehicle Code

## 66.0 Railroad crossings, bridges and tunnels

### 66.1 Railroad crossings

- 66.1.1 Every crossing must be approached with the expectation that a train is coming.
- 66.1.2 Speed must be reduced in accordance with the driver's ability to see approaching trains in any direction and speed must be held to a point which will permit the driver to stop short of the tracks in case a stop is necessary. In no case shall the driver rely solely upon presence of warning signals, gates or flagmen to warn of the approach of trains.
- 66.1.3 Because the highway surface at many grade crossing is rough, crossing must be traversed at reduced speed to prevent abuse of equipment and damage to the cargo.
- 66.1.4 Never attempt to race a train to a crossing. If in doubt, wait.
- 66.1.5 Never permit traffic conditions to trap you in a position where you have to stop on the tracks. Be sure you can get all the way across the tracks before you start across.
- 66.1.6 A full-stop is required at grade crossings whenever:  
- The nature of the cargo makes a stop mandatory under state or D.O.T. regulations.  
- Such stop is otherwise required by law.
- 66.1.7 The driver shall pull as far to the right as possible before stopping and shall signal following traffic to guard against rear-end collision.
- 66.1.8 Do not shift gears while crossing railroad tracks.
- 66.1.9 Double tracks require a double check. After one train has cleared a crossing be sure no other trains are near before starting across the tracks.
- 66.1.10 Yard areas and grade crossings in cities and towns are just as dangerous as rural grade crossings. Approach them with as much caution.

### 66.2 Bridges and tunnels

66.3 Toll plazas

66.4 Weigh stations--

66.4.1 Operators of larger trucks are generally required, when indicated, to stop and have their vehicle weighed (check local regulations or law to be sure).

66.4.2 If the truck is so constructed as to be easily seen through, for instance a flat bed or a stake, and he is not carrying a cargo, he may be given exemption to roll by the scales.

66.4.3 The various public service commissions and the Federal government and other regulatory agencies such as the Department of Agriculture, the Department of Commerce and the Department of Revenue have the authority to stop vehicles on the highway and determine their load, and if they meet the various requirements.

66.4.4 See also section 49.2, Legal regulations.

## 7. Vehicle and Driver

### 71.0 Physical and Emotional Conditions

- 71.1 Temporary (fatigue, carbon monoxide, etc.)
  - 71.1.1 The driver should be consistently aware of changing traffic conditions.
  - 71.1.2 The driver should perform routing functions without taking his eyes from the road.
  - 71.1.3 The driver should check instruments regularly while driving.
  - 71.1.4 The driver should remain courteous at all times.
  - 71.1.5 Physical condition of drivers must be such as to enable them to efficiently perform their duties. Drivers becoming unduly fatigued on the road shall stop in the nearest safe place. In the event of a delay due to such fatigue, the driver shall notify the nearest company terminal.
  - 71.1.6 The hours of service and rest rules must be adhered to by all drivers.
  - 71.1.7 The driver should be sure to get adequate rest and sleep before driving even though his off time may exceed the minimum standards.
  - 71.1.8 Drivers should be alert for the symptoms of carbon monoxide.
  - 71.1.9 Some conditions which can affect reaction time are age, fatigue, alcohol, etc.
- 71.2 Alcohol
  - 71.2.1 No driver may drive while he is under the influence of any alcoholic beverage, nor may he consume such substances while on duty.
- 71.3 Drugs
  - 71.3.1 No driver may drive while he is under the influence of any drug, nor may he consume such substances while on duty.
- 71.4 Vision
  - 71.4.1 A driver who must wear eye glasses to meet the vision requirements of the physical qualifications must wear them while driving.

71.5        Hearing

71.6        Illness

71.6.1      Drivers who become ill on the road should report the condition to the company and not drive until the condition is corrected. They should seek medical assistance if necessary.

71.7        Preoccupation and distraction - emotional conditions.

## 72.0 Vehicle care and servicing

### 72.1 Fuel stop service

72.1.1 When refueling vehicles, drivers must take every possible precaution against fire and they should observe the following:

- Engine must be shut off.
- No smoking or other types of open-flame light.
- Continuous metal-to-metal contact must be maintained between nozzle and fillpipe.
- Prevent activities by other persons which might cause fire.

72.1.2 Reserve fuel may not be carried except in properly mounted fuel tanks.

72.1.3 See also section 53.1, Fire prevention.

### 72.2 Roadside service

72.2.1 See section 53.1.6.

72.2.2 See section 53.1.9

### 72.3 Routine service

72.3.1 \*Drain air pressure reservoir on tanks on both tractor/truck and trailer at least once each day.

72.3.2 Bleed air tanks in cold weather because of possible water freezing in tank and lines.

72.3.3 \*Check the tractor protection valve every day.

72.3.4 Adjust dragging brakes or slack brakes by using slack adjuster as often as necessary.

72.3.5 Maintain correct tire pressures and correctly lubricate vehicle at specified intervals.

### 72.4 Routine inspection

72.4.1 Vehicle safety inspections should be performed each time the vehicle is driven and on a specified periodic schedule. These should be performed by both the driver and the maintenance shop and are the responsibility of the driver and owner.



- 72.5        Periodic inspection (In addition to those items listed in sections 11, 12, 13, 14, check these also.)
- 72.5.1     Look at engine wiring for cracked or badly worn insulation.
- 72.5.2     Look for loose wires. Be sure all spark plug wires are on tight.
- 72.5.3     Look for signs of leaks around engine and other signs of malfunction or excessive wear.
- 72.5.4     Check the operation of and condition of the governor and other speed regulation devices.
- 72.5.5     Look under front of unit for irregularities in steering mechanism.
- 72.6        Vehicle repairs
- 72.7        Pushing and towing

## 8. Driver Responsibilities

### 81.0 Driver responsibilities to the laws

#### 81.1 Driver licensing

81.1.1 Drivers must in addition to company rules be familiar with the regulations of the Department of Transportation and the laws of the states, cities and towns through which they operate.

81.1.2 A driver whose license is withdrawn, cancelled, suspended or revoked must notify his employer of this fact as soon as possible.

#### 81.2 Vehicle registration

81.2.1 See the Uniform Vehicle Code.

#### 81.3 Insurance

81.3.1 Care should be taken to make sure that the vehicle is safe and that all doors are locked to prevent theft of the cargo or of the vehicle, as usually the cargo is not insured.

#### 81.4 Vehicle inspection

81.4.1 It is the driver's responsibility to see that the vehicle is inspected periodically to make certain that it is in good operating condition.

81.4.2 See also section on Pre-trip inspection.

#### 81.5 Driver log and hours of service

81.5.1 Most drivers of commercial vehicles are required to keep a log and keep it up to date. Signing it certifies that all entries are correct.

81.5.2 Such log is subject to inspection at any time by the authorities.

81.5.3 He must also keep his cargo manifest and freight bills available as it is also subject to inspection.

#### 81.6 Cargo regulations

81.6.1 The driver must be familiar with and in compliance with the relevant company, local, state and federal government regulations pertaining to the transportation of special cargoes (e.g., explosives, flammables, etc.).

- 81.6.2 Vehicles loaded with hazardous materials shall be driven with care to avoid jolts, jars, sudden stops or any other movement which may cause shifting or other damage to the cargo.
- 81.6.3 In so far as possible, drivers must avoid parking vehicles loaded with hazardous materials in any congested or built-up area or leaving the vehicle unattended.
- 81.6.4 In the case of an accident involving the truck, the driver must keep all persons not performing rescue or other work at a safe distance.
- 81.6.5 See also the Uniform Vehicle Code.
- 81.7 Required equipment
- 81.7.1 No driver may drive a vehicle unless he has satisfied himself that the required emergency equipment is in place and ready for use. (See the Uniform Vehicle Code.)

82.0 Post-accident responsibilities

82.1 Stops vehicle

82.1.1 See the Uniform Vehicle Code.

82.2 Notifies police

82.2.1 Notify the police. If you cannot get to a nearby telephone, write a carefully worded note giving the location and apparent seriousness of the accident and give it to a reliable-appearing motorist and ask him to notify police for you. DO NOT LEAVE EQUIPMENT AND CARGO UNGUARDED EXCEPT IN EXTREME EMERGENCY.

82.2.2 Do not leave the scene until instructed to proceed by company officials, insurance representative or police officials.

82.3 Offers assistance to injured

82.4 Warns other traffic

82.4.1 PROTECT THE SCENE. Actuate four-way flashers. Lose no time in setting out red flags or fuses and pot torches or red emergency reflectors in accordance with Safety Regulations.

82.4.2 If there is spilled fuel present. Post reliable bystanders to help control traffic, if necessary. Call the fire department.

82.5 Exchanges information

82.6 Reports accident

82.6.1 When reporting an accident to anyone by telephone or messenger, be specific as to location, time, extent of injury or damage, condition or cargo and where you can be reached. In calling a terminal, be sure you are talking to someone in a position to act on your report. Make a note of such person's name for future reference.

