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

QTP24-3-L350
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Aircraft Tow

Vehicle Management Codes: L350 – L352, L354, L356

QUALIFICATION TRAINING PACKAGE

CONTENTS

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 knowledge test, **Section 5**.

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

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

1.1.2.2. Trainee:

1.1.2.2.1. Reads entire lesson plan prior to classroom lecture.

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

1.1.2.2.3. Takes aircraft tow knowledge test.

1.1.2.2.4. Uses **Attachments 2** and **4** as guides for vehicle inspection.

1.1.2.2.5. 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 and with the trainer.

2.1.1.3. The 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 and a performance and written test, 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 various aircraft tows.

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

3.2. Desired Learning Outcomes:

3.2.1. Understand the safety precautions to be followed before-, during-, and after-operation of the aircraft tow.

3.2.2. Understand the purpose of the aircraft tow and its role in the mission.

3.2.3. Know the proper operator maintenance procedures of the aircraft tow, in accordance with (IAW) applicable technical orders (TOs) and use of AF Form 1800.

3.2.4. Safely and proficiently operate the aircraft tow.

3.3. Lesson Duration.

3.3.1. Recommended instructional and hands on training time is 18 hours:

Figure 3.1. Recommended Training Time for Training Activities.

Training Activity	Training Time
Trainee's Preparation	1 Hour
Instructor's Lecture	1 Hour
Trainee's Written Evaluation	1 Hour
Instructor's Demonstration	2 Hour
Trainee's Personal Experience (to build confidence and proficiency) ▪ Perform Operator Maintenance ▪ Operate the Vehicle	12 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 TOs or Manufacturer's Operator's Manual (see vehicle maintenance 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. Air Force Instruction (AFI) 13-213, *Airfield Driving*.

3.4.5. Pintle Hook Lesson Plan.

3.4.6. Master Nuclear Certification List (MCNL)

3.4.7. AF Form 1800, *Operator's Inspection Guide and Trouble Report* (General Purpose Vehicles).

3.5. Instructional Training Aids and Equipment.

3.5.1. Aircraft Tow Lesson Plan.

3.5.2. Pintle Hook Lesson Plan.

3.5.3. Aircraft Tow Vehicle.

3.5.4. Applicable TO or Manufacturer's Operator's Manual.

3.5.5. AF Form 1800, *Operator's Inspection Guide and Trouble Report* (General Purpose Vehicles).

3.5.6. Videos (if locally produced).

3.5.7. Suitable training area.

3.5.8. Traffic cones or suitable markers.

Section 4—TRAINEE PREPARATION

4.1. Licensing Requirements.

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

4.1.1. 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*.

4.1.2. Applicable local licensing jurisdiction requirements.

4.2. Required Reading (Testable Material).

4.2.1. Read Aircraft Tow Lesson Plan.

4.2.2. Read Pintle Hook Lesson Plan.

4.2.3. Read AFMAN 24-306.

4.2.4. Read Manufacturer's Operator's Manual for the vehicle being trained on.

Section 5—KNOWLEDGE LECTURE AND EVALUATION

5.1. Knowledge Overview (Lecture).

5.1.1. The Air Force uses a variety of different aircraft tows to accomplish its mission. Like any other vehicle, training and licensing is a requirement to ensure the operator can operate an aircraft tow safely and proficiently.

5.2. Overview of Training and Requirements.

5.2.1. Training objectives.

5.2.1.1. 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.

5.2.1.2. Train and qualify each trainee in safe operation and preventive maintenance of the various aircraft tows.

5.2.1.3. This training will ensure the trainee becomes a qualified aircraft tow operator—an operator who has the knowledge and skills to operate an aircraft tow in a safe and professional manner.

5.2.2. Desired learning outcomes:

5.2.2.1. Understand the safety precautions to be followed before-, during-, and after-operation of the aircraft tow.

5.2.2.2. Understand the purpose of the aircraft tow and its role in the mission.

5.2.2.2.1. Purpose is for movement of material (vehicle is considered a Prime Mover).

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

5.2.2.2.3. Know the proper operator maintenance procedures of the aircraft tow, IAW applicable TOs and use of AF Form 1800.

5.2.2.2.4. Be able to safely and proficiently operate the aircraft tow.

5.2.2.2.4.1. Meet mission requirements.

5.2.2.2.4.2. Demonstrates a qualified trained professional operator.

5.2.3. Aircraft Tow Design. Aircraft tows vary in size, shape, and specifications, determined by make and model; it is imperative to know the specifications and rated loads of the aircraft tow that is about to be operated before using it. Specifications and rated load information should be used together to determine the proper use and area in which the aircraft tow will be used. This information is best found in the appropriate TO or for quick reference, the information may be found on the vehicle data plate located on the aircraft tow.

5.2.4. Specifications. Specifications generally described are equipment dimensions/weight; engine/drive train information and fluid types.

5.2.5. Rated Load/Capabilities. Rated loads and capabilities generally described are the towing rating and the tongue weight capacity of the pintle hook.

5.3. Vehicle Inspection.

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

5.3.1.1. The following items must be corrected before continued service:

5.3.1.1.1. Tires or brakes.

5.3.1.1.2. Steering mechanisms.

5.3.1.1.3. Operating levers controlling.

5.3.1.1.3.1. Power transmission.

5.3.1.1.3.2. Hoisting.

5.3.1.1.3.3. Dumping, and tripping.

5.3.1.1.4. Warning lights.

5.3.1.1.4.1. Turn signals.

5.3.1.1.4.2. Brake lights.

5.3.1.1.4.3. Emergency and rotating flashers.

5.3.1.1.4.4. Headlights.

5.3.1.1.4.5. Reflectors.

5.3.1.1.4.6. Clearance lights (unless the vehicle or equipment is not used during hours of darkness and restrictions are identified by a decal).

5.3.1.1.5. Windshield wipers.

5.3.1.1.6. Defrosters (when weather conditions require them to be operated).

5.3.1.1.7. Other similar safety and warning equipment/devices peculiar to special purpose.

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

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

5.3.1.3.1. Cleanliness/damage/missing items.

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

5.3.1.3.3. Fluid Levels; ensure level is within limits:

5.3.1.3.3.1. Engine oil.

5.3.1.3.3.2. Brake fluid.

5.3.1.3.3.3. Transmission fluid.

5.3.1.3.3.4. Antifreeze.

5.3.1.3.3.5. Hydraulic fluid.

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

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

5.3.1.3.6. All tires.

5.3.1.3.6.1. Tread to include depth.

5.3.1.3.6.2. Split rim tires will be inflated in cage.

5.3.1.3.6.3. Cuts and abrasions.

5.3.1.3.7. Drive belts; tension and fraying.

5.3.1.3.8. Air restriction gauge.

5.3.1.3.9. Carriage.

5.3.1.3.10. Hydraulic hoses/cylinders (damage/leaks).

5.3.1.3.11. Wiring/lights/reflectors/mirrors.

5.3.1.3.12. Warning devices.

5.3.1.3.13. Seatbelts.

5.3.1.3.14. Towing connection.

5.3.1.3.15. Markings – check visibility.

5.3.1.3.16. Horn operation.

5.3.1.3.17. Windshield wipers/washers.

5.3.1.3.18. Heater/defroster.

5.3.1.3.19. Exhaust system.

5.3.1.3.20. Brake and accelerator covers.

5.3.1.3.21. Air tanks.

5.3.1.3.22. Cold weather aids.

5.3.1.4. During-operation. See also **Figure 5.6.**:

5.3.1.4.1. All gauges and warning lights for proper operations.

5.3.1.4.1.1. Warning lights.

5.3.1.4.1.2. Gauges.

5.3.1.4.1.3. Indicators.

5.3.1.4.2. Controls for proper operations.

5.3.1.4.2.1. Steering wheel.

5.3.1.4.2.2. Direction control lever.

5.3.1.4.2.3. Gear selector lever.

5.3.1.4.2.4. Parking brake control.

5.3.1.4.2.5. Hydraulic control levers, normal controls are lift/lower of dump bed and swing of the snow plow.

5.3.1.4.2.5.1. Lift/lower control lever.

5.3.1.4.2.5.2. Swing control lever.

5.3.1.4.2.6. Accelerator control pedal.

5.3.1.4.2.7. Ignition switch.

5.3.1.4.2.8. Service brakes/inching pedal.

5.3.1.4.2.9. Selector switch.

5.3.1.4.3. Unusual noises.

5.3.1.5. After-Operation Inspection.

5.3.1.5.1. Ensure the aircraft tow is cleaned (free of dirt, excess oil, and grease).

5.3.1.5.2. Refuel.

5.3.1.5.2.1. For all types of fuel and charging: Use refueling area or charging area, turn-off engine and use parking brake, and do not smoke or use electronic devices.

5.3.1.5.2.2. Diesel. Turn-off engine and use parking brake. Avoid overfilling the fuel tanks.

5.3.1.5.3. Parking for after-inspection.

5.3.1.5.3.1. Level area.

5.3.1.5.3.2. Place transmission control in neutral.

5.3.1.5.3.3. Apply parking brake.

5.3.1.5.3.4. Turn-off all lights and accessories.

5.3.1.5.3.5. Drain air tanks, if applicable.

5.3.1.5.3.6. Perform a walk-around inspection.

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

5.3.2. 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.

5.4. Vehicle Safety and Equipment.

5.4.1. Hazards and Human Factors.

5.4.1.1. Common mishap types.

5.4.1.1.1. Dropped property.

5.4.1.1.2. Bruises, head injuries, cuts, and lacerations to personnel.

5.4.1.2. Common operator mishap causes:

5.4.1.2.1. Jerky starts and stops.

5.4.1.2.2. Failure to give proper signals when turning.

5.4.1.2.3. Traveling too fast and turning too sharply.

5.4.1.2.4. Turning too wide on corners; cutting corners too sharply.

5.4.1.2.5. Failure to set parking brake.

5.4.1.2.6. Pinch points on aircraft tow.

5.4.1.2.7. Failure to use a spotter in difficult areas/situations.

5.4.2. Safety Clothing and Equipment:

5.4.2.1. Safety steel-toed boots must be worn.

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

5.4.2.3. Reflective belts/vests during operation of low visibility and on the flightline.

5.4.2.4. Raingear, cold weather gear, etc.

5.4.2.5. Hearing protection.

5.4.2.6. Head protection.

5.4.2.7. AF Form 1800.

5.5. Driving Safety and Precautions.

5.5.1. Speed control.

5.5.1.1. Affects the ability to turn, pass, slow down or stop.

5.5.1.2. Accelerating—must be smooth/gradual.

5.5.2. Steering.

5.5.2.1. Keep both hands on wheel.

5.5.2.2. Avoid turning on inclines.

5.5.3. Stopping.

5.5.3.1. Stop as gradually as possible.

5.5.3.2. Distance required to stop depends on:

5.5.3.2.1. Driver perception time.

5.5.3.2.2. Driver reaction time.

5.5.3.2.3. Aircraft tow stopping time (can be increased based on things like road, tires, brake condition, load, etc.).

5.5.4. Towing operations safety considerations:

5.5.4.1. Do not inhale exhaust gases. Do not run the engine in an enclosed area.

5.5.4.2. Drive carefully at all times, exercise caution at cross aisles, hangars, and entering shop area.

5.5.4.3. Do not allow riders on exterior of vehicle.

5.5.4.4. Observe flight line traffic rules in operation of vehicle.

5.5.4.5. Keep loads within rated capacity of the aircraft tow.

5.5.4.6. Always ensure there are spotters when practical when backing, operator is responsible if an accident/incident occurs. Spotters must be trained and use hand signals IAW AFMAN 24-306.

5.5.4.7. Secure load before moving vehicle.

5.5.4.8. Ensure cellular phone is turned off prior to operation of vehicle or fueling operations.

5.5.4.9. Seat belts use is mandatory any time vehicle is placed in motion.

5.5.5. Winter driving safety.

5.5.5.1. Drive at reduced speeds.

5.5.5.2. Give turn signals sooner than usual.

5.5.5.3. Do not set the parking brake when freezing conditions are present.

5.5.5.3.1. Setting the parking brake in freezing conditions could result in a frozen brake cable and stuck brakes.

5.5.5.3.2. Instead, chock the vehicle and put the selector switch into either PARK (for standard automatic transmissions) or REVERSE (for vehicles that do not have a PARK selection).

5.5.5.4. Do not leave a vehicle outside for long periods of time unattended.

5.5.5.4.1. Leaving a vehicle, especially one with a diesel engine, outside in cold weather for a long period of time will make it very difficult to start.

5.5.5.4.2. Bring the vehicle back to the Vehicle Support Building so that it can be stored indoors until it is again needed.

5.6. Aircraft Tow Operation.

5.6.1. Operators must be thoroughly familiar with the safety precautions, principles of operation, location and use of controls and accessories and handling characteristics of the vehicle before attempting any operation or service procedure. Be knowledgeable about the location of:

5.6.1.1. Emergency flasher indicator light.

5.6.1.2. Defroster switch.

5.6.1.3. Temperature control.

5.6.1.4. Fan speed control.

5.6.1.5. Headlight switch.

5.6.1.6. Windshield wiper and washer control.

5.6.1.7. Hour meter.

5.6.1.8. Work light switch.

5.6.1.9. Steering wheel.

5.6.1.10. Horn.

5.6.1.11. Voltmeter and speedometer.

5.6.1.12. Oil pressure gauge.

5.6.1.13. Glow plug wait light.

5.6.2. Principals of operation.

5.6.2.1. The operator must know the size of load that the vehicle will provide power for movement, and the minimum weight ratings for the Pintle Hook. The specific weight ratings for the vehicle can be found in the manufacturer's operator's manual. This will vary from vehicle to vehicle.

5.6.3. Starting the engine.

5.6.3.1. Set parking brake. Parking brake lever must be set when the engine is not running.

5.6.3.2. Ensure the transmission is set to N (neutral). The engine will not start unless the transmission direction control lever is in neutral position and the battery disconnect switch is ON.

5.6.3.3. Turn starting switch to ON position and wait until orange wait light goes out, signifying the glow plugs have warmed up.

5.6.3.4. Depress accelerator halfway to the floor and hold in that position.

5.6.3.5. Never crank the engine for more than 30 seconds during an attempted start. If the engine fails to start over 30 seconds, allow the starting motor two minutes to cool down prior to attempting another start.

5.6.3.6. Check engine instruments for proper operation.

5.6.3.6.1. Turn the IGNITION switch to the OFF if the engine OIL PRESS gauge does not read 10 pounds per square inch (psi) minimum within seconds after starting.

5.6.3.6.2. Normal engine water temperature is from 180°F - 200°F. Normal engine oil pressure at idle speed is 16 psi minimum at rated speed is 40-60 psi. If the PRESS gauge does not display normal readings, shutdown the engine immediately and correct the malfunction.

5.6.4. Forward driving.

5.6.4.1. Remove wheel chocks.

5.6.4.2. Depress brake pedal.

5.6.4.3. Straighten wheels.

5.6.4.4. Position STEERING CONTROL lever to select FRONT, COORDINATED, or OBLIQUE CRAB.

5.6.4.5. Place 2X4/4X4 Shift lever to either 2X4 (2 wheel drive) or 4X4 (4 wheel drive).

5.6.4.6. Shift direction control lever to F (forward).

5.6.4.7. Position shift lever to 1 (first gear).

5.6.4.8. Release parking brake after LO BRAKE PRESS light is out.

5.6.4.9. Release brake pedal.

5.6.4.10. Slowly depress accelerator pedal.

5.6.5. Towing operations:

5.6.5.1. During towing operations, keep the vehicle in a gear range that will provide adequate torques for negotiation of grades.

5.6.5.2. Do not shift speeds while towing aircraft.

5.6.5.3. Do not shift direction, range or axle drive mode while vehicle is in motion.

5.6.5.4. Do not change steering modes when towing tractor is moving.

5.6.5.5. Do not use COORDINATED or OBLIQUE CRAB steering modes for extended or high speed travel.

5.6.5.6. Use optional four wheel drive capabilities ONLY when more traction is required.

5.6.5.7. Before shifting from two wheel drive to four wheel drive (or from four back to two) the towing tractor MUST be stopped.

5.6.5.8. Always check the pintle hook connection to see that the hook is properly engaged with the drawbar lunette eye. Also take into consideration the physical size and steering characteristics of the load being towed.

5.6.5.9. Refer to the Pintle Hook Lesson Plan for additional information on pintle hook use and safety.

5.6.6. Reverse driving.

5.6.6.1. Remove wheel chocks.

5.6.6.2. Depress brake pedal.

5.6.6.3. Straighten wheels.

5.6.6.4. Position STEERING CONTROL lever to select FRONT, COORDINATED, or OBLIQUE CRAB.

5.6.6.5. Place 2X4/4X4 Shift lever to either 2X4 (2 wheel drive) or 4X4 (4 wheel drive).

5.6.6.6. Shift direction control lever to R (reverse).

5.6.6.7. Position shift lever to 1 (first gear).

5.6.6.8. Release parking brake after LO BRAKE PRESS light is out.

5.6.6.9. Release brake pedal.

5.6.6.10. Slowly depress accelerator pedal.

5.6.6.11. The back-up alarm should sound to alert personnel in the vicinity. If the alarm does not sound, depress the horn button.

5.6.7. Stopping.

5.6.7.1. Release the accelerator pedal.

5.6.7.2. Depress and hold the brake pedal until towing vehicle stops. Do not lock the brakes.

5.6.7.3. Shift direction lever to neutral.

5.6.7.4. Set the parking brake lever and release brake pedal.

5.6.8. Normal shutdown procedures.

5.6.8.1. Idle engine for at least 5 minutes before stopping the engine.

5.6.8.2. Turn-off all of the lights and accessories.

5.6.8.3. Turn the ignition switch to OFF.

5.6.8.4. Close all of the windows and vents.

5.6.9. Emergency shutdown procedures.

5.6.9.1. Turn the ignition switch to OFF.

5.6.9.2. Pull the battery disconnect switch to OFF.

5.6.10. Tire changing procedures.

5.6.10.1. Ensure following tools/equipment are used while changing damaged/flat tire:

5.6.10.1.1. Vehicle jack w/jack handle.

5.6.10.1.2. Lug wrench.

5.6.10.1.3. Jack stand.

5.6.10.1.4. Wheel chocks.

5.6.10.1.5. Hand/eye/hearing protection (if pneumatic tools are to be used).

5.6.10.1.6. Safety/steel toed boots/shoes.

5.6.10.2. Ensure vehicle is on level surface.

5.6.10.3. Chock adjacent drive wheel.

5.6.10.4. Locate solid part of vehicle's frame.

5.6.10.5. Place vehicle jack under vehicle frame as close as possible without impeding tire removal and/or replacement.

5.6.10.6. Raise vehicle with jack until weight is completely supported on jack but tire is still in contact with ground.

5.6.10.7. Loosen, do NOT remove, lug nuts.

5.6.10.8. Jack vehicle up until tire clears ground with no more than an inch to allow replacement of tire.

5.6.10.9. Place jack stand under frame of vehicle to support vehicle in case jack hydraulics should leak and/or fail.

5.6.10.10. Remove vehicle lug nuts.

5.6.10.11. Remove vehicle flat/damaged tire.

5.6.10.12. Place replacement tire into vehicle axle.

5.6.10.13. Replace vehicle lug nuts (to hand tightness).

5.6.10.14. Jack vehicle up and remove jack stand.

5.6.10.15. Lower vehicle until it makes contact ground.

5.6.10.16. Tighten vehicle's lug nuts in star pattern.

5.6.11. Starting in cold weather. Temperature between -20°F and 20°F.

5.6.11.1. Perform pre-use inspection.

5.6.11.2. Plug engine block heater into an approved outlet. Allow enough time for the engine block to heat up sufficiently.

5.6.11.3. Set the parking brake if it is not already set.

5.6.11.4. Make sure the transmission is set to N (neutral).

5.6.11.5. Turn the ignition switch to ON, release immediately after the engine starts.

5.6.11.6. Allow engine at least five minutes to warm-up to operative temperature.

5.6.11.7. Check the engine instruments for proper operation.

5.6.12. Tire chains.

5.6.12.1. Tire Chains are used during winter weather, such as snow and ice, when the driving surfaces become slick. The chains provide more traction for the vehicle and prevent slipping and sliding.

5.6.12.2. Installation. **Note:** Gloves will be worn during installation.

5.6.12.2.1. Place the tire chain in front of the tire or tires with the horizontal chain hooks facing outwards and lateral chain on the outside of the tire.

5.6.12.2.2. Drive the vehicle onto the chains leaving enough slack to place the remainder of the chain on top of the tire.

5.6.12.2.3. Secure the inner lateral chain as tight as possible without crossing over the inner rim of the wheel. Safety wire any extra chain using 42 thousandths safety wire.

5.6.12.2.4. Secure the outer chain lateral latch. Safety wire any extra chain using 42 thousandths safety wire.

5.6.12.2.5. Place spring tensioner evenly on the outside of the tire chain.

5.6.12.2.6. If the horizontal chain breaks, safety wire the chain the lateral chain with 42 thousandths safety wire. If two horizontal chains break in a row, tire chains must be replaced immediately or damage to the vehicle could occur.

5.6.12.3. Removal.

5.6.12.3.1. Remove spring tensioners.

5.6.12.3.2. Cut all safety wire holding the extra chain.

5.6.12.3.3. Unlatch the inner lateral chain hook.

5.6.12.3.4. Unlatch the outer chains and spread them flat on the ground.

5.6.12.3.5. Slowly drive the vehicle off the chains and put them away in proper location.

Section 6—EXPLANATION AND DEMONSTRATION

6.1. Instructor's Preparation.

6.1.1. Establish a training location.

6.1.2. Obtain appropriate Manufacturer's 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 aircraft tow 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.

6.2.1.4. 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 aircraft tow safety:

6.2.1.7.1. Always observe speed and safety precautions while carrying loads.

6.2.1.7.2. Keep loads within the rated capacity of the aircraft tow.

6.2.1.7.3. Avoid sudden stops.

6.2.2. Practice basic AF 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, *Operator's Inspection Guide and Trouble Report.* 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 aircraft tow 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.

6.4.1.3. For more information refer to the vehicle data plate and the Operator's Manufacturer's Manual.

6.4.2. For all aircraft tows, 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. Aircraft tow capabilities.

6.4.2.2. Aircraft tow controls. Understands all gauges, switches, levers and buttons.

6.4.2.3. Parking brake use.

6.4.2.4. Turns.

6.4.2.5. Intersections.

6.4.2.6. Stopping/starting.

6.4.2.7. Backing.

6.4.2.8. Towing.

6.4.2.9. Coupling/uncoupling with the pintle hook.

6.4.2.10. Discuss aircraft tow stability of the load while operating.

6.4.2.11. Parking the aircraft tow.

6.4.3. Show trainee the after operation inspection and report.

6.4.3.1. Ensure vehicle cleaned.

6.4.3.2. Refueled.

6.4.3.3. Following manufacturer's shut-down procedures.

6.4.3.4. Park.

6.4.3.4.1. Level area.

6.4.3.4.2. Place transmission control in neutral.

6.4.3.4.3. Apply the parking brake (adjust if necessary).

6.4.3.4.4. Turn-off all lights and accessories.

6.4.3.4.5. Perform a walk around inspection of the aircraft tow.

6.4.3.4.5.1. Annotate any discrepancies found on AF Form 1800.

6.4.3.5. 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 aircraft tow 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. Hearing protection.

7.1.1.2.4. Reflective belt/vest during low visibility times.

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 mirror.

7.1.1.6. Aircraft tow 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.

7.1.2.2.1. Establish a road course with turns and stops signs.

7.1.2.2.2. Backing. Serve as the trainee's spotter, or if available, have another trainee be the spotter.

7.1.2.2.3. Continue until trainee can show proficiency in operating.

7.1.2.3. Have trainee practice the following aircraft tow operations (use spotter when backing) until they can safely and efficiently perform:

7.1.2.3.1. Aircraft tow capabilities.

7.1.2.3.2. Aircraft tow controls. Understands all gauges, switches, levers and buttons.

7.1.2.3.3. Parking brake use.

7.1.2.3.4. Turns.

7.1.2.3.5. Intersections.

7.1.2.3.6. Stopping/starting.

7.1.2.3.7. Backing.

7.1.2.3.8. Towing.

7.1.2.3.9. Coupling/uncoupling with the pintle hook.

7.1.2.3.10. Discuss aircraft tow stability of the load while operating.

7.1.2.3.11. Parking the aircraft tow.

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 aircraft tow 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. Hearing protection.

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, if equipped.

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

7.2.2.6. Aircraft tow safety items/procedures.

7.2.3. Explain driving techniques.

7.2.4. Ensure the driver is aware of driving situations.

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. Retraining; retrain No-Go's.

7.2.8.1. Re-demonstrate No-Go items.

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

7.2.8.3. Re-evaluate.

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

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

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

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*

AF Form 1800, *Operator's Inspection Guide and Trouble Report*

Abbreviations and Acronyms

AFI—Air Force Instruction

AFIMSC—Air Force Installation and Mission Support Center

AFMAN—Air Force Manual

AFQTP—Air Force Qualification Training Package

IAW—In Accordance With

RM—Risk Management **PSI—**

Pounds Per Square Inch **TO—**

Technical Order **USAF—**United

States Air Force

VCNCO—Vehicle Control Non Commissioned Officer

VCO—Vehicle Control Officer

Attachment 2

VEHICLE INSPECTION GUIDE

A2.1. Desired Learning Outcome.

A2.1.1. Understand the safety precautions to be followed before, during, and after operation of the aircraft tow.

A2.1.2. Understand the purpose of the aircraft tow and their role in the mission.

A2.2. Inspection During-Operations. The operator must ensure the following items are checked after starting the aircraft tow and during operations.

Figure A2.1. Aircraft Tow 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 aircraft tow. Understand the purpose of the aircraft tow and their role in the mission.

A3.1.2. Know the proper operator maintenance procedures of the aircraft tow, IAW applicable technical orders and use of AF Form 1800.

A3.1.3. Safely and proficiently operate the aircraft tow.

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

A3.3. Scoring.

A3.3.1. The trainer examiner will be scoring the trainee on aircraft tow 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 he/she has done anything wrong. It is in the best interest to concentrate on the operation of the aircraft tow. The trainer will explain the test results to the trainee 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 aircraft tow 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 condition while approaching vehicle.			
1.3. Checks all items listed on AF Form 1800.			
1.4. Signs AF Form 1800 to signify accomplishment of complete inspection.			
1.5. Checks for proper operation of controls/instruments during operations.			
Event	**Go**	**No Go**	**Notes**
2. KNOWLEDGE AND USE OF VEHICLE CONTROLS			
2.1. Understands all gauges, switches, levers and buttons.			
2.2. Brakes and braking techniques. Proper use of parking brake. Performs brake check. Failure to release parking brake before traveling.			
2.3. Engine. Uses proper starting procedures. Allows proper warm-up. Basic knowledge of engine.			
Event	**Go**	**No Go**	**Notes**
3. BASIC CONTROL AND OPERATION			
3.1. Avoids jerky starts and stops (Proper use of inching pedal).			
3.2. Understands basic aircraft tow stability of load and while operation (i.e. load is within capability of aircraft tow.)			

3.3. Maintains proper speed to ensure safety.			
3.4. Ensure proper aircraft tow safety practices (instructor will stop testing at any time to prevent any safety occurrence from happening). List safety violations.			
3.6. Properly parks aircraft tow, parking brake set, ignition off.			
Event	**Go**	**No Go**	**Notes**
3. COUPLING/UNCOUPLING WITH PINTLE HOOK			
3.1. Use Pintle Hook Lesson Plan during this portion of certification.			
Event:	**Go**	**No Go**	**Notes**
4. ON-ROAD DRIVING COURSE			
4.1. General. Safety belt is used, obeys all traffic signs, signals, and laws, completes test without an accident or moving violation.			
4.2. Turns. Checks traffic in all directions; uses turn signals and safely gets 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.			
4.3. Intersections. Checks traffic in all directions, decelerate gently, brakes smoothly, changes gears (if necessary), comes to a complete stop (if necessary), signals, sidewalks or stop lines.			
4.4. Stopping. Decelerates smoothly, brakes evenly, changes gears as necessary, brings vehicle to a full stop without coasting.			
4.5. Starting. Checks traffic, avoids jerky starts.			
4.6. Towing. Can tow an aircraft safely and effectively.			

4.7. Backing. Positions aircraft tow properly. Posts spotters before backing and uses spotters properly. Uses mirrors properly. Controls speed.			
4.8. Parking. Checks traffic position before parking. Secures truck properly. Parks safely and legally. Knows and executes proper use of emergency warning devices.			
Event:	**Go**	**No Go**	**Notes**
5. GENERAL DRIVING HABITS			
5.1. Consistently alert and attentive.			
5.2. Aware of changing traffic conditions.			
5.3. Adjusts to changing conditions.			
5.4. Nervous/apprehensive.			
5.5. Easily angered.			
5.6. Courteous to other vehicles.			
5.7. Avoids excessive conversation.			
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 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: ▪ Steering wheel. ▪ Accelerator (gas pedal). ▪ Brake controls. ▪ Foot brake. ▪ Trailer brake (if vehicle has one). ▪ Parking brake. ▪ Transmission controls. ▪ Interaxle differential lock (if vehicle has one). ▪ 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:

	▪ 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. ▪ 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. 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 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 If retractable axle equipped, check condition of lift mechanism. If air powered, check for leaks. 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 Taillights clean, operating, 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 (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). Release trailer parking brake (if applicable). Place vehicle into a low gear. o Gently pull forward against parking brake to make sure the parking brake holds. o Repeat the same steps for the trailer with trailer parking brake set and power unit parking brakes released (if applicable). 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.