

DRIVING AND TOWING SAFETY FOR ALL EMPLOYEES

Purpose This RRES Environmental Services (ES) business line document provides information to all ES business line employees who will be driving vehicles, towing trailers, or using vehicle-mounted winches as part of their work at LANL. Periodic retraining to this document may be required by the group leader or a project leader, especially when information is added or updated.

Scope This document applies to members of the four environmental groups (SWRC, WQH, MAQ, ECO) in the Environmental Services business line of RRES Division who operate a vehicle, tow a trailer, or use a vehicle-mounted winch for LANL business. Motorcycles are not allowed to be used for LANL business.

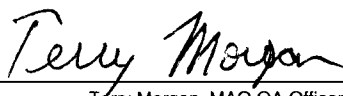
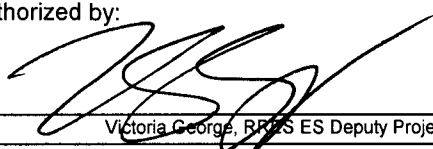
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Hazard Control Plan The hazard evaluation associated with this work is documented in Attachments 1 and 2: Initial risk = **medium**. Residual risk = **low**. Work permits required: none.

First authorization review date is one year from manager signature below.

Signatures

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Work authorized by:  Victoria George, RRES ES Deputy Project Director	Date: 8/6/04

General information about this document

Attachments This document has the following attachments:

Number	Attachment Title	No. of pages
1	Hazard Control Plan for Driving	3

History of revision This table lists the revision history and effective dates of this document.

Revision	Date	Description Of Changes
0		New document created from MAQ-Gen-Field-R2.

Who requires training to this document? The following personnel require training to this document:

- All ES business line members who drive for LANL business

Annual retraining is required.

Training method The training method for this document is “**self-study**” (reading) and is documented in accordance with the employee’s group’s procedure for training.

Prerequisites In addition to training to this document, the following training is also required:

- Defensive driving course (PS-13) (recommended for those who must regularly drive as part of their job; supervisor’s discretion)

Driving

Operating motor vehicles Statistically, driving is the most dangerous activity performed at LANL. All employees who operate government **and/or private** vehicles (*motorcycles may NOT be used*) for official Laboratory business must operate these competently, safely, and in compliance with federal, state, and local rules, regulations, and laws. See LIR 402-1320-01 for details of other LANL vehicle requirements.

Employees who operate government-owned, private, or leased motor vehicles must meet the following qualifications:

- Be 18 years old or over and have a US valid motor vehicle driver's license in their possession.
- Be free of physical or mental impairment that interferes with or limits safe control and operation of a motor vehicle in the performance of driving duties.

Vehicle equipment

Ensure the vehicle you are using is properly equipped and in good condition (contact the vehicle coordinator if problems are found). Ensure it contains:

- First aid kit
- Fire extinguisher
- Water and possibly food, depending on length and distance of trip
- Ice scraper/ brush during winter months

Trip logs

It is a LANL requirement to complete trip logs for every use of the vehicle. The log sheet is usually kept in the vehicle and a separate sign-out sheet (for reserving the vehicle) is normally kept where the keys are kept.

Seat belts

Ya gotta use them in any vehicle, even privately-owned and even as a passenger and even in the rear seats, when on official business. It's the law.

Motor vehicle accidents are the leading cause of on-the-job fatalities in the United States, accounting for 44% of all industrial fatalities. Using seat belts are effective in preventing fatalities and injuries.

Driving, continued

Parking rules LANL has its own rules and enforcement actions for parking. Read AM 617 for parking rules and associated penalties for parking violations.

Lock the vehicle when leaving it.

Avoid parking under or near dead trees that may fall on the vehicle.

Parking on flammable materials Be aware of vegetation where you park your vehicle. Exhaust systems can catch vegetation on fire at any time of year. Always try to park in an area clear of vegetation. If a fire is started in your vicinity, move to a safe location at report the location of the fire to EM&R at 667-6211.

Reporting accidents All accidents that involve a government vehicle or private vehicle that is used for official business, regardless of the extent of damage or injury, must be reported to your supervisor. Immediately call 911 if there are any injuries or spills. Follow the steps on the checklist kept in the vehicle.

Driver distractions Be aware of the ease with which you can be distracted by the radio, ventilation controls, other people, things outside the vehicle, and the ubiquitous cell phone. Keep your attention outside the vehicle at all times. Never initiate cell phone calls while driving unless absolutely necessary. If safe to do so, pull over and park to finish phone conversations. It is recommended that you tell any callers to wait until you can pull over to talk, or use the caller ID or voice mail features and return the call later.

Defensive driving classes Those employees who are regularly required to operate government vehicles as part of their jobs should take defensive driving training classes offered through the ES&H training group (PS-13 Training Services). The project or team leaders are responsible for identifying employees who are required to take defensive driving training classes.

Post-fire hazards After the Cerro Grande fire, the decreased water retention of the watershed will allow more runoff, thus creating more road washouts and soil on the roadway after rains.

Driving, continued

Vehicle troubles

For all government vehicle problems, call KSL at 667-5771 for assistance. Lab employees are not allowed to jump start batteries. It is OK to change tires if you are comfortable doing so – read the instructions on the equipment.

Refueling

When purchasing gas, use only the lowest grade of fuel.

Four-wheel-drive vehicles

Background Four-wheel-drive vehicles are often used for access to field work areas.

If the vehicle is not a "full-time" system, it is necessary to engage the front axle whenever four-wheel-drive is needed.

Ask for a demonstration If you need more information than given below, or would like a demonstration, ask a supervisor to show you the operation of a vehicle before taking it to the field.

Cautions Do not operate the vehicle on hard surface roads or at sustained high speeds while in four wheel drive. When operating the vehicle in 4L, the engine speed is about twice what it would be in high range, so take care not to overspeed the engine.

Because four wheel drive provides improved traction in mud or on snow or ice-covered roads, there is a tendency to exceed safe turning or stopping speeds. Four wheel drive does not improve cornering or stopping abilities (though vehicle stability is slightly enhanced near the limits of traction). *DO NOT GO FASTER THAN ROAD CONDITIONS PERMIT.*

Operating controls The transfer case shift lever has four positions:

Symbol	Name	Used for
2H	Rear wheel drive high range	Normal highway driving.
4H	Four wheel drive high range	More traction than two-wheel drive provides.
N	Neutral	Disengaging <u>both</u> driving axles.
4L	Four wheel drive low range	Maximum traction with high pulling power up to speeds of 25 mph.

Vehicles with "full time" four-wheel-drive systems have a lever with only low, neutral, and high positions.

Four-wheel-drive vehicles, continued

Locking hubs Vehicles with manually locking front axle hubs (a selector mechanism in the center of each front wheel identifies such vehicles) *must* be engaged *before* operating the vehicle in four wheel drive (4H or 4L). Most new vehicles have auto-locking hubs – check the manual or labels to determine which type the vehicle has.

To engage the hubs, turn the selector on each axle to "Lock." If the selector does not turn freely, move the vehicle a few inches in either direction, then try to turn the selector again.

When operating in two wheel drive (2H) under normal conditions, the locking hubs should be disengaged ("free" position). This will prevent unnecessary wear to the front drive components and provide the best fuel economy.

Shifting into "four-high" drive For high range only, to shift from two- to four-wheel-drive or back, the transfer case may be shifted while the vehicle is in motion at any speed below 55 mph while moving in a straight line. The front axle will engage faster if you momentarily release the accelerator pedal after making the shift.

Shifting during a turn may damage the axle disconnect gears.

If attempting to shift while the vehicle is stopped, it may be necessary to move the vehicle to engage or disengage the front axle.

Shifting from high or low range To shift from high range to low range (4H to 4L) or low range to high range (4L to 4H), one must:

- completely stop the vehicle,
- shift the transmission into NEUTRAL or PARK, and
- shift the transfer case quickly into the desired range.

If difficulty is encountered, move the vehicle forward or backward in a straight line and re-try. If both levers are in neutral and gear grinding occurs, turn off the engine and re-try.

Towing trailers

Towing vehicle

Ensure the vehicle you plan to use to tow the trailer is rated to tow the full weight of the loaded trailer. Ensure it has a proper trailer hitch and the correct trailer ball. Always use the safety chains (it is the law in the State of New Mexico); cross them to attach to hitch.

Hooking and unhooking trailer

Chock **BOTH** trailer wheels before raising the trailer tongue to hook or unhook the trailer from the vehicle. Keep hands and fingers clear and watch for sudden movement. Always use crank on tongue lift to raise and lower tongue; remember to swing it to horizontal before towing.

WARNING: As the hitch comes off the ball, the trailer may move. Stand away a foot or more and be ready to move.

Backing up towing vehicle

Use a second person to direct you towards the trailer tongue and alert you of dangers or obstacles.

Tongue weight

Ensure 10% of the total trailer weight is on the trailer tongue. Insufficient weight on the tongue can cause violent swaying at higher speeds. Adjust the load on the trailer if necessary.

Inspect hook-up

After hooking up the trailer, do a walk-around of the trailer and towing vehicle to ensure that trailer is appropriately hooked up. Have a second person check to make sure that turn signals and brake lights on the trailer and tow vehicle are operational. Do not tow a trailer if the lights or brakes are not working properly or if the tires are improperly inflated. Correct any defects found.

Towing trailers, continued

Towing

Use extra caution when towing: assume longer stopping distances, use mirrors when changing lanes, be aware of the extra width and length of the vehicle.

Do not make sudden moves or swerves while towing.

Exercise greater caution when turning, particularly in a city setting. The trailer will not track with the towing vehicle. Pay particular attention when pedestrians are in the vicinity of your proposed turn

Check the trailer frequently. Particular attention should be paid to the tires. A flat tire on a trailer is often difficult to detect from the towing vehicle and, if not discovered quickly, could result in serious damage to the trailer's wheel, rim, hub assembly, brakes, or axle.

Winch Operation

Winches Some vehicles come equipped or have winches installed on them for use in case vehicle becomes stuck.

Required equipment Keep a copy of the winch manual in the vehicle at all times.

Always have a heavy blanket available to place over the cable.

Keep gloves available for use whenever handling cable.

Winch attach points Be sure the attachment point is strong enough to withstand the force to be applied when the winch is used. If using a tree, place the attachment as low as possible on the tree.

Use of winch Read and follow all instructions for operation and operational limitations given in owner's manual.

Wear gloves to prevent scrapes or punctures from cable strands.

Place blanket over cable whenever it is to be under tension.

Stand away from ends of cable in case it breaks or comes loose.

Recovery strap **Never use a recovery strap** in a winching operation. Because it is designed to stretch, it stores energy and could react like a rubber band should your rigging fail. Use the recovery strap to “snatch” out a stuck vehicle.

[Click here to record “self-study” training to this procedure.](#)

HAZARD CONTROL PLAN

1. The work to be performed is described in this document.

“Driving and Towing Safety For All Employees”

2. Describe potential hazards associated with the work (use continuation page if needed).

Motor vehicle accidents: driver could be in an accident caused by others or by own fault.

Weather conditions can greatly increase hazards.

Road hazards: construction and utility repair work, or dead trees or branches that may block the roads.

Wash-outs: the decreased water retention of the watershed will allow more runoff, thus creating more road washouts and soil on the roadway after rains.

Driver distractions: driver can be distracted by things inside and outside the vehicle, such as the radio, climate controls, eating or drinking, people of opposite (or maybe same) sex, conversations, and cell phone use.

Hooking and unhooking trailer -- Pinched fingers, smashed feet, or hit by shifting trailer.

Use of winch -- Cable coming loose: cable could come off while under load and whip back to strike personnel.

Pulling tree over onto vehicle: if a weak tree is used as an anchor for the cable, it could be pulled over when a load is applied.

Pinches, scrapes, cuts: hands can become scraped by cable, pinched in guide rollers, or cut by wire burrs when handling cable during unwinding or rewinding.

3. For each hazard, list the likelihood and severity, and the resulting initial risk level (before any work controls are applied, as determined according to LIR300-00-01, section 7.2)

Motor vehicle accidents: improbable / catastrophic = medium

When poor weather conditions: improbable / catastrophic = medium

Road hazards: occasional / moderate = low

Wash-outs: occasional / moderate = low

Driver distractions: occasional / critical = medium

Hooking and unhooking trailer: occasional / critical = medium.

Winch cable coming loose: improbable / critical = low.

Pulling tree over onto vehicle: improbable / critical = low.

Pinches, scrapes, cuts: occasional / moderate = low.

Overall initial risk: Minimal Low Medium High

4. Applicable Laboratory, facility, or activity operational requirements directly related to the work:

None List: Work Permits required? No List:

AM 617 "Government and Private Vehicles" for parking rules and associated penalties for parking violations, seat belt use, and vehicle operation.

LIR 402-1320-01, "Vehicle and Pedestrian Safety."

HAZARD CONTROL PLAN, continued

5. Describe how the hazards listed above will be mitigated (e.g., safety equipment, administrative controls, etc.):

Drivers must have a valid driver's license from state of residence and be at least 17 years of age.
Do not use a motorcycle during official Laboratory business.
Drivers and passengers must wear seat belts while in any vehicle on government business. (AM 617)
Maintain a safe following distance – the Smith System Defensive Driving Program recommends a four-second following distance. However, safe following distance will be modified by many parameters such as road conditions (snow, rain, ice, etc.), speed, visibility, traffic conditions, etc.
Do not exceed posted speed limits. Reduce your driving speed to adjust for driving conditions such as traffic density, visibility, traction, etc.
Do not drive if you are overly fatigued, dizzy, or on medication that may impair driving ability.
---- See continuation page ----

6. Knowledge, skills, abilities, and training necessary to safely perform this work (check one or both):

- Group-level orientation and training to this procedure.
 Other → See training prerequisites on procedure page 3. Any additional describe here:

7. Any wastes and/or residual materials? (check one) None List:

8. Considering the administrative and engineering controls to be used, the *residual* risk level (as determined according to LIR300-00-01, section 7.3.3) is (check one):

- Minimal Low Medium (requires approval by Division Director)

9. Emergency actions to take in event of control failures or abnormal operation (check one):

- None List:

Provide first aid. Call 911 for emergency help.
Report accidents to supervisor.
Report accidents to EM&R at 667-6211.
Complete GSA Standard Form 91 and submit to group leader.

Signature of preparer of this HCP: This HCP was prepared by a knowledgeable individual and reviewed in accordance with requirements in LIR 300-00-01 and LIR 300-00-02.

Preparer(s) signature(s) _____ Name(s) (print) _____ /Position _____ Date _____

Signature by group leader on procedure title page signifies authorization to perform work for personnel properly trained to this procedure. This authorization will be renewed annually and documented in MAQ records. Controlled copies are considered authorized. Work will be performed to controlled copies only. This plan and procedure will be revised and distributed according to RRES-ES procedures.

HAZARD CONTROL PLAN, continued

Hazard Control Plan continuation page. Give item number being continued.

Item 5 continued.

Use your mirrors to evaluate the traffic around you.

Use your turn signals to warn other drivers of your intentions.

Attend defensive driving training classes offered through the ES&H Training Group (PS-13) if regularly required to operate government vehicles as part of job . The project leaders are responsible for identifying employees who are required to take defensive driving training classes.

Emergency vehicles: Be ready for emergency vehicles to appear at any time.

Repair crews: Be ready for repair crews at any location.

Road hazards: Watch the road; be ready for road hazards at any time.

Wash-outs: Watch the road; be ready for road hazards at any time.

Driver distractions: Be aware of the ease with which you can be distracted by the radio, ventilation controls, and other people. Keep your attention outside the vehicle at all times. Never initiate cell phone calls while driving unless absolutely necessary. If safe to do so, pull over and park to finish phone conversations. It is recommended that you tell any callers to hang on until you can pull over to talk.

Hooking and unhooking trailer -- The trailer hitch and the truck receiver must be properly matched and engaged. The trailer safety chain must be attached to the vehicle. Use the trailer tongue jack for raising and lowering the trailer tongue. Keep hands and fingers clear and watch for sudden movement. Chock BOTH trailer wheels for any hooking and unhooking operations.

Towing trailer -- Attach trailer safety chains to the vehicle. Use extra caution while towing the trailer; watch the mirrors when turning; be aware of the extra width and length of the vehicle. Stopping distances are significantly increased.

Winch use:

Follow all instructions for operation and operational limitations given in owner's manual.

Keep a copy of the manual in the vehicle at all times.

Always have a heavy blanket available to place over the cable.

Keep gloves available for use whenever handling cable.

Be sure the attachment point is strong enough to withstand the force to be applied when the winch is used. If using a tree, place the attachment as low as possible on the tree.