

**SNOW SURVEY SAFETY COMMITTEE
RECOMMENDATIONS TO SNOWPAC
JUNE 2007**

BACKGROUND

The Snow Survey and Water Supply Forecasting Program of the NRCS has enjoyed a good safety record for many years. This safety record is due in part to programmatic safety training and highly skilled employees. The wide range of activities required by the nature of our field operations can present a wide variety of hazards. These workplace hazards can be complicated by environmental conditions such as weather, elevation, exposure, remote location and employee fitness. New employees may not possess the complete array of skills often needed for the range of snow survey field activities. Long term employees need to refresh their skills in order to maintain proficiency. All employees need to build their safety skills and awareness in order to continue to enjoy a safe work environment.

The NRCS Safety and Health Management Program (GM.360.420.A - Subpart A) establishes the context "to ensure that employees are provided facilities, equipment, and work procedures free from recognized safety and health hazards". NRCS policy further recognizes the need for "periodic evaluation of facilities, equipment, vehicles, and work procedures to identify potential safety and health hazards" (GM.360.420.1).

The need for a review and update of the Snow Survey safety program has long been recognized. At the program-wide meeting in Las Vegas (2003) a committee was formed to:

"...examine all program safety issues and make recommendations to ensure that we have uniform procedures, training, equipment, and readiness in all aspects of the program. This includes, but is not limited to trip planning, snowmobile, ATV, tower climbing, wilderness first aid, and other issues."

"The team will develop a written assessment of our current policies and procedures and identify areas that may need additional clarification. For topics the group identifies, prepare recommended changes in procedure, policy, or program management for consideration by the PMT."

There has been no report from the 2003 committee but the issues with safety remain.

At the 2006 SNOWPAC meeting, a new committee was formed to: 1) conduct a comprehensive review of all program safety hazards 2) review current training, 3) review and research methods of accident prevention and mitigation and 4) issue recommendations for a Snow Survey Safety Program that would provide for the health and safety of program employees.

The new committee was formed to include: Sheila Strachan, Tony Tolsdorf, Randy Julander and Scott Oviatt volunteer as co-chairs. Jeff Anderson (ID), Rick McClure (AK), Joe Messina (CO) and Marianne Hallet (CA) complete the group.

ACCOMPLISHMENTS

The committee met via multiple teleconferences and laid out a plan to address their assignment. The committee:

- ⊕ Conducted a safety analysis of snow survey field work.
- ⊕ Developed a list of hazards commonly encountered in the field (hazards may vary from state to state). See Table 1 below.
- ⊕ Developed recommendations on how to specifically address safety hazards through training, review, or hazard reduction. See Table 1 below.
- ⊕ Researched how other Federal agencies involved in similar field activities have addressed these specific workplace safety hazards. References:
 - 1) Alaska NRCS Safety Handbook
<ftp://ftp-fc.sc.egov.usda.gov/AK/Forms/SafetyManual.pdf>
 - 2) Interagency Aviation Training <https://www.iat.gov/index.htm>
 - 3) Occupational Safety and Health Administration <http://www.osha.gov/>
- ⊕ Considered the most effective means of safety training and listed options by subject.
- ⊕ Adopted the OSHA technique known as “Job Hazard Analysis”. The Job Hazard Analysis (JHA) is a method to identify safety hazards before they occur. The Job Hazard Analysis then outlines a way to eliminate or reduce risk levels associated with specific tasks. JHAs for each hazard were found or developed and posted to the new Snow Survey safety website to enable sharing.
- ⊕ Developed a Safety website to share safety recommendations and Job Hazard Analyses. <http://www.id.nrcs.usda.gov/snow/safety/>
- ⊕ Gave an overview presentation of the safety committee process at the Field Technicians workshop in Portland the week of April 23rd.
- ⊕ Developed this report with recommendations to SNOWPAC.

A list of specific recommendations and action items follows:

TABLE 1. REVIEW OF SAFETY HAZARDS

ANIMAL SAFETY

| TOPIC | RECOMMENDATIONS | ACTION ITEMS |
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| Bites and Stings | Review bites and sting treatments in Wilderness First Aid (WFA) course and with tailgate sessions. | Organize Wilderness First Aid course and refreshers. |
| Bear Safety | AK NRCS employees follow NRCS Alaska Safety Handbook. Lower 48 employees view Bear Safety video. | Purchase “Staying Safe in Bear Country” DVD. |
| Hanta Virus | Review hanta virus prevention with tailgate safety sessions. | Distribute and discuss CDC Hanta virus references. |
| Mountain Lion | Review mountain lion safety with tailgate safety sessions. | Distribute and discuss Mountain Lion Foundation safety references. |

AVIATION SAFETY

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| General Aviation | Utilize Interagency Aviation Training resources. Recommend that all personnel who regularly travel in small aircraft have Air Crew Member training. All DCOs would have at least one employee trained as an Aviation Manager. All | Schedule classroom and online courses for all employees who fly in aircraft. https://www.iat.gov/ |
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| | <p>sling load operations would have at least one person trained as an Aviation Manager.</p> <p>OAS offers training at progressive experience levels: Passenger Air Crew Member Aviation Technical Specialist Aviation Manager.</p> <p>Generally the initial course is a classroom setting and the refreshers are online.</p> <p>Need to develop a policy for NRCS volunteers and aircraft.</p> | <p>There is no cost for these courses.</p> |
| Helicopter Slingloading | <p>Recommend all individuals working with helicopter sling loads should undergo the 3 day Interagency helicopter operations training. This training is normally hosted by other federal agencies (USFS, NPS).</p> | <p>Get schedules for 3 day training hosted by federal agencies. Enroll employees. (There is normally no tuition for this course.)</p> |

EQUIPMENT OPERATION

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| Backhoe Operation | <p>Recommend any office that uses a backhoe "certify" an operator. Certification would include viewing the safety video, supervised OJT and supervisor signing off on operator certification. Review safety video at least every other year. In addition to operator safety, individuals working around backhoes should also review the safety videos.</p> | <p>Purchase John Deere backhoe safety videos (at \$50 each) for offices that use backhoes.</p> |
| Chain saw safety Tree Falling and Bucking | <p>Recommend all chain saw operators take federal chain saw certification classes (S-212). The two day class is often offered annually by local BLM or USFS offices. Recommend S-212 refresher every 3 years. Recommend reviewing chain saw safety DVD every year.</p> | <p>Purchase and distribute chain saw safety DVD for all offices.</p> <p>Get schedules for USFS chain saw certification courses. Enroll employees.</p> |
| Firearm Safety | <p>AK NRCS only. Follow NRCS Alaska Safety Handbook.</p> | |
| Fork Lift Operation | <p>Recommend all fork lift operators view the OSHA fork lift safety video and complete the online certification and testing. Recertify every 2 to 3 years.</p> | <p>Purchase and distribute fork lift safety video for all offices using forklifts. Safety videos are available free from some</p> |

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| | | state OSHA offices. Organize certification for fork lift operators. |
| Hand and Power Tools | Review hand and power tool safety with tailgate sessions. | Organize hand and power tool safety sessions. |

MEDICAL / FIRST AID SAFETY

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| Back Safety and Lifting | Review back health and safety at tailgate sessions. Include back safety in Wilderness First Aid trainings. Limit loads by individual stature and strength. | Purchase back safety DVD. Organize a back safety tailgate session. |
| Hazardous Materials recognition and handling | Recommend OSHA hazardous materials safety video, with 1-2 year review. | Review online hazardous material resources. Designate a hazardous materials coordinator for each DCO. |
| Hearing Protection | Recommend following power tool manufacturer's guides for hearing protection. Recommend hearing protection discussion for tailgate safety sessions. | Organize hearing protection tailgate sessions. Purchase protective gear. |
| Wilderness First Aid | Recommend that at a minimum, all snow surveyors be certified in Wilderness First Aid (or equivalent) with 3 year renewal. Recommend that employees seeking advanced first aid training receive agency support. | Organize Wilderness First Aid course and refreshers. |
| CPR | Recommend yearly CPR refreshers. | Organize and schedule annual CPR refreshers. |
| Physical Fitness as related to yearly exam | Recommend a standardized physical examination process across DCOs. Recommend workplace incentives to promote physical fitness. Field staff should maintain a level of physical fitness necessary to complete required job duties with minimal exertion. | Review current physical exam for consistency across states. Develop fitness incentives. |

NAVIGATION SAFETY

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| Avalanche Hazard Awareness | Recommend 2 levels of avalanche certification for all employees traveling in avalanche terrain (travel leader, travel support). Every field going team would have at least one travel leader. Travel leaders would be trained to Level 2 (AIARE) avalanche safety certification. Travel support would receive annual avalanche | Designate travel leaders and enroll them in Level 1 and 2 avalanche courses. Travel leaders would in turn organize annual refreshers for travel support personnel. |
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| | <p>safety refreshers under the guidance of the travel leader. The travel leader would be responsible for conducting the annual avalanche safety review that includes beacon practice and snow safety videos with avalanche team supporters.</p> <p>Consider establishing standard and alternative routes for locations that involve crossing avalanche paths.</p> | <p>Distribute “Riding Safely in Avalanche Country” (each state should have received a copy at the Electronics Technician workshop.</p> <p>Purchase “Take Charge: Leading a Group Rescue” DVD.</p> |
| Back country travel (map and compass) | <p>Recommend employees demonstrate their proficiency with map and compass prior to being allowed to work in the backcountry. Competency in this subject should not be assumed. Recommend NRCS provides time and materials to employees for self study. Many books and online resources available.</p> | <p>Identify map and compass skills for each employee. Develop a work plan for each employee to gain map and compass skills.</p> |

TRANSPORTATION SAFETY

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| ATV operation | <p>Recommend 2-3 day safety and skills training for all employees (1/3 classroom 2/3 field). Suggest NRCS certify in-house ATV trainers (similar to tower climbing). Recertify ATV riders with safety refresher every 2-3 years.</p> | <p>Locate ATV safety trainings in each state. Enroll employees in safety courses. Certify NRCS ATV safety trainers.</p> |
| Boating Safety | <p>AK NRCS only. Follow NRCS Alaska Safety Handbook.</p> | |
| Defensive Driving | <p>Recommend all employees with driving responsibilities complete a 4 hour online defensive driving course with renewal every 2-3 years.</p> | <p>Schedule on-line defensive driving course. Purchase and review “7 minute solutions” video.</p> |
| Snow Cat operation Including Snow Cat loading and unloading from trailer | <p>Recommend snow cat operators take a Snow Cat safety class (NW School of Survival 2-3 day course or equivalent).</p> <p>Recommend that all new drivers of snow cats will have taken a training course and demonstrated skills in: safe driving, field maintenance and repair basics; negotiating side slopes and variable terrain; trailer loading and unloading.</p> <p>Recertify snow cat operators every 2-3 years</p> | <p>Schedule safety course for all snow cat operators.</p> |
| Snow machine operation | <p>Recommend 2-3 day safety and skills training for all employees (1/3 classroom 2/3 field).</p> | <p>Schedule safety course for all snow machine</p> |

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| | Suggest NRCS certify in-house snow machine trainers (similar to tower climbing). Recertify snow machine operators every 2-3 years. | operators. |
| Winter Driving | Recommend "Driving Snow" instructional video with renewal concurrent with defensive driving course. | Select instructional materials and incorporate into winter safety session. |
| Trailer Pulling and Backing | Recommend supervised OJT for all new employees with trailer pulling responsibilities. | Train new employees. |

CLIMBING SAFETY

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| Tower Climbing | All employees should complete the OSHA certified training before performing the tasks involved. The current training and policy is meeting safety needs. | Participate in NRCS sponsored tower climbing course. |
| Tree Climbing | Recommend that an employee who would be required to climb trees on the job, participate in an OSHA approved tree climbing course. | Enroll employees who will be climbing trees in a safety course. |

SNOW SURVIVAL SAFETY

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| Snow Survival | NRCS will continue to provide this training through the West Wide Snow Survey School. Current policy states that retraining will be conducted every 5 years. Evaluate the West Wide Snow School for opportunities for advanced, concurrent sessions. | SnowPAC needs to address funding to support the existing policy. |
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FINAL RECOMMENDATIONS:

The 2007 safety committee has completed its effort to review the current Snow Survey safety practices and submits the above recommendations for implementation and action to the SnowPAC. We encourage SnowPAC to set a new direction for the future of safety in the Snow Survey and Water Supply Forecasting program. In keeping with the NRCS Safety and Health Management Program, the committee finds that additional investments are needed in time, materials and skill building in order to improve safety for NRCS employees and snow survey cooperators.

Many of the safety program recommendations have an inexpensive, one time cost. Many of the trainings offered by other federal agencies have no tuition costs. Some of the recommended safety trainings lend themselves to seasonal intensive courses. For example a spring training could include ATV operation, defensive driving, and forklift operation. These sessions could either be hosted individually by DCO or program wide for all affected employees. Other recommendations could be combined into an indoor safety session where safety materials (many of which are on DVD) are viewed in one or two office days. Other

efficiencies could be gained by using NRCS employees in safety trainer positions (through “train the trainer” courses).

These recommendations complete one aspect of the safety review process. The next step will be to adopt and implement the recommendations. We believe it would be prudent to designate a standing safety committee to implement the above recommendations and to regularly report accomplishments to SnowPAC. The tasks that remain for the standing safety committee include:

- 1) Purchase safety equipment and videos as recommended in Table 1. Organize additional safety trainings as recommended in Table 1.
- 2) Set up a program wide accident reporting and tracking system to share accident prevention information.
- 3) Formally adopt the Job Hazard Analysis process. Continue to add, update and amend JHAs as needed. All personnel should review and sign all JHAs annually. Encourage employees to develop new and update existing JHAs.
- 4) Implement and document weekly tailgate safety meetings during field seasons (as required by OSHA) to review JHAs and other safety resources.
- 5) Regularly evaluate safety program strengths and weaknesses. Update recommendations, training and practices as new information becomes available.
- 6) Update the NRCS General Manual Title 360, Part 420, Subpart K (Field Policy for Snow Survey) to include these recommendations and formalize as policy.
- 7) Continue to develop and share safety materials and safety information program wide.
- 8) Follow OSHA standards for workplace safety when they address snow survey activities. Reference other federal agencies safety standards where applicable.
- 9) Review annual physical requirements to make sure that they are being implemented similarly across states and DCO's and that they are effectively measuring physical fitness.
- 10) Adopt a health incentive program to encourage fitness for all employees taking the annual physical. This could take the form of subsidized fitness club memberships, purchase of aerobic equipment for the workplace or providing some compensatory time during the work day for fitness activities.
- 11) Provide ongoing leadership “to ensure that employees are provided facilities, equipment, and work procedures free from recognized safety and health hazards”.