



W. M. KECK OBSERVATORY

DRIVING ON MAUNAKEA

Rev: 8/11/17 gm

1. General

Driving at speeds safe for the road conditions and the use of safety belts are the best means of avoiding the possibility of an accident and serious injury. All occupants must wear the safety belts.

Driving guidelines are provided for the safe transportation of employees and visitors to and from the summit of Maunakea. All drivers must comply with Hawaii State and County road laws and regulations, in particular to seat belt use and obeying the speed limits. Also, please check all rental car agreements because some rental agencies prohibit use of rental vehicles on the summit access road.

Drivers should exercise caution: there are many one-lane bridges, blind curves, and very steep grades on the way to and from the summit. Military personnel, hunters, dogs, wild pigs and range animals may suddenly appear. Oncoming drivers may cross the center line. Some road sections are gravel, and are in poor condition with no shoulders or guard rails. Visibility may be limited due to fog, heavy rain and bad weather such as ice, snow and severe wind storms.

2. Vehicle Check

Before starting the engine, the driver must visually check the tires, fuel, engine oil, brake fluid, and coolant levels. This practice may prevent drivers from being stranded in a remote area. Vehicles carrying loads should check for the presence of Non-native insects, spiders and seeds and pressure wash the vehicle, if applicable. For any vehicles carrying loads meeting the Office of Maunakea Management (OMKM) requirements requiring the review of a biologist, the driver must maintain a copy of the permit issued by the biologist in the vehicle. Please read the attached OMKM compliance document.

3. Driving Instructions

- a. The speed limit varies on the Saddle {200} and Maunakea Access Roads. When reaching the 17% grade below base camp*, use first (1st) gear on the gear selector. It is required to acclimate at base camp* for a minimum of a half hour (1 to 1 ½ hours for first timers recommended) before attempting to travel higher. See High Altitude Health Hazards for more information or refer to other information provided by WMKO staff.

- b. **On the ascent** on the gravel Summit Access Road, 4WD vehicles should be driven in 4H. Drivers must not exceed the Maunakea Observatory Support Services (MKSS) speed limit of 25 mph. On the sharp "switch back" turns, vehicle speed should be considerably less than posted.

The extended stopping distance on gravel, lack of guard rails, and the narrow road can result in the vehicle leaving the road way. It is recommended that windows be kept closed on the cinder road and the air on re-circulation mode. The cinder dust is hard on both lungs and vehicle interiors.

Grading of the gravel road happens several times a month. Going slow during these events allows time to react/act to the varieties of rocks and grader berms. When crossing a berm left by the grader, slow down and cross at an angle.

- c. **On the descent** on the gravel Summit Access Road, 4WD vehicles should be driven in 4H and either 1st or 2nd gear as speed dictates. Use lower gears for engine braking to avoid overheating the brakes. On the sharp "switch back" turns, vehicle speed should be considerably less than 25 mph. Stop at base camp* to check if the vehicle wheel hubs are hot to the touch; some adjustment must be made to driving, i.e. slow down and down shift. See Section 5 for more information on braking and shifting.
- d. **On the descent** on the Maunakea Access Road below the base camp* use the lowest gear position to the bottom of the 17% grade. **See Section 5 for more important information on braking and shifting.**

4. **Snow and Ice Conditions**

MKSS will close the road at base camp* when snow or ice are present on the pavement. The recommendations posted should be followed.

When the road opens to the public the driver should install snow chains before traveling. If the vehicle is not equipped with snow chains, do not attempt to travel during these conditions.

When driving in snow and/or ice conditions, the 4WD vehicle should be in 4L and 1st gear and the hubs locked. A speed of 5 mph, or less, should be maintained until dry pavement is reached.

5. **Braking and Shifting**

The proper way to brake on a downgrade is to intermittently apply, or "snub" the brakes in a way that will reduce the speed of the vehicle by about 5 mph during each application. Continuous application of the brakes or "riding the brakes" will result in overheating, damage to the brake components and possible brake failure.

If there is a need to use the brakes frequently, the transmission should be downshifted to the next lower gear selection. It is a good practice to use first or second gear on the hills and winding sections to help maintain proper vehicle control.

Use caution when downshifting; if the road surface is loose or slippery the deceleration force may cause the tires to slide, and a loss of control may occur. Do not ride the brakes, race the engine or coast while driving down a grade.

Overheating the breaks at high altitude is very common. At higher altitudes the brakes do not cool as efficiently as at sea level, so even one incident can destroy the linings and create a very unsafe situation.

6. Cell Phones

MKSS requests that cell phone not be used on the Summit Access Road unless there is an emergency. Use "911" for emergencies.

7. Additional Concerns

Because new regulations may be required from time to time, please check in with your WMKO contact on your day of arrival. You may be required to meet your WMKO contact at Hale Pohaku to obtain an OMKM RFID card or need other information on conditions at the summit.

* Base camp is referenced in this document as the acclimation point on the Maunakea Access Road at 9,200ft (2,804m) and 6.2 miles (10k) from Saddle Road. The Visitor Information Station may be open to the public for acclimation, road and weather conditions for the summit. The dorms at Hale Pohaku are reserved for the observatory staff and closed to the public, unless agreement with WMKO and your contract to use the facility.