

**TRAINING AND QUALIFICATION REQUIREMENTS
FOR
VEHICLES LESS THAN 10,000 GVWR**

INITIAL

- Read *Health and Safety Code Handbook* (FSH-6709.11) Chapter 10; Sections 11, 12, 13 General Vehicle Travel
- Read Driver-Operator Guide EM-7130-2, Chapters 1 & 2
- Read Fleet Equipment Management Handbook (FSH 7109.19) Chapters 40 & 60
- Read Fleet Equipment Management (FSM 7130), Section 7134
- Hold a valid state license for vehicle operated
- Receive instruction(s) in the use of:
 - Driver's Safety and Preventive Maintenance Inspection* -
 - Transportation Equipment, Form 7100-9
 - Equipment Maintenance Record, Form FS-7100-2
- Read, "*What To Do In Case of An Accident*," Form FS-7100-2c
- Read, "*Driver's Responsibility for Operation and Care of Vehicle*," Form FS-7100-2b
- Scheduled to or have attended *Defensive Driving Session* (within last 3 years or next scheduled session after receiving license).

RENEWAL

- Hold *valid* state license for vehicle type(s) to be operated
- Attend *Defensive Driving Session* within last 3 years.

I _____ have completed the training and qualification requirements for operation of vehicles less than 10,000 GVWR.

Employee Signature:

Date:

Supervisor Signature:

Date:

Operator Examiner Signature:

Date:

REQUIREMENTS AND RESTRICTIONS

Employees are responsible for Government-owned, -leased or rented motor vehicles assigned for carrying out their official duties. Employees are cautioned to observe the notice **Form AD-185** placed in all vehicles regarding official use of Government-owned or leased vehicles. Any personal use, such as commuting, hauling non-government employees, deviations from regular routes of travel can have serious consequences and will subject employees to disciplinary action.

Official purposes include use in emergencies threatening loss of life or property, but do not include the transportation of employees between their domiciles and places of employment, except in cases of employees engaged in field work. Transportation of non-government employees (including family members) can be transported in a Forest Service vehicle without first obtaining approval of an authorized official on **Form AD-202** in accordance with FSH 6509.33.

Employees shall not keep a Government vehicle at their private residence unless such storage has been specifically approved on **Form AD-728** by an authorized official for early departure or late arrival in connection with field work. All other requests are approved by the Secretary of Agriculture in accordance with **Departmental Regulation 5400-5**.

1. The employee at the outset of his/her duty shall be advised to surrender the OF-346 immediately if State license is revoked or suspended or expired. (Ref. FSH 7109.19 - Section 64.2 & 65)
2. All operators of any vehicle intended to carry more than 15 passengers are required to pass a physical examination prior to initial use or renewal of OF-346 (ref. FSH 7109.19 - Section 60.5; Section 63.4; and 49 CFR 383)
3. An identification card, OF-346, may be issued to a student with a valid State drivers license other than the State in which he/she is temporarily employed. The OF-346 can be issued for a period not to exceed 120 days (student plans to return to school)
4. The Forest Service is authorized to issue identification cards (OF-346) to non-Federal personnel to operate Government vehicles. Such applicants must pass the same requirements as the ones imposed on Government employees. Some examples of such personnel would be those in the following programs:

Union employees who serve as instructors in Civilian Conservation Centers

Workers under the Senior Community Service Employment Program when employed by the Forest Service

Work-study program participants (Co-Op students)

Workers under Volunteer Program

AD Hires

Drivers and operators of all Forest Service equipment shall strictly observe all State and local laws and regulations. They shall observe the accepted standards of safe driving and shall exercise all possible care to avoid accidents, or misuse and abuse. It is the responsibility of the employee's supervisor to invoke penalties when violations warrant it. Driver Examiners have authority to suspend operating privileges. If an OF-346 is pulled under field conditions, notify operator's immediate supervisor as soon as conditions warrant.

The operator of a Government motor vehicle is subject by law to the same extent as the driver of a private vehicle. The Federal Tort Claims Act applies to damages resulting from operation of Government vehicles by Federal personnel. Any claim or suit filed against the operator of a Government-owned or -leased motor vehicle resulting from an accident will be defended by the Government, if the employee was acting within the scope of his/her employment. If he was not, the Government will not pay the claim nor defend the suit. The Justice Department decides whether the employee acted within the scope of his employment. The Attorney General has discretion in determining whether the Department of Justice will defend an operator against whom a claim is made. Employees may still wish to carry public liability insurance for personal protection to cover circumstances held to be outside the scope of the Public Law.

Operators of Government-owned or -leased equipment have immediate custody thereof and are accountable for its loss, damage, or destruction. Liability insurance covering the operation of Government-owned or -leased vehicles is available as a rider to insurance policies on privately-owned automobile.

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CHAPTER 10 – TRAVEL

11 – GENERAL TRAVEL. This section contains direction related to safety and health requirements for travel to and from work projects and other activities.

11.01 – Authority. Regulations regarding general travel are in Title 29, Code of Federal Regulations (29 CFR), Parts 1910 and 1926.

11.06 – Reference. McClung, David, and P. Schaerer. 1993. The Avalanche Handbook. The Mountaineers Books. Seattle, WA.

11.1 – Requirements for All Travel.

11.11 – Qualifications. Qualifications for field work crews and office personnel include the following:

1. Each field work crew and office group shall be trained in first aid/cardiopulmonary resuscitation (CPR) or have at least one person certified to render first aid/CPR.

2. Prior to using a global positioning system (GPS), employees shall be trained in the use of GPS.

3. Employees and their supervisor shall utilize tailgate safety sessions to address safety concerns for local incidental travel, such as running short errands or postal services.

11.12 – Job Hazard Analyses. Job hazard analysis (JHA) for all work projects and activities involving travel shall include:

1. An itinerary listing planned route(s) of travel, date of travel, destination, and estimated time of departure/arrival, as needed.

2. Check-out/check-in system (such as a sign out board) for internal use only.

3. Name of employees.

4. Emergency phone numbers/communication system and contact points.

5. Other information relevant to the project or activity. (Some items required for the JHA are available in other documents, such

as a district or project safety and health plan, and may be included by reference.)

If employees fail to call in or return on schedule, the supervisor shall take those actions required by the JHA.

11.2 – Back-country Travel. *Never travel or work alone in isolated areas without preparing and discussing a detailed JHA that includes emergency evacuation procedures and a communication plan (sec. 21.14).* For all back-country travel, remember that terrain and weather may make aid and rescue an impossibility for several days. A minor accident can have serious consequences due to time and exposure, so plan ahead.

11.21 – Personal Protective Equipment.

1. The following personal protective equipment (PPE) is required for back-country travel:
 - a. First aid kit (refer to the Glossary).
 - b. Map and compass.
 - c. Matches or fire starter in weatherproof container.
 - d. Water or water purifier.
 - e. Food for 1 to 3 days.
 - f. Flashlight with extra batteries and bulb.
 - g. Two-way radio, cellular phone, or similar personal communications device.
 - h. Eye protection and sunscreen.
 - i. Lightweight shelter and appropriate clothing for climatic conditions.
 - j. Additional PPE identified by the JHA.
2. The following PPE is recommended for back-country travel:
 - a. GPS receiver (sec. 21.12 and 72).
 - b. Multi-purpose belt tool.
 - c. Whistle and signal mirror.

11.22 – Safety Practices.

1. Be aware of local conditions.
 - a. Weather, road traffic, and trail conditions.
 - b. Potential hazards, unusual activities, and animals that may be encountered (sec. 51, 53, and 54).

2. Choose campsites carefully. They should be free of:
 - a. Snags and other overhead hazards.
 - b. Leaning green trees in unstable or saturated soils.
 - c. Danger from rolling rocks and slides.
 - d. Danger of flash flooding.
 - e. Known animal problems.
3. If disoriented due to dehydration or other causes:
 - a. Keep calm. DON'T panic.
 - b. Contact the unit dispatcher for assistance.
 - c. Be aware that fatigue causes hallucinations.
 - d. Do not walk aimlessly. Try to orient yourself. Trust your GPS receiver, map, and compass.
4. If lost:
 - a. Contact the unit dispatcher for assistance.
 - b. Select a sheltered area, prepare a camp, and stay there. Conserve your strength.
 - c. Gather fuel for a warming fire BEFORE DARK.
 - d. Remember that warmth and liquids are more important than food.
 - e. Put out visual markers if available.

11.3 – Winter Travel. Employees traveling in the mountains in winter shall be skilled in winter mountaineering techniques, including emergency survival and avalanche hazard, and hazard tree recognition. Employees shall be skilled at their mode of travel, whether skis, snow shoes, or mechanized over-snow equipment and vehicles.

Employees shall carry a survival kit that includes items identified in the JHA and PPE appropriate for the conditions and hazards anticipated. Ski helmets or equivalent head protection should be considered when traversing areas known for avalanche and/or snag hazards.

11.31 – Safety Practices for Travel in Avalanche Areas. Employees shall be trained at a Forest Service sponsored/recognized national avalanche school or at the Forest Service National Avalanche Center.

Employees shall learn to identify avalanche-prone localities, recognize snow pack instability, travel safely in avalanche

terrain, carry out an effective, safe rescue, and know what rescue equipment/clothing is required. Years of experience are required to identify all potential avalanche hazards. If unsure of the safety of the terrain, turn back or go around.

11.32 – Safety Practices for Travel on Ice. Travel on frozen lakes and streams is permitted only after a JHA is prepared and all travelers sign it verifying that they have read and understand its direction.

1. Precautions.

- a. Planning shall include information on the depth of water before freezing and the age/thickness of ice. Do not travel over newly frozen lakes, on shore ice, or during periods of unstable ice conditions. Flowing water from springs and streams and extremely slick ice indicate hazard areas.
- b. Operating motorized vehicles on frozen lakes and streams shall be authorized only by local line officers and must be justified in writing.

2. Ice Rescue. *Personnel shall not put their lives in jeopardy where an ice rescue cannot be accomplished in a safe manner, even if the victim(s) are unable to help themselves. Always follow safe established rescue techniques.*

12 – MOTORIZED VEHICLES.

12.01 – Authority. The authority for the use of motorized vehicles is in Title 29, Code of Federal Regulations (29 CFR), sections 1910.106 and 1926.601; 36 CFR 261.16a; and 49 CFR Parts 171-180 and 383-397.

The authority for transportation of flammable and combustible liquids is in National Fire Protection Association (NFPA) 30, Flammable and Combustible Liquids Code (1996), National Fire Protection Association, Quincy, MA, and 49 CFR Parts 171 through 180.

FSM 5130 contains direction on structure and vehicle fires.

12.03 – Policy.

1. Employees shall not operate a motor vehicle while under the influence of alcohol and drugs nor while sick or suffering from excessive fatigue or emotional stress.

2. Drivers must observe all State and local traffic regulations.

12.04 – Responsibility.

12.04a – First-line Supervisors. First-line supervisors have the responsibility to observe drivers for vision, hearing, dexterity, or other physical limitations that might impair their ability to drive safely.

Supervisors shall review driving abilities of new employees within 30 days of employment. The authorization for an employee to drive on official business must be reviewed and documented by the supervisor when the employee starts work; 30 days later; and on a subsequent 4-year interval.

12.04b – Drivers/Operators. Drivers/operators have the responsibility to:

1. Inform their supervisors of any physical, mental, or emotional condition that might impair their ability to safely drive a motorized vehicle or operate machinery.
2. ***Know and observe all State and local traffic regulations.***
3. Drive safely while operating the vehicle within its mechanical limits.
4. Consider the needs of passengers with disabilities when traveling, such as accessibility and actions necessary in the event of vehicle fires or accidents.

12.06 – References.

1. U.S. Department of Agriculture, Forest Service. 1992. Driver-Operator Guide. EM-7130-2. Engineering Staff, Washington Office.

2. U.S. Department of Agriculture, Forest Service. Master Agreement Between Forest Service and National Federation of Federal Employees—Article 27, Safety and Health. Washington, DC.

12.1 – Qualifications. All Forest Service employees who operate Government vehicles (or private vehicles used on official duty) shall hold a valid State driver's license with the proper endorsements for the size and class being driven and a Forest Service-issued identification card indicating the type of vehicle or equipment the operator is authorized and qualified to operate (FSM 7134.1).

If a commercial driver's license is required for an employee's work duties, the employee shall be included in the Department of Transportation Federal Highway Administration Drug and Alcohol Testing Program. Operators shall be familiar with the Driver-Operator Guide (sec. 12.06).

12.11 – Training. Defensive driving training is required for all Forest Service employees who drive Government or private vehicles on official duty. Drivers must attend a Forest Service or National Safety Council or equivalent defensive driving course at least every 3 years.

12.12 – Suspensions. Supervisors may recommend and line officers may suspend an employee's authorization to drive on official business for:

1. Repeated disregard of safe driving practices.
2. Personal deficiencies that make driving unsafe.
3. Abuse of a vehicle and/or equipment.
4. Unauthorized use of a Government vehicle while on official duty.
5. Repeated violations of State driving regulations (such as speeding, reckless driving, and substance or alcohol abuse).
6. Involvement in a driving accident that displays negligence. After reviewing the initial accident report, the line officer may suspend the employee's driving authorization pending final disposition of the case.

Supervisors shall give the employee written notification of suspension (with appeal rights) and file a copy in the employee's official personnel folder.

12.2 – Required Vehicle Equipment. Factory installed safety devices and equipment shall not be nullified, altered, or removed. Ensure that Government vehicles are equipped with:

1. Safety belts for all passengers. Refer to 49 CFR 392.9 for exception of bus passengers.
2. Warning markers or reflectors and flashlight.
3. First aid kit. The standard first aid kit in all Government vehicles must contain two packets of the standard protective equipment (rubber gloves, face masks, eye protection, and CPR clear-mouth barrier) (refer to the Glossary).
4. Chock blocks.
5. Tire chains.
6. Window scraper.
7. Fire extinguishers (A:B:C or B:C) (sec. 35.11a). If the vehicle is carrying explosives, flammables, or 16 or more passengers, these rules apply:
 - a. Explosives: 2 extinguishers rated 2A-10B:C or more.
 - b. Flammables: 1 extinguisher rated 10B:C or more.
 - c. 16 or more passengers: 1 extinguisher rated 5B:C or more or 2 extinguishers rated 4B: or more.

12.3 – Safety Practices. Vehicle operators shall comply with all traffic laws, regulations, or ordinances, even in emergency driving situations (sec. 12.32).

12.31 – Work/Rest Guidelines. Vehicle operators must comply with these work/rest guidelines except for limited exceptions (during the first 24 hours) of emergency driving situations (sec. 12.32).

1. Employees and contractors operating Government vehicles shall drive:
 - a. Only if they have had at least 8 consecutive hours off duty before beginning a shift.
 - b. ***No more than 2 hours without a rest stop. Operators of vehicles carrying 16 or more passengers (including the driver) shall stop for 10 minutes every hour.***

- c. No more than 10 hours per shift. A shift must not exceed 16 hours, from beginning of shift to the end of shift including rest and meal stops.

2. Contractors operating Government commercial motor vehicles must adhere to the hours of service for drivers as required by the U.S. Department of Transportation (DOT) (sec. 12.01). An exception may be made only when an emergency is officially declared.

12.32 – Emergency Driving. Determine the type of emergency before driving. Emergency situations shall be justified in writing and approved in writing by the appropriate line officer.

1. When transporting passengers during an officially declared emergency, follow these precautions:

- a. **National or State emergency.** Declared by the President or Governor. Base allowable driving hours on the driving assignment, from starting point to destination. Upon the driver's arrival at the destination, do not permit further driving if work/rest guidelines in section 12.31 have been exceeded.
- b. **Regional emergency.** Local decision made by the line officer to provide direct assistance to supplement State and local efforts and capabilities to save lives.

2. Where city or county ordinances require emergency vehicles using a siren and red lights to continue their route of travel regardless of traffic signals, drivers shall comply with such ordinances; however, such travel through an intersection shall never exceed 10 mph (16 km/hour).

12.33 – Before Driving.

1. Determine conditions in the area to be traveled and choose the appropriate vehicle and route (sec. 51.11). Verify directions to your destination, obtain a map for reference if possible.

2. Check the owner's manual for instructions and location of tire changing equipment, headlights, wipers, heat, and air conditioning. If the vehicle has a computerized braking system designed to prevent wheel lockup, remember these points about automatic braking systems (ABS):

- a. ABS does not mean drivers can drive faster on snowy or icy roads.
 - b. In a two-wheel-drive vehicle or four-wheel-drive vehicle with ABS, maintain firm steady pressure on the brakes. Pumping or releasing the brakes negates ABS.
 - c. ABS does not function in some four-wheel-drive vehicles when four-wheel-drive is engaged.
 - d. Some vehicles, mostly pickups, have ABS on rear wheels only. Operate a vehicle so equipped the same as one without ABS. If the front wheels lockup, reduce brake pedal pressure to regain control.
3. Observe the “Circle of Safety” rule. Walk around the vehicle.
- a. Check the windshield, wipers, and wiper fluid level.
 - b. Scrape snow/ice from all windows.
 - c. Keep windows, mirrors, and lights clean to better see and be seen.
 - d. Check headlights, turn signals, and front tires (including wheels and lug nuts).
 - e. Adjust mirrors.
 - f. Check taillights, reflectors, and rear tires (including wheels and lug nuts).
4. Check the brakes by pressing firmly on the foot pedal, check the steering for any looseness, and check the horn. Know the function and location of all controls.
5. Before moving a vehicle, turn on the defroster fan to dislodge any dust and debris.
6. If the vehicle uses an alternative fuel, such as methanol, ethanol, diesel, or propane, familiarize yourself with the refueling procedures. Know in advance where the next funding station equipped with such fuel is located.
7. Do not fill a fuel tank beyond the normal shut off point and always allow for vapor expansion.
8. Secure all objects inside the cab and cargo area(s).
9. Operators of vehicles 10,000 gross vehicle weight rating (GVWR) and larger (single or in combination) must check wheels and lug nuts daily.

10. When work is performed on the wheel/tire/hub assembly (such as wheel bearings being packed), the operator should check for tightness after driving 50 to 100 miles (80 to 161 km).

11. Monitor vehicle performance when driving. Inspect a vehicle after use. Correct or report problems before a vehicle is used again.

12.34 – While Driving.

1. ***Always wear your safety belt(s).*** The vehicle operator shall ensure passengers also wear safety belts. If two types of restraint are available, use both.

2. Honor the right-of-way of pedestrians.

3. ***To prevent accidents, make concessions to other drivers who are thoughtless, unskilled, or ignorant of the hazards they create. Drive defensively and yield the right-of-way even when by all rules of the road it is yours.***

4. Be aware of traffic situations developing far ahead of the vehicle. Use the rearview and sideview mirrors often and keep your eyes moving to enlarge the “big picture.”

5. ***Drive to avoid accident situations created by the mistakes of others or by weather and road conditions.***

6. Do not compromise your safety, the safety of your passengers, or public safety when driving. The following are prohibited:

- a. Engaging in distracting conversation or activities.
- b. ***Eating or drinking.***
- c. Using a two-way radio.
- d. Using a hand-held cellular telephone.
- e. Using radio/stereo headphones.
- f. Taking prescription drugs that may cause dizziness or lack of concentration or reduce response time.
- g. Reading maps, instructions, or other material.
- h. Transporting pets. Transporting pets in Government vehicles generally is not allowed. Transporting pets shall be addressed on a case-by-case basis and documented in the job hazard analysis.

7. **Keep well to the right side on narrow roads and blind curves. Be able to stop within less than half of the visible distance.**

8. Reduce speed when driving on wet, hard-surfaced roads. The front wheels may hydroplane and lose contact with the road surface.

9. Adjust the vehicle speed and select the proper gear before ascending or descending a hill and entering turns.

10. **Pull off the road for a break or to change drivers if you experience any of these warning signs:**

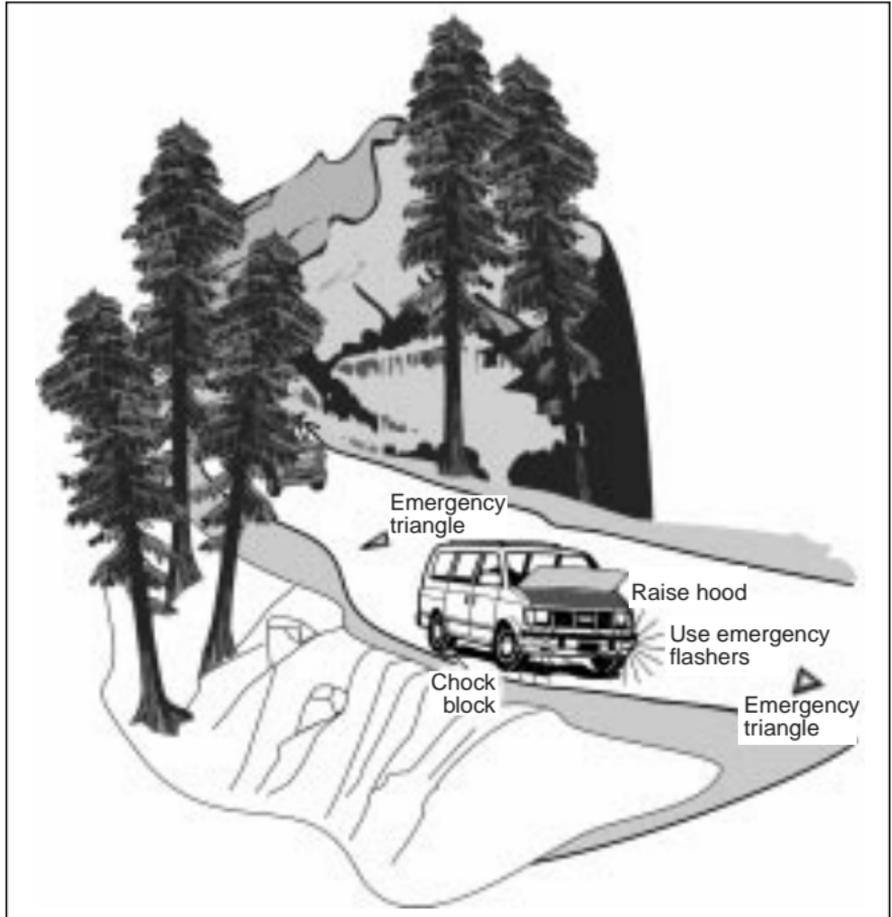
- a. Vehicle begins to feel too warm.
- b. Drowsiness, especially after meals.
- c. Eye strain.
- d. **Inattention, daydreaming.**
- e. Hallucinations (for example, misinterpreting shadows, reflections, objects on or near road) resulting in an impulse to strongly control the vehicle.
- f. Impatience, irritability not normally experienced.
- g. Stress that results in anxiety, anger, or lack of concentration.
- h. Muscular tension, restlessness, or inability to get comfortable.

11. Emergency Stopping.

- a. When it is safe to do so, move the vehicle to the shoulder of the road, away from traffic.
- b. Set the emergency brake.
- c. Activate four-way flashers.
- d. Keep alert to passing traffic.
- e. Exit the vehicle when traffic volume/flow presents undue hazards.
- f. Raise the hood.
- g. Display emergency reflectors, triangles, or other suitable warning devices (ex. 01).

12. If the vehicle is jacked up and/or parked on a grade, follow these steps:

- a. Turn the wheels into bank or curb to avoid rolling.

12.34 – Exhibit 01 – Emergency Stopping

- b. Shut off engine while your foot is on the service brake and then set the emergency brake. Put the transmission in the lowest gear that is the direction the vehicle would roll or into park for an automatic transmission.
- c. Block at least one wheel with chock blocks (or other suitable chock, such as a rock or log) . Chocking two wheels is preferred.

13. Prevent carbon monoxide poisoning in a parked vehicle by partially opening a downwind window when running the engine for heat.

12.35 – Driving on Limited Access Highways. When traveling on major divided highways designed for high-speed travel:

1. Plan your trip in advance; know the route and the highway numbers. Adverse weather conditions or construction work may require an alternate route or extra time. Know where to exit. Have adequate fuel.
2. Under ideal driving conditions, use the “2-second rule” in calculating following distance. Watch the vehicle ahead. When it passes a stationary point, such as a sign post or mileage marker, count “1 thousand 1, 1 thousand 2.” This is 2 seconds. If you reach the same stationary point before you finish those words, you are following too closely. Always compensate for changing weather and road conditions by increasing your following distance.

12.36 – Special Hazards while Driving on Forest Service Roads. Special hazards that drivers may encounter are:

1. **Road Width.** Roads with narrow driving surfaces, roads classified as single-lane with turnouts, and roads with few places to park or turn around.
2. **Grade.** Varying grade; range is from 0 to 18 percent.
3. **Surface.** A variety of road surfaces, including those that may be affected by weather.
4. **Sight Distance.** Sight distance which may be limited by adverse weather, blind curves, foliage, dust, smoke, and ambient light.
5. **Other Road Users.** Tourists, heavy equipment operators, motorcyclists, mountain bicyclists, and many other types of road users. Wildlife and domestic stock also may be encountered.

12.4 – Defensive Driving Techniques.

1. Drive slowly and use transmission gearing, engine compression, and gravity to slow the vehicle as it travels uphill. Conversely, use engine compression and gearing on downhill grades.
2. Keep right. ***Drive as far to the right as possible without driving on the shoulder.***

3. Keep headlights, taillights, mirrors, and all windows clean and clear. When conditions limit visibility, slow down, and turn on your headlights.

4. Always maintain control of the vehicle. For example, if unexpected wildlife or domestic livestock are encountered, slow down and try to avoid the animal. Generally, it is safer to hit the animal rather than to drive off the shoulder of the road or cross the centerline and risk a head-on collision.

5. **Parking.**

- a. Select a location that allows a minimum of a 12 foot (4 m) width of unobstructed travel area and adequate sight distance in both directions.
- b. Assess the intended parking area for soft material, holes, rocks, or other debris that could damage tires/undercarriage.
- c. When parking, position the vehicle for a forward departure. Avoid backing the vehicle, when possible.
- d. Shut off the engine, set emergency brake, and put transmission in gear or park.
- e. Use chock blocks.

6. **Methods for Backing.** It is safer to do a backing maneuver when first parking rather than when returning to the vehicle. This allows the operator a complete and full view of the parking spot. It is better to park the vehicle (when possible) so the operator can drive forward and eliminate backing altogether.

- a. Never back up or make a U-turn on blind corners.
- b. Before backing:
 - (1) Select a wide spot with a view that provides adequate sight distance in each direction.
 - (2) Always use a person to serve as a guide for backing when available.
 - (3) Walk around the vehicle and check for hazards and obstructions.
 - (4) Back the rear of the vehicle toward a cutbank.
 - (5) Use caution when backing on fill-sloped edges of roadways.
 - (6) Always face the danger.

7. **Winter Driving.**

- a. In the JHA, identify winter driving hazards on a site-specific basis. Include precautions and techniques to abate hazards:
 - (1) Slow down and increase following distance.
 - (2) Do not use cruise control when roads might be slick. Cruise control can apply power at the wrong time and initiate a skid or make a small skid worse.
 - (3) Follow precautions in all vehicles, including all-wheel-drive vehicles and four-wheel-drive vehicles. Although all-wheel-drive vehicles and four-wheel-drive vehicles may provide better traction, they do not decrease the normal stopping distance.
- b. List necessary equipment/supplies in the JHA. Such equipment/supplies might include jumper cables, snow shovel, winter survival gear, and abrasive material (cat litter, sand, salt, or traction mats).
- c. Prior to winter driving season, conduct tailgate safety sessions to discuss safe winter driving practices, such as what to do in the event of a skid.

12.5 – Transporting Flammable/Combustible Liquids. Flammable liquids have a flash point below 100 °F (38 °C). Combustible liquids have a flash point at or above 100 °F (38 °C). Ensure that a JHA has been written before transporting such liquids. The following is a brief summary of the guidelines:

1. All employees who handle, transport, and use flammable/combustible liquids shall receive hazard communication standards training and be familiar with material safety data sheets.
2. Passengers shall not ride in the enclosed cargo portion of a vehicle hauling flammable/combustible liquids. If it is absolutely necessary to carry flammable/combustible liquids, a minimum amount only of such cargo shall be secured in a rack on the roof.
3. Flammable/combustible liquids shall be carried in approved safety containers as defined by NFPA 30 (sec. 12.01). Such containers shall comply with these requirements:
 - a. Department of Transportation approved.
 - b. Clearly labeled to identify the contents (sec. 38.12).
 - c. No more than 90 percent full.

4. Containers for flammable/combustible liquids shall be:
 - a. Free of leaks and other damage.
 - b. Treated as dangerous, even when empty.
 - c. Stored separate from items, such as human and animal food, to protect against contamination by accidental leakage.
 - d. Positioned upright and secured from movement in a cargo area separated from the passenger compartment by a solid wall, such as a pickup box.
 - e. Never transported in the same cargo area with oxidizers, acids, or radio equipment.

5. Vehicle placarding shall be required for hauling flammables/combustibles in containers larger than 110 gallons (447 L) or containers with other fuels capable of holding more than 1,000 pounds (453 kg), including the weight of the container (approximately 110 gallons or 416 L). Operators shall meet commercial driver's license requirements.

6. Nonflammable chemical agents, such as oleoresin capsicum aerosols (pepper spray) used for deterring bear attacks, may be transported inside the passenger compartment. Inform passengers of the substance to be transported. Requirements for transporting such chemical agents are:

- a. An approved protective case or secured wrapping that will contain all atomized mist.
- b. A safety device protecting the trigger mechanism from accidental discharge.
- c. Storage away from direct sunlight or exposure to temperatures exceeding 120 °F (48 °C).

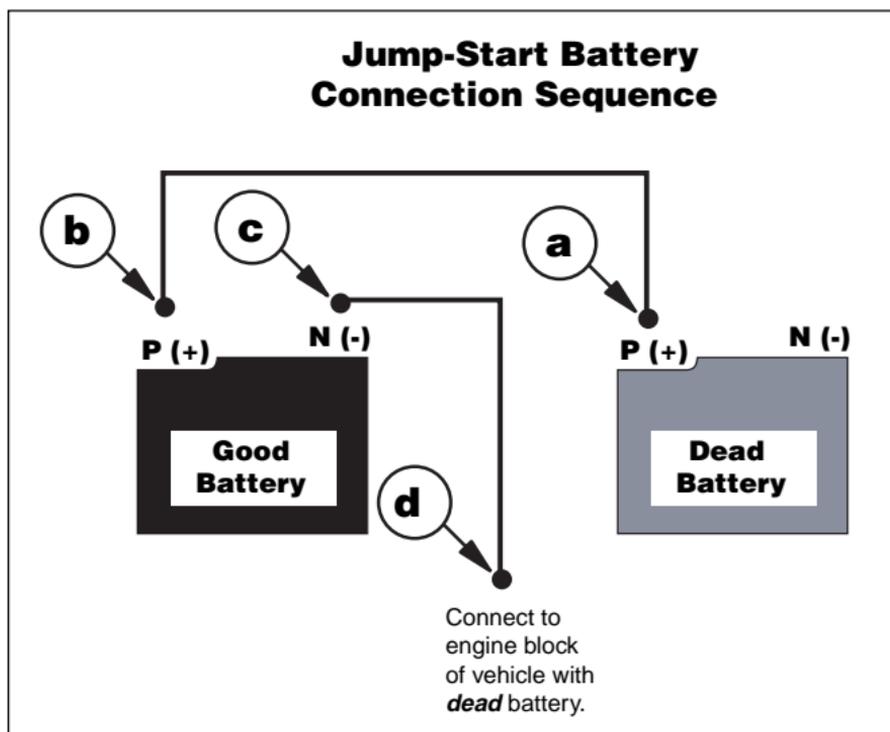
For law enforcement exceptions to these requirements refer to section 25.3.

12.6 – Battery Jump-Starting Safety. Take the following steps and precautions to jump-start a battery:

1. Before Attaching Battery Cables.
 - a. Make sure vehicles do not touch. Set both vehicles' emergency brakes, set automatic transmissions to PARK or manual transmissions to NEUTRAL. Turn the ignition OFF.

- b. Do not jump-start unless both batteries are the same voltage.
 - c. Wear personal protective equipment/clothing (protective goggles, eyewear, and/or face protection, and gloves).
 - d. Extinguish all flammable materials. A spark can ignite hydrogen gas emitted from batteries.
 - e. Remove the caps of the dead battery if the battery is not the maintenance-free type. Add battery water, if needed. REPLACE CAPS and cover with a damp cloth. Do not jump-start if fluid is frozen.
2. Attaching Battery Cables (ex. 01).
 - a. Clamp the positive (red) end of battery cable to the positive (+) terminal on the dead battery.
 - b. Clamp the positive (red) cable's loose end to the positive (+) terminal of the good battery.

12.6 – Exhibit 01 – Battery Jump-Starting Safety



- c. Clamp the negative (black) end of the battery cable to the negative (-) terminal of the good battery.
- d. Clamp the negative (black) cable's loose end to the disabled car's engine block or other suitable ground on the opposite side away from the dead battery.
- e. Start the car with the good battery.
- f. Start the disabled car.
- g. Remove the negative (black) cable from the engine block (or ground) and the negative terminal of the good battery.
- h. Remove the positive (red) cables from the positive terminals.

12.7 – Vehicle Fires. Rely on local fire departments that have the skills and equipment for rescuing occupants and extinguishing vehicle fires. When local assistance is not available, the first priority is safety of personnel.

12.71 – Procedures. Only trained employees with appropriate equipment shall engage in the suppression of vehicle fires. Do not attempt to take any action beyond your level of training.

Secure the scene. Isolate the area and ensure the safety of people and the environment. Ask law enforcement personnel to provide traffic control to prevent accidents and interference with firefighting.

When monitoring vehicle fires during non-suppression actions, stay up wind out of the smoke.

12.72 – Safety practices. If the vehicle you are riding in catches fire, follow these practices.

1. Engine Compartment Fire Safety. Getting away from the fire is your first priority. If there is time:
 - a. Park at a location that provides personal and public safety.
 - b. Turn off the ignition.
 - c. Set the emergency brake.
 - d. Pull the hood latch — but don't raise the hood.
 - e. Exit the vehicle.
 - f. If a fire extinguisher is used, direct a quick burst through the radiator or fender well to reduce the fire and the chance of flash fire when the hood is raised.

2. Fire in Cargo/Hazardous Materials. Any substance may be encountered as cargo in a vehicle fire. Trucks are especially likely to contain materials that are volatile, toxic, gaseous, explosive, or flammable. If hazardous materials are encountered or suspected, the first priority is safety of personnel (sec. 61).

- a. Obtain and study the Department of Transportation (DOT) Emergency Response Guidebook (or equivalent) on hazardous materials.
- b. Maintain a current list of emergency phone numbers to call in experts on hazardous materials.

13 – SPECIALIZED EQUIPMENT. The provisions contained in sections 12 through 12.6 on motorized vehicles apply also to use of specialized equipment.

13.01 – Authority. The authority for the use of specialized vehicles is in Title 49, Code of Federal Regulations (49 CFR), Parts 172, 383-397.

13.06 – Reference. U.S. Department of Agriculture, Forest Service. Driver-Operator Guide. EM-7130-2. Engineering Staff, Washington Office.

13.1 – Four-Wheel-Drive Vehicles.

13.11 – Operation. Four-wheel-drive vehicles are designed to provide extra power and traction for traveling at a slow speed over rough or unusual terrain. When operating four-wheel-drive vehicles:

1. Be familiar with the vehicle before using it for assigned field project work or other activities.
2. Know your limitations and that of the vehicle for all driving conditions.
3. Do not exceed the safe limits for driving speeds allowed by terrain and road conditions.
4. When chains are needed, put them on the rear tires or on all four tires.

13.12 – All-Wheel-Drive Vehicles. Do not confuse all-wheel-drive vehicles with four-wheel-drive vehicles in relation to technical capa-

bilities and driving limitations. All-wheel-drive vehicles have ground clearance and handling characteristics similar to standard sedans and vans. All-wheel-drive vehicles are not specifically designed for unimproved or off-road travel.

13.2 – All-Terrain Vehicles. An all-terrain vehicle (ATV) is any motorized off-highway vehicle 50 inches (1-1/4 m) or less in width, having a dry weight of 600 pounds (272 kg) or less, traveling on three or more low pressure tires, and having a seat to be straddled by the operator and handlebar for steering control as defined by the ATV Safety Institute. For Forest Service application, only four-wheel ATVs will be used by Forest Service employees, as stated in Chapter 6 of the Driver-Operator Guide (sec. 13.06).

13.21 – Qualifications.

1. The supervisor shall ensure that a JHA is prepared for all projects or activities using ATVs and that operators possess the skills required for the work project or activity.
2. Only qualified and authorized employees shall operate ATVs. Qualifications include being familiar with the Driver-Operator Guide (sec. 13.06) and the ATV manufacturer's operating manual.
3. Prior to Forest Service endorsement, a competent Forest Service employee shall conduct a field operations evaluation to identify the proficiency level of the operator. State endorsement is required, if applicable.
4. Operators shall be reevaluated for field operations every 3 years.

13.22 – Personal Protective Equipment.

1. Personal protective equipment (PPE) required for ATV use is as follows:
 - a. Fire extinguisher.
 - b. First aid kit (refer to the Glossary).
 - c. Personal communications device.
 - d. Motorcycle helmet (full- or three-quarter face). Mouth protection is recommended when using three-quarter face helmets. The helmet shall meet requirements of the Department of Transportation (DOT), ANSI (Z90.1), or Snell Memorial Foundation (SMF) standards.

- e. Leather gloves.
- f. Long pants and long-sleeved shirt or jacket.
- g. Appropriate footwear.
- h. Eye protection (such as goggles/glasses, or face shield).
- i. Additional items identified in the JHA (such as a kidney belt or chest protector when employee is engaged in patrols or law enforcement).

2. PPE recommended for ATV use includes a manufacturer's tool kit.

13.23 – Loading and Hauling.

1. Use a hauling vehicle of adequately rated capacity and capability. A tilt/bed trailer designed especially for ATVs is generally best for hauling ATVs.

2. Use loading ramps that are sufficiently wide and that secure firmly to the truck bed.

3. While transporting an ATV, put it in gear, set the parking brake, securely tie it to the hauling vehicle, and close the tailgate.

13.24 – Operation.

1. Become familiar with local hazards.

2. Before riding, always perform a T-CLOC (ASI Program) or similar check:

T – Tires, Wheels

C – Controls, Clutch, Brake, Throttle

L – Lights

O – Oil, Fuel

C – Chassis, Suspension, Nuts, Bolts

3. Do not carry passengers.

4. Always turn off the engine when the ATV is parked. Remove the ignition key and set the brake.

5. When carrying equipment, equalize the load to maintain balance, stability, and center of gravity. Never exceed the recommended gross vehicle weight.

6. Do not drive recklessly or engage in horseplay.

7. Do not ford deep or swift moving water. Hazards exist when:
 - a. Stream bottom is unstable due to mud, sand, boulders, or submerged obstacles.
 - b. Water depth is not consistent through the entire route of travel.
 - c. Stream width prevents a complete view of the bottom across the route of travel.
 - d. Water depth and current may flood the engine.
 - e. Current is forceful enough to require you to counteract it to maintain balance or direction of travel.
8. Modify an ATV only with the manufacturer's written approval.

13.3 – Motorcycles.

13.31 – Qualifications.

1. The supervisor shall ensure that a JHA is prepared for all projects or activities using motorcycles and that operators possess the skills required for the work project or activity.
2. Only qualified and authorized employees shall operate motorcycles. Qualifications shall include being familiar with the Driver-Operator Guide (sec. 13.06), the manufacturer's operating manual, and uses and limitations of the machine.
3. Before operators undertake riding assignments, a qualified examiner shall certify operators for the type of machine and terrain typical of the work project or activity.
4. Where State law requires, operators shall have a motorcycle endorsement. Certification shall be noted on their Driver-Operator Identification Card or documentation authorizing use.
5. Operators are responsible for carrying out machine inspections before, during, and after use.

13.32 – Personal Protective Equipment.

1. PPE required for motorcycles is as follows:
 - a. First aid kit (refer to the Glossary).
 - b. Personal communications device.
 - c. Motorcycle helmet (full or three-quarter face). Mouth protection is recommended when using three-quarter

face helmets, goggles, or face shield. Helmet shall meet requirements of DOT, ANSI Z90.1, or Snell Memorial Foundation (SMF) standards.

- d. Leather gloves.
- e. Long pants and long-sleeved shirt or jacket.
- f. Appropriate footwear.
- g. Additional items identified in the JHA.
- h. Manufacturer's tool kit.

13.33 – Operation. Always perform a pre-ride inspection (sec. 13.24).

13.4 – Snowmobiles.

13.41 – Qualifications.

1. The supervisor shall ensure that a JHA, emergency evacuation procedures, and communications plan are prepared and approved by the appropriate line officer for all projects or activities using snowmobiles, and that operators possess the skills required for the work project or activity. An itinerary shall be filed with the supervisor and at the final destination when appropriate.

2. Only qualified and authorized employees shall operate snowmobiles. Qualifications include being familiar with the Driver-Operator Guide (sec. 13.06) and the manufacturer's operating manual.

3. Operators shall receive training in the use of and the loading/unloading of snowmobiles that includes classroom instruction and practical field exercise or demonstration of proficiency. Certification shall be noted on a Driver-Operator Identification Card or other documentation authorizing use. Employees shall be trained in emergency survival, avalanche hazard recognition, and, where needed, avalanche control.

4. Operators shall be recertified every 3 years.

13.42 – Personal Protective Equipment.

- 1. PPE required for snowmobile use is as follows:
 - a. Map and compass (a GPS receiver is optional; sec. 21.12 and Glossary).
 - b. Manufacturer's operating manual.

- c. Snowmobile helmet (DOT, ANSI, or Snell approved.)
- d. Clothing adequate for winter travel, including goggles, gloves, and boots.
- e. Personal communications device.
- f. First aid kit (refer to the Glossary).
- g. Flashlight with extra batteries and bulb.
- h. Shovel.
- i. Manufacturer's tool kit.
- j. Collapsible (sectional) probes and avalanche rescue transceivers.
- k. Emergency equipment/clothing identified in the JHA.

2. PPE recommended for snowmobiles includes skis or snowshoes and sunscreen.

13.43 – Operation.

1. Always inspect the machine thoroughly before use, following procedures outlined in the manufacturer's operating manual.

2. Plan travel according to the weather and snow conditions. Be flexible with your departure dates.

3. Do not carry passengers.

4. Do not drive recklessly or engage in horseplay.

5. Do not leave the engine running when parked. Turn it off, remove the ignition key, and set the parking brake. If the machine does not have a parking brake, secure it against movement.

6. Avoid travel at night and do not travel alone. If travel at night cannot be avoided, travel over familiar ground. Do not blaze a new trail. Reduce speed so you don't overdrive the machine's headlights.

13.5 – Snow Cats.

13.51 – Qualifications.

1. The supervisor shall ensure that a JHA, emergency evacuation procedures, and communications plan are prepared and approved by the appropriate line officer for all projects or activities using snow cats, and that operators possess the skills required for

the work project or activity. An itinerary shall be filed with the supervisor and at the final destination when appropriate.

2. Only qualified and authorized employees shall operate snow cats. Qualifications include being familiar with the Driver-Operator Guide (sec. 13.06) and the manufacturer's operating manual.

3. Operators shall receive training in the use of and the loading/unloading of snow cats that includes classroom instruction and practical field exercise or demonstration of proficiency. This training shall be given by the manufacturer, a Forest Service employee with at least 100 hours of snow cat experience, or by a certified instructor. Certification shall be noted on a Driver-Operator Identification Card or other documentation authorizing use. Employees shall be trained in emergency survival, avalanche hazard recognition, and, where needed, avalanche control.

13.52 – Personal Protective Equipment. In addition to PPE identified in section 13.42, the following equipment is required:

1. Hearing protection (85 dB and above).
2. Safety belts for operator and all passengers.
3. Skis or snowshoes, depending on travel distance, terrain, and snow conditions.
4. Emergency equipment/clothing identified in the JHA. Collapsible (sectional) probes and avalanche rescue transceivers when applicable.

13.53 – Operation.

1. Become familiar with local hazards.
2. Plan travel according to weather and snow conditions.
3. Know snow conditions, such as expected amount and type (whiteouts).
4. Avoid travel at night.
5. Conduct a pre-trip inspection of the snow cat. Follow the procedures outlined in the manufacturer's operating manual.

6. Ensure lights are operating. For backing operations, utilize an observer or functional back up alarm or both.
7. Do not engage in reckless driving or horseplay, which is strictly prohibited.
8. Avoid leaving any machine running unattended. When it is necessary to run the machine when parked, make sure the emergency brake is set.
9. Radio any deviations from your scheduled route of travel to the appropriate unit or servicing personnel office whenever possible.
10. Do not attempt major modifications of a snow cat without the manufacturer's written approval.

13.6 – Trailers.

13.61 – Qualifications. Only qualified and authorized personnel are permitted to tow trailers as indicated by an endorsement on a Driver-Operator Identification Card or documentation authorizing use.

Each Forest or unit shall have personnel qualified to train and to authorize drivers for towing trailers.

13.62 – Pre-trip Safety Inspection.

1. Ensure that wheel bearings have been packed periodically.
2. Check the following:
 - a. Wheel bearing play and tires. Grasp the top of each tire and attempt to move it side to side.
 - b. Wheels, lug nuts, and tires.
 - c. Wiring and light system.
 - d. Trailer brakes, if equipped.
 - e. Fenders and mud flaps, if equipped.
 - f. Springs and shackles.
 - g. Trailer floor surface for defects.
 - h. Safety chains.

13.63 – Operation. Trailers can adversely affect vehicle handling and stopping. Always drive at a speed that allows for full control of the vehicle and trailer.

1. Ensure that vehicles used for towing trailers comply with Federal, State, and specific Regional requirements regarding size, weight, and necessary equipment.
 - a. For tongue type, tag-a-long trailers, gross trailer weight (GTW) is not to exceed 75 percent of the towing vehicle's gross vehicle weight rating (GVWR). The actual loaded weights shall never exceed the gross axle weight ratings (GAWR).
 - b. As truck gross vehicle weight ratings (GVWR) increase, the actual truck weight does not increase in the same proportion. There are situations where the best way to determine the towing capability of trucks over the nominal 1 ton weight (GTW) is not to exceed 75 percent of the actual truck weight. Adding weight to the truck is a better choice than adding any weight to the trailer. This allows the towing unit to fully control the trailer.
 - c. For fifth-wheel or gooseneck type trailers, use the manufacturer's published gross combined rating (GCWR), available from the fleet manager or specific vehicle towing specifications. These ratings reflect a combination of proper truck components, including engine size, transmission, rear axle ratio, frame, and suspension. In no case shall the GCWR exceed the manufacturer's published GCWR nor shall any individual axle exceed the specific gross axle weight (GAWR) stamped on the manufacturer's plate.
2. Keep hands and feet away from the coupling device when maneuvering the trailer into position for locking.
3. Never permit riders in or on trailers.
4. When backing a trailer, first get out and check the area to the rear, sides, front, and overhead to ensure the vehicle is clear of obstructions. Use an observer when available.

13.64 – Equipment. The following equipment is required for trailer use.

1. Warning equipment, such as reflective triangles or other suitable warning devices.

2. Brakes, lights, and markings as required by State and Federal regulations.
3. Safety chains to match or exceed the trailer weight rating. Chains shall be in place and crossed under the tongue.
4. Side-view mirrors that provide adequate rear vision.
5. Trailer jacks (horse and heavy duty trailers), which are generally not needed for light trailers, such as those used for ATVs and snowmobiles.
6. Trailer brakes for trailers with 1,500 pounds (680 kg) GTWR or above.
7. Emergency break-away system and wet or gel cell battery (trailers 1,500 pounds (680 kg) GTWR and above).

13.7 – Transporting Passengers. Drivers operating vehicles designed to transport more than 16 passengers (including the driver) must have a Commercial Driver's License and a Forest Service endorsement.

Transport vehicles shall be equipped with the following:

1. Manufacturer's standard seat with appropriate safety belts for every person carried by the vehicle. Refer to 49 CFR 392.9 for the exception for bus passengers.
2. Steps for loading and unloading.
3. Right and left side-view mirrors.
4. A safety partition separating passengers from tools/equipment.
5. Emergency doors, windows, and exits.
 - a. The passengers and driver shall have unobstructed access to all exits. The means of egress shall not be restricted, blocked, or modified in any way (49 CFR 393.61).
 - b. The vehicle driver and/or supervisor shall identify and inform all passengers of exit locations and emergency exit procedures.

13.71 – Safety Practices. When transporting passengers, observe these precautions:

1. Every vehicle shall meet appropriate standards for carrying passengers.
2. Passengers shall ride inside the passenger compartment.
3. ***Passengers shall never be allowed to ride anywhere but on a manufacturer's provided, installed seat.***
4. Employees and equipment may be transported together only when:
 - a. Equipment is enclosed in a box attached to the floor and securely fastened, or
 - b. A safety partition has been provided to separate passengers from equipment (sec. 12.5), or
 - c. Equipment is wrapped in appropriate material and secured to the vehicle (emergency only).
5. Flammable/combustible liquids, such as tree marking paint, shall not be transported inside the vehicle with passengers and driver (sec. 22.47e).

14 – AVIATION SAFETY. (For further direction, see FSM 5700, FSH 5709.14, FSH 5709.16, and appropriate Interagency Aviation Guides.) Aviation management includes all activities associated with providing aircraft support services for natural resource protection and management functions of the Forest Service. Support services incorporate program leadership, supervision, cooperation, aviation expertise, training, and safety program management.

It is essential that all aviation operations be planned with the utmost consideration. Missions can be accomplished safely, provided that a high degree of planning, risk management, and analysis is applied. Consult your aviation officer prior to undertaking any aviation operation.



United States Department of Agriculture

Forest Service

Washington Office Engineering

Driver-Operator Guide



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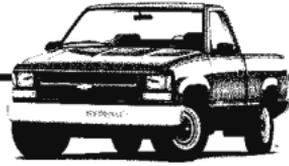
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Chapter 1—Cars and Light Trucks



OPERATORS Authorized Drivers

Vehicles owned or leased by the United States Department of Agriculture (USDA) Forest Service shall be driven only by persons who have qualified according to the regulations established by the Office of Personnel Management, USDA, and the USDA Forest Service. A valid State driver's license for the size and class of vehicle being operated is mandatory and must be in the operator's possession during operation.

Instructions and procedures governing qualification requirements for USDA Forest Service motor vehicle operators are included in Forest Service Manual (FSM) 7134. All personnel who operate motor vehicles owned or leased by the Government must meet these requirements.

Unauthorized Drivers

Do not allow Government-owned or -leased vehicles to be driven by unauthorized persons. In cases of accident or vehicle damage, the authorized driver/operator is held responsible for the actions of the unauthorized driver/operator.

OPERATION

Operators are required to exercise caution when driving Government vehicles. Damage such as broken springs (from speeding on rough roads) or vehicle overloading and damage to tires, fenders, tie rods, gas tanks, and axles can usually be avoided. The operator will be held responsible for abusive use of the vehicle.

The operator is responsible for preventive maintenance checks before, during, and after operation of the vehicle. Operators should become thoroughly familiar with the travel and equipment sections of the *Health and Safety Code Handbook*, FSH (Forest Service Handbook) 6709.11.

Safety Rules

1. Observe all traffic laws, ordinances, and regulations of the State or local community in which the vehicle is operated. Consult the State vehicle code for applicable regulations.
2. Do not carry loose objects, such as tools or instruments, in vehicle passenger compartments unless passengers are shielded by a mesh divider or other protective devices. Keep dash and floor clear of objects.
3. Never drive a vehicle when the load or other objects obscure your view, interfere with your driving, prevent free access to emergency equipment, or prevent free and ready exit from the cab or driving compartment by any person. Additional information on securing loads and loose objects, hauling personnel, and so forth, is discussed in chapter 4.
4. Approach all railroad crossings at a speed that allows for safe stopping.
5. When traveling, maintain an interval of at least 2 seconds. Allow more distance if another vehicle is following at an improper distance, if road conditions warrant, or if required by State law.
6. Turn off the engine and two-way radio when any vehicle or engine is being fueled. Do not smoke within 50 feet of the vehicle or fuel supply.
7. Turn off two-way radios when passing near a blasting area or explosives storage area.
8. Pull off the road for a short rest, coffee break, or change of drivers if you are getting drowsy.
9. Open at least one window to provide interior ventilation when running the motor of a parked vehicle.

10. Equip every USDA Forest Service vehicle with seat belts, warning flags/reflectors, chains or traction devices, and a first aid kit. Use seat belts when provided.
11. Give proper signals before taking any action.

Defensive Driving

Motor vehicle accidents are a major cause of death and serious injury. Adopt a policy of defensive driving. This means:

1. Drive to avoid accident situations created by the mistakes of others or by weather and road conditions.
2. Yield the right-of-way, even when, by all rules of the road, it may be yours.
3. Watch far ahead for wildlife, livestock, people, or vehicles moving onto the road or stopping; watch for highway signs or signals, icy spots, chuckholes, or a vehicle on the wrong side of the road.
4. When passing, approach the vehicle carefully, ease in and out of traffic, and allow plenty of passing distance.
5. Make an unbroken series of concessions to other drivers who are thoughtless, unskilled, or ignorant of the hazards they create.

Speed

1. Be thoroughly familiar with State and local speed laws; comply with them at all times. Defensive driving requires driving at a safe speed rather than merely complying with the posted speed.
2. Drive at a speed that permits full control of the vehicle, allowing for all road, weather, and traffic conditions.

3. On curves, be able to stop the vehicle within less than half of the visible distance.

Thinking and Stopping Distances (Feet) (Average on a hard-surfaced road)			
Speed	Thinking distance*	Mechanical stopping distance after brakes are applied	Total feet
20 mph	22	28	50
30 mph	33	68	101
40 mph	44	127	171
50 mph	55	203	258

*Average $\frac{3}{4}$ second

Turning Around

1. When turning around on mountain roads, always turn with the back of the vehicle toward the uphill bank; face danger.
2. Do not turn unless you have a clear view for 200 feet in each direction.
3. Use a helper (if available) who is on the ground and can see the dangers.

Braking

1. **Use your engine to assist the brakes.** When brakes are applied, heat is generated and some of the lining is worn away. If brakes are held continuously, the brake lining may be burned. Save the brakes by using the engine and transmission to slow the vehicle. Use the brakes to assist the engine. However, in doing so, avoid excessive engine revolutions per minute as this will damage the engine. Think ahead. Begin to slow down early by taking your foot off the accelerator while leaving the clutch engaged. Apply the brakes firmly but gradually. Remember that increasing the load increases the braking distance. This does not mean that the engine should be used as a brake by shifting to a lower gear for normal stops, such as stop signs or traffic lights.

2. **Be kind to your brakes.** When using the foot brake on hills, take the following precautions to prevent skidding or overheating the brakes:
 - Apply the brakes firmly but not abruptly. Abrupt application with full force may lock the wheels and cause the vehicle to slip or skid out of control.
 - Apply the brakes at intervals, only as needed.
3. **Parking brake.** The parking brake is designed to hold a stopped vehicle stationary. Do not use it to stop or slow down, except in an emergency. The foot brake is far more effective and will not crack an axle or drive shaft. Usually, the parking brake can be set more effectively by applying the foot brakes first.

Operation on Hills

It is risky to change gears while climbing or descending a hill; the safest procedure is to select the proper gear before starting to climb. However, if it is necessary to go to a lower gear, make the shift before the engine slows down to a stalling point.

Do not depend on the brakes alone on steep hills. If the road is slippery and the vehicle starts to slide when the brakes are applied, the wheels will lock, causing loss of control because the operator cannot steer. Use a lower gear and leave the clutch engaged. This will cause the driving wheels to turn, engine compression will slow the vehicle, and the wheels will revolve freely enough to permit steering control.

1. **Uphill.** If the engine stalls while climbing a steep hill and it is necessary to back down, apply the foot brake, set the parking brake, disengage the clutch, and shift quickly into reverse. If the vehicle does not slide or roll, start the engine while the clutch is still disengaged, and engage the clutch while releasing the brakes.

If the vehicle slides or rolls while the clutch is disengaged, reengage it immediately after shifting into reverse, and release the brakes. If the engine does

not start turning immediately, use the starter to relieve the strain on the gears. Then back down.

2. **Downhill.** When approaching a downgrade, first select a suitable gear. A good rule is to use one gear lower than would be used for driving up the same hill. Keep the clutch engaged, the throttle closed, and the ignition on before the vehicle starts down. Then observe the following instructions:
 - Keep the vehicle under complete control at all times. Lives may depend on it.
 - Reduce speed, if necessary, by liberal use of the foot brakes.
 - Remember that the possibility of losing control over your speed on descents is greater when the vehicle is loaded.
 - Remember that slower speeds are required when weather and road conditions are unfavorable.
 - Never coast downhill in neutral.
3. **Runaway vehicle.** If the braking effects of both the engine and the brakes fail to hold the vehicle and it starts to run out of control down a hill, the last resort is to ditch the vehicle by running it off the road—against a bank if possible—at a gradual angle. This must be done before the runaway vehicle has gained too much speed. Prompt ditching of a runaway vehicle can prevent a much more serious accident.

Use of Sirens and Emergency Lights

Sirens and red or blue emergency lights are to be used only by authorized drivers. These sirens and lights warn the public of the presence of an emergency vehicle.

Before operating a red or blue light and siren, an employee must pass the necessary examination and have the qualifications shown on the Equipment Operator's Identification Card. Oral permission is not a qualification. Sirens and red or blue lights will be installed only by mechanics after the approval of the forest supervisor.

All emergency vehicles traveling to fires shall abide by traffic lights and stop signs, unless escorted by police.

Consult the State vehicle code for further details on the use of sirens and red or blue lights.

Trailer Towing

All drivers towing trailers must be properly qualified and authorized. Each forest or unit must have personnel qualified to train and to authorize drivers for towing trailers.

1. Vehicles towing trailers must comply with Federal, State, and regional requirements regarding size and weight of towing vehicles. Do not exceed Gross Vehicle Weight Rating (GVWR), Gross Combination Weight Rating (GCWR), or the trailer weight rating. See FSH 7109.19 to determine safe towing combinations.
2. To provide for breakdowns on the road, all towing vehicles and trailers shall be equipped with flags or other suitable signal devices.
3. Trailer houses must be equipped with adequate signal devices.
4. All trailers must have proper brakes and lights to meet State and U.S. Department of Transportation requirements.
5. All trailers must be equipped with adequate safety chains.

Backing

The rearview mirror does not show the area immediately behind the vehicle. It is essential that a driver look behind the vehicle before backing or be guided by a helper standing behind and to the side of the vehicle. The following safety precautions also should be observed:

1. Close all vehicle doors.

2. Back slowly. Be sure there is sufficient clearance when backing into garages or other narrow places.
3. Avoid long-distance backing.
4. Avoid backing downhill.
5. Turn the vehicle around on dead-end roads before parking.

Parking

1. Use chock blocks or other blocking devices when parking on a grade.
2. Always park well off the pavement or roadway.
3. If it is necessary to park on the road in an emergency, be sure to place flags, signs with reflectors, or red lights 200 feet in each direction from the vehicle.
4. Avoid leaving the motor running when a vehicle is parked.
5. Do not park a vehicle over dry vegetation. Exhaust system temperatures can ignite dry vegetation.

Winter Driving

Skillful driving is especially important under unfavorable driving conditions. Adverse conditions, such as wet or icy road surfaces, greatly lengthen stopping distances and increase driving hazards. Always reduce speed under such conditions.

Driving in hazardous weather demands special techniques.

1. How to avoid skids:
 - Keep speed well below dry-road speed.
 - Keep vehicle pulling steadily.
 - Make no sudden changes in speed, gears, or direction.
 - Avoid driving too fast on curves

- Avoid applying the brakes too suddenly or too hard. Pump the brakes to slow down.
 - Avoid driving too fast for surface conditions.
2. How to get out of a skid. If the vehicle should start to skid, the following procedures will help you recover:
 - Avoid braking. Slamming the brakes when a vehicle is skidding locks the wheels and causes loss of traction and steering.
 - Turn the front wheels in the direction of the slide. As the car begins to straighten, straighten the front wheels.
 - Avoid oversteering. Turning the steering wheel too far whips the rear end into a skid in the opposite direction.
 - Avoid lifting your foot from the accelerator suddenly. Maintain power to driving wheels and slow down.

Use of Tire Chains

Tire chains provide the best traction on snow- or ice-covered roads. But there are limits to the help they can give. Even with chains, you cannot safely drive at dry-road speeds on snow- or ice-covered surfaces. It will take about twice as long to bring the vehicle to a stop on ice or packed snow as on a dry road surface, so driving speed should be cut in half. Tire chains are designed to move on the tires and should be tightened only by hand. Reduce speed when using chains to cut down on chain wear and maintain maximum control over the vehicle.

Economic Operation

Fuel Consumption

Every operator of a Government vehicle should drive as efficiently as possible to reduce fuel consumption. Gasoline is wasted by:

1. Excessive speed.
2. Delayed shifting (at 20 mph, second gear uses 20 percent more gas than high gear).

3. Needless idling (long periods of idling may overheat the engine and transmission; never leave the vehicle with the engine running).
4. Incorrect tire pressures.
5. Slipping the clutch to hold the vehicle on hills.
6. Incorrect wheel alignment.
7. Poor engine tuneup.
8. Hauling unnecessary loads.
9. Fast getaways at green lights.
10. Fast speedups and slowdowns.

Starting

Improper starting may damage the vehicle.

1. Do not crank the engine excessively. Continued cranking of the engine discharges the battery rapidly and may shorten its life. Do not keep the starter engaged for longer than 10 to 15 seconds; you may damage the starter. Disengage the clutch when using the starter to reduce the load on the starting motor and battery. If the engine fails to start after being turned over several times, check the fuel supply and ignition system for loose connections and short circuits. The battery will not start the engine if the engine is not getting fuel or spark.
2. Do not race a cold engine. Warm the engine with the throttle partly open. Start the vehicle moving as soon as the engine runs smoothly. Drive slowly, avoid hard pulls, and do not lug the engine. Continue driving at reduced speed until the engine temperature gauge reaches the normal position.

Transmissions

Automatic and standard transmissions are handled differently. Old habits may interfere with proper driving when changing from one kind of transmission to another. The danger is even greater when changing from automatic to standard transmission. Be sure new drivers have driven vehicles with clutches and gearshift levers before authorizing them to operate these vehicles.

1. **Standard transmission.** Do not “ride” the clutch. Keep your foot off the clutch except when starting, stopping, or shifting. Even a slight continued pressure on the clutch pedal wears out the clutch facings and release bearings. For the same reason, when stopped on a hill, never slip the clutch to prevent the vehicle from rolling back. Use the brakes instead.
2. **Automatic transmission.** When using a vehicle with automatic transmission:
 - Understand the position of the selector lever. Make sure the lever is in the correct position for starting.
 - Shift to a lower range when descending steep grades.
 - Always slow the vehicle with the brakes before shifting to low range on wet or slippery surfaces. Use short strokes on the brakes. Shifting to low range at high speed will cause the vehicle to skid or swerve and could damage the transmission.
 - Hold your right foot on the brake pedal during traffic stops to prevent creeping.
 - Never coast in neutral.
 - Use your right foot on the brake pedal.
 - Always have the car completely stopped before moving the control into the park position.
 - Do not push or tow a vehicle with automatic transmission to start the engine. Newer vehicles are not designed to start by pushing or towing. If an engine fails to start because of a discharged battery, use a booster battery and jumper cables to start it.
 - If it is necessary to tow an automatic transmission vehicle a long distance for repair, tow it with only the nonpowered wheels on the ground or, on

vehicles with rear-wheel drive, disconnect the drive shaft.

- Place the selector lever in the neutral position when the vehicle is being towed.
- Be sure to check the oil level in the transmission according to the lubrication guide.
- Select the proper *Drive* position.

Loading

1. ***Never drive a vehicle with an improperly distributed or secured load.*** Study the State vehicle code and U.S. Department of Transportation regulations for safe loading and binding requirements. Vehicle loading is outlined in FSH 7109.19, chapter 30. Chapter 4 of this guide contains additional information on loading.
2. ***Never drive an overloaded vehicle.*** Overloading can reduce vehicle performance and cause structural failures. It also may lead to increased maintenance requirements. Load limits for each type of vehicle are set by regulation and manufacturer's recommendations to comply with safety rules and maintenance requirements. Limits are posted in the logbook or in a conspicuous place in the vehicle. Do not exceed these limits. Operators may be held liable for accidents or equipment damage caused by overloading. If a citation is issued, the driver is responsible.

ACCIDENT REPORTS

All accidents, property damage, and injury are to be reported. A detailed report must be made when a Government vehicle is involved in an accident with a private vehicle or other private property, regardless of how minor the damage may be. This report must be forwarded through the proper channels to the regional forester. The same report is required if only Government property is involved. Comply with all laws of the State in which the accident occurred.

When private property is involved, do not make any commitments or sign or make any statements to anyone other than the ranger, forest supervisor, or authorized USDA Forest Service investigator.

Sometimes when private property is not involved and damage to Government property is minor, accidents can be handled by administrators at the local level. However, the driver cannot make this decision.

Every accident, regardless of the extent of damage, must be reported by the driver to the immediate supervisor, who will decide what action to take. Form SF-91, Operator's Report of Motor Vehicle Accident, provided in all Government vehicles, is used to report accidents.

PREVENTIVE MAINTENANCE

Preventive maintenance is the systematic care, servicing, and inspection of equipment to keep it in good operating condition and to detect and correct mechanical deficiencies.

The driver is the single most important factor in preventive maintenance. Use equipment as it is intended to be used. Perform daily and other scheduled services as recommended by the manufacturer, region, and forest. Operating conditions may require more frequent service.

Operation Checks

Before-Operation Check

Each operator shall ensure that the vehicle is in mechanically safe condition by visually checking the following:

1. Tires—for inflation, cuts, breaks, and excessive or uneven wear
2. Leaks—fuel, oil, water, transmission and axle lubricants
3. Crankcase oil level—adequate

4. Coolant level in radiator—adequate
5. Lights and signal devices—operating properly
6. All glass (including rear window and light lenses)—clean and unbroken
7. Mirrors—properly adjusted, clean, and unbroken
8. Fuel supply—adequate
9. Horn—operational
10. Brakes—adjusted and functional
11. First aid kit, chains, and tire-changing tools—available and adequate
12. Steering—normal free play
13. Equipment logbook—up to date and properly recorded
14. Battery—clean terminals and adequate water level
15. Windshield wipers—operational and blades in good condition; proper washer fluid
16. Body—dents or other damage
17. License plates—present on the vehicle

During-Operation Check

Some vehicle defects can be detected only while the vehicle is operating. An accident or serious damage can be avoided by keeping constantly alert for signs of defects, such as unusual noises or vibrations, and taking immediate corrective action. Major items to check include:

1. Foot and parking brakes for proper operation and adjustment

2. Clutch for free-travel adjustment, slippage, and chatter
3. Transmission for noise and proper shifting
4. Transfer case for proper gear selection, noise, and proper shifting
5. Engine and controls for unusual noises, proper response, exhaust system leakage or noises, and visual checks for water, oil, and fuel leaks
6. All instruments for functioning within proper ranges
7. Steering gear for looseness, slack, wear, and pull to the left or right
8. Differential for unusual noise in the power train
9. Body for loose components and rattles

After-Operation Check

This check is intended primarily to correct any deficiencies found in the during-operation check. Report any malfunctions or needed repairs to your work supervisor. Where vehicles are on emergency use, the before-operation check should be made at the end of a trip to ensure that the vehicle is ready for emergency use.

Routine Maintenance

Lubrication

The responsibility of a driver does not end with the proficient operation of the vehicle. The driver must ensure that the vehicle is properly maintained and that it is ready to go at all times.

Lubricating the vehicle at the proper intervals is one of the most important preventive maintenance jobs. The intervals for lubrication and oil changes for each vehicle are established by regulation and the manufacturer's service standards.

The driver is responsible for ensuring that the vehicle is lubricated in accordance with manufacturer's service intervals, as well as regional and specific forest standards. When operation involves abnormal conditions, such as snow, water, and dust, more frequent lubrication is required. Operators should check with their supervisors when such circumstances arise.

Emergencies, such as fires and floods, are the only acceptable reasons for extending lubrication intervals. These emergencies should be noted in the maintenance record, and the vehicle should be lubricated at the earliest possible opportunity.

When the vehicle is lubricated commercially, the driver must make a spot check of the finished job to see that it was done correctly and that the billing is accurate.

When a unit is provided with a reminder card or plate, the driver is to post due dates of required services. The driver is also responsible for maintaining a record of this service using form FS 7100-2, Equipment Maintenance Record.

Inspections

Inspections determine maintenance needs and compliance with standards. They also identify appropriate times to take action for maximum efficiency, safety, and economy. Three kinds of inspections are necessary for satisfactory results: daily, monthly, and mechanical. The equipment operator performs the first two inspections and a qualified mechanic performs the third inspection.

1. **Daily inspection.** Drivers or operators are responsible for performance of the daily inspections as outlined in this guide.
2. **Monthly inspection.** The driver, operator, or individual assigned responsibility for the vehicle/equipment is responsible for the monthly inspection, which is performed and recorded using form FS 7100-9, Driver's Safety and Preventive Maintenance Inspection.

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- 3. Mechanical inspection.** All fleet equipment owned or leased by the USDA Forest Service shall receive a periodic safety inspection performed by a journeyman-level mechanic. In the absence of other State requirements, minimum frequency is once every year. Regions, stations, or forests, may require more frequent inspections. Drivers-operators are responsible for seeing that mechanical inspections are performed on time.

Batteries

For extended battery life and safety, observe the following guidelines:

- 1. Proper care of batteries.** Batteries require attention to give satisfactory service.
 - Check and maintain the proper electrolyte or water level. Do this every 2 weeks—every week during periods of high temperatures or continuous heavy battery use. Do not overfill. (This does not apply to maintenance-free batteries.)
 - Keep the battery tight in the carrier case and terminals clean at all times. Baking soda may be used to remove corrosion around terminals.
 - Keep batteries charged at all times.
 - Never use the starter for more than 10 seconds at a time. Allow the battery to rest between starts after extended use of the starter motor.
 - Prevent batteries from freezing by keeping them charged when they are not being used.
 - Store batteries on wood; never store them on a concrete floor.
 - Keep batteries cool.
 - When a battery has been discharged, recharge it according to the manufacturer's recommendations.
- 2. Use of booster batteries.** Booster starting of a battery can be dangerous. When the water level is low, there is extra space for hydrogen gas to be trapped. The slightest spark can cause an explosion. Always use batteries of equal voltage and follow these safety steps:

When using jumper cables, remove cell caps from both batteries. Leave them off during the process to let hydrogen gas vent.

- Connect one cable to ungrounded terminal of the weak battery.
- Keep the other end of the cable from touching either vehicle until it is connected to the terminal of the same polarity on the stronger battery. (Positive to positive or negative to negative.)
- Connect second cable to other terminal of stronger battery.
- Important final step: Connect remaining cable to vehicle frame or starter ground below the level of the weak battery. This reduces the risk that sparks might cause an explosion.

Tires

1. **Care and maintenance.** Check tires for proper inflation at least once a week. Check tires of vehicles hauling heavy loads and on long hauls daily and adjust inflation if necessary.

Recommended pressures are shown on tire side-walls. Adjust tire pressure the first thing in the morning or when the tires are cold. Do not, under any circumstances, remove air from tires after sustained running or when the tires are warm.

Overloading tires greatly shortens their life; avoid it. Inspect tires visually during the preventive inspection and take steps to correct anything that causes unusual wear. Some examples of improper wear and their causes include:

Improper Wear and Probable Cause	
Type of wear	Probable cause
Small, flat spots every few inches	Wobbly wheels or loose wheel bearings
Excessive wear on edges of tread	Underinflation
Excessive wear on center of tread	Overinflation

Improper Wear and Probable Cause <i>(continued)</i>	
Type of wear	Probable cause
Excessive wear on one edge of tread	Too much camber or caster; sprung axle
Two flat spots diametrically opposite	Eccentric brake drums
Excessive wear on one tire	Dragging or seizing brake
Feather edge or sharp corner on either edge of front tires	Too much toe in or toe out; bent tie rod

Rotating tires every 4,000 miles can extend tire life by as much as 20 percent. Include spare tires in the rotation cycle.

2. **Recapping.** Under no circumstances should tires be worn beyond the point of recapping, that is, to the wear bar strip. Tires that are worn down to a faint tread line should be inspected in shops by qualified personnel and recapped for further use.

Washing, Cleaning, and Polishing

Intervals for washing and cleaning will be determined by the conditions under which the vehicle is operated. A good mechanical or safety inspection cannot be made if the vehicle is dirty. Operators should clean their vehicles before each preventive inspection and as often between inspections as necessary to have the vehicle reflect credit on the USDA Forest Service by its appearance.

Steam cleaning and pressure washing should be done by qualified mechanics. Polishing is optional. Polish reduces the frequency of need for cleaning and lessens paint oxidation.

Vehicles Equipped With Radios

Vehicles equipped with two-way radios and radio telephones require special care.

1. Radios must be installed by qualified radio technicians.
2. Keep the batteries filled and clean in vehicles equipped with radios.
3. Keep the generator and alternator, alternator belt, and regulator in good condition.
4. Start the vehicle and keep the battery charged when using the radio for extended periods of time. Continued heavy use of the radio rapidly discharges the battery.
5. Turn off two-way radios when near a blasting area or construction job.

Emission-Control Equipment

The emission-control equipment installed by the vehicle manufacturer to meet Federal and State requirements must be maintained properly. The operator is responsible for making sure such items as air pumps, PCV valves and tubing, distributor advance and retarding mechanisms, and other related components are checked by a mechanic when the vehicle is serviced. There is no acceptable reason for removing or tampering with any emission control equipment.

Maintenance Records

Equipment Logbook

This logbook contains certain records that are pertinent to the operation and maintenance of the equipment. Some of these records may be optional in some regions and stations. Equipment logbooks should contain use records, service records, operator safety and preventive maintenance inspections, and equipment identification.

Operator's Preventive Maintenance Check

Performance of this check is the direct responsibility of the driver or operator. While forest supervisors may permit delegation of this operator check, the responsibility for seeing that it is done correctly and that malfunctions are corrected rests with the operator.

Normally, inspections will be made once each month when the equipment is being used. Retain a copy of the last inspection in the equipment logbook. Use the regional form for this inspection. The driver must initial and enter the inspection in column 9 of the unit service record. Note the correction of any deficiencies on this form.

Long-Term Storage Standards Before Storage

1. Clean the engine thoroughly and wash the unit.
2. Lubricate.
3. Fill the fuel tank.
4. Drain the crankcase and refill it with new oil.
5. Check the cooling system antifreeze for the lowest expected temperature; add additional antifreeze as needed. Check all hoses and hose connections. If the cooling system is to be drained, be sure that the radiator, engine block, water pump, and heater are drained completely. Tie a warning tag marked *Cooling System Drained* to the steering wheel.
6. Remove the air cleaner, start the engine, run it at a fast idle, and pour a half pint of oil through the carburetor air intake until the engine stops.
7. Clean, replace, and tighten the air cleaner.
8. Remove the battery. Clean and store it on a wooden base in a dry, frostproof place. Clean the cable terminals and battery carrier with a soda solution, and rinse them with clean water.
9. Block up the axles to take the weight off pneumatic tires.

During Storage

1. Leave air vents in the open position.
2. Leave the door window open about 1/2 inch.
3. Store under cover if possible.

COMMERCIAL REPAIRS

When commercial repairs are required, coordinate repairs with local or forest fleet manager.

1. Before authorizing any major repairs, check with the nearest USDA Forest Service shop or forest fleet manager for permission to make the repairs.
2. Describe the work to be performed when known beforehand, or describe the nature of mechanical deficiencies. Avoid vague orders, such as “Fix it up,” which leave the job entirely to the discretion of the party performing the work.
3. Inspect the work performed for satisfactory quality and to determine whether corrections are needed. Test the vehicle, when applicable, to ensure that the deficiency has been corrected.
4. Satisfy yourself that the cost of the work performed is reasonable. If the work is unsatisfactory, have the garage do it again and stand behind its work. Do not pay two or more repair shops for the same job. Avoid unreliable repair shops.



Chapter 2—Four-Wheel-Drive Vehicles

Four-wheel-drive vehicles are designed to provide extra power and traction for traveling at a slow speed over rough or unusual terrain. Accidents and the high cost of operating four-wheel-drive vehicles are, in most cases, caused by abusive use or expecting the four-wheel drive to do the impossible. This chapter is intended to highlight safe, economical ways to get the most out of these vehicles.

OPERATORS

Drivers operating four-wheel-drive vehicles must be thoroughly trained and qualified (chapter 1, Authorized Drivers).

OPERATION

The same general safe driving practices for standard vehicles apply to four-wheel-drive vehicles (chapter 1, Safety Rules).

Four-wheel drive should be used only when greater traction and power are required than can be provided by a standard transmission in low gear. Use it in steep off-road operations, in snow or on icy roads, in mud or sand, or other conditions that require extra traction to travel at slow speed.

The gear train will be placed under stress when vehicles are driven on surfaced roads with four-wheel drive engaged. This causes difficulty in shifting out of four-wheel drive. To relieve this stress, back up a few feet or drive off the surfaced road. This will allow the wheels to slip.

Safety Rules

1. Four-wheel-drive vehicles usually do not perform as well on surfaced roads as conventional-drive vehicles. However, in most cases, four-wheel-drive vehicles can be operated up to the legal speed limit on main paved highways. Speed on unimproved roads should never exceed the safe limits allowed by terrain and

- road conditions. Know the limitations of the vehicle, especially on hard-packed snow and ice.
2. When descending steep, unsurfaced mountain roads with heavy loads, proceed with the four-wheel drive engaged. Place the hubs in the locked position. This affords double safety in case one axle or drive shaft should break. It is a good practice to descend a grade using one gear lower than required to ascend the same grade.
 3. Do not allow the engine revolutions per minute to exceed the manufacturer's recommended limits, particularly when the engine is under compression. Use a constant steady application of the brakes to maintain proper speed.
 4. Be careful when driving on sidehills. Four-wheel-drive vehicles have a high center of gravity and will tip more easily than conventional vehicles.
 5. Know the limitations of the vehicle and do not exceed them. Most accidents and breakdowns occur within that last one-quarter mile that should not have been attempted.
 6. When operating in rough or brushy terrain, do not allow anyone to ride outside of the cab; in open jeeps, drivers must be alert for limbs or brush.

Operating Procedures

Shifting Into and Out of Four-Wheel Drive

For best results, do the following:

1. Review and follow the instructions in the operator's manual provided by the manufacturer.
2. A shifting device with position diagram will be mounted in a conspicuous place in the cab of all four-wheel-drive vehicles. Study the diagram carefully and practice shifting as directed before driving the vehicle.

3. If the vehicle is equipped with front hubs, lock them into position before shifting the transfer case into four-wheel drive. Most four-wheel-drive vehicles of current make employ a single-lever control for the transfer case. The lever engages the front differential. The lever normally allows the operator to select four-wheel-drive high, four-wheel low, a two-wheel high range, and a neutral position for power takeoff equipment.
4. The operator can shift from two-wheel high to four-wheel high, or vice versa, while the vehicle is stationary or moving at moderate speeds. If the vehicle is moving, let up on the accelerator before shifting.
5. To shift from two- or four-wheel high to four-wheel low, bring the vehicle to a virtual standstill; four-wheel low range should be used only in the most severe conditions. When shifting out of four-wheel, low range into two- or four-wheel, high range, the vehicle should be stopped.
6. Analyze the terrain and select the proper gear before attempting to travel over difficult terrain. Failure to do so often results in a vehicle becoming stuck or damage to the power train.

Front-Wheel Hub Locks

In addition to transfer case gear selections, the front wheels of some four-wheel-drive vehicles are equipped with locking hubs. These hubs are provided so that the front axle can be disengaged when driving in two-wheel drive. When locking hubs are used properly, the wear on the front-end gear train is greatly reduced. Unlock front hubs when appropriate.

Do not force hub locks in or out of the locking position with makeshift tools; rock the vehicle slightly and the splines will engage.

Some hubs are manually controlled. Other models engage and disengage automatically. Be sure to check the type on the vehicle.

1. **Manually controlled hubs**—Never shift into four-wheel drive with manual-control hubs in free position—drive train damage could result.
2. **Automatic hubs**—Automatic hubs will engage when the transfer case is shifted into four-wheel drive.

Winches

When selecting a winch, choose one with a single line rating at least $1\frac{1}{2}$ times greater than the vehicle weight rating. This allows the winch to pull the vehicle weight and overcome the added resistance caused by whatever the vehicle is stuck in. Never exceed the rated capacity. Rigging a double line with a snatch block will reduce the load on winch and cable by about half.

Avoid running a winch cable over rocks or wrapping it around parts of the vehicle that could cause the cable to fray or kink during winching. Never put the winch cable around an object and hook back on the cable. This will damage the cable.

Never pull at an angle to the load.

Always wear heavy leather gloves when handling the winch cable.

If a tree is used as a solid anchor for winching, be sure to use a tree truck protector.

Always drape a blanket or floormat over the middle of a stretched winch cable to prevent the cable from whipping back if it breaks or comes loose. A cable that snaps under stress is extremely dangerous. Its loose ends can sever a leg or kill a person. All persons shall stand clear before the winch line is tightened.

When rewinding the cable after use, either drag a weight until the cable is almost all rewound or use a helper to hold the cable taut to ensure the cable is distributed evenly and tightly on the drum. Never allow the cable to slide through your hands. Do not allow the cable to stack on the drum unevenly. Hook the cable to the proper anchor on the truck, and draw it taut. Mashed, pinched, or frayed areas on the cable severely reduce its original tensile strength. For safety's sake, replace the cable when it is damaged.

1. **Power Takeoff (PTO) Winches.**

- Check the PTO shift lever plate for the correct operating positions. Always depress the clutch pedal of the vehicle (disengaging the clutch) before engaging the power takeoff.
- When the winch is not being used, lock the shift lever in neutral.
- Never operate the winch above 1,500 engine revolutions per minute.
- Use the high-speed position of the winch when pulling light loads and reeling in the cable.
- Pay out cable by disengaging the sliding-jaw clutch on the winch, then pull the cable out by hand. Reverse gear may be used for lowering a load.
- PTO winches are provided with shearpins as a safety precaution to prevent overloading the cable or winch. The shearpin is located in the yoke of the universal joint that drives the winch worm-gear shaft; it is designed to break before the cable or winch. Never use makeshift pins to replace a shearpin. Do not depend on the shearpin for safety—a damaged cable may break before the pin does.

2. **Electric Winches.**

- Pull cable off the drum by hand, using the winch's clutch to free the spool, rather than using the winch's motor to unwind the cable. This saves time and battery power.

- On hard winch pulls, stop winching every 1 to 2 minutes to prevent the electric motor from overheating. Do not operate the winch with the motor lugged down to low revolutions per minute because heat could build up rapidly, possibly damaging the motor. Allowing the motor to cool with intermittent operation will also allow time for the battery to recharge while the vehicle engine is running.
- The electric remote control lead should only be plugged into the winch during actual operation to prevent accidental operation or injury. When using the remote control lead from inside a vehicle, always pass the lead through a window to avoid pinching the lead in the door.

Parking on Hills

When parking a four-wheel-drive vehicle on steep, off-highway grades, remember the following points:

1. Place the vehicle in four-wheel drive low range, and shift into the lowest gear.
2. Set the parking brake by first engaging the foot brake and then applying the parking brake.
3. Park at a cross angle to the grade if the grade is not too steep.

Tire Chains

When tire chains are required, they should be used as recommended in the owner's manual. Use tire chains on all four wheels only under the most severe conditions. When tire chains are used on all four wheels, excessive maintenance costs can be expected. The user must be prepared to justify such use.

MAINTENANCE

1. Always keep the engine oil level at the full mark. This may require carrying extra oil when operating over rough, steep terrain. This is necessary to ensure lubrication when the oil pan is tipped.
2. Check for water in the gearboxes and engine after fording streams.
3. Because four-wheel-drive vehicles usually are used under more severe conditions, they must be checked and lubricated more often than conventional vehicles. Check the logbook and reminder card or data plate for lubrication, safety, and mechanical inspection intervals. Under extreme use where mud, snow, water, or heavy dust is excessive, it may be necessary to service the vehicle daily.
4. Mismatched tires will cause early failure of the axle assemblies and transfer cases and accelerate tire wear. All tires should be matched to within $\frac{1}{8}$ -inch circumference. Mismatched tires will result in a windup of the gear train and can be detected by a locking-up action when attempting to shift out of four-wheel drive.
5. Rotating the tires, including the spare, when wear is noted, will help keep the tire size as nearly equal as possible. Never use snow tires, which are normally larger than standard tires, on rear wheels only. If snow tires are necessary, they should be used on all four wheels.



FOREST SERVICE HANDBOOK
WASHINGTON

FSH 7109.19 - FLEET EQUIPMENT MANAGEMENT HANDBOOK

Amendment No. 7109.19-92-5

Effective December 30, 1992

POSTING NOTICE. Amendments are numbered consecutively by Handbook number and calendar year. Post by document name. Remove entire document and replace with this amendment. Retain this transmittal as the first page of this document. The last amendment to this Handbook was Amendment 7109.19-92-4 to 7109.19,40 Contents.

<u>Document Name</u>	<u>Superseded</u>	<u>New</u>
	<u>(Number of Pages)</u>	
41 thru 44--3	6	-
7109.19,40	-	7

Digest:

41-44 - Makes minor grammatical and technical changes throughout these sections.

41.1 - Changes frequency of mechanical/safety inspections for all owned or leased fleet equipment from every 24 months to every 12 months.

42.3 - Adds direction for reporting accident damage and includes the requirement to report all damage involving Forest Service-owned and -leased equipment and vehicles.

F. DALE ROBERTSON
Chief

FSH 7109.19 - FLEET EQUIPMENT MANAGEMENT HANDBOOK
WO AMENDMENT 7109.19-92-5
EFFECTIVE 12/30/92

CHAPTER 40 - INSPECTION, MAINTENANCE, AND REPAIR

41 - PREVENTIVE MAINTENANCE. Provide for safe, efficient maintenance of Forest Service equipment in accordance with the manufacturer's specifications or Regional standards.

41.1 - Inspections. Inspections determine maintenance needs, compliance with emission standards, and the time to take action to obtain maximum efficiency, safety, and economy. Two types of inspections are necessary for satisfactory results: one by operators and one by qualified mechanics.

1. Operator Inspections. Drivers or operators shall be responsible for daily inspection items as contained in Driver-Operator Guide, EM-7130-2 (FSM 7130.7).

The driver, operator, or individual assigned responsibility for the item of equipment shall perform the monthly inspections. While Regions or Stations may permit delegation of this operator inspection, the driver, operator, or person assigned responsibility for the item shall be responsible for seeing that it is completed correctly and that malfunctions are corrected.

User program funds shall bear the cost of the inspection regardless of who performs it or how.

Use the following forms for performing equipment and vehicle inspections and follow up:

- a. Form FS-7100-9, Driver's Safety and Preventive Maintenance Inspection-Transportation Equipment.
- b. Form FS-7100-9a, Operator's Safety and Preventive Maintenance Inspection-Crawler Tractors and Loaders.
- c. Form FS-7100-9b, Operator's Safety and Preventive Maintenance Inspection-Motor Graders, Wheel Tractors, and Pneumatic Tire Loaders.
- d. Form FS-7100-9c, Operator's Safety and Preventive Maintenance Inspection-Trailers (Tandem, Semi, Horse, etc.).
- e. Form FS-7100-9d, Safety and Preventive Maintenance Inspection-House, Laboratory, Crew, etc., Trailers.
- f. Form FS-7100-9e, Safety and Preventive Maintenance Inspection Check Sheet-Fire Pumps.

- g. Form FS-7100-9f, Safety and Preventive Maintenance Inspection Check Sheet-Air Compressors, Concrete Mixers, Forklifts, Chippers, Cranes, Powered Trail Equipment.
- h. Form FS-7100-9g, Safety and Preventive Maintenance Inspection of Watercraft.
- i. Documentation specified in the Occupational Safety and Health Administration (OSHA) handbook, Part 1926, Section 550(a)(5) and (6), for cranes and hoists.

Operators shall report all maintenance problems. Operators shall not put the vehicle back into regular service until deficiencies in safety items are corrected.

Keep a current Form FS-7100-9 in the vehicle.

2. Mechanical/Safety Inspections. All fleet equipment owned or leased by the Forest Service shall receive an annual mechanical/safety inspection that meets or exceeds State requirements. In States without a safety inspection and/or emission program, a journey-level mechanic shall perform a mechanical/safety inspection according to the following schedule:

- a. Classes 010 through 299. Yearly by State certified shop or journey-level mechanic.
- b. Class 300 and above. Yearly by journey-level mechanic.
- c. Specialized and Project Equipment. Yearly inspections following Form FS-7100-4a, Mechanical Inspection of Automotive Equipment, and Form FS-7100-4b, Mechanic Inspection and Maintenance Order--Construction Equipment.
- d. Commercial Motor Vehicles. Yearly by journey-level mechanic.

File a copy of this inspection in the equipment folder and a second copy in the log book.

3. Grounding of Unsafe Equipment. No individual shall be required or permitted to operate any equipment determined to be unsafe or likely to result in further damage. If there is reason to believe that the assigned equipment is unsafe to operate, report the unsafe condition to the Fleet Manager, or if unavailable, to the work supervisor or other appropriate supervisory official who will determine whether the equipment needs to be withdrawn from use until it is repaired.

41.2 - Equipment Servicing. Equipment servicing is the individual operator's responsibility. Instructions and information are found in Driver-Operator Guide, EM-7130-2 (FSM 7130.7), and in the vehicle. Ordinarily, commercial service stations perform routine servicing operations, such as lubricating, washing, steam cleaning, oil and filter changing, and tire repairing.

1. Fuel. Use self-service commercial facilities when practical and cost effective. Use the appropriate type of fuel for the engine as specified by the manufacturer.

2. Lubrication. The frequency of equipment lubrication depends largely on operating conditions and intensity of use. Use the lubrication types and follow the intervals that the manufacturer specifies unless the Regional Director of Engineering has established supplementary standards. Standards for storage and transportation of flammable liquids and lubricants are specified in Title 29, Code of Federal Regulations, section 1910.106; the Occupational Safety and Health Act of 1970; State or local requirements; and the FSH 6709.11.

3. Tires. (Driver-Operator Guide, EM-7130-2 (FSM 7130.7)). Applicable State laws shall govern acceptable tread types and allowable wear limits. Each Region or Station shall develop fire stocking levels and procurement procedures.

42.02 - Objectives. The objectives of the Forest Service equipment maintenance program are:

1. To prevent underservicing or overservicing; and
2. To ensure that service work meets the standards of the applicable manufacturer's service instructions unless the Regional Director of Engineering, Station Director, or Area Director establishes more stringent standards and operating conditions (FSM 7133.1).

42.1 - Maintenance Due to Normal Use. Maintenance due to normal wear is the maintenance required after using equipment for its intended purpose within its design and performance capabilities.

42.2 - Repair Due to Nonstandard Use. Repair due to nonstandard use results from using the equipment in a manner for which it was not intended, or beyond the design or operation capabilities of the equipment. Abuse is damage caused by disregard for established standards of use or maintenance.

Operators, mechanics, inspectors, and fleet managers shall identify and report evidence of damage resulting from nonstandard use and abuse.

Forest Supervisors or Project Leaders may authorize nonstandard use after determining and recording the circumstances that identify the need for such use.

The Forest Supervisor or Project Leader shall charge the unusual repair costs to the appropriation financing the work on which the damage occurred.

42.3 - Accidental Damage. Accidental damage includes both damages due to hazards and to accidents. Recover both accidental and hazard damage costs from the appropriation financing the work on which the damage occurred.

1. Damages Due to Hazards. A hazard is an unusual or unforeseen occurrence, such as fire, flood, or slide.

2. Damages Due to Accidents. An accident is an impact with any object that causes damage, however slight, to Forest Service-owned or -leased equipment. Specifically included are damages to the underside of a vehicle and cracked windshields, headlights, and taillights from flying rocks from other vehicles.

3. Reporting. All accident damage involving Forest Service-owned and -leased equipment and vehicles shall be reported on form SF-91, Operator's Report of Motor Vehicle Accident to the appropriate official as described in FSH 6709.12, section 32.1. Chargeable motor vehicle accidents are defined in FSH 6709.12, section 30.5.

4. Investigation of Accidents. The Region or Station Equipment Manager or representative shall be part of the investigation team for accidents, especially those attributed to suspected mechanical failure.

42.4 - Financing Maintenance and Repairs. (FSH 6509.11f). With proper accountability, the responsible person or project usually reimburses the Working Capital Fund (WCF) for damage resulting from accident, misuse, or abuse. Initially, charge all maintenance costs, which include repair costs, mechanical inspections, and required safety inspections, to WCF accounts. Reimburse the WCF from the appropriate project user funds for all repair expenditures other than those that the Forest Fleet Manager identifies as routine, normal maintenance.

Use Form AD-112, Report of Unserviceable, Lost or Damaged Property, to document the decision of final financial responsibility for each charge.

When equipment is damaged while other agencies are using it, the using agency shall finance the repairs.

Charge damage involving a third party to either WCF account 617 or 618. When the matter is resolved, credit WCF account 429 from either the third party or the using project funds.

Use Form AD-112, Report of Unserviceable, Lost or Damaged Property, to document the decision of final financial responsibility for each charge.

When a WCF vehicle incurs damage beyond repair (totaled), charge the loss (capitalized value minus accumulated depreciation minus the actual or estimated amount from the sale) to the responsible person or project. Credit the income to account 454, as with any sale of WCF fleet equipment.

42.5 - Repair Standards. Do not repair equipment or replace components without the Forest Fleet Manager's prior approval unless they exceed the allowable wear tolerances that the manufacturers establish or violate Federal, State, or local regulations or interfere with safe operation.

Non-shop personnel shall not exceed maximum repair limits established by Forest Supervisors and Project Leaders, without the unit Fleet Manager's prior approval.

1. New or Remanufactured Components. In general, replace components using dependable remanufactured or new components as much as practicable. (FSM 6316.3).

2. Cost Effectiveness Considerations. Do not perform major repairs and body work on equipment nearing the end of its scheduled life. Maintain this equipment only for safety items to protect employees and the public.

42.6 - Approval of Homemade Equipment. The Regional Director of Engineering must approve all homemade equipment before it is put into service. Designate technically competent personnel to inspect and recommend acceptance of equipment that Forest Service personnel or local commercial shops construct. Establish service standards and periodic inspections designed to protect the operator and others from equipment failure.

42.7 - Approval of Modifications. Modifications of fleet equipment that affect vehicle performance, load carrying, and towing capacity must be in accordance with Title 49, Code of Federal Regulations, Part 567 (49 CFR Part 567).

42.8 - Inspection of Rentals and Leases. A journey-level mechanic, designated technically competent inspector, or Fleet Manager shall inspect rental equipment to determine the physical and mechanical condition before beginning operation and again immediately before releasing the equipment. The person in charge of the project shall see that deficiencies are corrected in accordance with the contract agreement and so noted on the applicable inspection form.

43 - MAINTENANCE AND REPAIR SOURCES. The Forest Service uses alternative sources of maintenance and repair services.

Follow established controls to ensure adequate supervision of repair diagnoses, decisions, and purchase procedures.

43.1 - Commercial Facilities. Each unit supervisor is responsible for providing inspection of maintenance performed in commercial shops to ensure quality work. A technically competent individual should perform all inspection work. Normally, commercial shops shall perform major repair work and specialty work.

43.2 - Forest Service Facilities. Equipment inspectors or equipment specialists ordinarily shall make mechanical inspections, perform preventive maintenance, perform initial service of newly delivered equipment, and prepare equipment for disposal. They shall also perform emergency repairs, minor repairs during inspections, and other work that is most efficiently performed in-house.

43.3 - Job Corps Facilities. A qualified instructor or journey-level mechanic shall supervise all work that Job Corps enrollees perform on fleet equipment. Take into

consideration shop facilities, Job Corps enrollees capabilities, and time available when deciding which maintenance work will occur in Job Corps Center shops.

43.4 - Other Agency Facilities. Use written agreements to formalize shared service arrangements with State, local, or other Federal agencies for repair and maintenance of Forest Service vehicles in their facilities.

43.5 - Driver/Operator. The operator shall perform minor maintenance in conjunction with the safety and preventive maintenance inspection. Charge time spent performing minor maintenance to project funds.

43.6 - Use of Nonshop Personnel. Work performed by nonshop personnel shall be minor in degree of difficulty and limited to component or assembly replacement when authorized by the Forest Fleet Manager.

44 - MAINTENANCE COST LIMITATIONS.

1. Single Job Limitations. Exceed limitations only with the approval of the Regional Director of Engineering or Station Director (ex. 01).

2. Cumulative Limitations. Exceed limitations only with the approval of the Regional Director of Engineering or Station Director (ex. 02).

Regions and Stations may develop other processes for controlling maintenance expenditures.

Recapitalize, rebuild, or extend the life of equipment only when detailed economic analysis by the Regional Equipment Engineer and the Working Capital Fund Financial Manager shows that the cost of the extended life will be less than the cost for an equal time period of new equipment (FSM 7133.3).

44 - EXHIBITS 01 AND 02 ARE SEPARATE DOCUMENTS.



**FOREST SERVICE HANDBOOK
SOUTHERN REGION (REGION 8)
ATLANTA, GA**

FSH 7109.19 – FLEET EQUIPMENT MANAGEMENT HANDBOOK

**CHAPTER 60 – QUALIFICATION, TRAINING, AND TESTING
OF MOTORIZED FLEET EQUIPMENT OPERATORS**

Supplement No.: R8-7109.19-2005-1.

Effective Date: June 29, 2005.

Duration: This supplement is effective until superseded or removed.

Approved: R. GARY PIERSON
Acting Regional Forester

Date Approved: 06/08/2005

Posting Instructions: Supplements are numbered consecutively by Handbook number and calendar year. Post by document; remove the entire document and replace it with this supplement. Retain this transmittal as the first page(s) of this document. The last supplement to this Handbook was R8 Supplement 7109.19-2003-1 to Chapter 60.

New Document	7109.19,60	6 Pages
Superseded Document(s) by Issuance Number and Effective Date	7109.19,60	2 Pages

Digest:

60.5 - Defines commercial motor vehicle and commercial motor vehicle operator; and specialized equipment

61.4 – Issues minimum training requirements for Special Equipment Operators..

**FSH 7109.19 – FLEET EQUIPMENT MANAGEMENT HANDBOOK
CHAPTER 60 – QUALIFICATION, TRAINING, AND TESTING
OF MOTORIZED FLEET EQUIPMENT OPERATORS**

60.4 - Responsibility.

The Regional Equipment Engineer shall select a qualified person to serve as the Regional Instructor/Examiner. This individual will be responsible for training Unit Instructor/Examiners and directing the Regional driver-operator program.

Only certified Instructor/Examiners shall authorize individuals to operate fleet vehicles and equipment. The person to whom authority is delegated shall be responsible for determining that the required tests have been administered and that the applicant meets the applicable standard(s) and test(s).

60.5 – Definitions

1. Operator - An operator is an individual who drives a motor vehicle or operates specialized equipment.
 - a. Commercial Motor Vehicle Operator. A commercial motor vehicle operator is an individual who is required to operate Government-owned or leased commercial motor vehicles, as defined by the Commercial Motor Vehicle Act of 1986 (49 CFR 383) or State laws.
 - b. Incidental Operator. An incidental operator is an individual, other than one occupying a position officially classified as a motor vehicle operator or a special equipment operator, who is required to operate a Government-owned or leased motor vehicle to properly carry out assigned duties. Incidental operators may be authorized to operate vehicles up to 10,000 pounds gross vehicle weight rating (GVWR) designed for highway use.
 - c. Motor Vehicle Operator. A motor vehicle operator is an individual, other than one occupying a position officially classified as a special equipment operator, who is regularly required to operate Government-owned or leased motor vehicles, and who occupies a position officially classified as a motor vehicle operator.
 - d. Special Equipment Operator. A special equipment operator is an individual who is required to operate Government-owned or leased specialized equipment of the types listed in Section 60.5
 - e. Class Operator. Class A Operator would ride ATV/UTVs only in developed environments, such as motorized trails, campgrounds or nurseries or other restricted settings as determined by the supervisor. This classification is listed on OF-346.

**FSH 7109.19 – FLEET EQUIPMENT MANAGEMENT HANDBOOK
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f. Class B Operator. Class B Operator would ride ATV/UTV for the full range of use permitted in FSH 6709.11 Section 13, Regional Supplement. This classification is listed on OF-346.

2. Specialized Equipment

a. Emergency Vehicle. An emergency vehicle, other than a law enforcement vehicle, equipped with a siren and emergency lighting (White, red or blue flashing lights) used primarily to respond to emergency situations (for example, fires, traffic accidents, and medical emergencies).

b. Law Enforcement Vehicle. A law enforcement vehicle is a vehicle, either marked or unmarked, used primarily for law enforcement purposes, and may not be equipped with a siren and emergency lighting.

c. Vehicles with a gross vehicle weight rating from 10,000 pounds to 26,000 pounds. This category includes vehicles with a gross vehicle weight rating (GVWR) between 10,000 to 26,000 pounds, and for which a commercial driver's license is not required.

d. Construction, industrial and agricultural equipment. This includes motor graders, crawler tractors, wheeled tractors, wheeled loaders, tracked loaders, log skidders, fork lifts, and so forth.

e. All other specialized fleet equipment. This includes snowmobiles, trail bikes, motorcycles, all-terrain vehicles, motorboats, trailers, and so forth.

(1) All-Terrain Vehicles (ATV). An all-terrain vehicle is any motorized off-highway vehicle having a seat to be straddled by the operator and has handlebar for steering and four low-pressure tires for traveling.

(2) Utility Vehicles. A utility vehicle is any motorized off-road vehicle having four or more wheels with seatbelts, steering wheel and optional roll over protection (based on risk in JHA) structure.

**FSH 7109.19 – FLEET EQUIPMENT MANAGEMENT HANDBOOK
CHAPTER 60 – QUALIFICATION, TRAINING, AND TESTING
OF MOTORIZED FLEET EQUIPMENT OPERATORS**

61 - QUALIFICATION.

All applicants for Driver/Operator authorization must complete Application for Motor Vehicle Operator's Identification Card (AD-184) and Physical Fitness Inquiry for Motor Vehicle Operator (OF-345).

Check the applicant's driving record. If the driving record shows two (2) vehicle accidents for which he/she was determined to be at fault and/or three (3) moving (traffic) violations during the preceding four-year period, they cannot be issued an OF-346.

61.4 – Minimum Requirements for Special Equipment Operators.

1. Supervisors and project leaders shall ensure that operators of all government-owned or leased four wheeled All-terrain Vehicles (ATV) and utility vehicles receive the following training prior to operation:

- a. Safety Vehicle Institute of America (SVIA) that includes a proficiency check ride on typical terrain.
- b. Utility Vehicle that includes a proficiency check ride on level terrain and typical terrain.
- c. Proper use of personal protective equipment, such as helmets (Utility Vehicles require a hard Hat), gloves, and safety glasses/goggles, as a minimum.
- d. Pre-operation inspection procedures.
- e. Proper operating procedures and potential hazards associated with improper operation.
- f. Proper maintenance, storage, and transportation procedures.
- g. Hands-on driver training and testing (in a controlled environment).

2. Complete required Load Capacity Calculations for utility vehicles. (See Exhibit 61.4-Exhibit 01.)

3. Secure cargo in utility vehicles properly and do not exceed manufacturer's Gross Vehicle Weight (GVW).

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61.4- Exhibit 01

USDA Forest Service

R8-FS-7100-1 (Rev. 3/05)

UTILITY VEHICLE LOAD CALCULATION (Complete each operating day.) FSH 7109.19, 60			
OPERATOR	<i>John Doe</i>	MODEL	<i>J. Deere HPX 4x4</i>
PROJECT	<i>ATV Train Maintenance</i>	DATE	<i>3/16/2005</i>
1. UTILITY VEHICLE WEIGHT (Owner's Manual)		<i>1,230 #</i>	
2. OPERATOR WEIGHT (Variable)		<i>200#</i>	
3. FUEL WEIGHT __ Gal x 7.5 lbs per gal ____ =		<i>40#</i>	
4. ACCESSORIES (Fire ext., Tool kit, Winch)		<i>65#</i>	
5. TOTAL WEIGHT OF 1 THRU 4 above.		<i>1,535#</i>	
6. MAX GVWR (Dry wt. + Max capacity) (See owners manual.)		<i>1,230+1,300=2,530#</i>	
ALLOWABLE PAYLOAD (Subtract Item 5 from Item 6 above.)		<i>995#</i>	
Have you Reviewed a current JHA? Have you reviewed Health and Safety Code?		<i>YES</i>	
Prepared by:		<i>John Doe</i>	

**FSH 7109.19 – FLEET EQUIPMENT MANAGEMENT HANDBOOK
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62.2 - Supplemental Training.

Conduct a Defensive Driving Program at least once every four years.

63 - TESTING.

63.1 - Operating Skills Test.

A skilled individual can be designated to conduct the hands-on testing if the Unit Driver/Operator Examiner needs assistance.

63.4 - Medical Certificate.

Conduct the medical evaluation every other year, in accordance with 49 CFR 391.81. All renewals will be paid from benefiting funds.

**FSM 7100 - ENGINEERING OPERATIONS
CHAPTER 7130 - FLEET EQUIPMENT MANAGEMENT**

7133.04b - Forest Supervisors, District Rangers, and Project Leaders

It is the responsibility of the Forest Supervisors, District Rangers, and Project Leaders to:

1. Specify maximum dollar limitation for repair of fleet equipment without prior approval from the Forest Fleet Manager.
2. Conduct a commercial industrial review of maintenance and repair systems in accordance with supplement 1 to the Office of Management and Budget Circular A-76 (FSM 1310).

7133.1 - Maintenance and Repair

The Working Capital Fund shall pay for maintenance and repair of capitalized fleet equipment. See FSH 6509.11f, section 38.13, for direction on the recovery of maintenance and repair costs resulting from abnormal use from appropriated funds or from third parties. See FSH 7109.19, section 42, for the definition of abnormal use and related direction.

7133.2 - Inspection of Rented Vehicles

A certified mechanic or an individual who has demonstrated a technical competence shall conduct a mechanical inspection of all rental equipment before it is put in operation and again immediately before its release. The intent of these inspections is to ascertain and document the physical condition of the equipment. Charge the benefiting appropriation for the cost of these inspections.

7133.3 - Rebuilding and Recapitalization of Equipment

Obtain approval from the Regional Forester, Station Director, or Area Director before recapitalizing equipment (FSM 7133.04a).

7134 - QUALIFICATION AND TRAINING

7134.01 - Authority

The Federal Property and Administrative Services Act of 1949 (40 U.S.C. 471, et seq.) requires each executive agency to train, test, and qualify vehicle and equipment drivers or operators in compliance with orders and directives issued by the Office of Personnel Management in the Federal Personnel Manual chapter 930, subchapter 1, Motor Vehicle Operators (FSH 6109.41 - FPM 930, subch. 1). Supplements applicable to the Forest Service are found in Agriculture Property Management Regulations chapter 104, part 38, subpart 5 (FSH 6409.31 - AGPMR 104-38.5).

**FSM 7100 - ENGINEERING OPERATIONS
CHAPTER 7130 - FLEET EQUIPMENT MANAGEMENT**

7134.02 - Objective

To ensure safe, productive, and energy efficient operation of fleet equipment.

1. Operate all Forest Service equipment and vehicles within the manufacturers' design standards.
2. Use benefiting project funds to pay costs associated with the following:
 - a. Agency training of incidental motor vehicle operators, and agency training, testing, and qualification of special equipment operators;
 - b. Programs and activities to promote safe driving and equipment use;
 - c. Training and testing for commercial driver's license program requirements.

7134.1 - Qualification

Ensure that all operators of Government-owned or -leased motor vehicles are qualified, tested, and certified through State licensing programs. Special equipment driver/operators shall be qualified, tested, and certified through Forest Service programs. When operating government vehicles or equipment the Form OF-346, United States Government Motor Vehicle Operator's Identification Card, or a Forest Service issued identification card indicating the type of vehicle or equipment the holder is authorized to drive or operate must be in the employee's possession. The identification card may be issued with an indefinite expiration date subject to review as required by the Federal Personnel Manual, chapter 930.

7134.2 - Training

1. Operators. Provide all operators of fleet equipment with training that fully informs them of their responsibilities. Include procedures for obtaining repairs, correcting deficiencies, driving defensively, driving to conserve energy, using preventive maintenance checks, and safely operating vehicles and equipment in a Forest environment.
2. Equipment Management Personnel. Provide training to develop and sustain a nucleus of equipment management personnel, equipment, inspectors, and shop personnel who are knowledgeable in the following:
 - a. Equipment inspection and servicing procedures.
 - b. Shop production standards.
 - c. Cost records and financial reports.
 - d. Operator training, testing, and qualification.

**FSM 7100 - ENGINEERING OPERATIONS
CHAPTER 7130 - FLEET EQUIPMENT MANAGEMENT**

7135 - REPORTS

7135.01 - Authority

The Federal Property Management Regulations, chapter 101, part 38, subpart 1, section 02 (FPMR 101-38.102) requires that each agency complete Form SF-82, Agency Report of Motor Vehicle Data, each year. To meet the requirements of Congress, the Office of Management and Budget, and the General Services Administration (GSA), the Department of Agriculture consolidates its various agencies' data and forwards the consolidated data to GSA.

7135.02 - Objective

To provide accurate and timely data for required reports through the use of automated data processing.

7135.04 - Responsibility

The Regional Forester shall ensure that required data for the annual motor vehicle reports are supplied.

When a Station or Area has incorporated its Working Capital Fund fleet equipment with that of a Region, the Region shall report the required data for the Station or Area.

7135.1 - Required Reports

The following required reports are currently prepared by the National Finance Center:

1. Report FS-7100-D, Annual Motor Vehicle Report. This report is due in the Washington Office Engineering Staff by November 15 of each year.
2. Report FS-7100-Z, Annual Motor Vehicle Report Department of Labor-Owned. This report is due in the Washington Office Engineering Staff by November 15 of each year.

Fleet Equipment Use Record Unit (Charged as Worked)							
Vehicle Number		Beginning Odometer		Use Period			Year
Day	Ending Odometer	Job Code	Miles Driven	Repaired yes/no	Refueled yes/no	Print Driver's Name	# of Passengers
24							
25							
26							
27							
28							
29							
30							
31							
1							
2							
3							
4							
5							
6							
7							
8							
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11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
Ending Miles:	Complete Total Miles by Mgmt Code below:						Total Days Used
	Job Code	Miles	Job Code	Miles			
Starting Miles:							
Total Mileage:							

*** Return this form with any receipts (maintenance, repair or fuel, etc.) to the Unit Fleet Manager at the end of the Use Period ***

Drivers Safety and Preventative Maintenance Inspection Form FS-7100-9 (Reference FSM 7130)			
Vehicle Number	Unit / District	Date	Inspectors Name
Instructions: Use Operators Mauual as guide for service intervals and to perform this inspection (**) Indicates a Safety item to be repaired before operating.			
Inspection Item		Satisfactory	Unsatisfactory
1. Daily entries up-to-date			
2. Accident Forms available			
3. Lube, oil, & filter changes recorded & on schedule			
4. Safety & PM inspections recorded and on schedule			
5. First Aid Kit clean, serviceable and mounted			
6. ** Mirrors Serviceable and Brackets Tight			
7. ** Glass Clear and Serviceable			
8. ** Drivers Floor clear and all loose equipment anchored			
9. ** Windshield wipers, washers, defroster, & AC operational			
10. Heater, Defroster, Air Conditioner Operating			
11. ** Seats, Safety Belts Serviceable			
12. ** Lights, Horn, dash guages & warning flasher operational			
13. ** Back-up alarm operational (if applicable)			
14. All fluids clean & at proper level - oil, brake, trans, water, etc			
15. Battery snug & clean and fluid @ proper level			
16. Radiator cap, hoses & serviceable & fluid @ proper level			
17. Hood latch and safety catch operational			
18. All belts tight and operational			
19. ** Correct tire pressure, good condition (lug nuts tight-duals)			
20. Doors fenders, biumpers, body, ball-hitch operational			
21. Accessories secured & operational: Spare tire, lug wrench, tire chains, tool box, tools, flares etc			
22. Springs, shock absorbers in good coodition & operational			
23. Leaks - exhaust, brakes, fuel, oil,cooling, transmission, etc			
24. Vehicle Attachments?			
25. Starter & generator guages operational			
26. ** Speedometer and odometer operting properly			
27. ** Brakes (Foot and Parking) Effective			
28. Clutch operational (if applicable)			
29. ** Steering System Operational			
30. ** Vehicle Handling and Operation Acceptable			
LIST - REMARKS and UNSATISFACTORY ITEMS CORRECTED / REPAIRED			
Unsatisfactory Items Corrected By			Date

WHAT TO DO IN CASE OF A TRAFFIC ACCIDENT

1. Warn all traffic in both directions.
2. Give first aid – send for doctor – do not move injured persons unless absolutely necessary.
3. Request ambulance service through nearest police authorities or Government agency.
4. Exchange names, addresses, license numbers and insurance data with others involved in accident.
5. Get name of witnesses, addresses, statements.
6. Complete Forms SF-92 at scene of accident. Be accurate.
7. Report to: Police (request copy of police report)
Your supervisor
Your insurance company
8. Do not object to reasonable investigation.
9. Do not admit liability or promise settlement.
10. Do not encourage filing of claims.
11. Establish identity before leaving scene of accident.

Keep this sheet and the following forms together in the Log Book or in the Log Book cover:

- CA-1 – Federal Employee’s Notice of Traumatic Injury and Claim for Continuation of Pay/Compensation
- SF-91 – Operators Report of Motor Vehicle Accident
- SF-94 – Witnesses Statement
- AD-278 – Supervisor’s Report of Accident

WHAT TO DO IN CASE OF A TRAFFIC ACCIDENT

1. Warn all traffic in both directions.
2. Give first aid – send for doctor – do not move injured persons unless absolutely necessary.
3. Request ambulance service through nearest police authorities or Government agency.
4. Exchange names, addresses, license numbers and insurance data with others involved in accident.
5. Get name of witnesses, addresses, statements.
6. Complete Forms SF-92 at scene of accident. Be accurate.
7. Report to: Police (request copy of police report)
Your supervisor
Your insurance company
8. Do not object to reasonable investigation.
9. Do not admit liability or promise settlement.
10. Do not encourage filing of claims.
11. Establish identity before leaving scene of accident.

Keep this sheet and the following forms together in the Log Book or in the Log Book cover:

- CA-1 – Federal Employee’s Notice of Traumatic Injury and Claim for Continuation of Pay/Compensation
- SF-91 – Operators Report of Motor Vehicle Accident
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- AD-278 – Supervisor’s Report of Accident

Keep First Aid Guide in the Log Book or cover.

Keep First Aid Guide in the Log Book or cover.

DRIVER'S RESPONSIBILITIES FOR OPERATION
AND CARE OF VEHICLE
(FSH 7109.18)

PREVENTIVE MAINTENANCE

Lubrication. See Driver-Operator Handbook, FSH 7109.18, for detailed lubrication instructions. Lube at recommended mileage interval shown and note mileage on remainder plate or decal. In order to coordinate vehicle servicing and use, 300 miles over or under is permissible.

Form FS-7100-9 Checks. Make FS-7100-9 Preventive Maintenance checks in duplicate at a minimum of 30-day intervals while vehicle is in use) checks may be made at lubes if intervals are 30 days or less). Forward original through channels to Headquarters. Put copy of latest FS 7100-9 in logbook, remove preceding copy. Also make FS 7100-9 checks when releasing vehicle from assignment, transferring, or immediately prior to sending to shop. See FSM 7130 and instructions in logbook for making FS 71000-9 checks.

Oil and Filter Changes. Oil and filter changes are to be made on all vehicles at intervals specified by Region, Station or Area servicing standards. Where not provided use manufacturers standards. The operator is responsible for seeing that these changes are made at the prescribed intervals.

Logbook Entries. Make sure that all preventive maintenance services are entered in proper columns in logbook.

Reminder Plates. Make sure the due mileages (or dates) for next preventive maintenance services are entered on reminder plate or decal when present service is accomplished.

GASOLINE

1. Use regular-grade gasoline leaded or unleaded, as per manufacturers recommendation. Premium-grade gasoline may be used only in specified vehicles.
2. Fill up at Forest Service pumps whenever practicable. This saves 6 to 8 cents a gallon.
3. Consult list of service stations in logbook cover that will honor your national credit card.

ENGINE OIL

1. See Driver-Operator Handbook for SAE grade to use.
2. The Forest Service uses detergent-type engine oil. Mixing detergent oil of different brands is not harmful.

TIRE CARE

Keep tires inflated to manufacturers pressure shown on sidewalls. Check weekly, when cool with a good tire gage. Keeping tires at manufacturers recommended pressure will not only increase tire life but will save considerable in fuel usage. This is a "drive for conservation" item. For other tire card procedures, consult the Drive Handbook, paragraph 14.24.

VEHICLE STORAGE

For procedure, consult FSM 7133 for use of AD-728, Temporary Storage Authorization.

ROADSIDE FAILURES AND EMERGENCY REPAIRS

Responsibility. The operator is responsible for seeing that a vehicle is properly cared for in the event of an on-the-road breakdown. This includes securing towing service, if necessary. When in doubt, contact the nearest forest headquarters or shop for instructions as to how to proceed.



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Interim Directive No.: 6709.11-2012-1

Effective Date: February 15, 2012

Duration: This interim directive expires on August 15, 2013.

Approved: KATHLEEN ATKINSON **Date Approved:** 02/13/2012
Associate Deputy Chief, OPS

Posting Instructions: Interim directives are numbered consecutively by handbook number and calendar year. Post by document at the end of the chapter. Retain this transmittal as the first page(s) of this document. The last interim directive was 6709.11-2011-1 to chapter 20.

New Document	id_6709.11-2012-1	7 Pages
Superseded Document(s) (Interim Directive Number and Effective Date)	id_6709.11-2010-2, 07/12/2010	7 Pages

Digest:

This interim directive (ID) reissues without change, the direction previously issued in id_6709.11-2010-2.

12.34 - Clarifies direction in paragraph 3 to prevent accidents.

Removes direction in subparagraphs 6(d) and 6(e), and creates new paragraph 7, with direction regarding employee use of cell phone and radio communications. Also renumbers remaining paragraphs.

WO INTERIM DIRECTIVE
EFFECTIVE DATE: 02/15/2012
DURATION: This interim directive expires on 08/15/2013.

id_6709.11-2012-1
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12.34 – While Driving

3. To prevent accidents, yield the right of way to other drivers who are thoughtless, unskilled, or ignorant of the hazards they create.
4. Be aware of traffic situations developing ahead of the vehicle. Scan the rearview and sideview mirrors often and keep your eyes moving to enlarge the "big picture."
6. Do not compromise your safety, the safety of your passengers, or public safety when driving. The following are prohibited while operating a vehicle:
 - a. Engaging in distracting conversation or activities.
 - b. Eating or drinking.
 - c. Using radio/stereo headphones.
 - d. Taking prescription drugs that may cause dizziness or lack of concentration or reduce response time.
 - e. Reading maps, instructions, or other material.
 - f. Transporting pets. Transporting pets in Government vehicles generally is not allowed. Transporting pets shall be addressed on a case-by-case basis and documented in the job hazard analysis.
7. Use of cellular phone and mobile radio by Forest Service employees and contractors who are operating government-owned, government-leased, government-rented, or privately owned vehicles on official government business shall conform to the following direction:

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- a. When there is a passenger in the vehicle and the vehicle is in motion, the passenger shall manage communications to prevent driver distraction.
 - b. When the driver is the only occupant of the vehicle, the driver shall not engage in cellular phone or mobile radio communications while the vehicle is in motion unless actively engaged in essential law enforcement duties or actively responding to an emergency such as wildland firefighting. During non-emergency situations, the driver shall identify a safe location to stop the vehicle and then engage in cellular phone or mobile radio communications.
 - c. The above restrictions apply whether or not hands-free technology is available.
 - d. If State cell phone and mobile radio communications use laws are more restrictive than Forest Service policy, then State law requirements shall apply.
8. Keep well to the right side on narrow roads and blind curves. Be able to stop within less than half of the visible distance.
 9. Reduce speed when driving on wet, hard-surfaced roads. The front wheels may hydroplane and lose contact with the road surface.
 10. Adjust the vehicle speed and select the proper gear before ascending or descending a hill and entering turns.
 11. Pull off the road for a break or to change drivers if you experience any of these warning signs:

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- a. Vehicle begins to feel too warm.
 - b. Drowsiness, especially after meals.
 - c. Eye strain.
 - d. Inattention, daydreaming.
 - e. Hallucinations (for example, misinterpreting shadows, reflections, objects on or near road) resulting in an impulse to strongly control the vehicle.
 - f. Impatience, irritability not normally experienced.
 - g. Stress that results in anxiety, anger, or lack of concentration.
 - h. Muscular tension, restlessness, or inability to get comfortable.
12. Emergency Stopping.
- a. When it is safe to do so, move the vehicle to the shoulder of the road, away from traffic.
 - b. Set the emergency brake.
 - c. Activate four-way flashers.
 - d. Keep alert to passing traffic.

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- e. Exit the vehicle when traffic volume/flow presents undue hazards.
 - f. Raise the hood.
 - g. Display emergency reflectors, triangles, or other suitable warning devices (ex. 01).
13. If the vehicle is jacked up and/or parked on a grade, follow these steps:
- a. Turn the wheels into bank or curb to avoid rolling.
 - b. Shut off the engine while your foot is on the service brake and then set the emergency brake. Put the transmission in the lowest gear that is the direction the vehicle would roll or into park for an automatic transmission.
 - c. Block at least one wheel with chock blocks (or other suitable chock, such as a rock or log). Chocking two wheels is preferred.
14. Prevent carbon monoxide poisoning in a parked vehicle by partially opening a downwind window when running the engine for heat.

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12.34 - Exhibit 01

Emergency Stopping





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Interim Directive No.: 6709.11-2012-2

Effective Date: February 22, 2012

Duration: This interim directive expires on August 22, 2013.

Approved: KATHLEEN ATKINSON **Date Approved:** 02/19/2012
Associate Deputy Chief, OPS

Posting Instructions: Interim directives are numbered consecutively by handbook number and calendar year. Post by document at the end of the chapter. Retain this transmittal as the first page(s) of this document. The last interim directive was 6709.11-2012-1 to chapter 10.

New Document	id_6709.11-2012-2	36 Pages
Superseded Document(s) (Interim Directive Number and Effective Date)	id_6709.11-2010-5, 12/28/2010	36 Pages

Digest:

This interim directive (ID) reissues without changes, the direction previously issued in id_6709.11-2010-5.

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13 - SPECIALIZED EQUIPMENT

13.01 - Authority

The authority for the use of specialized vehicles is in Title 29, Code of Federal Regulations (29 CFR), Part 1960.8(a) and Title 36, Code of Federal Regulations (36 CFR), Part 261.16a.

The authority for the use of off-highway vehicles is in Title 29, Code of Federal Regulation (29 CFR), Part 1926.601.

13.04 - Responsibility

1. Project Leaders, Supervisors, and Managers.

Project leaders, supervisors, and managers shall:

- a. Ensure that all Forest Service employees and cooperators assigned or allowed to operate specialized vehicles are trained prior to operating vehicles.
- b. Ensure that a Job Hazard Analysis (JHA)/Risk Management Assessment (RA) (sec. 21.1) is prepared for each type of all-terrain vehicle (ATV) and utility-terrain vehicle (UTV) activity.
- c. Review every 4 years, each employee's authorization to operate government-owned or government-leased motorized fleet equipment.
- d. Prohibit off-highway use of non-roll over protection structure (ROPS) equipped UTVs.

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e. Ensure the use of non-ROPS equipped UTV limited to flat road operations. Provide non-ROPS equipped UTV flat road operating use criteria.

f. Ensure all non-ROPS equipped UTV operations are discontinued by June 13, 2013.

2. Fleet Program Managers. Fleet program managers have the primary responsibility for managing an effective licensing and qualification program as described in FSH 7109.19 (ch. 60).

3. Employees. Employees are responsible for completing required training and discussing associated hazards before operating specialized equipment.

13.05 - Definitions

All-Terrain Vehicle (ATV). A type of off-highway vehicle that travels on three or more low-pressure tires; has handle-bar steering; is less than or equal to 50 inches in width; and has a seat designed to be straddled by the operator.

Approved All-Terrain Vehicles (ATVs) for Forest Service Use. Any motorized off-highway vehicle 50 inches (1¼ m) or less in width, traveling on four or more low-pressure tires, having a seat to be straddled by the operator and handlebar for steering control. All ATVs must have only a single seat and be operated by a single rider.

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Approved Utility-Terrain Vehicles (UTVs) for Forest Service Off-Highway Use. Any motorized off-highway vehicle capable of maneuvering over uneven terrain, having four or more low pressure tires, designed with side by side seats, seatbelts, steering wheel, and equipped with American National Standard Institute (ANSI) or Occupational Safety and Health Administration (OSHA) certified roll over protection structure (ROPS). Approved UTVs must be directionally controlled with a steering wheel. UTVs steered and braked utilizing levers are not approved for Forest Service use.

Certified ATV Trainer. An individual who has completed American Safety Institute (ASI) ATV Rider Course Instructor Certification or has attended another ATV “train the trainer” course for other agencies or certifying organizations that meets the minimum training requirement.

Check-Ride. An operator’s demonstration of the required abilities and skills to operate a specialized vehicle.

Industrial Use. An activity or process requiring an ATV or UTV which is used as an integral part of that activity/process, including but not limited to, the following: pesticide or fuel firing device application or transportation of greater than 15 gallons of liquid cargo. Industrial use does not include the following:

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- a. Transporting the operator plus solid cargo that does not exceed weight limitations of either the cargo racks and/or a combined weight of the operator and cargo that does not exceed vehicle limitations.
- b. Transporting the operator plus liquid cargo up to 15 gallons if contained in one tank.
- c. Transporting the operator with liquid cargo up to 15 gallons if contained in separate containers not exceeding an individual capacity of 5 gallons each, and not exceeding the rated capacity of the cargo rack/(s).
- d. The use of a trailer to transport cargo.

Job Hazard Analysis (JHA). A formal process for systematically examining the risk associated with an activity, in order to develop effective strategies to reduce the level of risk, prepared and approved in accordance with section 21.1.

Maximum Manufacturer's Cargo Rack Weight Limitation. Limits specified by the manufacturer in the ATV or UTV operator's manual for the front and rear cargo racks.

Maximum Manufacturer's Towing Capacity. Capacity specified by the manufacturer of the ATV or UTV in operator's manual for the vehicle.

Off-highway vehicle. Any motor vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other natural terrain.

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Over-snow vehicle. A motor vehicle that is designed for use over snow and that runs on a track or tracks and/or a ski or skis, while in use over snow.

Risk Management Assessment (RA). A hazard analysis technique that focuses on continuous reassessment of hazards, control measures, residual risk, tasks, and supervision evaluation methods.

Roll Over Protection Structure (ROPS). ROPS, or Rollover Protective Structure, is a cab or frame that provides a safe environment for the vehicle/tractor operator in the event of a rollover. Those that are ROPS-certified meet a design standard developed by either OSHA or ANSI, and will display a certification label/sticker. Acceptable certifications include SAE J1194 Nov 1999 (R2009) "Rollover Protective Structures (ROPS) for Wheeled Agricultural Tractors" or OSHA 29 CFR 1928.51 (b)(1) "Roll-over Protective Structures (ROPS) for Tractors Used in Agricultural Operations." All references to ROPS in this handbook refer to certified ROPS.

13.06 - References

1. Engineering Staff 2007, Driver-Operator Guide, 0771-3801-MTDC, Missoula, MT: U.S. Department of Agriculture, Forest Service, Missoula Technology and Development Center.
2. Forest Service Handbook 7109.19, Fleet Equipment Management Handbook.

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3. Forest Service Manual 7130, Fleet Equipment Management.

4. Snell Memorial Foundation, 3628 Madison Avenue, Suite 11, North Highlands, CA 95660.
<http://www.smf.org/>.

13.1 - Four-Wheel-Drive Vehicles

Four-wheel-drive vehicles are designed to provide extra power and traction for traveling at a slow speed over rough or unusual terrain. The same general safe driving practices for standard vehicles apply to four-wheel drive vehicles. Four-wheel drive should be used only when greater traction and power are required than can be provided by a standard transmission in low gear. Use it in steep off-highway operations, in snow or on icy roads, in mud or sand, or other conditions that require extra traction to travel at slow speed.

1. Four-wheel drive vehicles usually do not perform as well on surfaced roads as conventional drive vehicles. Speed on unimproved roads should never exceed the safe limits allowed by terrain and road conditions.

2. Four-wheel drive vehicles with a narrow wheel track and high center of gravity will tip more easily than conventional vehicles. The major hazard occurs when taking emergency action after steering in one direction and then being forced to rapidly correct in the opposite direction. High center of gravity vehicles are more likely to tip and roll.

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3. When chains are needed, follow the recommendations and directions of the vehicle manufacturer's owner's manual.

Do not confuse all-wheel-drive vehicles with four-wheel-drive vehicles in relation to technical capabilities and driving limitations. All-wheel-drive vehicles have ground clearance and handling characteristics similar to standard sedans and vans. All-wheel-drive vehicles are not specifically designed for unimproved or off-highway travel.

13.2 - All-Terrain Vehicles (ATV) – Utility-Terrain Vehicles (UTV)

By June 13, 2013 all units must stop using ATVs for “industrial use” applications and use only UTVs for “industrial use” activities.

13.21 - Qualifications

1. For maintaining and tracking of certifications and re-evaluation requirements, refer to FSM 7100, chapter 60.
2. Only authorized and certified employees shall operate ATV/UTVs (sec. 13.21). Qualifications include being familiar with the Forest Service Driver-Operator Guide and the ATV/UTV manufacturer's operating manual. Employees shall also be trained and authorized for hauling ATV or UTV in a pickup truck or on a trailer before transporting.

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3. All applicable local and state operating requirements must be followed.
4. Forest Service ATV operators shall successfully complete the ATV Safety Institute (ASI) ATV Rider Course training or equivalent training, that is approved by the forest supervisor, assistant director, or line officer having responsibility for the task/project.
5. Forest Service UTV operators shall successfully complete the Forest Service UTV Training Course, or equivalent training, that is approved by the forest supervisor, assistant director, or line officer having responsibility for the task/project.
6. Equivalent ATV/UTV training must include the same basic topics and exercises that the ASI course covers which includes but is not limited to:
 - a. T-CLOC (ATV maintenance and pre-ride).
 - b. Personal Protective Equipment (PPE).
 - c. Federal and state regulations, rules and laws.
 - d. Shifting.
 - e. Braking.
 - f. Turning.
 - g. Basic ATV orientation, engine turn off/on, park brake and routine maintenance.

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- h. Emergency stops and emergency dismounting.
 - i. Operational techniques to include swerves, quick and sharp turns, avoiding obstacles, traversing hills and steep terrain.
 - j. Body position (in turns and on hills).
 - k. SIPDE (Search Scan, Identify hazards, Predict what will happen, Decide what to do and Execute).
 - l. Fire extinguisher training.
 - m. Loading and unloading onto pickup truck or trailer.
7. Document the date of this training on form FS-6700-41 or equivalent to establish the time period for re-evaluation of the ATV/UTV operator.
8. Operators shall hold a valid Operator's Identification Card, OF-346 which documents qualifications on the type of ATV/UTV being used and trailer towing limits as applicable.
9. All operators shall be re-evaluated by a certified trainer every three years. Document the re-evaluation on form FS-6700-41 (ATV/UTV Operator Accountability/Certification Tracking Record). Re-evaluation consists of demonstrating to the certified ATV/UTV trainer the operator's skills and abilities in: controls, service, handling, loading/tie-down,

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unloading, and operating over terrain typically encountered, utilizing the equipment the operator will use on the job. This demonstration of skills and abilities may be accomplished during a check-ride.

10. Infrequent users (less than 16 hours of riding a year), including volunteers and Special Program enrollees shall have a check-ride before the scheduled use of the ATV/UTV for project work, or as determined by the certified trainer. Operators are responsible for tracking their actual ATV/UTV ride time, informing their supervisor(s) that they need a check-ride, and contacting their local certified trainer to schedule it.

13.22 - Personal Protective Equipment (PPE) and Operating Equipment

1. Identify PPE and field equipment required for ATV/UTV use in the JHA/RA. At a minimum the following PPE/field equipment must be provided and used:

- a. First aid kit (sec. 21.22), and in addition to the standard first aid kit the following items are recommended: rubber gloves, eye protection, and CPR mask with one way valve. It is also recommended to enclose the first aid kit in a zip-loc bag or other dust-proof container.

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b. Personal communications device defined as a two-way radio, cellular phone, or satellite phone. Selection of device should be based upon area, terrain, and reception reliability.

c. Helmet.

(1) ATV and UTV operators shall wear a full or three-quarter face motorcycle helmet with chin strap properly secured.

(2) The helmet must meet requirements of the Department of Transportation (DOT), ANSI Z90.1 standard, or Snell Memorial Foundation (SMF) standards.

(3) Helmets must be replaced as recommended by their manufacturer or sooner if a helmet is involved in an impact related accident or shows significant wear or damage.

(4) UTV operators shall wear:

d. Gloves as determined by the JHA/RA.

e. Long pants and long-sleeved shirt, jersey or jacket.

f. Footwear that complies with agency field footwear requirements.

g. Eye Protection.

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(1) ATVs. Safety glasses, goggles, or sunglasses that meet the ANSI Z87.1 standard as determined by the JHA based on the work environment (for example, brushy environment may warrant goggles as opposed to glasses).

(2) UTVs. Safety glasses, goggles, or sunglasses that meet the ANSI Z87.1 standard as determined by the JHA/RA based on the work environment. Eye protection is not required for UTVs with original equipment manufacturer (OEM) brush or roll cages having OEM windshields that protect the face from branches, flying debris, and so forth, unless otherwise required by an associated industrial use activity.

h. Additional rider protection gear identified in the JHA/RA, such as rider pants or knee/shin/elbow guards, or law enforcement protective wear such as a kidney belt or chest protector.

i. Owner's manual and tool kit.

j. Fire extinguisher.

2. The following equipment is required for Forest Service back-country travel. Back country, for the purpose of this directive, is a two or more hour walk/hike away from transportation vehicle /loading site.

a. Map and compass.

b. Matches or fire starter in weatherproof container.

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- c. Water for 1 to 3 days or 1-micron water filter with disinfection.
 - d. Food for 1 to 3 days.
 - e. Flashlight with extra batteries and bulb.
 - f. Eye protection and sunscreen.
 - g. Lightweight shelter and appropriate clothing for climatic conditions.
 - h. Whistle and signal mirror.
 - i. Additional PPE, survival gear, and other equipment identified by the JHA.
3. The following equipment is recommended for back-country travel:
- a. GPS receiver.
 - b. Multi-purpose belt tool.
4. PPE for Pesticide Application:
- a. Helmet equipped with removable, washable liners which meet the following additional requirements:

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(1) ATV Pesticide Application. Applicators shall wear a helmet as described in paragraph 1c, with chin strap properly secured while in transit to and from the pesticide application area. While applying pesticide the applicator may wear a half-shell style DOT approved motorcycle helmet.

This helmet provision is only applicable during the five year transition period during which ATVs may be used for ATV pesticide application.

(2) Applicators shall wear a helmet during UTV pesticide application as described in paragraph 1c.

b. Nitrile gloves, as specified by product MSDS, are to be worn during spray operations replacing riding gloves.

c. To protect the applicator from chemical exposure and for safe operation of the ATV/UTV impervious boots with fiberglass shank in the sole or impervious boot covers over leather riding boots must be worn.

d. Follow pesticide label instructions for other personal protective equipment, as specified.

5. Additional equipment recommended for ATV/UTV use is the manufacturer's tool kit to include a tire air pressure gauge of appropriate pressure range.

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13.23 - Loading and Hauling

1. Operator shall wear the personal protective equipment described in section 13.22 while loading/unloading ATV/UTV.
2. An ATV/UTV being transported must be well secured to the transport vehicle, with the transmission in gear and the parking brake set.
3. Transporting vehicle must be of adequately rated capacity and capability to haul the ATV/UTV without exceeding the vehicle's gross vehicle weight rating (GVWR). Forest Service personnel shall not exceed 75 percent of the combined rated gross vehicle weight capacity for a truck and trailer when hauling an ATV/UTV.
4. Secure ATV/UTVs using four tie-downs, two in front, two in back, to prevent forward, backward, and sideways movement. If a commercially manufactured restraining device is used, two tie downs may be used in lieu of four, provided the use of the device is addressed in the JHA/RA. All tie-down straps must be in good condition, free of frays/splices with the following minimum rated capacity:
 - a. ATV—1,200 pounds. Use only straps with cam action or ratchet action buckles to secure ATVs; do not use knotted straps or rope.

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- b. UTV—2,500 pounds. Use only ratchet-type tie downs to secure a UTV; do not use knotted straps or rope.
5. When transporting an ATV in a pickup truck it is strongly recommended that the tailgate be completely closed at all times. If the tailgate cannot be closed all four tires of the ATV must rest on the pick-up bed at all times.
6. When transporting an ATV/UTV on a trailer, the trailer must have the appropriate rating, ensuring that the load does not exceed combined gross vehicle weight and trailer rated capacity.
 - a. Trailers are the recommended method for transporting ATVs.
 - b. Trailers must be used to transport UTVs.
7. Portable or detachable containers with hazardous materials contents, such as pesticide, flammable solids or flammable liquids must:
 - a. Be secured separately from the ATV/UTV inside the bed of the truck to prevent movement. Tanks that are specifically manufactured to be solidly attached to an ATV/UTV for the purpose of repeated use are not portable containers and do not have to be removed prior to transport. Such tanks may only contain small quantities of residual contents prior to loading or transport.

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- b. Be in good condition, free of leaks and residue on their exteriors, properly labeled, and meet DOT specifications for over the road transportation requirements.
 - c. Accompanying MSDS must be carried in transporting vehicle.
 - d. For further information, consult section 61.14.
8. Any materials, equipment, or gear in the pick-up bed must also be secured from movement at all times.
9. Recommended hierarchy for loading ATVs into the back of a pickup truck is as follows:
- a. One piece, bi- or tri-fold ramps that are securely strapped, chained, and/or bolted to the truck bed.
 - b. Two individual ramps a minimum of 10 inches wide and 72 inches long. Chains or straps must be used to secure the ramps to the vehicle and prevent rearward movement of the ramps during loading.
10. Loading ramps must meet the following criteria:
- a. Fabricated of aluminum or steel and of welded construction. Driving surface must have closely spaced crossed members or mesh construction with high traction surface. Wooden ramps may not be used.

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b. May be of one or two piece design, rigid or folding.
Hinges must be factory installed.

c. Adequately rated to support the combined weight of the
ATV/UTV, the rider, and any cargo that cannot be
removed from the machine for loading.

(1) Minimum ramp loading capacity for ATVs is 1,200
pounds.

(2) Minimum ramp loading capacity for UTVs is 1,500
pounds.

11. Loading ramps must be secured to transport
vehicle with two tie-down straps, chains, steel cables,
or mechanical fasteners, and capable of supporting the
ATV/UTV and associated equipment. Loading ramps
for pick-up beds or trailers must meet the requirements
listed in exhibit 01.

12. Do not position trucks and trailers across side
slopes for loading or unloading operations.

13. Follow the detailed procedures for loading and
unloading ATV/UTVs as described in exhibit 01.

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13.23 – Exhibit 01

**ATV/UTV Loading and Transport
Procedures for Pick-ups**

The objective of exhibit 01 is to establish Standard Operating Procedures to ensure safe loading, unloading, and transport of ATVs in pickup trucks. Only certified operators are permitted to load or unload ATVs or UTVs. Great care must be taken to avoid a wide variety of hazards associated with this operation. A risk assessment will be done prior to ATV operation, as circumstances are rarely constant. Loading/unloading operations should never become routine.

The recommended method of transporting an ATV is via trailer. Trailers normally have built-in ramps and set lower to the ground, decreasing the loading angle. Do not exceed manufacturer's vehicle/trailer weight recommendations. Follow trailer towing requirements in FSH 7109.19, chapter 60, 31.3. If operational reasons make it necessary to transport an ATV via pick-up, the ATV may be loaded/unloaded either by driving it up/down a ramp onto the pickup bed or by winching it up the ramp with a winch mounted on either the ATV or the truck.

It is recommended that a winch be used for loading/unloading a damaged ATV or an ATV that is heavily or unevenly loaded with equipment that cannot be removed. Full rider PPE must be worn during all winching operations.

If the ATV will be ridden into a truck bed, the following procedures will be adhered to:

Personal Protective Equipment:

- All required Personal Protective Equipment (PPE) must be worn while loading and unloading ATVs to/from vehicles.

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13.23 – Exhibit 01--Continued

Loading Ramps:

- Loading ramps may be aluminum or steel and must be of welded construction, plastic ramps may be used if commercially designed and manufactured specifically for ATV loading. Ramps may be one or two piece, rigid or folding. Hinges must be factory installed. Ramp surface (driving surface) should have closely spaced cross members or mesh construction with high traction surface. Plastic ramps must have traction blocks molded into drive surface. Under no circumstances will wooden ramps be used.
- Ramps for ATVs must have a minimum rated capacity of 1,200 pounds.
- Ramps for UTVs must have a minimum rated capacity of 1,500 pounds.
- Regardless of the minimum ramp capacities stated above, it is the operator's responsibility to ensure that the ramp they are using is adequately rated to support the combined weight of the ATV/UTV, the rider, and any cargo that can't be removed from the machine for loading. Ramps with higher rated capacities may be necessary in some situations.
- One piece, bi- or tri-fold ramps must be a minimum of 46 inches wide when extended for loading. One piece ramps must be wider than the distance between the ATV's tires as measured from the outside of the left tire to the outside of the right tire. For two-piece ramps, each ramp must be a minimum of 10 inches wide. Ramp length must be a minimum of 72 inches (6 feet) long when extended for loading; however, 84 inches (7 feet) is the recommended length.

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13.23 – Exhibit 01--Continued

- All ramps must have chains, cables, or straps to secure the ramps to the vehicle tailgate. Use of ramp chains or straps during loading is mandatory. These chains or straps prevent rearward movement of the ramps during loading.

Vehicle:

- Only pickup trucks or larger vehicles that have room for all four wheels of the ATV to rest on the bed of the truck will be used to transport ATVs. Total cargo carried (including passengers, gear and ATV/UTV) in a truck may not exceed the limits in FSH 7109.19, 31.1.
- Pickup trucks may transport only one ATV loaded in the bed and all four ATV wheels/tires must be in contact with the bed surface.
- Transport vehicles should be equipped with front-end header boards (headache racks) if possible.
- All vehicles must have a flat bed surface, wide enough between wheel wells that the ATV may be rolled on the bed without riding over the wheel wells. Under no circumstances will an ATV be loaded into a vehicle when the ATV must be driven over the wheel wells.
- Four tie downs sufficient to secure the ATV to the vehicle must be used. Stake pocket tie downs rated at 1,000 pounds or more (available at many auto or trailer retail stores) are acceptable, but welded or bolted tie down points are recommended.

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13.23 – Exhibit 01--Continued

Vehicle/Ramp Position:

- The ramp angle from vehicle to ground has the largest influence on risk when loading/unloading ATVs. If the ramp angle is reduced, and all other conditions remain the same, risk is reduced. The truck should be positioned to take advantage of any terrain features that will help reduce the ramp angle. Therefore, the operator should consider the following methods to reduce the ramp angle.
 - The use of a loading wall, if available, or positioning the rear of the truck near a berm will reduce the ramp angle from truck bed to ground. If the loading wall is the correct height, it may eliminate the need for ramps and allow roll-on/roll-off loading.
 - The truck may be positioned with the rear wheels in a depression (for example, a ditch) to reduce the ramp angle. This lowers the bed of the truck and allows the ramps to be located on higher ground on the far side of the depression.
- Loading ramps must be secured to the truck bed with chains, cables, or straps designed for that purpose. When in position for loading, the chains or straps must be taut with no slack or sag.
- Two-piece loading ramps must be positioned parallel and spaced so the ATV tires are centered on the ramps. One-piece ramps must be centered on the truck bed and the ATV driven up the center of the ramp.
- Loading ramps should be positioned so the ends in contact with the ground are level or at the same height. Uneven ramps may cause the ATV to tip over sideways during loading/unloading.

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13.23 – Exhibit 01--Continued

Loading Technique:

- The ATV's racks should be unloaded before transporting. Any heavy cargo must be removed and/or spray tanks emptied. If heavy cargo or tanks cannot be removed, sandbags or other heavy objects should be secured to the opposite cargo rack to help balance the ATV. The only safe method of loading an ATV that has a loaded spray tank or other heavy load on the back is to winch the ATV into the bed of the pick-up.
- Padding should be placed at the front of the vehicle's bed to protect both vehicles and help absorb impact during loading. An old tire (minus the rim) works well for this.
- When preparing to drive the ATV into the bed of a vehicle, the operator should be leaning well forward with feet positioned on the ATV's footrests. This keeps the operator's weight low over the ATV's center of gravity.
- The ATV should be loaded with the front of the ATV toward the front of the transport vehicle whenever possible. In cases where the ATV must be loaded with a tank or other load on the ATV rear, it may be safer to load the ATV with the rear facing the front of the transport vehicle, placing the center of gravity further forward and reducing the probability of the ATV tipping backward off the ramp. This operation should be performed with a winch.
- The operator should apply throttle smoothly and climb the ramp at low speed. Too much or sudden increases in throttle will cause the ATV to be harder to control and may cause the ATV to impact the front of the vehicle bed or over-turn.

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13.23 – Exhibit 01--Continued

- As the ATV starts up the ramp the operator should lean toward the uphill direction, toward the ramps, to help keep the ATV balanced.
- Use the safest method for unloading an ATV. This should only be done after carefully assessing the ground slope and potential obstacles the ATV will encounter when it exits the end of the ramp. When riding down, the operator should lean forward, apply only enough throttle to start the ATV down the ramps, and then allow the ATV to roll backwards using light pressure on all the brakes to control speed; never suddenly apply hard braking when descending a ramp.
- For transport, ATVs with manual transmissions should be left in first gear. ATVs with automatic transmissions should be in the park position. The ATV's ignition key should be turned off and removed, the parking brake set, the run/stop switch in the stop (or off) position and the fuel lever turned to the off position.

Secure Load:

- Only tie down straps must be used for securing an ATV/UTV for transport; ropes, chains, cables, or bungee cords are not acceptable.
- Tie down straps must be in good condition, free of frays/splices with the following minimum rated capacity:

ATV—1,200 pounds.

Only straps with cam action or ratchet action buckles may be used to secure ATVs; knotted straps must not be used.

UTV—2,500 pounds.

Only ratchet type tie downs may be used to secure a UTV: knotted straps must not be used.

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3.23 – Exhibit 01--Continued

- A minimum of four tie downs must be used to secure the ATV/UTV to the vehicle; two tie downs to secure the front of the ATV/UTV to the vehicle and two tie downs to secure the rear of the ATV/UTV to the vehicle.
- Hooks on one end of the tie-downs must generally be attached to the ATV/UTV's frame tubing, not the cargo racks, unless otherwise stated by the owner's manual. Hooks on the other end must be attached to vehicle cargo anchors.

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13.24 - Operations

1. Each operator shall meet the training and testing requirements in FSH 7109.19, chapter 60.
2. Supervisors shall ensure that operators possess the skills required for the work project or activity (sec. 13.21).
3. The supervisor shall ensure that a JHA/RA is prepared for each work activity involving use of ATV/UTVs.
4. The following ATV/UTV issues should be considered in the JHA/RA:
 - a. Is the ATV/UTV the appropriate vehicle for the work project or activity?
 - b. Operator tasks.
 - c. Personal protective equipment.
 - d. Operator experience/training level.
 - e. Vehicle cargo rack weight limitations.
 - f. ATV/UTV capabilities/limitations.
 - g. Loading, unloading, and transportation of the vehicle.
 - h. Terrain (for example need for ROPS).

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- i. Weather and work environment.
 - j. Maintaining reliable communications.
 - k. Check-Out/Check-In (COCI) procedure.
 - l. Evacuation Plan which includes: location of work, nearest medical evacuation site latitude/longitude, and routes to the work-site for responding ground SAR (Search and Rescue)/EMS (Emergency Medical Service).
5. All participants shall review the hazards identified in the JHA/RA for the project or trip prior to commencing operations. Changes in operating conditions must require reevaluation of the JHA and necessitate a review of any new hazards.
6. Before riding, perform a pre-maintenance check such as T-CLOC (ASI Tires/Controls/Lights/Oil/Chassis-maintenance Checklist) or similar check as specified by the manufacture. See exhibit 01 for recommended pre-ride checklist.
7. An annual maintenance inspection from the manufacturer, certified ATV/UTV mechanic, or fleet manager's designee is required. Maintain a copy of the inspection report in the equipment history folder.
8. Do not carry passengers on ATVs.

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9. Carry only manufacturer recommended number of passengers on UTVs. The operator and each passenger shall have their own seat belt and it must be fastened at all times when the vehicle is in motion.

10. When parking the ATV/UTV:
 - a. Engage brake;
 - b. Shift transmission into low range/low gear;
 - c. Block tires when parking on an incline/decline, turn off and remove keys if appropriate.
 - d. If parking for longer than 1 to 2 days, turn the fuel supply line valve to “Off” or follow the manufacturer’s instructions.

11. When carrying equipment, equalize the load to maintain balance, stability and center of gravity. Never exceed the manufacturer’s maximum carrying capacity of either axle or cargo rack as specified in the ATV/UTV owner’s manual. Follow manufacturer loading instructions.

12. Secure all tools or equipment transported on ATV/UTVs. Observe additional precautions when carrying liquids.

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13. Secure equipment on an ATV as close to the rider as possible in order to maintain the center of gravity as close to the center of the machine as possible, but not so close as to preclude an emergency dismount from the ATV.

14. Do not exceed the maximum manufacturer's towing capacity specified in the vehicle owner's manual when using an ATV/UTV to tow a trailer and/or equipment. Manufacturers specified towing capacity varies depending on grade or slope of the terrain to be travel. In addition, do not exceed the trailer's weight rating.

15. Do not drive recklessly or at excessive speed, or engage in horseplay.

16. Do not enter deep or swift moving water. Hazards exist when:

- a. Stream bottom is unstable due to mud, sand, boulders, or submerged obstacles.
- b. Water depth is not consistent through the entire route of travel.
- c. Stream width or water turbidity prevents a complete view of the bottom across the route of travel.

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- d. Water depth and current may stall the engine.
- e. Current is forceful enough to require you to counteract it to maintain balance or direction of travel.

17. Modifications that include changes to the frame, electrical systems, and other changes to the manufacturer's design of the ATV/UTV's mechanical configuration are not allowed, except in the following cases:

- a. Installation of commercially available "add-ons," such as carry-all boxes, equipment bags, approved extended range fuel tanks, equipment racks or other attachments, such as agriculture spraying equipment, when installed in accordance with manufacturer instructions.
- b. UTV mounted firing devices when both the device itself and the fuel firing operations comply with the requirements in exhibit 02.

18. A check-out/check-in procedure (COCI) must be developed and followed. Provide a copy to the supervisor.

19. Report all ATV/UTV accidents using standard accident reporting procedures and document on both the form SF-91 and Safety and Health Information Portal System (SHIPS).

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20. When hazardous materials or pesticides are being transported, ensure that the JHA reflects the necessary actions to activate emergency procedures in the event of an accidental discharge as appropriate for the region and state. The JHA must include chemical name, classification, quantity and precautions to be taken in the event of an accident. For further information, refer to section 61.14.

21. When transporting external fuel containers, it is required at a minimum that each UTV has a secured 2.5 pound ABC fire extinguisher. If an ATV/UTV has a firing torch attached, a 10-BC fire extinguisher is required.

22. Whenever possible, two machines should be used when going out into the field. When traveling with one machine, you must have a work alone policy in place.

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13.24 – Exhibit 01

**ATV/UTV OPERATOR
Pre-ride Inspection Checklist**

Warning: If a proper inspection is not done before each use, severe injury or death could result. Always inspect the ATV/UTV before each use to ensure the equipment is in proper operating condition.

T = TIRES & WHEELS: Tires–Check air pressure and condition. Wheels–Check rim bolts (lug nuts), axle nuts, and wheel bearings.

C = CONTROLS & CABLES: Controls and Throttle–Locate and check workability. Brakes–Check adjustment and fluid level. Recoil Start and shifter–Check workability.

L = LIGHTS & ELECTRONICS: Ignition switch, Engine stop switch, and Lights–Check workability.

O = OIL, FUEL, FLUIDS, & AIR FILTER: Oil–Check level and for leaks. Fuel–Check level. Coolant–Check level and for leaks. Air filter–Check condition (clean and not torn or blocked).

C = CHASSIS, DRIVESHAFT, SUSPENSION, & EXTERNAL EQUIPMENT: Chassis and Suspension–Shake handlebars, footrests, racks, etc. to be sure nothing is loose. Drive shaft–Check for oil leaks and missing nuts and bolts. Check fasteners for tightness and racks for cracks. External Equipment–Check winches for proper operation, damaged cables, fairlead, hook and controls. Check tool boxes and other external equipment and loaded items are secured and in good repair. Check trailer hitches are secure and the proper size and capacity.

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13.24 – Exhibit 02

ATV/UTV Fuel Firing Device Operations

Fuel Firing Device Requirements

All purchases of vehicle mounted fuel firing devices must comply with the Missoula Technology and Development Center (MTDC) to ensure compliance with the most current technical standards and requirements.

Operational Requirements

Prior to Burn

- Perform inspection of ATV/UTV, fuel firing device, fire extinguisher, etc. (use checklists)
- Include discussion of ATV/UTV use and fuel firing device operations in pre-burn briefing
- Document ATV/UTV fuel firing device operations and hazards use in JHA

Firing Operations – Refer to FSM 5100.

Emergency Procedures – Always provide for personal safety first.

Stuck, Stalled, or Rolled ATV/UTV

- Halt further ignition
- Extinguish wick/igniter
- Notify others of your situation and request help
- Extinguish fire near machine

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13.24 – Exhibit 02--Continued

Fuel firing device Catches Fire

- Try to extinguish fire
- If practical, jettison fuel firing device and drive ATV/UTV away
- If fuel firing device cannot be jettisoned abandon ATV/UTV/fuel firing device and leave area immediately
- Notify others of your situation

Fuel firing device Inspection Checklist (Pre-operation)

- Valves
- Filters
- Check all connections, including condition (fuel lines)
- Switches
- Fuel firing device is securely fastened to ATV/UTV
- Fill tank
- Pump check
- Nozzle
- Igniter system
- Tank (cap tight, etc.)
- Fasteners
- Snuffer
- Spare fuses
- Wiring and connections

Safety and Auxiliary Equipment Checklist

- Fire Extinguisher
- Minimum 10 lbs., Type B-C
- Not mounted on fuel firing device. Mounted to be accessible in event of a rollover