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100K Reach Stacker

Vehicle Management Codes: E985

QUALIFICATION TRAINING PACKAGE

DRAFT

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Section 1—OVERVIEW

1.1. Overview.

1.1.1. Send comments and suggested improvements on AF Form 847, *Recommendation for Change of Publication* through Air Force Installation and Mission Support Center (AFIMSC) functional managers via e-mail at AFIMSC.IZSL.VehicleOps@us.af.mil.

1.1.2. How to use this plan:

1.1.2.1. Instructor:

1.1.2.1.1. Provide overview of training, **Section 2** and **Section 3**.

1.1.2.1.2. Instructor's lesson plan for trainee preparation, give classroom lecture, **Section 4**.

1.1.2.1.3. Instructor's lesson plan for demonstration, **Section 6**.

1.1.2.1.4. Instructor's lesson plan for performance and evaluation, **Section 7**.

1.1.2.2. Trainee:

1.1.2.2.1. Reads this entire lesson plan prior to starting lecture.

1.1.2.2.2. Follows along with lecture using this lesson plan and its attachments.

1.1.2.2.3. Uses **Attachment 2** and **Attachment 4** as guides for vehicle inspection.

1.1.2.2.4. Takes performance test.

Section 2—RESPONSIBILITIES

2.1. Responsibilities.

2.1.1. The trainee shall:

2.1.1.1. Ensure the trainer explains the Air Force Qualification Training Package (AFQTP) process and the responsibilities.

2.1.1.2. Review the AFQTP/Module/Unit with the trainer.

2.1.1.3. They trainee should ask questions if he/she does not understand the objectives for each unit.

2.1.1.4. Review missed questions with the trainer.

2.1.2. Instructor shall:

2.1.2.1. Review the AFQTP with the trainee.

2.1.2.2. Conduct knowledge training with the trainee using the AFQTP.

2.1.2.3. Grade the review questions using the answer key.

2.1.2.4. Review missed questions with the trainee to ensure the required task knowledge has been gained to complete the task.

2.1.2.5. Sign-off the task(s).

2.1.3. The Certifier shall:

2.1.3.1. Evaluate the Airman's task performance without assistance.

2.1.3.2. Sign-off the task(s).

Section 3—INTRODUCTION

3.1. Objectives.

3.1.1. Given lectures, demonstrations, hands-on driving session, trainees will be able to perform operator's inspection and complete the performance test with zero instructor assists.

3.1.1.1. Train and qualify each trainee in safe operation and preventive maintenance of the 100K reach stacker.

3.1.1.2. This training will ensure the trainee becomes a qualified 100K reach stacker; an operator who has the knowledge and skills to operate a 100K reach stacker in a safe and professional manner.

3.2. Desired Learning Outcomes.

3.2.1. Understand the purpose of the 100K reach stacker and its role in the mission.

3.2.2. Locate information contained in the applicable technical order (TO) and explain terminology used in the TO and operator' guide.

3.2.3. Identify and operate the controls for the 100k reach stacker.

3.2.4. Understand the safety precautions to be followed before-, during-, and after- operation of the 100 K-reach stacker.

3.2.5. Know the proper operator maintenance procedures of the 100K reach stacker, IAW applicable TOs and use of Air Force (AF) Form 1800, *Operator's Inspection Guide and Trouble Report*.

3.2.6. Safely and proficiently operate the 100K reach stacker.

3.3. Lesson Duration.

3.3.1. Recommended instructional and hands on training time is 25 hours:

Figure 3.1. Recommended Training Time for Training Activities.

Training Activity	Training Time
Trainee's Preparation	2 Hours
Instructor's Lecture	2 Hours
Instructor's Demonstration	5 Hours
Trainee's Personal Experience (to build confidence and proficiency) ▪ Perform Operator Maintenance ▪ Operate the Vehicle	15 Hours
Trainee's Performance Evaluation	1 Hour

Note: This is a recommended time; training time may be more or less depending how quickly a trainee learns new tasks.

3.4. Instructional References.

3.4.1. Risk Management (RM) and Safety Principles.

3.4.2. Applicable TOs or manufacturer's operator's manual (Hyster operator manuals). See Vehicle Management for TO number for vehicle being used in training.

3.4.3. Air Force Manual (AFMAN) 24-306, *Operation of Air Force Government Motor Vehicles*.

3.4.4. AF Form 1800.

3.4.5. Special references based-off type of vehicle.

3.5. Instructional Training Aids and Equipment.

3.5.1. 100K Reach Stacker Lesson Plan.

3.5.2. 100K reach stacker

3.5.3. Containers, if applicable.

3.5.4. Applicable TO or manufacturer's operator's manual.

3.5.5. AF Form 1800.

3.5.6. Commercial training course slide shows and videos, if available.

3.5.7. Videos (if locally produced).

3.5.8. Suitable training area.

Section 4—TRAINEE PREPARATION

4.1. Licensing Requirements.

4.1.1. Trainee must have in his/her possession a valid state driver's license.

4.1.2. AF Form 171, *Request for Driver's Training and Addition to U.S. Government Driver's License* IAW Air Force Instruction (AFI) 24-301, *Ground Transportation*.

4.1.3. Applicable local licensing jurisdiction requirements.

4.2. Required Reading.

4.2.1. Read this entire lesson plan.

4.2.2. Read AFMAN 24-306.

4.2.3. Read manufacturer's operator's manual for the vehicle being trained on.

Section 5—KNOWLEDGE LECTURE AND EVALUATION

5.1. Overview of Training and Requirements.

5.1.1. Training objectives:

5.1.1.1. Given lectures, demonstrations, hands-on driving session, and a performance and written test, trainees will be able to perform operator's inspection and complete the performance test with zero instructor assists.

5.1.1.2. Train and qualify each trainee in safe operation and preventive maintenance of the 100K reach stacker.

5.1.1.3. This training will ensure the trainee becomes a qualified 100K reach stacker operator—an operator who has the knowledge and skills to operate a 100K reach stacker in a safe and professional manner.

5.1.2. Desired learning outcomes:

5.1.2.1. Understand the safety precautions to be followed before-, during-, and after-operation of the 100K reach stacker.

5.1.2.2. Understand the purpose of the 100K reach stacker and its role in the mission. The purpose of the 100K reach stacker is to handle containers in order to achieve maximum space utilization

5.1.2.3. Role in the mission (Unit/Base/Community (during natural disasters)/Air Force).

5.1.3. 100K reach stacker design (varies by manufacturer/model).

5.1.3.1. Dimensions.

5.1.3.1.1. Overall length: 38 feet.

5.1.3.1.2. Overall width: 20 feet.

5.1.3.1.3. Overall height: 15.5 feet.

5.1.3.2. Fluid levels.

5.1.3.2.1. Diesel fuel: #2.

5.1.3.2.2. Engine oil: 34 liters (10w20 for -28° to 20°, 14w40 for -18°C and up).

5.1.3.2.3. Hydraulic reservoir: 605 liters (JDM-J20).

5.1.3.2.4. Cooling system: 40 liters (50/50 mixture).

5.1.3.2.5. Transmission: 62 liters (ATF Dextrin 4 or SAE 10w).

5.1.3.3. Service weight: 152,944 lbs.

5.1.3.4. Tire pressure.

5.1.3.4.1. Front/rear: 145 pounds per square inch (psi).

5.1.4. Engine.

5.1.4.1. Cummins QSM 11 engine (Tier 3).

5.1.4.2. Turbocharged aspiration, diesel, 6 cylinder line; 10.8 liters.

5.1.4.3. Electrical: 24 volt, negative ground.

5.1.5. Transmission.

5.1.5.1. TE27—TE32 Power shift transmission.

5.1.5.2. Four forward and four reverse.

5.1.5.3. Neutral.

5.1.6. Advanced systems.

5.1.6.1. Braking System.

5.1.6.1.1. Provides hydraulic pressure for brakes, hydraulic reservoir, and pressure indication gauge.

5.1.6.2. Personnel cab.

5.1.6.2.1. Designed for high visibility, except in rear.

5.1.6.2.2. All controls for operations are located within easy reach of the operator.

5.1.6.2.3. For cab operating instrument and controls, refer to Commercial Manual and slide shows.

5.2. Vehicle Inspection.

5.2.1. Pre-trip vehicle inspection test/operational checks. During each shift, the operator must perform all operational checks. Before operation, during operation, and after operation. Any equipment or vehicle faults should be reported immediately to vehicle maintenance personnel.

5.2.2. Use the vehicle's TO in conjunction with AF Form 1800 and **Attachment 2** as a walk around guide.

5.2.3. A Seven-Step Inspection Method will help ensure the inspection is the same each time it is conducted, and that nothing is left out. See **Attachment 4** for the Seven-Step Inspection Method.

5.2.4. Types of Vehicle Inspection. If discrepancies are found they must be reported to Vehicle Control Officer/Vehicle Non Commissioned Control Officer (VCO/VCNCO), the supervisor, and/or vehicle maintenance:

5.2.4.1. Pre-trip inspection – find items/problems that could cause accident or breakdown.

5.2.4.1.1. Vehicle maintenance to authorize continued use for all other maintenance discrepancies.

5.2.4.1.2. Parking brake set/wheels chocked if on an incline, attachment is fully lowered.

5.2.4.1.3. Cleanliness/damage/missing items.

5.2.4.1.4. All machine safety/operation decals are in place and legible.

5.2.4.1.5. Leaks (fuel/oil/coolant/hydraulic/air).

5.2.4.1.6. Lubrication. Lubrication intervals are for normal climate conditions. Times and lubricants must be adjusted when operating in extreme heat, cold, dust, or humidity. Check all carriage and lift points.

5.2.4.1.7. Engine area.

5.2.4.1.7.1. Check air filter indicator. Red indicates dirty filter. Notify Vehicle Management.

5.2.4.1.7.2. Check air intake for obstruction or damage.

5.2.4.1.7.3. Check alternator and fan belt for cracks or frays and belt play.

5.2.4.1.7.4. Check belts, hoses and overall appearance of the engine.

5.2.4.1.7.5. Check all hydraulic and fuel lines for leaks, dry rot and cracks.

5.2.4.1.8. Fluid Levels; ensure level is within limits:

5.2.4.1.8.1. Fuel tank.

5.2.4.1.8.2. Engine oil.

5.2.4.1.8.3. Check fluid level in radiator, also for annual stenciling.

5.2.4.1.8.4. Coolant. Check the engine coolant level at the reservoirs.

5.2.4.1.8.5. Transmission fluid.

5.2.4.1.8.6. Antifreeze.

5.2.4.1.8.7. Hydraulic fluid level.

5.2.4.1.8.8. Brake fluid (master cylinder).

5.2.4.1.8.8.1. Check site gauge on hydraulic reservoir. If overfilled damage could be cause to seals, due to expansion of oil when hot.

5.2.4.1.8.9. Windshield washer fluid level.

5.2.4.1.9. Battery; security, fluid, damage and corrosion.

5.2.4.1.9.1. Check battery terminals for tightness and corrosion. Visually check fluid.

5.2.4.1.10. All wheel rims (cracks, splits, etc.); check for loose or missing lug nuts.

5.2.4.1.11. All tires.

5.2.4.1.11.1. Proper inflation.

5.2.4.1.11.2. Sidewalls, tread.

5.2.4.1.11.3. Cuts and abrasions.

5.2.4.1.11.4. Lug nuts.

5.2.4.1.12. Transmission.

5.2.4.1.13. Drive belts; tension and fraying.

5.2.4.1.14. All hoses and wiring.

5.2.4.1.15. Differential, shocks and brakes for leaks.

5.2.4.1.16. Suspension, springs and shocks.

5.2.4.1.17. Check brake canister assembly for damage.

5.2.4.1.18. Fuel door and fuel cap; intact, not broken or damaged.

5.2.4.1.19. Horn operation.

5.2.4.1.20. Control panel.

5.2.4.1.21. Cylinders. Not leaking or damaged.

5.2.4.1.21.1. Lift.

5.2.4.1.21.2. Boom extension.

5.2.4.1.21.3. Expansion.

5.2.4.1.21.4. Steering.

5.2.4.1.21.5. Damping.

5.2.4.1.21.6. Sideshift.

5.2.4.1.21.7. Twistlocks.

5.2.4.1.21.8. Pile slope (if equipped).

5.2.4.1.21.9. Cab raise (if equipped).

5.2.4.1.22. Electrical connectors, wires, cables and junction boxes are not loose or damaged.

5.2.4.1.23. Hydraulic hoses and connectors are not leaking or damaged.

5.2.4.1.24. Boom, attachment and frame. Free of cracks, broken welds, loose bolts, dents, and obvious damage.

5.2.4.1.25. Attachment linkages, twistlocks, guide blocks, plungers, switches, expansion pads, etc.

5.2.4.1.26. Engine compartment hood-lock in place and functional.

5.2.4.1.27. Operator cab structure, braces, machine structure. No breaks, cracks or broken welds.

5.2.4.1.28. Heater/defroster.

5.2.4.1.29. Wiring/lights/reflectors (interior and exterior).

5.2.4.1.30. Mirrors.

5.2.4.1.31. Windshield and windshield wipers/washers.

5.2.4.1.32. Steps, walkways and handholds. Free of oil, grease, hydraulic fluid, ice, snow, debris, etc. Anti-slip pads are in place. Free of any damage.

5.2.4.1.33. Doors.

5.2.4.1.34. Windows.

5.2.4.1.35. Hood latches.

5.2.4.1.36. Seatbelts.

5.2.4.1.37. Fire extinguisher.

5.2.4.1.38. Complete AF Form 1800 document deficiencies and report all safety items immediately to Vehicle Management.

5.2.4.2. During-operation.

5.2.4.2.1. Monitor all gauges and warning lights for proper operations.

5.2.4.2.1.1. Warning lights.

5.2.4.2.1.2. Flashing beacons.

5.2.4.2.1.3. Camera system, if equipped.

5.2.4.2.1.4. Gauges (air pressure, oil pressure, fuel gauge, water temperature, battery voltage, hydraulic oil temperature).

5.2.4.2.1.5. Indicators.

5.2.4.2.2. Reach stacker functions check:

5.2.4.2.2.1. Attachment expansion.

5.2.4.2.2.2. Pile slope.

5.2.4.2.2.3. Attachment rotation.

5.2.4.2.2.4. Side shift.

5.2.4.2.2.5. Boom lift.

5.2.4.2.2.6. Boom extension.

5.2.4.2.2.7. Twistlocks.

5.2.4.2.2.8. Cab positioning system.

5.2.4.2.3. Observe for jerky movement during operation of hydraulic functions.

5.2.4.2.4. Listen for any unusual sounds.

5.2.4.2.5. Stay alert for any unusual smells or odors.

5.2.4.2.6. Stay alert for any abnormal vibrations or handling problems.

5.2.4.3. After-trip inspection and report.

5.2.4.3.1. Set parking brake.

5.2.4.3.2. Shut down engine.

5.2.4.3.3. Chock wheels.

5.2.4.3.4. Walk around the vehicle and check for fluid leaks or unusual conditions.

5.2.4.3.5. Ensure vehicle and components are cleaned.

5.2.4.3.6. Equipment is properly stowed.

5.2.4.3.7. Refueled.

5.2.4.3.8. Parked.

5.2.4.3.9. Apply brakes.

5.2.4.3.10. Place transmission in neutral (park for an automatic).

5.3. Vehicle Safety and Equipment.

5.3.1. Hazards and Human Factors:

5.3.1.1. Overall size.

5.3.1.2. Clearance.

5.3.2. Safety clothing and equipment:

5.3.2.1. Safety steel-toed boots must be worn.

5.3.2.2. Gloves will be worn during cargo loading and unloading (take off rings/jewelry first.

5.3.2.3. Hearing protection.

5.3.2.4. Eye protection.

5.3.2.5. First aid kit.

5.3.2.6. Raingear, cold weather gear, etc.

5.3.2.7. Reflective belt during hours of reduced visibility and on flightline.

5.3.2.8. Fire extinguisher.

5.3.2.9. AF Form 1800.

5.4. Driving Safety and Precautions.

5.4.1. Operators are required to become familiar with the safety precautions and location and use of controls, accessories, indicators and handling characteristics of the 100K reach stacker prior to attempting any operation or service procedures. General safety precautions include:

5.4.1.1. Lowering or blocking hydraulically operated components before servicing units.

5.4.1.2. Ensuring unit is on level ground before working under it.

5.4.1.3. Keeping transmission in low gear when going downhill.

5.4.1.4. Never freewheeling on a downgrade. Keep in gear for maximum control.

5.4.1.5. Never operating with the parking brake engaged.

5.4.1.6. Ensuring adequate ventilation under all conditions. Exhaust fumes can cause severe injury or death to personnel.

5.4.1.7. Keeping personnel at a minimum of 50 ft. away from the vehicle while in operation.

5.4.1.8. No riders, except during training (instructor must wear safety harness and secure it to the vehicle).

5.4.1.9. Ensuring all controls are clean and fee of oil.

5.4.1.10. Never leaving a running unit unattended.

5.4.1.11. Never using steering wheel or controls as hand holds for mounting and dismounting.

5.4.1.12. Transmission may be up shifted. Do not overrun the engine by downshifting. Ensure the speed is not too great before attempting to downshift (5 miles per hour (mph)).

5.4.1.13. Avoiding idling engine for long periods. This will result in engine damage.

5.4.1.14. Never allowing others to work on suspended loads.

5.4.1.15. Never exceeding load capacity.

5.4.1.16. Being aware of power lines while traveling.

5.4.1.17. Operator may refuse to lift or move any load that exceeds capacity, any unsafe load, or any load not designated to be lifted by this machine.

5.4.1.18. Ensuring ground crews are qualified in all hand signals.

5.4.1.19. Never attempting to follow more than one ground crew member.

Note: CAUTION – Ground crews will be used for all lifting, positioning, and for transportation of loads that restrict the operators' vision.

5.4.1.20. Not lifting container if all lift locks are not fully engaged and indicator lights do not show engaged.

5.4.1.21. Be aware of steep inclines and declines.

5.4.1.22. Never stack containers during times of high winds (over 28 mph) or when the wind exceeds the operator's skill level or comfort zone.

5.4.2. Off-road driving. Drive carefully on uneven, wet or slippery surfaces. For more information on off-road driving and safe vehicle operation guidance, refer to AFMAN 24-306.

5.4.3. Cargo loading and tie-down procedures. For more information on safely loading, transporting and unloading cargo, refer to AFMAN 24-306 and the manufacturer's operator's manual for the specific vehicle type.

5.4.4. Hazardous cargo. For more information on transporting hazardous cargo, refer to AFMAN 24-306 and the Hazardous Cargo Lesson Plan.

5.4.5. Observe all flightline traffic rules.

5.4.6. Foreign Object Damage (FOD). Vehicle operators will remove FOD from tires during daily the vehicle inspection. Before entering the airfield, a physical check for loose/unsecured objects and an inspection of the tire treads for FOD will be accomplished, with the exception of emergency vehicles responding to actual situations.

5.4.6.1. Any vehicle which has been driven on an unpaved surface will have a tire FOD inspection accomplished prior to re-entering the airfield area. Vehicles that frequent the flight line will be equipped with a FOD picker and a covered FOD container.

5.4.6.2. FOD picker will be etched with the vehicle number painted on red or orange (or have a red streamer attached).

5.4.6.3. FOD picker will be annotated on vehicle inspection form.

5.4.6.4. FOD containers will be identified with the letters "FOD" and will be emptied daily.

5.4.6.5. FOD checks are performed so that aircraft damage can be kept at a minimum.

5.4.7. Spotter safety.

5.4.7.1. Always use a spotter. The operator should maintain visual contact with the spotter at all times. If visual contact is lost, the operator must immediately stop the vehicle. See AFMAN 24-306 for additional guidance on spotter safety and standard AF spotter hand signals.

5.5. Vehicle Operation.

5.5.1. Control familiarization. To ensure quick response time under normal or emergency conditions, a thorough familiarization of controls, locations, and functions will be provided by the trainer. Students will be given enough time to build familiarity in control location and use prior to operating the vehicle and being licensed on the vehicle.

5.5.2. Engine starting. Turn master switch to the ON position.

5.5.3. Be sure all controls and gear levers are in neutral (vehicle is equipped with a neutral switch and will not start in gear).

5.5.4. Engage parking brake.

5.5.5. Turn ignition switch to start the vehicle.

5.5.6. Idle engine –under 1000 revolutions per minute (rpm) for 5-10 minutes.

5.5.7. Check all lights and wipers.

5.5.8. Check all hydraulic controls for proper operation.

5.5.9. Smooth terrain.

5.5.9.1. With load: travel with the boom and the spreader raised only enough for visibility. Keep the load upgrade for maximum control. Ensure center of gravity of the load is to the center of gravity to the truck.

5.5.9.2. No load: travel with the boom and spreader raised only enough for visibility.

5.5.10. Rough terrain.

5.5.10.1. With load: travel with the boom and the spreader raised only enough for visibility. Keep the load upgrade for maximum control. Ensure center of gravity of the load is to the center of gravity to the truck.

5.5.10.2. No load: travel with the boom and spreader raised only enough for visibility.

5.5.10.3. Put transmission into first gear and test foot brake.

5.5.10.4. Sound horn if going around blind corners.

5.5.10.5. After all checks are completed, sign appropriate forms. Correct any discrepancies.

5.5.11. Post operation.

5.5.11.1. Park on level ground, set parking brake, gear in neutral.

5.5.11.2. Fully retract and lower the boom.

5.5.11.3. Retract the spreader to the 20 ft. position.

5.5.11.4. Idle engine down for 5-10 minutes.

5.5.11.5. To shut off motor, turn ignition switch to the OFF position.

5.5.11.6. Ensure vehicle is secure by locking the steering wheel, and closing the windows.

5.5.11.7. Make a final walk-around inspection.

5.5.11.7.1. Check for leaks.

5.5.11.7.2. Check for cuts on tires.

5.5.11.7.3. Check for damage to the vehicle.

5.5.11.7.4. Make sure it is clean with plenty of fuel before turning it back to dispatch support.

Section 6—EXPLANATION AND DEMONSTRATION.

6.1. Instructor's Preparation.

6.1.1. Establish a training location.

6.1.2. Obtain appropriate vehicle operator's manual.

6.1.3. Schedule/reserve a vehicle.

6.1.4. Ensure trainee completes AF Form 171.

6.2. Safety Procedures and Equipment.

6.2.1. The following safety items should be followed by both the instructor and trainee.

6.2.1.1. Chock wheel (if required) when the vehicle is parked.

6.2.1.2. Remove all jewelry and identification tags.

6.2.1.3. Personal protective equipment and equipment items.

6.2.1.3.1. Safety steel-toed boots must be worn.

6.2.1.3.2. Gloves will be worn during cargo loading and unloading.

6.2.1.3.3. First aid kit.

6.2.1.3.4. Hearing protection.

6.2.1.3.5. Eye protection.

6.2.1.3.6. Raingear, cold weather gear, etc.

6.2.1.3.7. Reflective belt during hours of reduced visibility or on the flightline.

6.2.1.4. The trainer and trainee should walk around vehicle to become familiar with all warning labels and signs.

6.2.1.5. Ensure trainee wears seat belts.

6.2.1.6. Properly adjust driver's seat and all mirrors, if available.

6.2.1.7. Throughout demonstration, practice 100K reach stacker safety.

6.2.2. Practice basic RM process during demonstration:

6.2.2.1. Identify hazards.

6.2.2.2. Assess hazards.

6.2.2.3. Develop controls and make decisions.

6.2.2.4. Implement controls.

6.2.2.5. Supervise and evaluate.

6.3. Operator Maintenance Demonstration.

6.3.1. With trainee, accomplish vehicle inspection using AF Form 1800. The vehicle inspection will follow the seven-step method as described in **Attachment 4**. An inspection guide (**Attachment 2**) can be used to ensure all areas of the 100K reach stacker are covered in addition to the "Operation Demonstration" guidelines provided below.

6.4. Operation Demonstration.

6.4.1. Throughout demonstration:

6.4.1.1. Allow for questions.

6.4.1.2. Repeat demonstrations as needed.

6.4.2. For the 100K reach stacker, within the training area, demonstrate and explain the following. **Note:** Use information contained on the data plate and/or the operator's manual:

6.4.2.1. Specific 100K reach stacker capacities: Explain parking brake as they apply to 100K reach stacker being used.

6.4.2.2. 100K reach stacker levers and controls.

6.4.2.3. Point out the items to be inspected during operations.

6.4.3. Describe and demonstrate the following 100K reach stacker operations (use spotter when backing).

6.4.3.1. Describe the different types of loads and how to handle each.

6.4.3.2. Describe the minimum levels for oil and air pressure.

6.4.3.3. Describe the proper shutdown techniques.

6.4.3.4. Demonstrate backing procedures. Always use a spotter.

6.4.3.5. Demonstrate proper parking procedures.

6.4.4. Show trainee the after operation inspection and report.

6.4.4.1. Ensure vehicle is cleaned.

6.4.4.2. Refuel vehicle.

6.4.4.3. Following manufacturer's shut-down procedures.

6.4.4.4. Park.

6.4.4.4.1. Apply brakes.

6.4.4.4.2. Place transmission in neutral (park or an automatic).

6.4.4.5. Perform a walk-around inspection.

6.4.4.6. Annotate any discrepancies found on AF Form 1800.

6.4.5. Conclude by allowing time for questions and any requested re-demonstrations.

Section 7—TRAINEE PERFORMANCE AND EVALUATION

7.1. Trainee Performance.

7.1.1. Instructor will:

7.1.1.1. Ensure safety at all times. **Note:** Stop training when safety items are violated. Proceed only when the trainee fully understands how to avoid repeating the safety infraction(s).

7.1.1.1.1. Chock wheel (if required) when 100K reach stacker is parked.

7.1.1.1.2. Remove all jewelry and identification tags.

Note: If available, mark vehicle with magnetic sign indicating "Driver-in-Training" or "Trainee Operator."

7.1.1.2. Personal protective equipment and other items:

7.1.1.2.1. Safety steel-toed boots must be worn.

7.1.1.2.2. Gloves will be worn during cargo loading and unloading.

7.1.1.2.3. First aid kit.

7.1.1.2.4. Hearing protection.

7.1.1.2.5. Eye protection.

7.1.1.2.6. Reflective belt during hours of reduced visibility or on the flightline.

7.1.1.2.7. Raingear, cold weather gear, etc.

7.1.1.3. Pay particular attention to the cautions and warnings listed in the operator's manual.

7.1.1.4. Ensure trainee wears seat belts.

7.1.1.5. Properly adjust driver's seat and all mirrors.

7.1.1.6. 100K reach stacker safety items/procedures.

7.1.1.7. Ensure the driver is aware of driving situations he/she is to perform.

7.1.1.8. Conduct during/after-action reviews with the trainee (demonstration may need to be re-accomplished).

7.1.2. Trainee Performance.

7.1.2.1. Conduct operator maintenance (have trainee explain items being inspected). **Note:** Allow trainee to use **Attachment 2** as a guide while performing inspection.

7.1.2.1.1. Pre-inspection.

7.1.2.1.2. During-inspection.

7.1.2.2. Ensure AF From 1800 is properly documented.

7.1.2.3. For the 100K reach stacker, within the training area, demonstrate and explain the following. **Note:** Use information contained on the data plate and/or the operator's manual:

7.1.2.3.1. Specific 100K reach stacker capacities: Explain parking brake as they apply to 100K reach stacker being used.

7.1.2.3.2. 100K reach stacker levers and controls.

7.1.2.4. Describe and demonstrate the following 100K reach stacker operations (use spotter when backing).

7.1.2.4.1. Different types of loads and how to handle each.

7.1.2.4.2. Minimum levels for oil and air pressure.

7.1.2.4.3. Proper shutdown techniques.

7.1.2.4.4. Demonstrate backing procedures. Always use a spotter.

7.1.2.4.5. Demonstrate proper parking procedures.

7.1.2.4.6. Continue until trainee can show proficiency in operating.

7.1.2.5. Perform after-operation inspection.

7.1.2.5.1. Ensure vehicle cleaned.

7.1.2.5.2. Refueled.

7.1.2.5.3. Following manufacturer's shut-down procedures.

7.1.2.5.4. Park.

7.1.2.5.5. Apply brakes.

7.1.2.5.6. Place transmission in neutral (park or an automatic).

7.1.2.6. Report any discrepancies found on AF Form 1800.

7.2. Performance Evaluation.

7.2.1. Trainee will perform performance evaluation found in **Attachment 3**.

7.2.1.1. Instructor and trainee will review **Attachment 3**.

7.2.1.2. Instructor will answer trainee's questions.

Note: If available, mark vehicle with magnetic sign indicating "Driver-in-Training" or "Trainee Operator".

7.2.2. Instructor will:

7.2.2.1. Ensure safety at all times.

7.2.2.1.1. Place wheel chocks (if required) when 100K reach stacker is parked,

7.2.2.1.2. Remove all jewelry and identification tags.

7.2.2.2. Personal protective equipment and other items.

7.2.2.2.1. Safety steel-toed boots must be worn.

7.2.2.2.2. Gloves will be worn during cargo loading and unloading.

7.2.2.2.3. First aid kit.

7.2.2.2.4. Hearing protection.

7.2.2.2.5. Eye protection.

7.2.2.2.6. Reflective belt during hours of reduced visibility or on the flightline.

7.2.2.3. Pay particular attention to the cautions and warnings listed in the operator's manual.

7.2.2.4. Ensure trainee wears seat belts.

7.2.2.5. Properly adjust driver’s seat and all mirrors (if available).

7.2.2.6. 100K reach stacker safety items/procedures.

7.2.3. Explain driving techniques.

7.2.4. Establish a course that will have the following: (if the course does not have one of the following, then the trainee should be able to explain the correct driving techniques).

7.2.4.1. Different types of loads and how to handle each.

7.2.4.2. Minimum levels for oil and air pressure.

7.2.4.3. Proper shutdown techniques.

7.2.4.4. Demonstrate proper parking procedures.

7.2.4.5. Demonstrate backing procedures.

7.2.5. Conduct after-action reviews with the trainee.

7.2.6. Trainee is not allowed any instructor assists to pass performance evaluation.

7.2.7. Evaluation checklist provided in **Attachment 3**.

7.2.8. Perform after-operation inspection. Annotate any discrepancies found on AF Form 1800.

7.2.9. Retraining; retrain No-Go's.

7.2.9.1. Re-demonstrate "No-Go" items.

7.2.9.2. Have trainee re-perform until they show proficiency in operating, critique weaknesses as observed.

7.2.9.3. Re-evaluate.

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References
AFI 24-301, *Ground Transportation, 1 November 2018*
AFMAN 24-306, *Operation of Air Force Government Motor Vehicles*, 9 December 2017

Adopted Forms
AF Form 171, *Request for Driver's Training and Addition to U.S. Government Drivers*, 1 November 2018
AF Form 847, *Recommendation for Change of Publication*, 22 September 2009
AF Form 1800, *Operator's Inspection Guide and Trouble Report*, 1 April 2010

Abbreviations and Acronyms
AF—Air Force
AFI—Air Force Instruction
AFIMSC—Air Force Installation Mission Support Center
AFQTP—Air Force Qualification Training Package
AFMAN—Air Force Manual
FOD—Foreign Object Damage
IAW—In Accordance With
MPH—Miles per Hour
PSI—Pounds per Square Inch
RM—Risk Management
RPM—Revolutions per Minute
VCNCO—Vehicle Control Non Commissioned Officer
VCO—Vehicle Control Officer

Attachment 2

100K REACH STACKER INSPECTION GUIDE

GENERAL

STEP 1. VEHICLE OVERVIEW

☐ Paperwork
- AF Form 1800
- Discrepancy Correction Complete (VM Annotation)

☐ Vehicle Approach
- Damage
- Vehicle Leaning
- Fresh Leakage of Fluids
- Hazards Surrounding Vehicle

INTERNAL

STEP 2. ENGINE COMPARTMENT

☐ Leaks/Hoses/Electrical Wiring Insulation
☐ Hood Latches
☐ Oil Level
☐ Coolant Level
☐ Power Steering Fluid
☐ Windshield Washer Fluid
☐ Hydraulic Fluid
☐ Battery Fluid Level, Connections & Tie-downs
☐ Automatic Transmission Fluid Level
☐ Engine Compartment Belts
☐ Air Filter/Air Intake
☐ Antifreeze Level

STEP 3. ENGINE START/CAB CHECK (LEFT/FRONT/RIGHT)

☐ Safe Start
☐ Gauges
- Oil Pressure Gauge
- Temperature Gauge (Coolant/Engine Oil)
- Ammeter/Voltmeter

☐ Warning Lights, Beacons & Buzzers
☐ Mirrors & Windshield
☐ Wipers/Washers
☐ Emergency & Safety Equipment
- Red Reflective Triangles
- Properly Charged & Rated Fire Extinguisher
- Optional (Chains/Tire Changing Equip, Emergency Phone List)

☐ **3B** – Lights/Reflectors/Reflector Tape Condition (Front/Sides/Rear)
(Dash Indicators for:)
- Left Turn Signal
- Right Turn Signal
- Four-Way Emergency Flashers
- High Beam Headlight
- Clearance Lights

(Reflective Clean & Functional Light & Reflector Checks Include:)
- Headlights
- Running Lights
- Backing Lights
- Turn Signals
- Four-Way Flashers
- Brake Lights
- Spotlight
- Deck Lights
- Red Reflectors & Amber Reflectors
- Reflective Tape Condition

☐ Horn
☐ Heater/Defroster
☐ Brakes
- Parking Brake Check
- Hydraulic Brake Check
- Service Brake Check
- Safety Belt

(TURN-OFF ENGINE/TURN-ON HEADLIGHTS *LOW BEAM* AND FOUR-WAY FLASHERS)

STEP 4. WALK-AROUND INSPECTION

☐ **4A** – Steering
- Steering Box/Hoses
- Steering Linkages
- Tie Rod
- Steering Plate
- Steering Arm Bolts and Pins

☐ **4B** – Suspension
- Springs/Air/Torque
- Mounts
- Shock Absorbers

☐ **4C** – Brakes
- Slack Adjustors & Pushrods
- Brake Chambers
- Brake Hoses/Lines
- Brake Linings
- Brake Canister

☐ **4D** – Wheels
- Rims
- Tires
- Hub Oil Seals/Axle Seals
- Lug Nuts
- Proper Inflation

☐ **4E** – Cylinders

SIDE OF VEHICLE

☐ **4F** – Doors

☐ **4F** – Mirrors

☐ **4F** – Fuel Tank/Fuel Door/Fuel Cap

☐ **4F** – Steps/Walkways/Handholds

REACH STACKER COMPONENTS

☐ **4G** – Boom

☐ **4G** – Attachment Linkages/Twistlocks/Guide Blocks

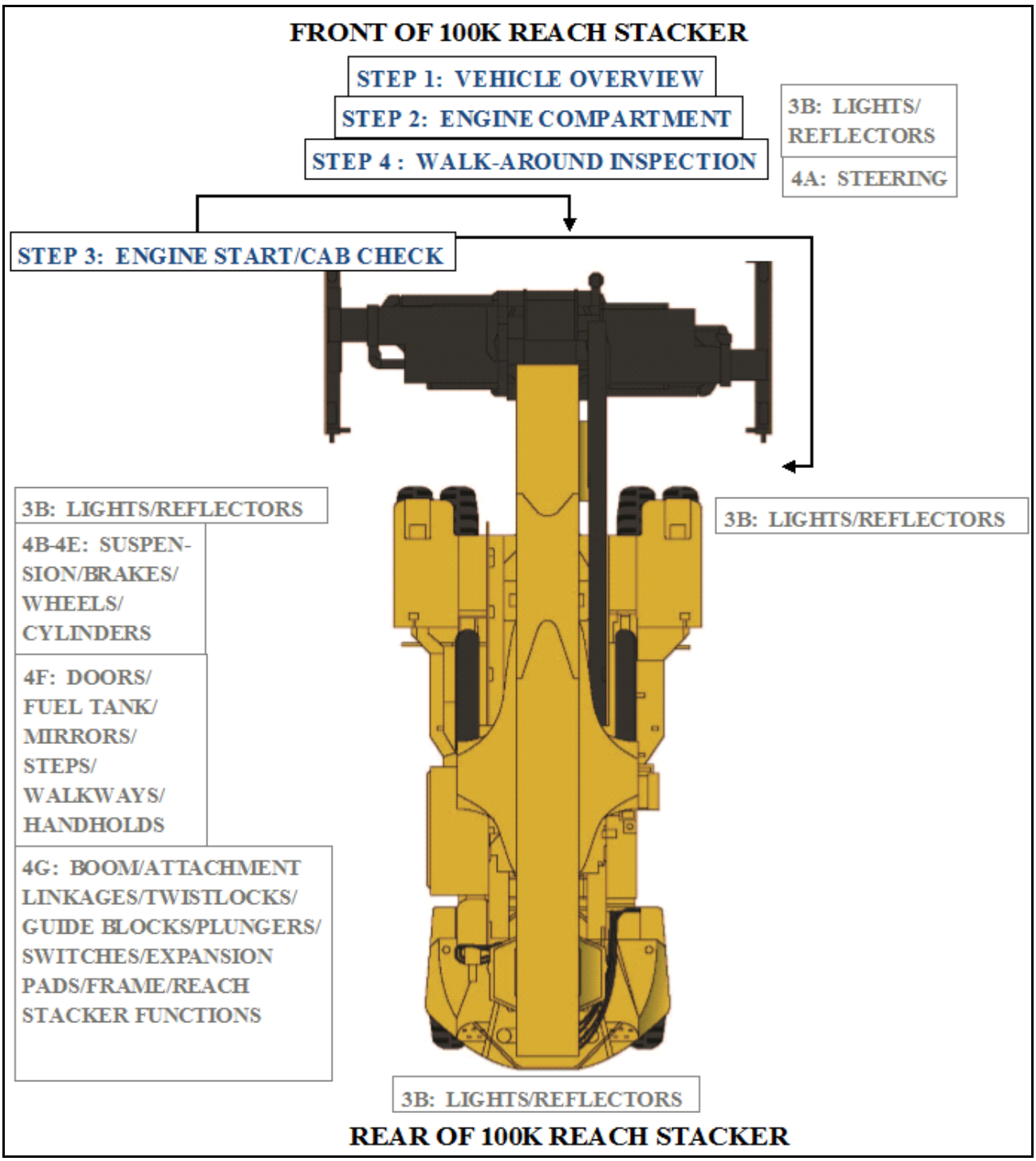
☐ **4G** – Plungers/Switches/Expansion Pads

☐ **4G** – Frame

☐ **4G** – Reach Stacker Functions

REAR OF VEHICLE

Figure A2.1. 100K Reach Stacker Vehicle Inspection Guide.



Attachment 3

PERFORMANCE TEST

A3.1. Desired Learning Outcome.

A3.1.1. Understand the safety precautions to be followed before-, during-, and after-operation of the 100K reach stacker.

A3.1.2. Understand the purpose of the 100K reach stacker and its role in the mission.

A3.1.3. Know the proper operator maintenance procedures of the 100K reach stacker, in accordance with (IAW) applicable TOs and use of AF Form 1800.

A3.1.4. Safely and proficiently operate the 100K reach stacker.

A3.2. Instructions. Before beginning the performance test, the trainer will brief trainee on the scenario he/she will need to accomplish. They will be given additional directions and instructions as needed while proceeding through the scenario.

A3.3. Scoring.

A3.3.1. The trainer examiner will be scoring on 100K reach stacker operations and also the general safe driving practices. The examiner will give directions and instructions to the trainee in sufficient time to execute a driving maneuver. He/she will not be asked to drive in an unsafe manner.

A3.3.2. The examiner will be making various marks on the performance test checklist. This does not necessarily mean the trainee has done anything wrong. It is in the best interest to concentrate on the operation of the 100K reach stacker. The trainer will explain the test results at the conclusion of the performance test.

A3.3.3. Tasks being graded are listed on the following page; the trainee will be required to successfully pass all items.

A3.3.4. The instructor will stop the test at any time safe 100K reach stacker operations are not being followed or as deemed necessary for safety concerns.

Figure A3.1. Performance Test Checklist:

PERFORMANCE TEST			
Trainees Name:		**Date:**	
Event	**Go**	**No Go**	**Notes**
1. PRE, DURING, AND POST- OPERATION INSPECTION			
1.1. Operator has required Personal Protective Equipment.			
1.2. Follows general pattern of pre-trip checklist.			
1.3. Performs brake component check			
1.4. Signs AF Form 1800 to signify accomplishment of complete inspection.			
1.5. Inspects all emergency equipment on the 100K reach stacker.			
1.6. Inspects all levers, controls and fluid levels.			
1.7. Cleans windshield, windows, mirrors, lights and reflectors.			
1.8. Continues during operations inspection checks.			
1.9. Performs post trip inspection and reports malfunctions to Vehicle Management.			
Event	**Go**	**No Go**	**Notes**
2. ON-ROAD DRIVING TEST			
2.1. General - safety belt is used; obeys all traffic signs, signals, and laws; completes test without an accident or moving violation. Properly uses all necessary safety equipment. Prohibits personnel from coming within 50 feet of the vehicle while in operation.			
2.2. Operating the starter for the correct amount of time.			
2.3. Operating all controls.			
2.4. Different types of loads and how to handle each.			
2.5. Obeying speed limits.			

2.6. Demonstrating proper parking procedures.			
2.7. Demonstrating proper backing procedures. Uses spotter.			
2.8. Demonstrate shutdown procedures.			
CERTIFIER COMMENTS:			

Attachment 4

SEVEN-STEP INSPECTION PROCESS

Figure A4.1. Seven-Step Inspection Process.

Seven-Step Inspection Process	
Step	**Procedure**
1. Vehicle Overview	• Review the AF Form 1800. o Ensure any discrepancy has been corrected. o Vehicle Management annotated the discrepancy was completed. o Approaching the vehicle. ▪ Damage or vehicle leaning to one side. ▪ Fresh leakage of fluids. ▪ Hazards around vehicle.
2. Check Engine Compartment	• **Note:** Check that the parking brakes are on and/or wheels chocked. The operator may have to raise the hood, tilt the cab (secure loose things so they don't fall and break something), or open the engine compartment door. • Check the following: o Engine oil level. o Coolant level in radiator; condition of hoses. o Power steering fluid level; hose condition (if so equipped). o Windshield washer fluid level. o Battery fluid level, connections and tie-downs (battery may be located elsewhere). o Automatic transmission fluid level (may require engine to be running). o Check belts for tightness and excessive wear (alternator, water pump, air compressor)--learn how much "give" the belts should have when adjusted right.

	o Leaks in the engine compartment (fuel, coolant, oil, power steering fluid, hydraulic fluid, battery fluid). Cracked, worn electrical wiring insulation.
3. Start Engine and Inspect Inside the Cab	• Get in and start engine. • Make sure parking brake is on. • Put gearshift in neutral (or park if automatic). Start engine; listen for unusual noises. • If equipped, check the Anti-lock Braking System (ABS) indicator lights. Light on dash should come on and then turn-off. If it stays on the ABS is not working properly. • **Note:** For trailers only, if the yellow light on the left rear of the trailer stays on, the ABS is not working properly. • Look at the gauges. o <u>Oil pressure</u>. Should come up to normal within seconds after engine is started. o <u>Air pressure</u>. Pressure should build from 50 to 90 psi within 3 minutes. Build air pressure to governor cut-out (usually around 120 – 140 psi. Know the vehicle's requirements. o <u>Ammeter and/or voltmeter</u>. Should be in normal range(s). o <u>Coolant temperature</u>. Should begin gradual rise to normal operating range. o <u>Engine oil temperature</u>. Should begin gradual rise to normal operating range. o <u>Warning lights and buzzers</u>. Oil, coolant, charging circuit warning, and antilock brake system lights should go out right away. o Check condition of controls. Check all of the following for looseness, sticking, damage, or improper setting: ▪ Steering wheel. ▪ Clutch.

	▪ Accelerator (gas pedal). ▪ Brake controls. ▪ Foot brake. ▪ Parking brake. ▪ Transmission controls. ▪ Horn(s). ▪ Windshield wiper/washer. ▪ Lights. ▪ Headlights. ▪ Dimmer switch. ▪ Turn signal. ▪ Four-way flashers. ▪ Parking – clearance – identification – marker switch (switches). • Check mirrors and windshield. o Inspect mirrors and windshield for cracks, dirt, illegal stickers, or other obstructions to seeing clearly. Clean and adjust as necessary. • Check emergency equipment. o Check for safety equipment: ▪ Spare electrical fuses (unless vehicle has circuit breakers). ▪ Three red reflective triangles, 6 fuses or 3 liquid burning flares. ▪ Properly charged and rated fire extinguisher. Check for optional items such as: ▪ Chains (where winter conditions require). ▪ Tire changing equipment. ▪ List of emergency phone numbers Accident reporting kit (packet). o Check safety belt. Check that the safety belt is securely mounted, adjusts; latches properly and is not ripped or frayed.
4. Turn-off Engine	• Make sure the parking brake is set, turn-off the engine, and take the key with. • Turn-on headlights (low beams) and four-way emergency flashers, and get out of the vehicle.

5. Do Walk-Around Inspection	• General. o Go to front of vehicle and check that low beams are on and both of the four-way flashers are working. o Turn-off headlights and four-way emergency flashers. o Turn-on parking, clearance, side-marker, and identification lights. o Turn-on right turn signal, and start walk-around inspection. o Walk around and inspect. ▪ Clean all lights, reflectors, and glass as while doing the walk-around inspection. • Left front side. o Driver's door glass should be clean. o Door latches or locks should work properly. • Left front wheel. o Condition of wheel and rim--missing, bent, broken studs, clamps, lugs, or any signs of misalignment. o Condition of tires--properly inflated, valve stem and cap OK, no serious cuts, bulges, or tread wear. o Use wrench to test rust-streaked lug nuts, indicating looseness. o Hub oil level OK, no leaks. Left front suspension. o Condition of spring, spring hangers, shackles, o U-bolts. o Shock absorber condition. • Left front brake. o Condition of brake drum or disc. o Condition of hoses. • Front. o Condition of front axle. Condition of steering system. o No loose, worn, bent, damaged or missing parts. o Mustgrabsteering mechanism to test for looseness. o Condition of windshield. o Check for damage and clean if dirty.

	o Check windshield wiper arms for proper spring tension. o Check wiper blades for damage, "stiff" rubber, and securement. o Lights and reflectors. o Parking, clearance, and identification lights clean, operating, and proper color (amber at front). o Reflectors clean and proper color (amber at front). o Right front turn signal light clean, operating, and proper color (amber or white on signals facing forward). • Right side. o Right front: check all items as done on left front. o Right fuel tank(s). o Securely mounted, not damaged, or leaking. Fuel crossover line secure. o Tank(s) contain enough fuel. Cap(s) on and secure. o Condition of visible parts. Rear of engine--not leaking. Transmission--not leaking. o Exhaust system--secure, not leaking, not touching wires, fuel, or air-lines. o Frame and cross members--no bends or cracks. • Right rear. o Condition of wheels and rims--no missing, bent, or broken spacers, studs, clamps, or lugs. o Condition of tires--properly inflated, valve stems and caps OK, no serious cuts, bulges, tread wear, tires not rubbing each other, and nothing stuck between them. o Tires same type, e.g., not mixed radial and bias types. o Tires evenly matched (same sizes). Wheel bearing/seals not leaking. o Suspension. o Condition of spring(s), spring hangers, shackles, and U-bolts. o Axle secure.

	o Powered axle(s) not leaking lube (gear oil). Condition of torque rod arms, bushings. o Condition of shock absorber(s). o Condition of air ride components. o Brakes. o Brake adjustment. o Condition of brake drum(s) or discs. o Condition of hoses--look for any wear due to rubbing. o Lights and reflectors. o Side-marker lights clean, operating, and proper color (red at rear, others amber). o Side-marker reflectors clean and proper color (red at rear, others amber). • Rear. o Lights and reflectors. o Rear clearance and identification lights clean, operating, and proper color (red at rear). o Reflectors clean and proper color (red at rear). o Right rear turn signal operating, and proper color (red, yellow, or amber at rear). o License plate(s) present, clean, and secured. o Splash guards present, not damaged, properly fastened, not dragging on ground, or rubbing tires. • Left side. o Check all items as done on right side, plus: o Battery (batteries) (if not mounted in engine compartment). o Battery box (boxes) securely mounted to vehicle. Box has secure cover. o Battery (batteries) secured against movement. Battery (batteries) not broken or leaking. o Fluid in battery (batteries) at proper level (except maintenance-free type).

	o Cell caps present and securely tightened (except maintenance-free type). o Vents in cell caps free of foreign material (except maintenance-free type).
6. Check Signal Lights	• Get in and turn-off all lights. • Turn-on stop lights. • Turn-on left turn signal lights. • Get out and check lights. • Left front turn signal light clean, operating and proper color (amber or white on signals facing the front). • Left rear turn signal light and both stop lights clean operating, and proper color (red, yellow, or amber). • Get in vehicle. o Turn-off lights not needed for driving. o Check for all required papers, trip manifests, permits, etc. o Secure all loose articles in cab (they might interfere with operation of the controls or hit the operator in a crash). o Start the engine.
7. Start the Engine and Check Test for Hydraulic Leaks	• Test for hydraulic leaks. o If the vehicle has hydraulic brakes, pump the brake pedal three times. o Then apply firm pressure to the pedal and hold for five seconds. o The pedal should not move. If it does, there may be a leak or other problem. • Brake system. • Test parking brake. o Fasten safety belt. o Set parking brake (power unit only). Place vehicle into a low gear. o Gently pull forward against parking brake to make sure the parking brake holds. o If it doesn't hold vehicle, it is faulty; get it fixed. • Test service brake stopping action. o Go about 5 miles per hour.

	o Push brake pedal firmly. o "Pulling" to one side or the other can mean brake trouble. o Any unusual brake pedal "feel" or delayed stopping action can mean trouble. o If the trainee finds anything unsafe during the Vehicle inspection, get it fixed. Federal and state laws forbid operating an unsafe vehicle. • Check vehicle operation regularly: o Instruments. o Air pressure gauge (if the vehicle has air brakes). Temperature gauges. o Pressure gauges. Ammeter/voltmeter. o Mirrors. o Tires. • Safety inspection. • Document any discrepancy on AF Form 1800. Sign-off AF Form 1800 to signify accomplishment of inspection.