DEPARTMENT OF THE AIR FORCE
Headquarters US Air Force
Washington, D.C. 20330-1030

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Snow Blowers

Vehicle Management Codes: D577 & D578

QUALIFICATION TRAINING PACKAGE

CONTENTS

Section 1—OVERVIEW

1.1. Overview.

1.1.1. Send comments and suggested improvements on Air Force (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 knowledge exam, **Section 5**.

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

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 Plan (AFQTP) process and the trainee's responsibilities.

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

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

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. Sign-off the task(s).

Section 3—INTRODUCTION

3.1. Objectives.

3.1.1. Given lectures, demonstrations, and a 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 snow blower.

3.1.1.2. This training will ensure the trainee becomes a qualified snow blower operator; an operator who has the knowledge and skills to operate a snow blower in a safe, proficient and professional manner.

3.2. Desired Learning Outcomes.

3.2.1. Understand the purpose of the snow blower and its role in the mission.

3.2.2. Understand the safety precautions to be followed for pre-, during- and post-operation inspections of the snow blower.

3.2.3. Know the proper operator maintenance procedures of the snow blower in accordance with (IAW) applicable technical manual(s) and use of AF Form 1800, *Operator's Inspection Guide and Trouble Report*.

3.2.4. Be completely familiar with the safety features of the snow blower.

3.2.5. Safely and proficiently operate the snow blower.

3.3. Lesson Duration.

3.3.1. Recommended instructional and hands on training time is 14 hours:

Table 3.1. Recommended Training Time for Training Activities.

Training Activity	Training Time
Trainee's Preparation	2 Hours
Instructor's Lecture	3 Hours
Instructor's Demonstration	2 Hours
Trainee's Personal Experience (to build confidence and proficiency) ▪ Perform Operator Maintenance ▪ Operate the Vehicle	6 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 IAW Air Force Pamphlet (AFPAM) 90-803, *Risk Management (RM) Guidelines and Tools*.

3.4.2. Applicable technical manual(s) or Manufacturer's Operator's Manual (see Vehicle Management for technical manual(s) 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. Air Force Instruction (AFI) 91-203, *Air Force Consolidated Occupational Safety Instruction*.

3.4.6. AFI 24-302, *Vehicle Management*.

3.5. Instructional Training Aids and Equipment.

3.5.1. Snow Blower Lesson Plan.

3.5.2. Snow blower.

3.5.3. Applicable technical manual or manufacturer's operator's manual.

3.5.4. AF Form 1800.

3.5.5. Videos (if locally produced).

3.5.6. Suitable training area.

3.5.7. Traffic cones.

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 Drivers* IAW 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 operating session(s), the trainee must be able to perform operator's inspection and complete the performance evaluation with zero instructor assists.

5.1.1.2. Train and qualify each trainee in safe operation and preventive/operational maintenance of the snow blower.

5.1.1.3. This training will ensure the trainee becomes a qualified snow blower operator—an operator who has the knowledge and skills to operate a snow blower in a safe, proficient and professional manner.

5.1.2. Desired learning outcomes:

5.1.2.1. Understand the purpose of the snow blower and its role in the mission.

5.1.2.1.1. The purpose of the snow blower is to remove heavy concentrations of snow from the pavement surface.

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

5.1.2.2. Understand the safety precautions to be followed pre-, during- and post-operational inspection of the snow blower.

5.1.2.3. Be completely familiar with the safety features of the snow blower.

5.1.2.4. Safely and proficiently operate the snow blower.

5.1.3. Snow blower design. The design of a snow blower varies depending on the vehicle manufacturer. Refer to the technical manual(s) for additional information on the specific snow blower being operated.

5.1.4. The trainee should be able to identify the following components of the snow blower:

5.1.4.1. Blower head assembly components.

5.1.4.2. Auxiliary engine.

5.2. Vehicle Inspection.

5.2.1. Pre-operation vehicle inspection test. Use **Attachment 2** as a 360 walk-around guide along with AF Form 1800.

5.2.2. 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.

5.2.3. Types of Vehicle Inspection. If discrepancies are found the operator must report them to Vehicle Control Officer/Vehicle Control Non-Commissioned Officer (VCO/VCNCO), the supervisor, and/or vehicle maintenance:

5.2.3.1. Pre-operation inspection – identify items/problems that could cause accidents or breakdowns.

5.2.3.1.1. Vehicle Maintenance may authorize continued use for all other maintenance discrepancies.

5.2.3.1.2. Cleanliness/damaged/missing items.

5.2.3.1.3. Leaks (fuel/oil/coolant/air).

5.2.3.1.4. Fluid levels; ensure levels are is within limits:

5.2.3.1.4.1. Engine oil.

5.2.3.1.4.2. Coolant.

5.2.3.1.4.3. Power steering fluid.

5.2.3.1.4.4. Transmission fluid.

5.2.3.1.4.5. Hydraulic fluid.

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

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

5.2.3.1.7. All tires.

5.2.3.1.7.1. Proper inflation.

5.2.3.1.7.2. Sidewalls, tread, to include depth, bulges.

5.2.3.1.7.3. Cuts and abrasions.

5.2.3.1.7.4. Lug nuts.

5.2.3.1.7.5. Mud flaps.

5.2.3.1.8. Transmission.

5.2.3.1.8.1. Differential(s). Damage, wear and leaks.

5.2.3.1.8.2. Drive train. Damage, wear and leaks.

5.2.3.1.9. Drive belts; tension and fraying.

5.2.3.1.10. Air filter(s).

5.2.3.1.11. All hoses and wiring.

5.2.3.1.12. Suspension.

5.2.3.1.12.1. Shocks and springs, damage.

5.2.3.1.13. Frame bolts and other fasteners, visual inspection for damage.

5.2.3.1.14. Welds visual inspection for cracks.

5.2.3.1.15. Visual and auditory warning devices.

5.2.3.1.16. Storage bin doors properly latched, if applicable.

5.2.3.1.17. Blower head assembly components.

5.2.3.1.17.1. Blower head frame.

5.2.3.1.17.2. Blower drum/liner.

5.2.3.1.17.3. Ribbons.

5.2.3.1.17.4. Impeller.

5.2.3.1.17.5. Cutting edge/moldboard.

5.2.3.1.17.6. Loading chute assembly, if applicable.

5.2.3.1.17.7. Lift Frame/lift cylinder.

5.2.3.1.17.8. Chains, shackles, and pins.

5.2.3.1.17.9. Hydraulic lift/drum rotate cylinders.

5.2.3.1.17.10. Loading chute cylinders, if applicable.

5.2.3.1.17.11. Hydraulic motor(s).

5.2.3.1.17.12. Hydraulic hoses.

5.2.3.1.17.13. Casters/shoes.

5.2.3.1.17.14. Blower head drive train/shear pins. **Note:** Refer to technical manual(s).

5.2.3.1.18. Auxiliary engine(s), if applicable.

5.2.3.1.18.1. Refer to **Paragraph 5.2.**

5.2.3.1.19. Pintle hook connection/compatibility, if applicable.

5.2.3.1.20. Fuel tank(s) assembly for damage.

5.2.3.1.21. Diesel exhaust fluid (DEF) tank, if applicable.

5.2.3.1.22. Wiring/lights/reflectors (interior/exterior).

5.2.3.1.23. Mirrors.

5.2.3.1.24. Windshield and windshield wipers/washers.

5.2.3.1.25. Doors.

5.2.3.1.26. Windows.

5.2.3.1.27. Seatbelts.

5.2.3.2. During-operation inspection.

5.2.3.2.1. Ensure master(s) switch is turned to the ON position.

5.2.3.2.2. Ignition to accessory position.

5.2.3.2.3. Check all gauges and warning lights/indicators for proper operations.

Note: CAUTION – Regeneration system. Refer to technical manual(s).

5.2.3.2.4. Ignition to starts.

5.2.3.2.5. Check for unusual conditions (interior).

5.2.3.2.5.1. Sounds.

5.2.3.2.5.2. Odors.

5.2.3.2.5.3. Vibrations.

5.2.3.2.6. Conduct 360 walk-around; check for unusual conditions (exterior).

5.2.3.2.6.1. Sounds.

5.2.3.2.6.2. Odors.

5.2.3.2.6.3. Vibrations.

5.2.3.2.6.4. Leaks.

5.2.3.2.6.5. Light function.

5.2.3.2.7. Conduct function check of all controls.

5.2.3.2.7.1. Steering wheel. **Note:** Disengage all-wheel steer function.

5.2.3.2.7.2. Shift selector.

5.2.3.2.7.3. Parking brake.

5.2.3.2.7.4. Blower head assembly lift/drum rotate levers/switches.

5.2.3.2.7.5. Loading chute assembly extent/retract/rotate/deflector switches.

5.2.3.2.7.6. Windshield wipers.

5.2.3.2.7.7. Climate control.

5.2.3.2.8. Air brake check. The trainee must accomplish all three components of the air brake check correctly. Air brake safety devices vary. However, this procedure is designed to see that any safety device operates correctly as air pressure drops from normal to a low air condition. For safety purposes, in areas where an incline is present, the operator will use wheel chocks during the air brake check. The proper procedures for inspecting the air brake system are as follows:

5.2.3.2.8.1. With the air pressure built up to governor cutoff (120 – 140 pounds per square inch (psi)), shut off the engine, chock the wheels if necessary, release the parking brake (all vehicles) and fully apply the foot brake. Hold the foot brake for one minute. Check the air gauge to see if the air pressure drops more than three pounds in one minute (single vehicle).

5.2.3.2.8.2. Without re-starting the engine, turn electrical power to the “on” or “battery charge” position. Begin fanning off the air pressure by rapidly applying and releasing the foot brake. Low air warning devices (buzzer, light, flag) should activate before air pressure drops below 60 psi or level specified by the manufacturer.

5.2.3.2.8.3. Continue to fan off the air pressure. On single vehicle types, the parking brake valve should close (pop-out).

5.2.3.2.9. Start auxiliary engine.

5.2.3.2.9.1. Check for unusual conditions (interior).

5.2.3.2.9.1.1. Sounds.

5.2.3.2.9.1.2. Odors.

5.2.3.2.9.1.3. Vibrations.

5.2.3.2.9.2. Conduct 360 walk-around; check for unusual conditions (exterior).

5.2.3.2.9.2.1. Sounds.

5.2.3.2.9.2.2. Odors.

5.2.3.2.9.2.3. Vibrations.

5.2.3.2.9.2.4. Leaks.

5.2.3.2.10. Sign AF Form 1800. Verify Standard Form (SF) 91, *Motor Vehicle Accident Report* and Department of Defense (DD) Form 518, *Accident Identification Card* are on-hand.

5.2.3.3. Post-operation inspection.

5.2.3.3.1. Check fuel level (< ¾ tank, refuel).

5.2.3.3.2. Check DEF level (< ¾ tank, refuel).

5.2.3.3.3. Ensure vehicle and components are cleaned.

5.2.3.3.4. Park vehicle. Ensure transmission in neutral, apply parking brake.

5.2.3.3.5. Ground blower head.

5.2.3.3.6. Follow manufacturer's shut-down procedures.

5.2.3.3.7. Shut off lights and accessories.

5.2.3.3.8. Ensure master(s) switch is turned to the OFF position.

5.2.3.3.9. Drain air tanks.

5.2.3.3.10. Post 360 walk-around. Check for leaks and damage.

5.3. Vehicle Safety and Equipment.

5.3.1. Hazards and human factors:

5.3.1.1. Traffic due to size and weight.

5.3.1.2. Jerky starts and stops.

5.3.1.3. Traveling too fast and turning too sharply.

5.3.1.4. Slip hazards.

5.3.1.4.1. Always maintain three-points of contact when mounting/dismounting the vehicle.

5.3.1.4.2. Be aware of slip hazards on ladders/cat-walks.

5.3.1.5. Restricted visibility.

5.3.2. Safety clothing and equipment:

5.3.2.1. Safety steel-toed boots must be worn.

5.3.2.2. Hearing protection.

5.3.2.3. Inclement weather gear, if needed.

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

5.3.2.5. First aid kit.

5.3.2.6. Cones.

5.3.2.7. Tire gauge.

5.3.2.8. Fire extinguisher.

5.3.2.9. AF Form 1800, SF 91 and DD Form 518.

5.4. Driving Safety and Precautions.

5.4.1. Overview safety and precautions. The following are safety items and procedures to be followed during snow blower operations. The manufacturer's operator's manual will also provide safe operating procedures and the vehicle itself may have warnings, cautions and danger stickers that the vehicle operator should be aware of.

5.4.2. Vehicle data plate. Be familiar with the location and information found on the data plate.

5.4.3. Plan the route.

5.4.3.1. Overhead clearance. Check the clearance height of the vehicle relative to the overhead obstructions such as power lines, trees, and bridges.

5.4.3.2. Width restrictions/construction zones, over-the-road.

5.4.3.3. Weight restriction (roads, bridges, off-road conditions).

5.4.3.4. Inclines.

5.4.3.5. Uneven ground.

5.4.3.6. Soft surfaces.

5.4.4. Over the road operation.

5.4.4.1. Greater vehicle weight. The operator needs to consider the combined weight of the snow blower and the load. This will affect the following:

5.4.4.1.1. Operator's ability to stop. Do not tailgate the vehicle in front. Allow more distance between vehicles in order to increase reaction time.

5.4.4.1.2. Vehicle's ability to accelerate/follow the flow of traffic. Accelerate smoothly and gradually so the truck does not jerk. Rough acceleration causes unnecessary, premature mechanical damage to the truck's drive train. Maintain a safe speed (typically 5 miles per hour (mph) below the posted speed limit).

5.4.4.2. Downgrades/upgrades. The operator will use lower gears more frequently to climb hills or mountains with increasing grade steepness, length and/or heavy load weight. Plan ahead to identify downgrades/upgrades on the route of travel. If possible, talk to other drivers who are familiar with the grades to find out what speeds are safe. When encountering downgrades/upgrades as described, the operator will need to address:

5.4.4.2.1. Speed. On downgrades, gravity causes the speed of the vehicle to increase. The operator must select an appropriate safe speed, use a low gear, and proper braking techniques. The operator must go slow enough so as to not overheat the truck brakes.

5.4.4.2.2. Stopping. If the brakes become too hot, they may start to "fade". This means the operator will need to apply the brakes harder and harder to acquire equivalent stopping power.

5.4.4.3. Sharp turns. Slow down before entering the turn. During the turn, avoid sharp sudden movements with the steering wheel. This reduces the chance of the truck weight shifting, and also prevents the possibility of tipping over due to the higher center of gravity.

5.4.4.4. Surroundings. Operating a snow blower requires the operator's constant attention. Many situations can be avoided by simply paying close attention to the surrounding conditions. Road signs such as "steep grade", "low overhead clearance", "sharp turn ahead", and special speed limits are posted for the driver's safety.

5.4.4.5. Blind spots. Operators must understand the distances where visibility is limited based on the vehicle being used.

5.4.4.6. Operator must take in to account the size of the blower head assembly when operating.

CAUTION: Ensure impeller and ribbons are DISENGAGED before servicing. DISENGAGE impeller and ribbons and cease blowing operations if anyone enters safety zone.

5.4.5. Airfield snow blower operations IAW AFI 13-213, *Airfield Driving*, AFMAN 24-306 and local requirements. Maintain:

5.4.5.1. Safe operating distance around aircraft.

5.4.5.2. Proper distance from airfield lights, buildings, hangars, etc.

5.4.5.3. Two-way communications/light signals with Base Ops and Control Tower, as applicable.

5.4.5.4. Knowledge and adherence to airfield markings/indicators.

5.4.5.5. Alertness to aircraft/vehicle movement.

5.4.5.6. Awareness of prepositioned aerospace ground equipment (AGE), wheel chocks, fire extinguisher/bottle, etc.

5.4.5.7. Awareness of in-ground refueling hydrant lids/utilities man-hole covers.

5.4.5.8. Alertness to aircraft arresting system cables/anchor chains.

CAUTION: Be aware of frost-heaved/uneven pavements and hidden items in snow windrows.

5.4.6. Backing.

5.4.6.1. Use a spotter and hand signals.

5.4.6.2. Back slowly and keep the spotter in view at all times. If the operator loses sight of the spotter, the operator must immediately stop the vehicle.

5.4.6.3. See AFMAN 24-306 for standard AF spotter hand signals and additional guidance on spotter safety.

5.4.7. Tire changing safety.

5.4.7.1. Consider where the vehicle is located. If on a bridge, curve, road with no shoulder, etc.it is safer to move a vehicle on a flat tire to a safe location.

5.4.7.2. Find a location with a firm and level surface for the jack and jack stand.

5.4.7.3. Turn on the four-way flashers.

5.4.7.4. Set parking brake.

5.4.7.5. Ground blower head.

5.4.7.6. Place warning triangles or flares.

5.4.7.7. Block the wheels. If changing a front tire, block the rear wheels. If changing a rear tire, block the front wheels.

5.4.7.8. As required, place dunnage or cribbage under the jack and jack stand.

5.4.7.9. Adhere to FOD program and procedures.

5.5. Vehicle Operation.

5.5.1. General vehicle operations.

5.5.1.1. Complete a pre-operation vehicle inspection.

5.5.1.2. Sign the current AF Form 1800.

5.5.1.3. Climb into the vehicle. Use three points of contact.

5.5.1.4. Adjust the seat and mirrors as needed; fasten seat belt.

5.5.2. Starting the vehicle.

5.5.2.1. To start the vehicle, ensure the parking brake is set and the gear selection is in neutral.

5.5.2.2. Turn the ignition key to the ON position. If the vehicle is equipped with a starter button, press and release the button once the engines starts. **CAUTION:** Do not engage the starter for more than 10 seconds.

5.5.2.3. Wait 10 to 15 seconds before reengaging the starter again if the truck does start on the first try.

5.5.2.4. Trucks equipped with a cold weather starting aid should only be used when temperatures are colder than 35°F.

5.5.2.5. Once the engine starts, monitor the gauges to make sure they are functioning properly.

5.5.3. Moving the vehicle.

5.5.3.1. Before placing the vehicle in motion, ensure the doors are closed and all passengers have a seat belt on.

5.5.3.2. Check air brake pressure and ensure it is in the operating range of at minimum 90 psi.

5.5.3.3. Raise the blower head and place it in the CARRY position before moving the snow blower.

5.5.3.4. Travel to the assigned job location and position the snow blower for snow control operations. Following the snow control operations procedures for operating the snow blower. **CAUTION:** Be mindful of elevated lights, signs and structures when blowing the snow off of the pavement.

5.5.4. End of duty day.

5.5.4.1. Perform post-operation procedures as described in **Paragraph 5.2.**

5.5.4.2. If another operator will be operating the snow blower, it is recommended to perform the above procedure together.

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 snow blower is parked.

6.2.1.2. Remove all jewelry and identification tags.

6.2.1.3. Personal protective equipment (PPE) and equipment items.

6.2.1.3.1. Steel-toed boots must be worn.

6.2.1.3.2. Gloves will be worn during pre-operation, post-operation inspection and while performing maintenance/adjustments to the blower head.

6.2.1.3.3. Hearing protection, if required

6.2.1.3.4. Eye protection, if required.

6.2.1.3.5. Inclement weather gear.

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

6.2.1.3.7. Warning triangles.

6.2.1.4. The trainer and the trainee should conduct a 360 walk-around the vehicle to become familiar with all warning labels and signs.

6.2.1.5. Ensure that the vehicle is properly parked and the brakes are set before accomplishing the walk-around inspection.

6.2.1.6. Properly adjust driver's seat and all mirrors

6.2.1.7. Ensure trainee wears seat belts.

6.2.1.8. Throughout demonstration, practice snow blower operational safety.

6.2.2. Practice basic RM process during demonstration:

6.2.2.1. Identify the hazards.

6.2.2.2. Assess the 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 snow blower 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. Demonstrate/discuss pre-operation and during-operation inspection requirements.

6.4.3. Demonstrate the following for the snow blower.

6.4.3.1. Forward.

6.4.3.2. Turning.

6.4.3.2.1. Two-wheel front steer.

6.4.3.2.2. Crab-steer.

6.4.3.2.3. All-wheel.

6.4.3.3. Braking.

6.4.3.4. Backing, (use trained spotter when backing).

6.4.3.5. Parking.

6.4.3.6. Blowing operations. **Note:** Refer to the technical manual for additional guidance pertaining to the vehicle being operated. Demonstrate:

6.4.3.6.1. Blower head/assembly/casters adjustments.

6.4.3.6.2. Raise/lower blower head.

6.4.3.6.3. Rotate blower drum right and left.

6.4.3.6.4. Engage/disengage impeller.

6.4.3.6.5. Blowing operations to the right and to the left.

6.4.4. Demonstrate/discuss post-operation requirements.

6.4.4.1. Ensure vehicle is clean.

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. Ground blower head.

6.4.4.4.2. Place transmission in neutral.

6.4.4.4.3. Apply brakes.

6.4.4.4.4. Apply chocks.

6.4.4.5. Perform a 360 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 snow blower 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. PPE and other items:

7.1.1.2.1. Steel-toed boots must be worn.

7.1.1.2.2. Gloves will be worn during pre-operation inspection, post-operation inspection and while performing maintenance/adjustments to the snow blower or blower lifting chain/wire rope.

7.1.1.2.3. Hearing protection, if required.

7.1.1.2.4. Eye protection, if required.

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

7.1.1.2.6. Warning triangles.

7.1.1.2.7. Inclement weather gear, if required.

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

7.1.1.4. Properly adjust driver’s seat and all mirrors.

7.1.1.5. Ensure trainee wears seat belt.

7.1.1.6. Snow blower safety items/procedures.

7.1.1.7. Ensure the trainee is aware of tasks to be performed.

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-operation inspection.

7.1.2.1.2. Air brakes test.

7.1.2.1.3. During-operation inspection.

7.1.2.2. Ensure AF From 1800 is properly documented.

7.1.2.2.1. Identify and explain snow blower gauges, switches, levers and buttons.

7.1.2.2.2. Establish a road 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 operating techniques).

7.1.2.2.2.1. Forward.

7.1.2.2.2.2. Turning.

7.1.2.2.2.2.1. Two-wheel front steer.

7.1.2.2.2.2.2. Crab-steer.

7.1.2.2.2.2.3. All-wheel.

7.1.2.2.2.3. Braking.

7.1.2.2.2.4. Backing, (use spotter when backing).

7.1.2.2.2.5. Parking.

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 snow blower is parked,

7.2.2.1.2. Remove all jewelry and identification tags.

7.2.2.2. PPE and other items.

7.2.2.2.1. Steel-toed boots must be worn.

7.2.2.2.2. Gloves will be worn during pre-operation inspection, post- operation inspection and while performing maintenance/adjustments to the blower head.

7.2.2.2.3. Hearing protection, if required.

7.2.2.2.4. Eye protection, if required.

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

7.2.2.2.6. Warning triangles.

7.2.2.2.7. Inclement weather gear, if required.

7.2.2.3. Ensure trainee wears seat belt.

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

7.2.2.5. Snow blower safety items/procedures.

7.2.3. Explain operating techniques.

7.2.4. The trainee will demonstrate and be evaluated on the following procedures.

7.2.4.1. Pre-operation inspection.

7.2.4.2. Forward.

7.2.4.3. Turning.

7.2.4.3.1. Two-wheel front steer.

7.2.4.3.2. Crab-steer.

7.2.4.3.3. All-wheel.

7.2.4.4. Braking.

7.2.4.5. Backing, (use spotter when backing).

7.2.4.6. Parking.

7.2.4.7. Blower operation. **Note:** Refer to the technical manual for additional guidance pertaining to the vehicle being operated

7.2.4.7.1. Blower attachment adjustments.

7.2.4.7.2. Blower attachment lift chains/wire rope adjustments.

7.2.4.7.3. Raising/lower blower attachment.

7.2.4.7.4. Tilting/rotate snow blower attachment left and right.

7.2.4.8. Perform post-operation inspection.

7.2.4.8.1. Ensure vehicle components are cleaned.

7.2.4.8.2. Check fuel level. If there is < ¾ tank, refuel the vehicle.

7.2.4.8.3. Check diesel exhaust fluid level, if equipped.

7.2.4.8.4. Following manufacturer's shut-down procedures.

7.2.4.8.5. Park.

7.2.4.8.5.1. Ground blower attachment.

7.2.4.8.5.2. Place transmission in neutral.

7.2.4.8.5.3. Apply parking brake.

7.2.4.8.6. Engine cool down (3-5 minutes), shut off lights and accessories.

7.2.4.8.7. Drain air tanks.

7.2.4.8.8. Perform a 360 walk-around inspection checking for leaks and damage IAW **Attachment 2**.

7.2.5. Ensure the driver is aware of operating situations.

7.2.6. Conduct after-action reviews with the trainee.

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

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

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 13-213, *Airfield Driving*, 1 June 2011

AFI 24-301, *Ground Transportation*, 1 November 2018

AFI 24-302, *Vehicle Management*, 26 June 2012

AFI 91-203, *Air Force Consolidated Occupational Safety Instruction*, 15 June 2012

AFMAN 24-306, *Operation of Air Force Government Motor Vehicles*, 9 December 2016
AFPAM 90-803, *Risk Management (RM) Guidelines and Tools*, 11 February 2013

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

AFMAN—Air Force Manual

AFQTP—Air Force Qualification Training Plan

DD—Department of Defense

DEF—Diesel Exhaust Fluid

IAW—In Accordance With

PPE—Personal Protective Equipment

PSI—Pounds per Square Inch

RM—Risk Management

SF—Standard Form

VCNCO—Vehicle Control Non Commissioned Officer

VCO—Vehicle Control Officer

Attachment 2

SNOW BLOWER 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
- Oil Level
- Coolant Level
- Power Steering Fluid
- Windshield Washer Fluid
- Battery Fluid Level, Connections & Tie downs
- Automatic Transmission Fluid Level
- Engine Compartment Belts
- Hydraulic Fluid

☐ Auxiliary Engine(s), if applicable

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

☐ Safe Start

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

☐ Warning Lights & 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
- Headlights
- Taillights
- Backing Lights
- Brake Lights
- Red Reflectors & Amber Reflectors
- Reflective Tape Condition

☐ Horn
☐ Heater/Defroster
☐ Brakes
- Parking Brake Check
- Hydraulic Brake Check
- Air Brake Check (if equipped)
- Service Brake Check
- Safety Belt

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

<u>STEP 4. WALK-AROUND INSPECTION</u>

☐ **4A** – Steering
- Steering Box/Hoses
- Steering Linkages

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

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

☐ **4D** – Wheels
- Rims
- Tires
- Hub Oil Seals/Axle Seals
- Lug Nuts
- Mud Flaps
- Spacers & Budd Spacing

SIDE OF VEHICLE

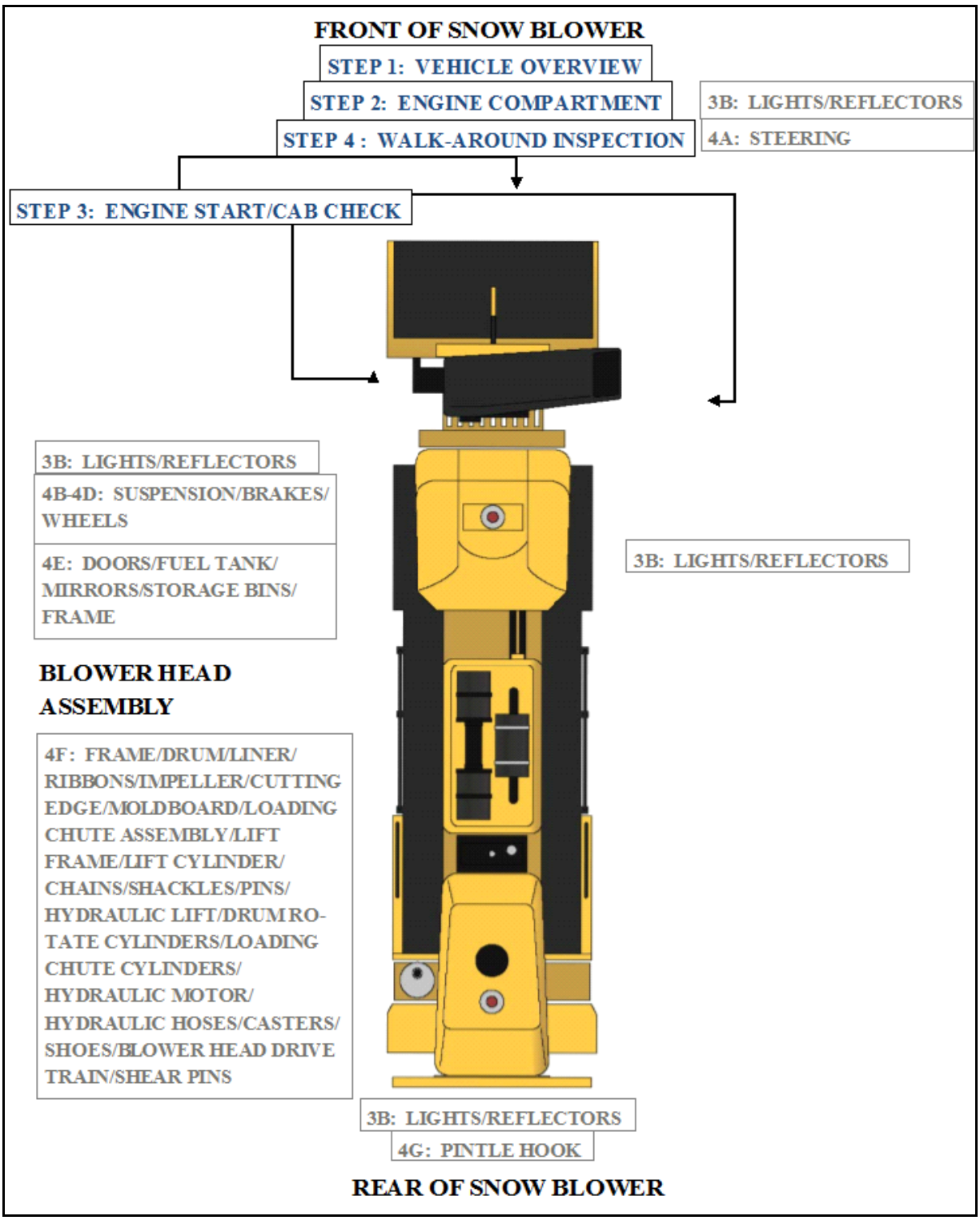
☐ **4E** – Doors
☐ **4E** – Mirrors
☐ **4E** – Fuel Tank
☐ **4E** – Storage Bins/Storage Bin Doors
☐ **4E** - Frame

SPECIAL EQUIPMENT

☐ **4F** –Blower Head Assembly
- Frame
- Drum/Liner
- Ribbons
- Impeller
- Cutting Edge/Moldboard
- Loading Chute Assembly, if applicable
- Lift Frame/Lift Cylinder
- Chains/Shackles/Pins
- Hydraulic Lift/Drum Rotate Cylinders
- Loading Chute Cylinders, if applicable
- Hydraulic Motor(s)
- Hydraulic Hoses
- Casters/Shoes
- Blower head Drive Train/Shear Pins

☐ **4G** – Pintle Hook

Figure A2.1. Snow Blower Truck Inspection Guide.



Attachment 3

PERFORMANCE TEST

A3.1. Desired Learning Outcome.

A3.1.1. Understand the safety precautions to be followed pre-, during-, and post-operation of the snow blower.

A3.1.2. Understand the purpose of the snow blower and its role in the mission.

A3.1.3. Know the proper operator maintenance procedures of the snow blower, IAW applicable technical orders and use of Air Force (AF) Form 1800.

A3.1.4. Safely and proficiently operate the snow blower.

A3.2. Instructions. Before beginning the performance test, the trainer will brief the trainee on the scenario that will need to be accomplished. He/she will be given additional directions and instructions as needed throughout the scenario.

A3.3. Scoring.

A3.3.1. The trainer examiner will be scoring the trainee on snow blower operations and also the general safe driving practices. The examiner will give directions and instructions to the trainee in sufficient time for him/her to execute a driving maneuver. They 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 anything has been done wrong. It is in the best interest to concentrate on the operation of the snow blower. 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 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. Cleans windshield, windows, mirrors, lights and reflectors			
1.6. Continues during operations inspection checks.			
1.7. Knows use of jacks, tools, emergency devices, tire chains, fire extinguishers, etc.			
1.8. Performs post trip inspection and reports malfunctions to Vehicle Management.			
Event	**Go**	**No Go**	**Notes**
2. BASIC CONTROL AND VEHICLE OPERATION			
2.1. Safety belt is used; obeys all traffic signs, signals, and laws; completes test without an accident or moving violation.			
2.2. Avoids jerky starts and stops.			
2.3. Does not cut corners sharply.			
2.4. Maintains proper speed and space.			
2.5. Ensure proper snow blower safety practices. List safety violations.			

2.6. Turns:			
Checks traffic in all directions; uses turn signals and safely get into the lane needed for the turn; slows down smoothly, changes gears as needed to keep power; checks mirrors to ensure proper clearance; vehicle should not move into oncoming traffic.			
Two-wheel front steer.			
Crab-steer.			
All-wheel.			
2.7. Stopping - decelerates smoothly, brakes evenly, changes gears as necessary; brings vehicle to a full stop without coasting.			
2.8. Starting - checks traffic, avoids jerky starts.			
Event	**Go**	**No Go**	**Notes**
3. KNOWLEDGE OF VEHICLE AND USE OF CONTROLS			
3.1. Engine:			
Uses proper starting procedures			
Allows proper warm-up.			
Understands all gauges.			
Uses proper shutdown procedures.			
Basic knowledge of engines.			
3.2. Clutch and Transmission.			
Understands proper clutching techniques.			
Uses clutch properly through all gears.			
Shifts smoothly.			
Time shifts properly.			
Avoids riding the clutch.			
Proper use of tachometer and shifting range.			
3.3. Brakes and Braking Techniques			
Understands the principles of an air brake system.			
Knows proper use of the protection valve.			
Knows proper use of the hand valve.			
Understands the low air warning.			
Uses proper techniques on downgrades.			

Understands the principle of front wheel limiting switch.			
Proper use of parking brake.			
Ensures air tank is at full tank pressure prior to moving the vehicle.			
Performs brake check before pulling out.			
Event	**Go**	**No Go**	**Notes**
4. BACKING/PARKING			
4.1. Backing.			
Positions properly.			
Inspects before backing.			
Uses spotters properly.			
Uses mirrors properly.			
Avoids blind side backing.			
Controls speed.			
4.2. Parking.			
Checks traffic position before parking.			
Secures vehicle properly.			
Parks legally and safely.			
Uses emergency warning devices, if required.			
Event	**Go**	**No Go**	**Notes**
5. SNOW BLOWER OPERATIONS			
5.1. Attachment adjustments.			
5.2. Attachment lift chains/wire rope adjustments.			
5.3. Raising/lowering blower attachment.			
5.4. Tilting/rotating snow blower attachment left and right.			
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. o Damage or vehicle leaning to one side. o Fresh leakage of fluids. o 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. • Look at the gauges. o Oil pressure. Should come up to normal within seconds after engine is started. o Air pressure. 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 Ammeter and/or voltmeter. Should be in normal range(s). o Coolant temperature. Should begin gradual rise to normal operating range. o Engine oil temperature. Should begin gradual rise to normal operating range. o Warning lights and buzzers. 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: o Steering wheel. o Clutch. o Accelerator (gas pedal). o Brake controls. o Foot brake. o Parking brake. o Transmission controls.

	o Interaxle differential lock (if vehicle has one). o Horn(s). o Windshield wiper/washer. o Lights. o Headlights. o Dimmer switch. o Turn signal. o Four-way flashers. o 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: o Spare electrical fuses (unless vehicle has circuit breakers). o Three red reflective triangles, 6 fuses or 3 liquid burning flares. o Properly charged and rated fire extinguisher. Check for optional items such as: o Chains (where winter conditions require). o Tire changing equipment. o 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 Push dimmer switch and check that high beams work. 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. o 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 Mustgrab steering 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 Primary and secondary safety cab locks engaged (if cab-over-engine design). 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. o Air-lines and electrical wiring--secured against snagging, rubbing, wearing. o Spare tire carrier or rack not damaged (if so equipped). o Spare tire and/or wheel securely mounted in rack. o Spare tire and wheel adequate (proper size, properly inflated). o Curbside cargo compartment doors in good condition, securely closed, latched/locked and required security seals in place. • 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. o Rear doors securely closed, latched/locked. • 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 (apply trailer hand brake or have a helper put on the brake pedal). • 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.

Figure A4.2. Additional Steps for Inspecting Air Brakes System.

Additional Steps for Inspecting Air Brakes	
Step	**Procedure**
2. Engine Compartment Checks	• Check air compressor drive belt condition and tightness (if compressor is belt driven).
5. Walk-Around Inspecting	• Check manual slack adjusters on S-cam brakes. **Note:** Vehicles with automatic slack adjustors still must be checked. o Park on level ground and chock the wheels. o Release the parking brakes so the operator can move the slack adjusters. o Use gloves and pull hard on each slack adjuster that it can be reached. o Check slack adjuster, more than 1-inch indicates adjustments required (vehicles with too much brake slack can be very hard to stop). Adjust it or have it adjusted. • Check brake drums (or discs), linings, and hoses.
7. Final Air Brake Check	• Test low pressure warning signal. o Shut the engine off when the vehicle has enough air pressure so that the low pressure warning signal is not on. o Turn the electrical power on. o Step on and off the brake pedal to reduce air tank pressure. o Low air pressure warning signal should come on before the pressure drops to less than 60 psi in the air tank with lowest pressure. • Check that the spring brakes come on automatically. o Chock the wheels. o Release the parking brakes when enough air pressure is built up. o Shut the engine off. o Step on and off the brake pedal to reduce the air tank pressure. o "Parking brake" knob should pop out when the air pressure falls to the manufacturer's specification. • Check rate of air pressure buildup o Refer to manufacturer’s recommendation for average buildup time.

	o If not within recommended time, the air pressure may drop too low during driving operations. • Test air leakage rate. o With a fully-charged air system (typically 125 psi). o Turn-off the engine. o Release the service brake and time the air pressure drop. o The loss rate should be less than 2 psi in one minute for single vehicles. o Not less than 3 psi in 1 minute for combination vehicles. • Then apply 90 psi or more with the brake pedal. o After the initial pressure drop, if the air pressure falls more than 3 psi in 1 minute for single vehicles. o Not more than 4 psi for combination vehicles. • Check air compressor governor cut-in and cut-out pressures. o Air compressor should start at about 100 psi and stop at about 125 psi. o Run the engine at a fast idle. o Air governor should cut-out the air compressor at about the manufacturer's specified pressure. o Engine idling, step on and off brake to reduce air tank pressure. o Compressor should cut-in at manufacturer's specified cut-in pressure. o Test parking brake: Stop the vehicle; put the parking brake on; gently pull against it in low gear to determine if parking brake will hold. o Test service brakes. o Wait for normal air pressure. • Release the parking brake. • Move the vehicle forward slowly (about 5 mph). • Apply the brakes firmly using the brake pedal. • Note any vehicle "pulling" to one side, unusual feel, or delayed stopping action.