

Driving Safety

Driving often constitutes a greater risk of significant injury than most activities actually performed in the field. Most vehicles/trailers used for field trips are large and not the easiest to handle. Often, drivers of these vehicles are not used to driving such big vehicles. Below are several driving safety suggestions, a sample vehicle safety checklist, and a primer for driving vans in the field.

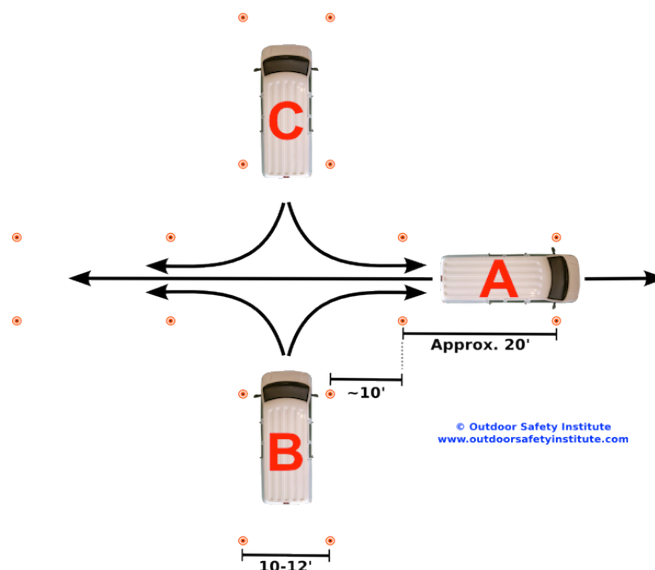
Reinforce use of seatbelts by all passengers. Not all participants are bought in to the importance of wearing a seatbelt. You may need to forcefully set the tone for this in the beginning of a trip and remind participants throughout that it's not only a really good idea, but it's the law.

Pre-trip (new) driver training. Many outdoor adventure organizations use a simple low-consequence "cone course" that is set up in an empty parking lot to familiarize new drivers with maneuvering big vehicles. Perform the test at low speeds. Consider one-on-one coaching, a group challenge, or an actual proficiency test.

Materials needed: Empty parking lot, 14-24 Traffic Cones (3M PVC 18-inch Traffic Safety Cone), Van, Trailer (if relevant),

Course Ideas:

- Straight line (A in the diagram): Try it backwards and forwards. It is difficult to back up in a straight line for a long distance (especially without the use of the rear-view mirror). Try doing this with a trailer for added difficulty.
- 90 degree turns (B and C in the diagram): Left and right, forwards and backwards
- S-Turns: Avoid a series of cones placed in the vehicles path by weaving around them. Set up a row of 3-4 cones each separated by about 30 feet.
- Parallel parking: Create a parking space marked by cones



Pre/Post Trip Vehicle Inspection: It is helpful if one person in a campus unit is ultimately responsible for pre/post trip inspection of the vehicles they use for field trips. This person should also communicate with the people who are in charge of maintenance of the vehicles if at all possible. On the following 2 pages is an editable sample pre/post trip inspection that is used by the UCSC Recreation Department.

Sample Van Driving Checklist and Trip Sheet

Driver(s) _____ Vehicle # _____
 Date out _____ Date in _____ Trailer # _____
 Beg mileage _____ End mileage _____ Total miles _____
 Destination _____ Program or purpose _____

Please complete the following pre-trip checklist whenever transporting passengers.

Write your initials in the appropriate column.

Yes = Yes, this appears to be in good working condition. No = No, it is not in good condition.

Van Components	Yes	No
Parking brake		
Foot brake		
Head lights		
Brake lights		
Tail lights		
Turn signals		
Reflectors		
Tires		
Spare tire		
Mirrors		
Mirrors are adjusted to the driver.		
Horn		
Wipers		
Fire extinguisher		
First aid kit		
Seats are secured.		
Seat belts		

Trailer Components	Yes	No
Tail lights and brake lights		
Turn signals		
Tires		
Spare tire		
Hitch-vehicle connection		
Hitch-trailer connection		
Safety chains		
Chain-vehicle connection		
Electrical cable		
Cotter pin		
Landing leg		

Driver Understandings	Yes	No
On the Road requirements		
Photocopy of driver's license		
DIESEL or GAS (circle one)		
Use of glow plugs in diesel vans		

Circle the location of any pre-trip damages:

	Left		Right	
Front	Fender	Door	Fender	Door
	Quarter panel	Bumper	Quarter panel	Bumper
Rear	Fender	Door	Fender	Door
	Quarter panel	Bumper	Quarter panel	Bumper

Please record any necessary details from the pre-trip checklist and damage locations:

_____ Emergencies and Incidents *(Initial after reading.)*

For immediate threats to life and safety, your first call should be 911. Immediately after a vehicle accident, call the police. Next, call the call-down list below as soon as is practical after an accident occurs or the emergency situation allows. Finally, use the *Driver's Accident Reporting Packet* located in the console for the required procedures to document and report the accident.

Dustin Smucker, Assoc Dir of Recreation		Primary point of contact
UCSC Fleet Services (8a-5p,M-F)	831-459-2228	To arrange towing, repairs, etc.
Fleet Assistance (24-hour roadside)	800-600-6065	Same as above, but outside of business hours
UCSC Police Dispatch (Dispatch will connect you to Christa Mercado, UCSC Fleet Services, outside of business hours)	831-459-2231	When urgent help is required, and no one else is available

If for any reason the van should be returned with damage, the renter is responsible for a \$500.00 deductible fee. The renter may be held responsible for the full cost of the repair if the incident resulted from unauthorized van use or if the insurance claim is rejected.

_____ On the Road – Requirements *(Initial after reading.)*

1. Drivers must abide by all state and federal rules of the road.
2. Drivers must have their valid driver's license in their possession.
3. All van occupants must always wear seat belts.
4. Alcohol, controlled substances, weapons and smoking in the vehicle are prohibited.
5. Drivers are prohibited from using a cell phone in any way, including hands free devices.
6. Drivers are prohibited from adjusting any cabin controls while on the road - temperature, radio, passenger windows, mirrors, etc. The only exception is to adjust their own window.
7. One-way trips are restricted to 16 total hours. After 16 hours, the trip may resume after at least an 8-hour break.
8. Drive with headlights on at all times.

_____ On the Road – Best Practices *(Initial after reading.)*

1. Adjust side and rear view mirrors prior to driving.
2. For trips lasting greater than two hours, consider having at least two drivers per van.
3. If a second driver suggests switching out of concern for the current driver's condition, the switch happens without argument. Consider switching drivers no more than every four hours.
4. Because vans are larger than most vehicles we drive, drivers use spotters when backing up. If you are driving solo, step out of the van and check out your intended path before backing up.
5. Firmly adhere to the three-second rule. This allows ample space between you and the vehicle in front of you if they quickly decelerate.

_____ Fuel cards *(Initial after reading.)*

1. **Know whether your van uses gas or diesel. Use the correct fuel for your van.**
2. Please use the fuel card at major fuel stations only. Some small service stations will not accept it. We may not be able to reimburse you for fuel charges.
3. The fuel card should only be used for the van to which it is assigned.
4. Purchases are restricted only to fuel and oil.
5. You are responsible for lost fuel cards. The replacement cost is \$50.
6. To use your fuel card:
 - a) Insert and remove the fuel card.
 - b) Enter the current odometer reading.
 - c) Enter the vehicle number.

Post-trip inspection (Please provide any relevant comments on the condition of the van):

Please return the van, keys and fuel card to the Recreation office at the assigned time.

A Primer for Driving Passenger Vans in the Field (modified from a reference created by UCSC Earth Science professor Hilde Schwarz)

Many field classes use vans with automatic transmissions (a.k.a. automatic gearboxes), which means that the vehicle automatically changes gear ratio as it changes forward speed. This allows you to a) keep both hands on the wheel and b) focus on road conditions rather than manual gear changing. These vans have two-wheel/rearwheel drive, which means that the rear two wheels receive power directly from the engine and thus directly propel the vehicle, while the front wheels are used solely for steering (similar to your bicycle). In Ford vans, the engine is in front (more about this later).

DRIVING ON STEEP PAVED ROADS

Although most vans are ‘automatics’, you will still have to change gears now and then. For instance, when moving forward you manually shift from ‘P’ (Park) to ‘D’ (Drive), and when reversing you shift to ‘R’ (Reverse). Everybody knows about these gears - right? Less well understood are the low gears: ‘3’, ‘2’ and ‘1’, but it turns out that in order to drive our vans safely you must know how to use these too. The key paved-road use of the powerful low gears is to slow down the vehicle when descending a steep grade. This helps preserve the brakes. In fact, if you routinely fail to drop a van into low gear on a serious slope you can seriously compromise the brakes (#####) or lose them altogether (#disaster). Use the following general rule to choose which low gear to select in a downhill situation: the steeper the slope, the lower the gear, the slower the speed. Lower gears can also give the vehicle the power to a) drive uphill with a heavy load more efficiently, b) drive through or out of sand or mud off-road (see below) and c) tow another vehicle.

DRIVING OFF-ROAD

The engine-in-front/rear wheel drive arrangement in most vans allows for efficient braking, easy access to the engine compartment and good handling on most paved surfaces. A disadvantage is that such vehicles more easily get stuck in snow, ice, sand or mud – for a couple of reasons. First, since most of the vehicle weight is in the engine at the front, the rear wheels (which actually propel the car) tend to lose traction on slippery surfaces. Second, since these vans are heaviest at the front end, where the wheels are unpowered, it is relatively easy to drive into a bad situation - such as a muddy or sandy strip on the side of the road - that entraps the front end of the car such that the rear wheels cannot extract it. If you find yourself pointed downslope in the latter situation, start looking for a tow strap and another vehicle to pull you out.

Please read the following suggestions for off-road driving carefully.

- Be wary of ‘soft shoulders’ adjacent to paved roadways. Unless someone confirms the firmness of a road shoulder, even the most benign-looking may prove hazardous.
- When driving on rocky surfaces, drive slowly, and endeavor to avoid sharp and/or large rocks. Do not worry about trying to ‘keep up’. Rushing could result in flat tires, damage to the van, or worse.
- When driving on gravel roads, slow down. Gravel has the same effect as ball bearings: it reduces traction and decreases your effective stopping distance.
- When driving on washboard roads, don’t speed. The unevenness of the road = reduced traction. Speeds of 35 to 40 mph may be optimum for reducing bumpiness while allowing for a reasonable grip on the roadway.

- On sandy, muddy or deeply rutted surfaces – DO NOT STOP unless you have to (resuming might prove problematic).
- On steep roads – Remember: gravity favors those going downhill. If you get stuck on a slope it will probably be when going uphill. If this happens, DO NOT (no way, no how) attempt to turn around. Rather, reverse back down the road, slowly and carefully, using safely positioned fellow students as spotters to keep you on the road/straight as you go.

HOW TO GET UN-STUCK, OFF-ROAD

If you are in a van that is mired in the muck, assess the situation calmly and thoroughly. If you rush/panic your knee-jerk solutions may make things worse. Depending on a) the agent of ‘stickage’ (mud, ice, snow, sand, lava, migrating banana slugs, etc...), b) the number and depth of tires stuck and c) the resources available, consider the following options to free a bogged down van (Note: these are not necessarily in order and some of my suggestions apply only to front engine, rear-wheel drive vehicles.)

- DIG OUT. Clear any material that has built up in ‘front’ of the tires (‘front’ meaning the direction you want them to travel).
- ADD WEIGHT to the rear end of the vehicle (= better traction for the powered wheels). Packing the back of the vehicle with people is ideal. This is beneficial no matter which direction (frontwards or backwards) you are trying to move.
- ADD TRACTION TO THE GROUND SURFACE. Place boards, rugs, floor boards, clothes, branches (anything flat that will add traction without puncturing the tires) on the ground, on the side of the tire (front or back) that is in the direction you are attempting to move the vehicle.
- STRAIGHTEN THE WHEELS, and keep them straight.
- DOWNSHIFT from ‘D’ to a lower gear.
- Have people help PUSH the vehicle as you’re attempting to move it. (An important caveat: do not try this if the vehicle is on a slope, with humans positioned on the downhill side: very dangerous!)
- JACK UP. If the vehicle is up to its axle(s) in stickage, try using the jack to raise the van back up to ground level, filling in the former hole(s) with whatever you can find before you remove the jack. This gets you back to a situation where you have at least a fighting chance.
- ROCK the van from front to back. Here's how it works: Put the van into reverse and raise the engine speed with the brakes on, then roll backwards a bit, then quickly slip the transmission into low (forward) gear. Repeat the process. If the tires don't sink deeper, you may be able to work your way out (especially if you have already completed the above steps.)
- GET PULLED OUT, using a tow strap attached to a second vehicle. Line up the vehicles as well as possible, and make sure the rescue vehicle is on firm ground. Vans may be towed backwards or forwards (in neutral gear and with a driver in place only!). Please follow these steps:
 - Read the instructions for towing in the owner’s manual (hopefully in the glove box).

- Attach the tow strap securely to a tow hook (strong steel loop) at the front or rear of the van. Attach the other end to the rescue vehicle. DO NOT attach the tow strap to the bumper or axle.
- Clear the area for safety (in case the strap breaks) before you begin towing.
- With both vehicles manned, creep the rescue vehicle forward until the tow strap is tight. Do not try to get a running start! Once the strap is tight, you can begin to pull the other vehicle. Remember to keep all movement nice and slow. The driver of the stuck vehicle must be ever ready to apply the brakes.
- LET AIR OUT OF THE TIRES - to no lower than 10 pounds per tire (otherwise the tires may slip off the rims, which is bad). This should be considered as an almost last ditch effort, as it will gravely compromise the strength of your tires on the road until you reach a service station where you can reinflate them. If you have access to a compressor, and thus the ability to re-inflate your tires on the spot, you might want to consider this option sooner than later.
- CALL FOR HELP. If all else fails, you may have to call in professionals, such as AAA.

Once you are unstuck and begin moving, KEEP MOVING, keeping those tires straight as you go.