

* WINTER DRIVING ON MT. GRAHAM



Presented by:
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Mt. Graham from Base Camp

Elevation change from 3,340 ft to +10,420 ft (Utility Building): a gain of ~7,080 ft
Traveling through five different life zones.



* Get ready for some twists and turns!

* How does driving on Mt. Lemmon compare to Mt. Graham

- Mt. Lemmon is equipped with guard rails. *Mt. Graham has none.*
- Mt. Lemmon is a heavily traveled road. *Mt. Graham is very lightly traveled in comparison.*
- The Mt. Lemmon Highway is wide, easily driven. *Mt. Graham's road is much narrower and curvy with many hairpin turns (>20).*
- Mt. Lemmon is frequently patrolled by the Pima County Sheriff Dept. *Mt. Graham currently has one UAPD officer.*
- Mt. Lemmon is paved all the way to the summit. *Mt. Graham has almost 8 miles of dirt road and nearly 2 miles of that are a one-way access road.*

* Why is this comparison important?

* Because it illustrates the following:

- Mt Graham is a remote site. 1 hour 15 minutes from base camp.
- The closest 'neighbor' to the summit is the USFS Columbine Work Center (frequently empty and closed)
- The terrain on Mt Graham is steep and very rugged.
- Cell phone coverage is sparse and intermittent.
- Help may be hours away in winter conditions



* Wet Canyon 12-31-10
Elev ~6,200 ft

*Today's Talking Points

- The MGIO Orientation Packet
- Type of Vehicle
- Driving Rules
- High Altitude
- Black Ice
- Survival Gear
- MGIO Duty System
- Driving with the Plows
- What to do in case of an Accident



*The MGIO Orientation Packet

*Is It Important and Who Needs It?

Everyone who is working or visiting Mt. Graham should familiarize themselves with this information!

- This packet contains:
 - ✓ Very important contact phone numbers
 - ✓ Observatory Check-In Procedures
 - ✓ Security Information from UAPD
 - ✓ Tips from the Custodial Department
 - ✓ Milepost Log from Base Camp to the Summit
 - ✓ Radio Instruction Sheet & Radio Unit Assignment List
 - ✓ Mt. Graham Red Squirrel Briefing

* MGIO Orientation Packet

- * The MGIO Safe Driving Policy & Safety Bulletins
 - Included in this information
 - ✓ Winter Mountain Driving
 - ✓ Snow Plowing Procedures
 - ✓ Ice and Snow Fall from Building Roofs
 - ✓ Emergency Transport Vehicle
 - ✓ Emergency Response Contingency Plan

The MGIO Orientation Packet can be found
on our website!
mgio.arizona.edu



* What kind of vehicle should I drive up the mountain in the winter?

* Four wheel drive

- Make sure it is equipped with snow chains and survival gear
- Be familiar with your vehicle and how it operates. Do you know how to shift into 4WD? What are the limits of the vehicle?
- High profile
- Rental vehicles: the operator is responsible to make sure it is equipped with all of the winter survival gear that is required



* Rules For Driving In The Snow

- Chain up properly.
- Drive in the center of the road as much as possible. A plowed road may look wider than normal, but beware: the shoulders will be soft snow that will not support the weight of the vehicle
- Traveling after dark is highly discouraged. If it is necessary, please use the buddy system
- Make sure your two-way radios are working and stay in contact with someone
- Take your survival gear
- Slow down!



* Effects of High Altitude or Why am I so Light Headed Up Here?

- High altitude is defined as starting at 8,000 feet, where there are about 25 percent fewer oxygen molecules available per breath.
- Both heart rate and respiratory rate increase as altitude increases.
- Dehydration: Low humidity, dry air and increased respiratory rate are all factors that contribute. Lower air pressure also accelerates skin dryness.
- Fluid Shifts: The body decreases the amount of blood flowing to digestive organs and increases blood to the brain, heart and lungs. As a result of more blood being pumped through the arteries to the brain, headaches are common.

* What Can I do about these High Altitude Effects?

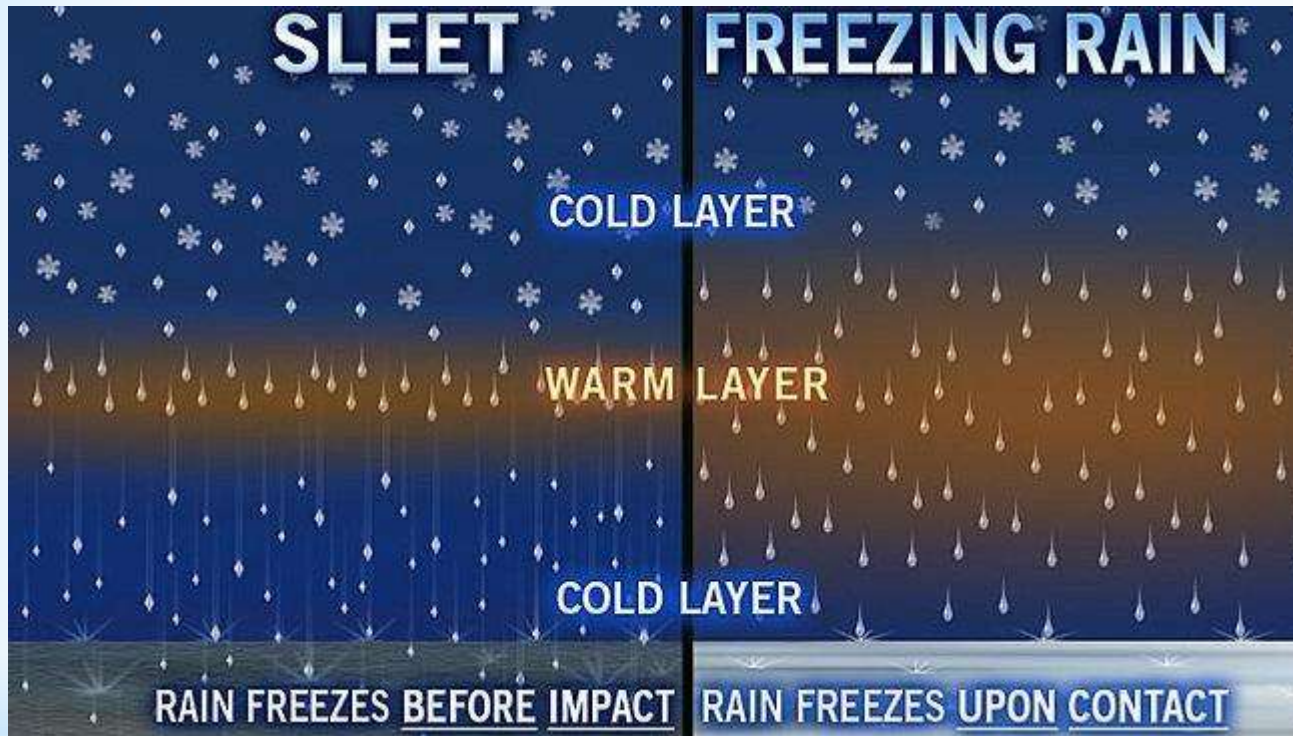
- Take it easy and don't over exert yourself.
- Stay hydrated! Very important!
- Avoid , alcohol and barbiturates, such as sleeping pills.
- Eat a high carb diet.
- Do what you can to prevent getting dizzy....





* Black Ice... what is it and how do I deal with it?

* How is black ice formed?



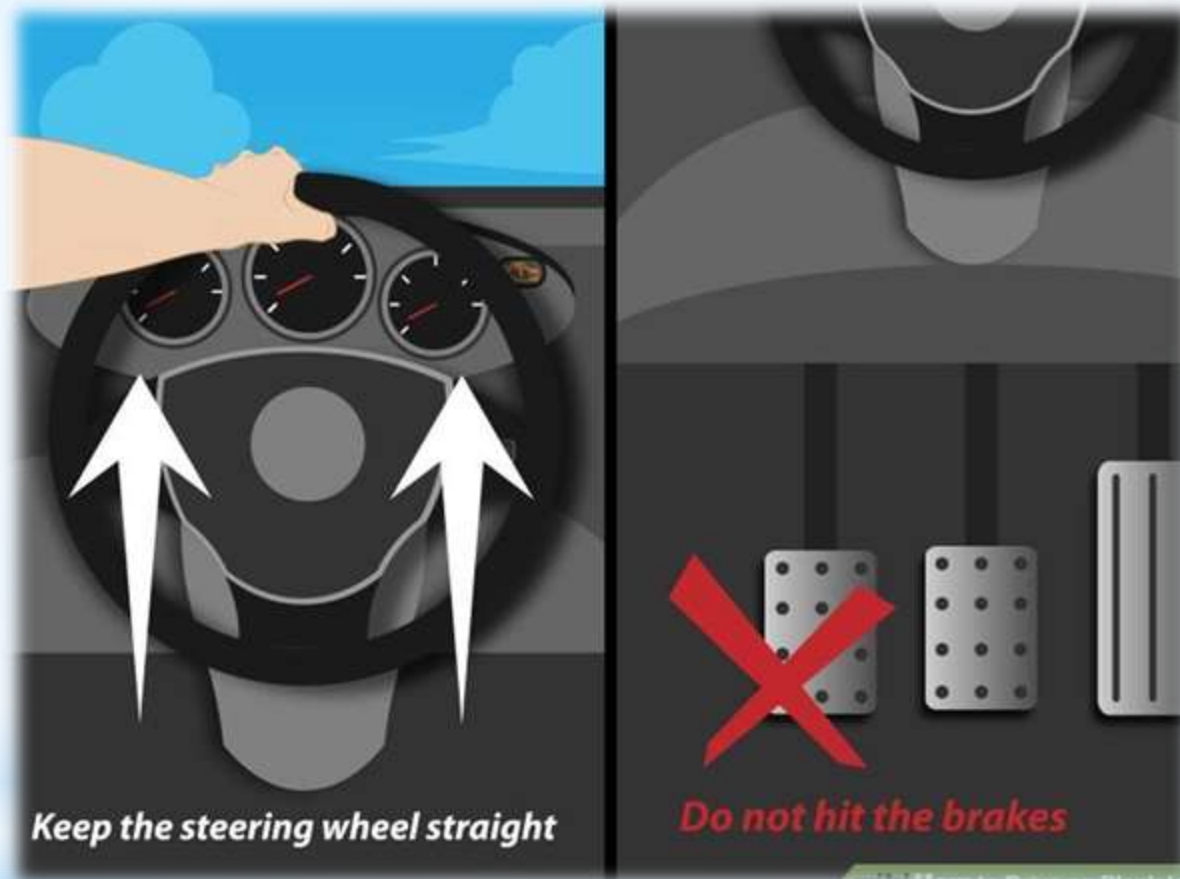
* This type of ice gets its name from its ability to blend in with the surroundings

*Tips for driving on black ice.

- 1. Know what to look for: smooth, glossy sheets
- 2. Stay informed. Get the latest road/weather information before heading out
- 3. Prepare your vehicle
- 4. Drive slow!
- 5. Drive with confidence
- 6. Black ice forms early morning and evening. Bridges, overpasses, patches of road with little or no sunshine, tree lined stretches; all of Swift Trail!



If You Have To Slow Down



- * Slow down by de-accelerating. Do not touch the brakes. If you can, shift into a lower gear.



* Below Ladybug Saddle
12-31-10
Elev ~8,400 ft

* What Should Each Vehicle Carry?

Survival Gear that every vehicle should have:

- List of all emergency telephone and radio contact numbers
- Fire extinguisher
- Pocket lighter or butane mini-torch
- Small shovel
- First Aid Kit
- Emergency Blanket per passenger
- Snow Chains
- Ice Scraper
- Bag of sand
- Tool kit: pliers, duct and electrical tape, screwdrivers, plastic warning sign, jumper cables, 20ft tow strap



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First Aid kit

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Ice scraper

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Emergency blanket per passenger

Tool kit: pliers, screwdrivers, duct and electrical tape, plastic warning sign, jumper cables, 20 ft tow strap



* What Should I Bring?

* Personal items to have with you:

- Appropriate clothing!
 - Winter gloves (handy for putting on snow chains too)
 - Heavy coat
 - Hat
 - Boots
 - Extra supply of water and food
 - NO flops, shorts or sleeveless shirts!

* The MGIO Duty System

- MGIO has someone on call 24/7
- Contact number is (928) 965-3100
- Their primary duties on site are:
 - ✓ Utility problems
 - ✓ Maintenance issues
 - ✓ Snow removal
- This person can assist anyone who is trouble within certain guidelines:
 - ✓ MGIO is not a towing service but can certainly assist with getting people out of trouble
 - ✓ The duty man is not an EMT

We Are Here to Help You!



* Who's going to help us?

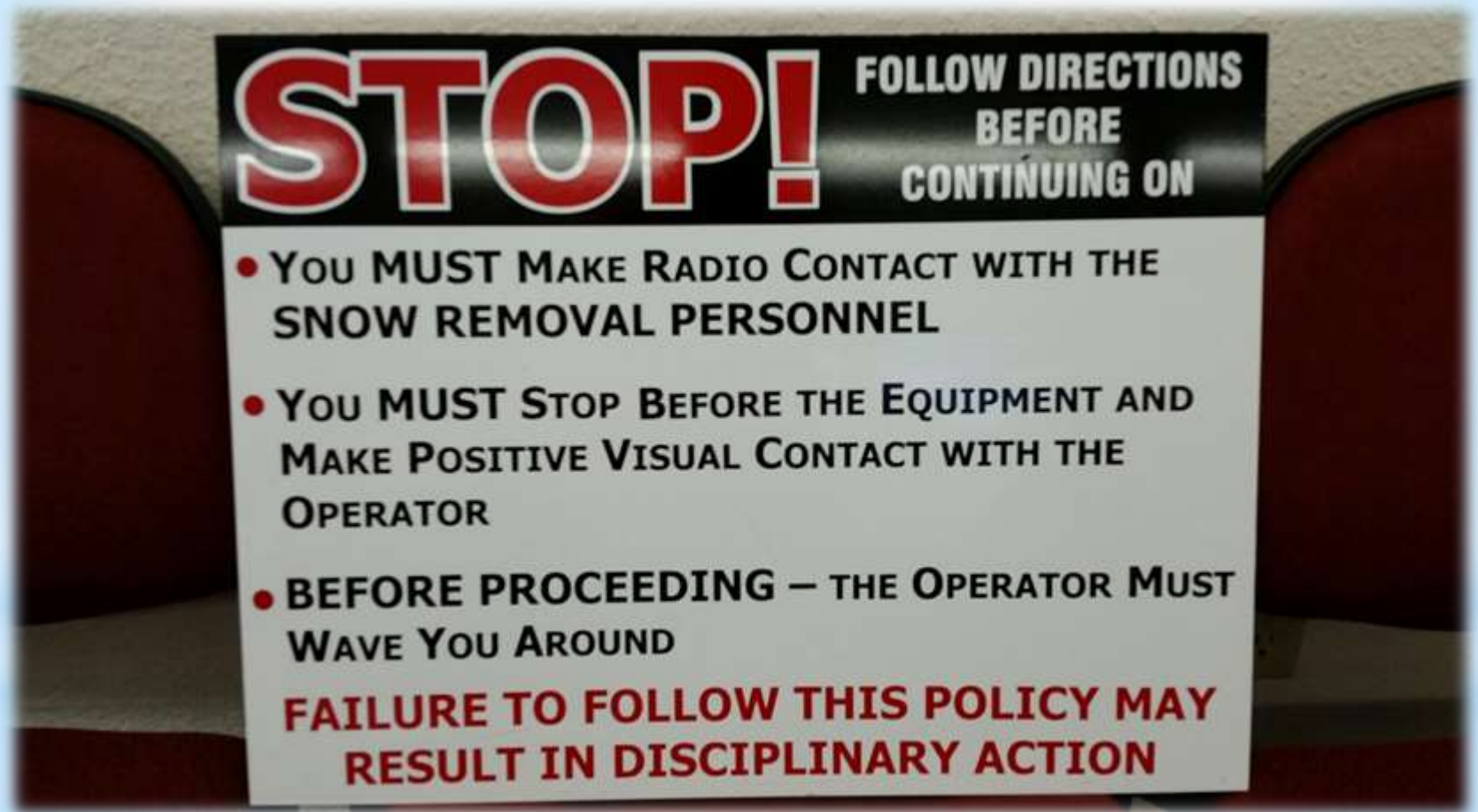
* Driving With The Plows



* Procedures for approaching the plows and graders

- **ADOT will generally plow the paved portion of Swift Trail (~20 miles). If you encounter a closed gate, call Base Camp (radio unit 30) and we will alert them to your presence. Getting through may take up to 30 minutes. Please be patient!**
- **MGIO will plow the unpaved portion of Swift Trail (~8 miles).**
 - When you arrive at the locked gate at the end of the pavement, radio your presence to all MGIO snow removal personnel.
 - When you come upon a plow or grader - STOP - give them a wide berth (>100 feet) do not proceed until you have made positive contact with the operator. The operator will then permit you to proceed when he has stopped his machine and it is safe to pass.

* Important Sign During Snow Season



* Mt. Graham Snow Removal Equipment

* MGIO uses various pieces of heavy equipment to remove snow

- *Front end loaders*
- *Backhoes*
- *Road graders*
- *Snow plows*





* Front end loader with auger type snow blower attached



* Fan Type Snow Blower

* V-Plow



Width 10 ft 6 in





* Road grader with snow wing and a loader with a push blade attached



* Bottom of the Access Road
12-31-10
Elev ~ 9,600 ft

* What Happens if I'm in an Accident?

- If there are injuries, call 911
- Make contact with the proper authority: if the accident is on the summit or the access road, UAPD. If it's on Swift Trail, (Highway 366) then contact DPS (520)746-4600
- Graham County Sheriff 24 hr dispatch (928) 428-0808
- Risk Management and Safety, Fleet Safety Policy, Number RM-002, sec 3.5 states: *All accidents involving a university vehicle, or associated with a university activity (regardless of vehicle ownership) must be reported to RM&S and to the driver's supervisor or university management official.*
- <http://risk.arizona.edu/sites/risk/files/fleetsafetypolicy.pdf>
- Remember: the driver has obligations to stop, render aid when it's necessary, make notifications, exchange info or leave info. Leaving the scene could be a criminal offense.

* Safe Driving on Mt. Graham

* Some general safety tips:

- Slow down. Speed will get you in trouble
- Make sure your fuel tank is full
- Tires are properly inflated
- Windshield wipers are in good condition and check wiper fluid
- Use lower gears: don't ride the brakes when coming down



* Seriously, how bad can it get really?





* Turn 5 on the Access Road
12-31-10
Elev ~ 10,000 ft

*The 'Got-To-Do' Check List

- Check your personal survival pack for warm clothes, hat, boots, gloves, extra food and water
- Check your winter vehicle list
- Snow chains. Are they the right size and do I know how to put them on (in the snow)?
- Check your vehicle. Tire pressure, windshield washer fluid, oil and antifreeze levels
- Check your two-way radios
- Check the latest weather forecast information
- Are you familiar with the information in the MGIO Orientation Packet?



*** Most of all....drive
carefully!**





Thank you!