

U.S. Department of Agriculture NRCS		1. WORK PROJECT/ACTIVITY Backcountry Travel	2. LOCATION Westwide	3. Unit Snow Survey
JOB HAZARD ANALYSIS (JHA)		4. NAME OF ANALYST Tony Tolsdorf	5. JOB TITLE Hydrologist	6. DATE PREPARED 6/14/07
7. TASKS/PROCEDURES		8. HAZARDS	9. ABATEMENT ACTIONS Engineering Controls * Substitution * Administrative Controls * PPE	
VEHICLE TRAVEL	Extended Travel	Fatigue Vehicle/Object Collision	<ul style="list-style-type: none"> ● Only 10 hours/day may be spent driving, with breaks every 2 hours. ● Remain alert. Use the air conditioning or stereo or open the windows, if needed. ● Maintain good eating and sleeping habits and drink plenty of water. Don't overexert before driving. ● If fatigued, do not continue to drive. Pull over and take a nap, or seek overnight lodging when possible. 	
	Vehicle Operation (Highway Driving)	Mechanical Failure Flat Tires Vehicle Fire Exhaust Leaks Vehicle Collision Internal Projectiles Run-Away Vehicle Carbon Monoxide Gas	<ul style="list-style-type: none"> ● Adhere to the vehicle's schedule of preventative maintenance. ● Use only vehicles appropriate to work needs and the driving conditions expected. ● Check for tire cuts, fluid leaks, flat tires, body damage, windshield cracks, and other damage daily. ● Check lights, wipers, fluid levels, and seat belts daily. ● Ensure the vehicle has a complete and current first aid kit and fire extinguisher. ● Ensure the vehicle is equipped with warning signs and/or flares and that the warning flashers operate. ● Ensure the vehicle is equipped with a working mobile radio or carry a handheld radio. ● Place heavy objects behind a secure safety cage if they must be carried in a passenger compartment. ● Carry and use chock blocks, use parking brake, and don't leave vehicle unattended while it is running. ● Check and maintain the vehicle's exhaust system. ● Carry more fuel than is needed to get to and from destinations. ● Inform someone of your destination and estimated time of return. Call in if plans change. ● Carry extra food, water, and clothing. ● Drive defensively. Completion of a defensive driving course if required to operate a government vehicle. 	

<p>Travel on Forest Roads (Off-Highway Driving)</p>	<p>Large Vehicles Narrow, Rough Roads Animal/Object Collision Running/Skidding Off Road Icy/Muddy Roads Flying Debris (Rocks, Etc) Poor Visibility Backing Run-Away Vehicle Roadway Obstacles Carbon Monoxide Gas</p>	<ul style="list-style-type: none"> • Drive with care in tall brush and grass. Watch for wildlife, fallen trees, rocks, and other obstacles. • Stay on the main roadway. Pull over on firm ground and avoid soft shoulders, if a stop is necessary. • Slow down, especially on corners. Maintain a safe speed at all times. • Follow from a safe distance. • Know when and how to use 4WD. Specific training is required to operate a 4WD government vehicle. • Use only vehicles appropriate to the road conditions. Learn these conditions before you go. • Pull over to allow larger vehicles (ie: trucks and trailers) to pass from either direction. • Don't travel the road at all if there is high potential for resource or vehicle damage. • Try to park so that backing up will not be necessary. Use a spotter or get out to check behind vehicle. • When removing debris from the roadway, use care, lift properly, and use proper equipment and PPE. • When descending a long grade, use lower gears to control speed rather than brakes. • Keep vehicle well ventilated by opening a window at least 6 inches, when idling or heating for a period. • Keep all windows clear of snow, ice, mud, and anything else obstructing the driver's view. • Keep vehicle windows clean, inside and out, and washer fluid full. Replace damaged or worn wipers. • See Chapter 8 (Travel- Surface) of Snow Survey School manual.
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C O M M U N I C A T I O N	Communications *Radio *Cell Phone *Satalite Phone	Dead Spots Radio Failure Absent Monitoring	<ul style="list-style-type: none"> ● Ensure the radio is working properly and that batteries are charged before going into the field. ● Always carry a backup clamshell battery. ● Be fully trained in radio use to avoid operator errors. ● Know who to contact and how in the event FS is not monitoring (nights, weekends, and off-season). ● Learn the locations of geographic dead spots and find alternative transmission locations. ● Learn the effects of weather on radio transmissions. ● Learn the locations of all repeater stations. ● Check in with a designated office daily. Include present location and travel plans in the transmission. ● Be aware of changing cell phone coverage. ● Satalite phones can be unreliable.
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F O O T T R A V E L		Falls, Foot Injuries, and Stress and Impact Injuries	<ul style="list-style-type: none"> ● Identify and use safe travel routes. Do not exceed physical abilities or equipment design. ● Use pack equipment properly. Carry weight on hips, not back. ● Warm up and stretch the appropriate muscle groups before and after hitting the trail. ● Test and use secure footing. Move cautiously and deliberately. Never run. ● In heavy undergrowth, particularly off-trail, slow down and watch carefully. ● Carry tools on the downhill side. ● Wear boots with good, non-skid soles that are tall enough to support ankles. ● Know basic first aid. Completion of a basic first aid course is required. ● Use footwear appropriate to the terrain and load being carried. ● Know how to fall. Roll, protect the head and neck, and do not extend arms to break the fall. ● Keep oversnow equipment well maintained. ● See Chapter 8 (Travel-Surface) of the Snow Survey School manual.
		Disorientation	<ul style="list-style-type: none"> ● Carry and know how to use maps and orienteering equipment. Take an orienteering course. ● Compass ● GPS ● Monitor travel on a map, and note landmarks along the way. ● Carry a basic survival kit and enough equipment to survive. Take a survival course. ● If lost, maintain position, radio for assistance, and make camp. Don't panic, just wait patiently. ● Always have completed a trip plan and have emergency operations planned out for search and rescue. (See Chapter 6 Preparedness in Snow Survey School Handbook)

	Falling Trees	<ul style="list-style-type: none"> • Learn to identify hazard trees. • Wear a hardhat if traveling through particularly hazardous areas (bugkill, burned out areas, etc). • Do not camp or take breaks within 1.5 tree lengths of a hazard tree. Be watchful in windy conditions.
	River Crossings	<ul style="list-style-type: none"> • Do not attempt to cross deep, fast water, particularly during spring snowmelt or a flood. • Use a long stick or trekking pole to probe for deep spots and aid in balance. • Cross at a 45-degree angle traveling upstream. • Do not cross barefoot. Wear river sandals, tennis shoes, or boots. Use care placing feet.
	Fatigue	<ul style="list-style-type: none"> • Take breaks, as needed, and get plenty of sleep at night. Avoid over exertion. Stick to the schedule. • Eat and drink well, particularly at high altitude. • Regulate body temperature. Avoid high heat and extreme cold. • Use extra care at the end of the day, when fatigue is most likely and trail accidents are most common.
	Flash Floods	<ul style="list-style-type: none"> • Don't enter narrow canyons when weather threatens. Remember that floods can travel long distances. • Don't attempt to cross a flooded area, particularly if the water is moving. • Don't park or camp in or adjacent to areas prone to flooding, such as washes, streams, or depressions.

A T V & C o v e r S n o w M a c h i n e s	Backcountry Trails or Cross Country	Breakdown Accident Run out of fuel Many of the same backcountry hazards as foot travel.	<ul style="list-style-type: none"> • Be prepared for overnight stay. • Be prepared to walk out. • When snowmobiling be sure to have a secondary form of snow transportation such as skis or snow shoes. • Carry some basic spare parts. (See ATV and Snowmobile JHAs.) • Pack extra food and water. • Carry communication devices. (2 way radios, cell phones, satalite phones, etc.) • First aid kit. • Carry more furel thatn will be needed. • ATV and Snowmobile training • Wear helmet and other protective clothing and gear. • Keep machines well maintained. • See Chapter 8 (Travel-Suface) of Snow Survey School manual.
A i r T r a v e l		Crash Fire Breakdown	<ul style="list-style-type: none"> • Carry complete survival pack • Wear nomex flight suit and and other flight gear. • Helmet • Be trained in flight safety procedures for fixed wing and helicopters • Complete flight plan. • Use only certified pilots. • See Chapter 9 (Travel – Air) Snow Survey School manual
10. LINE OFFICER SIGNATURE		11. TITLE	12. DATE

JHA INSTRUCTIONS

The JHA shall identify the location of the work project or activity, the name of employee(s) involved in the process, the date(s) of acknowledgment, and the name of the appropriate line officer approving the JHA. The line officer acknowledges that employees have read and understand the contents, have received the required training, and are qualified to perform the work project or activity.

Blocks 1, 2, 3, 4, 5, and 6: Self-explanatory.

Block 7: Identify all tasks and procedures associated with the work project or activity that have potential to cause injury or illness to personnel and damage to property or material. Include emergency evacuation procedures (EEP).

Block 8: Identify all known or suspect hazards associated with each respective task/procedure listed in Block 7. For example:

- a) Research past accidents/incidents.
- b) Research the Health and Safety Code or other literature.
- c) Discuss the work project/activity with participants.
- d) Observe the work project/activity.
- e) A combination of the above.

Block 9: Identify appropriate actions to reduce or eliminate the hazards identified in Block 8. Abatement measures listed below are in the order of preference:

- a) Engineering Controls (the most desirable method of abatement). For example, ergonomically designed tools, equipment, and furniture.
- b) Substitution. For example, switching to high flash point, non-toxic solvents.
- c) Administrative Controls. For example, limiting exposure by reducing the work schedule; establishing appropriate procedures and practices.
- d) PPE (least desirable method of abatement). For example, using hearing protection when working with or close to portable machines (chain saws, rock drills, and portable water pumps).
- e) A combination of the above.

Block 10: The JHA must be reviewed and approved by a line officer. Attach a copy of the JHA as justification for purchase orders when procuring PPE.

Blocks 11 and 12: Self-explanatory.

EMERGENCY EVACUATION INSTRUCTIONS

Work supervisors and crew members are responsible for developing and discussing field emergency evacuation procedures (EEP) and alternatives in the event a person(s) becomes seriously ill or injured at the worksite.

Be prepared to provide the following information:

- a) Nature of the accident or injury (avoid using victim's name).
- b) Type of assistance needed, if any (ground, air, or water evacuation).
- c) Location of accident or injury, best access route into the worksite (road name/number), identifiable ground/air landmarks.
- d) Radio frequencies.
- e) Contact person.
- f) Local hazards to ground vehicles or aviation.
- g) Weather conditions (wind speed & direction, visibility, temperature).
- h) Topography.
- i) Number of individuals to be transported.
- j) Estimated weight of individuals for air/water evacuation.

The items listed above serve only as guidelines for the development of emergency evacuation procedures.

JHA and Emergency Evacuation Procedures Acknowledgment:

We, the undersigned employees, acknowledge participation in the development of this JHA (as applicable) and accompanying emergency evacuation procedures. We have thoroughly discussed and understand the provisions of these documents:

SIGNATURE

DATE