ALASKA SNOWMOBILE SAFETY OPERATIONS LEVEL 1

STUDENT MANUAL

NORTH AMERICA OUTDOOR INSTITUTE

Special recognition for development of this program goes to:

H2O Guides, Inc.

AIARE

Alaska Division of Parks—SnowTrack

Alaska Dept. of Public Safety

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Note from naoi

Sharing the message

Debra McGhan, NAOI Executive Director

The goal of this course is to prepare you for safe snowmobile travel on terrain ranging from trails to open fields or tundra to mountains and glaciated conditions.

Our mission at NAOI is to save lives from preventable injuries and deaths through interactive education programs.

We appreciate your interest in learning what you can to operate a snowmobile safely .

NAOI is a not-for-profit corporation formed to provide interactive education programs focused on outdoor safety and environmental awareness. Courses like this help sustain our programs and give us the ability to fight in the battle to save lives.

Thank you for your participation.

Inside

"Our Mission is to reduce injuries and save lives through interactive, outdoor safety & environmental awareness education programs."

Safe Riders Pledge

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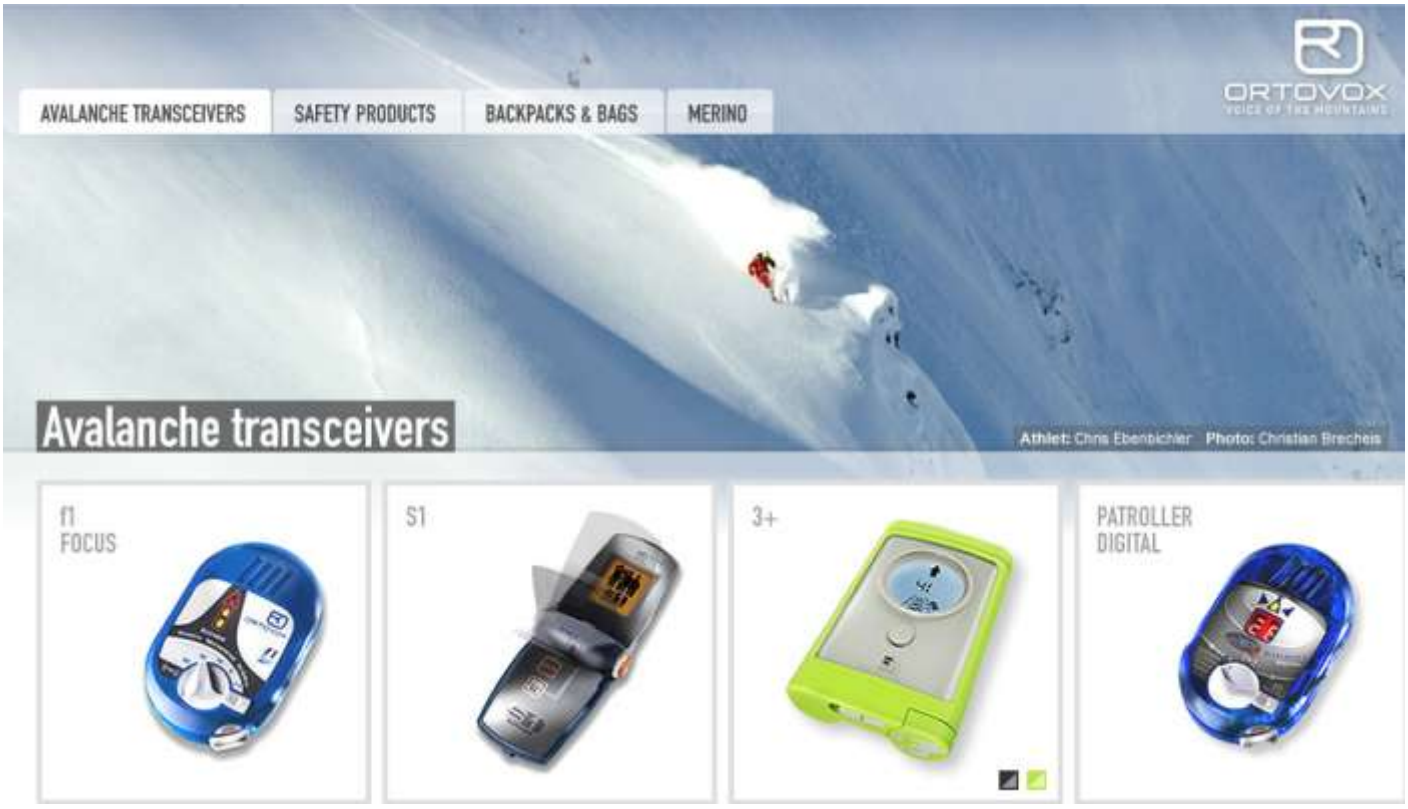

Schedule

Day #1 - 0800 hrs to 1700 hrs

Introductions, Student skill assessment, Program overview

Goals and objectives
What's in the instructor/guides pack
Safety briefing
Team group emphasis, physical conditioning, nutrition and hydration; proper clothing and layering
Equipment overview

Break 10 minutes

Equipment Pre-trip planning; Equipment operation
Weather and Snow Stability Forecasting
Personal stories/experiences

Lunch 1200 – 1300 hrs.

Break 15 minutes

Be Snow Smart - Snow Safety
Companion rescue
Q & A – Hand out safety ca

Day #2 - 0800 hrs to 1700 hrs—Ride based on weather and snow conditions

Safe glacier travel, Terrain management
Z drag, C drag for crevasse rescue
Riding Techniques

Break 10 minutes

Mechanics
Pre-trip planning and preparation

Lunch

Ride to pre-determined location - Return to base by 1700 hrs

Day #3 (0800 – 1700 hrs) - Ride Based on weather and snow conditions

Glacier travel and crevasse rescue
Extended ride for practice and skills training

Day #4 (0800 – 1700 hrs)

AM Final ride & equipment operation – Location based on snow & weather conditions

Lunch

Cold Weather Injuries Prevention & Treatment

Break

Methods of instruction and Teach Back

Day #5 (8am-5pm) –

MOI -Teach back

Lunch

Competency quiz, Feedback, Q and A, Completion awards presentation

Course Syllabus

Instructors:

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General Description

Snowmobile travel in Alaska has become a way of life. Snowmobiles are used for general recreation, travel and transport of equipment and supplies. Learning safe travel techniques is critical to reduce injuries and deaths from preventable injuries. More instructors are needed to meet the demand of delivering quality training programs for the citizens and visitors of Alaska. This five-day 40-hour course, (delivered through a facilitated, project team method, will provide a discussion-based overview of safe snowmobile operation, terrain management and rescue.

Grading and Performance Criteria

This course will be pass/fail. The grading criteria will include attendance, demonstration of pre-class preparation by having completed the required readings and quality of participation. The course will be conducted as lecture, demonstration, visual and hands-on practice. Students are expected to contribute to the discussions. Student outcomes will be tested through small group exercises and projects.

Course Objectives

- *Provide overview and techniques for safe snowmobile operations*
- *Demonstrate and provide instruction for proper equipment maintenance and repair*
- *Provide overview and practice opportunities for safe glacier and mountain travel*
- *Demonstrate and provide instruction for proper companion rescue*
- *Provide overview and techniques for cold weather injury prevention and treatment*
- *Provide methods of instruction techniques and teach-back demonstrations*

Student Outcomes

- *Understand the relationship between proper planning and accident risk factors*
- *Gain knowledge of safe snowmobile operation, maintenance and repair*
- *Discuss basic planning and evaluation methods*
- *Define the basic operation for safe snowmobile travel and injury avoidance*
- *Demonstrate listening skills and other methods required to receive relevant feedback during planning, development, and implementation*
- *Demonstrate knowledge of snowmobile functions and safe operations*
- *Gain knowledge on cold injury prevention and treatment*
- *Learn team member and leadership skills through participation in team-based learning exercises*
- *Learn methods of instruction techniques and teach back skills*

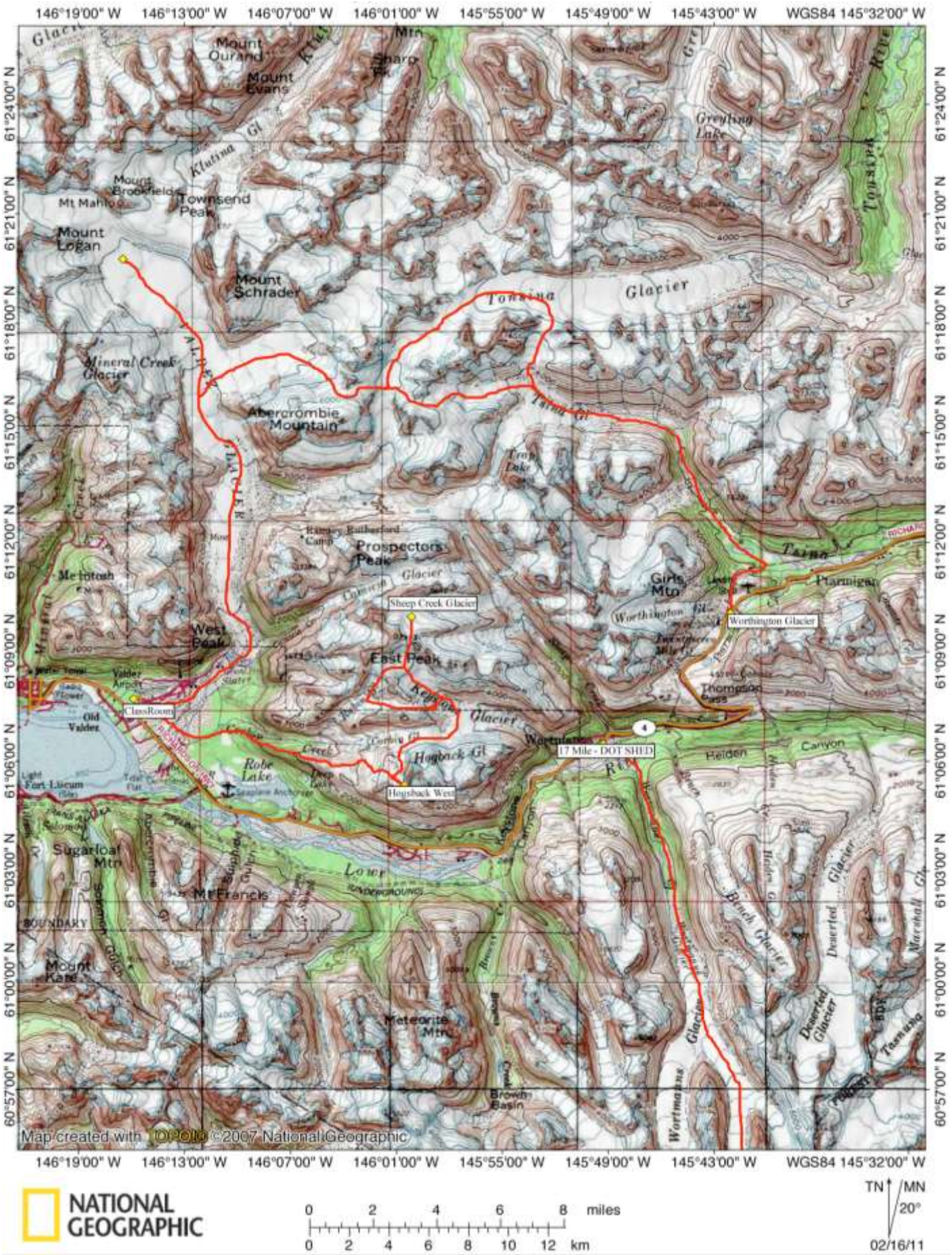
Required pre-reading

Freedom of the Hills – Don Graydon
Snow Sense – Jill Fredston and Doug Fessler

Course Outline

- *Program overview, snowmobiling in Alaska; safety briefing, goals, objectives, proper clothing, physical health preparation, equipment pre-trip planning, weather and snow stability forecasting, proper clothing.*
- *Equipment operation; riding techniques, mechanics; terrain assessment and route selection.*
- *Safe winter travel, glacier travel, crevasse rescue, avalanche awareness, companion rescue*
- *Cold weather injury prevention & treatment, methods of instruction*
- *Teach back, competency quiz, feedback, completion awards presentation*

AREA OF PROPOSED RIDES




Valdez
Chugach
National Forest
Cordova
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SECTION I - TRIP PLANNING FOR SAFE SNOWMOBILING

SNOWMACHINE EQUIPMENT/GEAR LIST – Student Recommended gear list

- Back Pack (daypack) 15 liter plus daypack
- Waterproof watch
- Avalanche transceiver; probe and shovel (lightweight collapsible)
- Water/wind proof breathable shell
- Neck gator
- Face mask
- Boots
- Hat
- 2 pairs of gloves
- Harness
- Figure eight
- 3 prussic 5mm
- 2 Pulley's
- Three carabineers
- Two locking carabineers
- Leatherman or similar tool
- UV-rated eye protection
- Goggle cleaning cloth
- Snowmobile helmet / DOT certified
- Insulated water bottle
- Snacks and lunch

Instructor/Guide Packs will also include:

100 ft. of 8.5mm Static dry rope;
15 ft. of tubular webbing;
Two ice screws;
Compass;
Headlamp;
Extra batteries;
Cam straps;
Extra layers, gloves, goggles.
Kneepads (placed under shell)
Insulated Face Mask
First Aid Kit

NOTE:

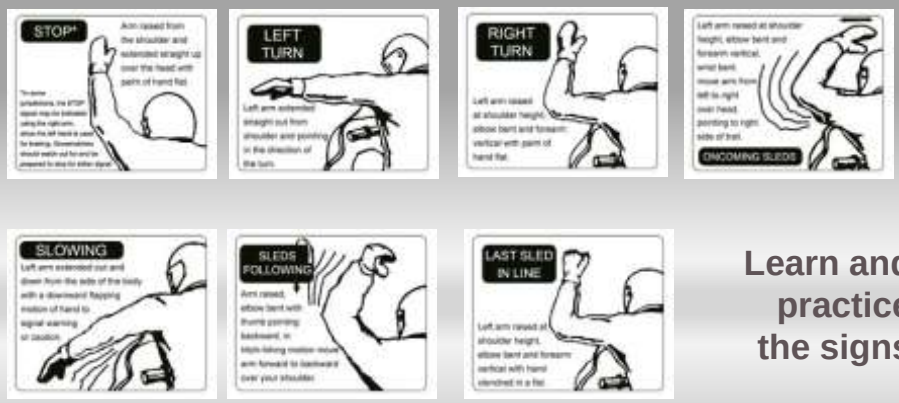
- Students without avalanche, shovel and probe will have a kit provided for use.
- Credit card required to secure loan of equipment

Suggested items for carrying on a snowmobile adventure

- Shovel, transceiver, probe (carry on your body)
- Snow Saw
- Sleeping bag or Bivy bag
- Snowshoes
- Come-a-long/Tow Rope
- Extra clothing (layers, softshell, hard shell, boots, gloves, socks, face mask)
- Headlamp with extra batteries
- Cell or Satellite Phone
- Map and compass (GPS)
- Package of Jello
- Survival Kit
- First Aid Kit
- Ice Pick/axe
- Ice Screws
- Duct Tape
- Helmet – DOT rated - good quality and condition
- Spare parts & tools
- Hand warmers
- Thermos w/hot h20

Hand Signals

- Giving clear, easy-to-see hand signals are vital to safe snowmobile riding



Learn and practice the signs

Photo Caption Needed

Safe Riders Pledge

- I will drive within the limits of my machine and my abilities
- I will obey the rules and laws of the state or province I am visiting
- I will be alert and cautious when crossing roads, and always cross at a right angle to traffic
- I will keep my machine in top shape and follow a pre-op check before each ride
- I will wear appropriate clothing, including gloves, boots and a helmet with a visor
- I will let family or friends know my planned route, my destination and my expected arrival time
- I will treat the outdoors with respect. I will not litter or damage trees or other vegetation
- I will respect other peoples' property and rights, and lend a hand when I see someone in need
- I understand the consequences of driving impaired and will never drink or use drugs when driving a snowmobile

Riding Responsibly

- Respect other riders, skiers, hikers, mushers
- Avoid stopping/blocking trail
- Practice the buddy system
- Obtain proper parking permits
- Practice and use defensive driving techniques
- Vehicle/trailer parking with respect to others
- Environmental respect and awareness
- Know and practice hand signals for communication
- Stay on marked trails when riding in an area restricted to trails

Our Decisions

Is it a good day to play in the Mountains?

→ Strike 1 Factors that cause you to slow down, take extra caution, or adjust your plans for the day.

→ Strike 2 Factors that cause you to reconsider your plans for the day such as avoiding steep terrain and other potential hazards.

→ Strike 3 Factors that demand you make changes to your current plan to avoid mountain terrain or potential hazards.

H20 Guides Photo

Trail Etiquette

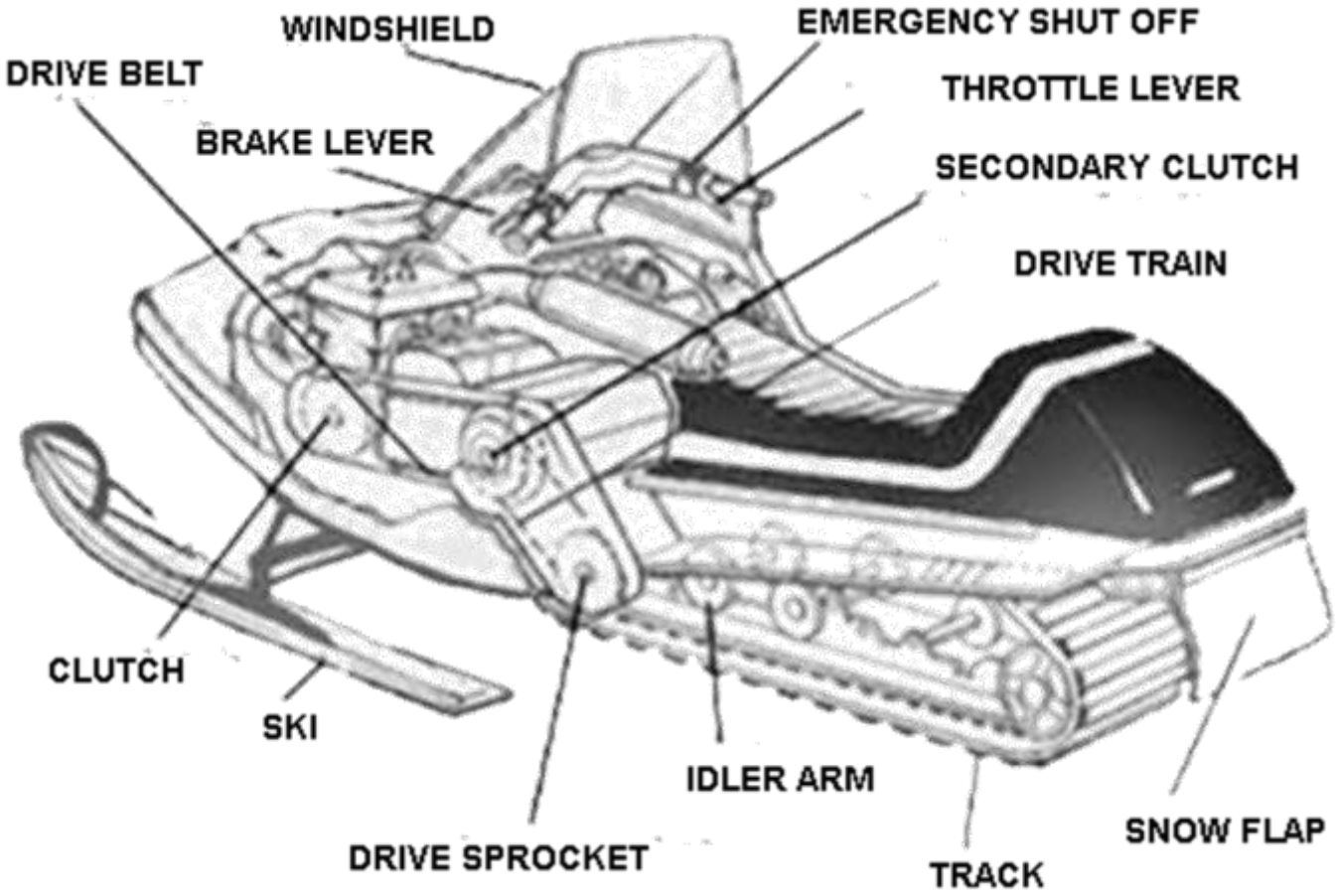
- Reduce your impact. Travel established trails when possible.
- Keep a safe distance between your machine and others
- Always expect the unexpected
- Stay Alert! Do not assume that existing trails are safe

D. Adler photo

Respect Wildlife & Property
Private Property

D. Adler photo

MAINTENANCE AND MECHANICS



Prestart Check

- ✓ **Fluids** – enough fuel and oil for return trip?
- ✓ **Steering system** – check skis for bends or cracks, do handlebars turn both ways?
- ✓ **Throttle** – does it move easily?
- ✓ **Brakes** – do they stick or bind?
- ✓ **Lights** – front and back working?
- ✓ **Track** – not ripped, worn or loose, free of snow/ice
- ✓ **Test kill switch**
- ✓ **If sled was parked outside in cold for any length of time, clear ice and snow from track by picking up the back end and slamming to ground a couple of times**
- ✓ **Are you dressed properly? Adequate clothing, helmet, beacon, shovel and probe**

Practice proper protocols for mechanical success!

- ✓ Check spare parts and tools (adjustable wrench, screwdrivers, lockable pliers)
- ✓ Light bulbs – pack so they won't break
- ✓ Spark plugs need to be gapped. Check owner's manual for proper setting
- ✓ Drive belt – spare
- ✓ Clutch
- ✓ Starter pull rope
- ✓ Owner's manual
- ✓ Be familiar with your sled!

COMPLETE A CHECK OF THE FOLLOWING COMPONENTS

HOOD AND ENGINE

Exhaust, Belt/Clutch, Oil, Carbs/Injectors, Antifreeze, Battery, Plugs, Air Filter, Pull start

FLUIDS

Antifreeze, Gasoline, Gear Oil, Engine Oil, Injection Oil

LIGHT AND MIRRORS

Headlight, Mirrors, Snow Flap, Reflectors, Taillight

INSTURMENT CLUSTER

Kill Switch, Key Switch, Reverse Lever or button, Pull Start, Throttle, Brake system, Lanyard, Choke

STEERING AND SKIS

Grips, Hand warmers, Steering column, Steering Joint, Skis, Running Boards, Bogie Wheels, Front and Rear Suspension.

TRACTION DEVICES

Studs, Cleats, Paddles, Hi-Fax

BELT AND CLUTCH

Primary Clutch, Secondary Clutch, Drive Belt and Spare

NOTES:

SECTION 1 TRIP PLANNING & SAFE SNOWMOBILING COMPREHENSION ASSESSMENT

1. Name three important items to carry on a snowmobile trip? _____

   _____, _____.

2. Name three things you should do before starting your machine at the beginning of the day, as part of a pre-ride check? _____, _____, _____.

3. You should always carry a spare _____when riding on a snowmobile.

4. All of the following are part of a pre-trip plan except

   A. Tell someone where you are going and when you expect to return.
   B. Be certain you have survival gear with you.
   C. Alert the troopers that you will be traveling in the backcountry for the day.
   D. Obtain a weather forecast.

5. T or F—Always carry all of your gear in a backpack on the back of your machine

6. You are out riding on the trail and your snowmobile will not restart after you tried pulling on the pull-start. What are the three main things to check before trying to perform rescue-towing. _____, _____, _____

7. True or False: You only need to inspect your snowmobile during Fall Prep and Spring storage.

8. You are riding and have started to gain elevation and realize that you are not getting full RPM's while trying to climb a steeper slope. What should you stop and adjust to get maximum RPM's? _____

9. What should the snowmobile choke do?

   A. Help start a cold engine but be turned off after it warms up.
   B. Stop the engine.
   C. Stop the flow of gas to the engine.
   D. Release oil into the engine.
   E. All of the above.

6. True or False: To check the brakes you should squeeze the brake lever and check to make sure it does not touch the handlebars.

SECTION II: Be Snow Smart—Avalanche Awareness

THE FOUR CATEGORIES OF AVALANCHE HAZARD EVALUATION

1. Terrain
2. Snowpack
3. Weather
4. Human Factors

1) TERRAIN Questions to ask yourself:

- Is the slope steep enough to avalanche? Most avalanches occur on 30-45 degree slopes.
- Where is the starting zone and the run out zone?
- What is the slope aspect? Is it windward or leeward? Wind loading can cause avalanches.
- What is the slope shape? Most avalanches occur on convex roll overs.
- What is the slope history? Have you seen slides on the slope before? Are there broken trees?
- Are there other potential hazards such as cornices and snow bridges over crevasses?

2) SNOWPACK Questions to ask yourself:

- How well are the snow layers bonded? ((Learn ways of testing the bonds.)
- What types of crystals do you see? Generally, large crystals are bad and smaller are good.
- Are you causing cracks on the snow surface? Or does the snow sound "hollow"? Do you hear a "whumping" noise as you travel? These are all signs of slab instability.
- Is there evidence of natural avalanches in the area? This is the number one indicator of instability. If the avalanche can start on its own, then you can start one with your skis, snowboard or snow machine.

3) WEATHER Questions to ask yourself:

- Is their newly fallen snow? If so how much? New snow needs time to settle and bond.
- Has their been recent high winds? Wind loading can cause avalanches.
- Have their been large changes in temperature? Very warm or very cold temperatures can cause instability.

4) HUMAN FACTORS Questions to ask yourself:

- Attitude: Do you take the time to stop and think about avalanches or do you just rush out and ride the powder? Are you the type of person who thinks, " It won't happen to me" or do you stop and think about the safe way to play in the snow?
- Do you choose safe slopes when the danger is high?
- Do you just jump right on the slope or do you take time to feel it out? Ski cut the slope at the top to test it.
- Do you follow safe backcountry travel protocol?
    - On steep slopes always travel one at a time, that way, if the slope avalanches, only one person is caught in the slide and your friends will be able to help you get out.
    - Do you travel from safe zone to safe zone?

- Do you travel beyond the run out zone at the bottom and use safe spots such as behind large rocks.
- Do you stay close enough to your friends to see them. You should never go into the backcountry alone.
- Do you prepare for the worst? Every person who goes into the backcountry should have an avalanche beacon, a probe, and a shovel. You should practice with the avalanche beacon because in a rescue every second counts.
- Do you know and practice proper Rescue procedures?
    - If your friend is buried in an avalanche, do not just leave him and go for help. Stay and look for him because every second counts. By the time you go and get help and come back, It will probably be too late.
    - If you have a large number of people in your group, some should stay and search and some should go for help.

Johnson Pass, Kenai Peninsula - Accident 2009

S. Hildebrand photo, 2008

Essentially, any snow-covered mountainous terrain greater than 25 degrees in steepness can be considered potential avalanche terrain. Additionally, terrain that lies in the “fall line” or along a down hill line of trajectory of these areas should also be considered capable of being hit by an avalanche. This coarse description of avalanche terrain falls short of being precise, but from a worst-case scenario is fairly accurate. The reality is avalanches actually run in a smaller proportion of mountainous terrain than one would estimate base on the above criteria.

Avoiding Avalanche Terrain Can Be Simple. In most cases safe areas include:

- Ridges, with no snow covered slopes above.
- Dense forest.
- Well out in the valley floor, beyond the furthest extent of historic vegetation damage. If

vegetation is no help, the Avalanche Handbook(2006) describes methods for estimating run-out

potential.

- Slopes no greater than 25 degrees in steepness, with slopes no steeper overhead. **Avalanche professionals measure the critical incline of the avalanche start zone as the steepest part of a slope over a length of 30ft (10m) or more, (not the average incline) not including cliffs.**

Following these guidelines ensures avoiding encounters with avalanches, but is also quite restrictive in terms of travel options. Many backcountry recreationists hope to access terrain that these simple guidelines would not allow.

Make sure you are clear of runout zones when watching friends high mark.

AVALANCHE TERRAIN EVALUATION FACTORS

Location Relative To Weather

- **Position and Elevation in the Mountain Range**
- **Aspect to Wind**
- **Aspect to Sun**

Slope Scale Features

- **Incline (slope angle)**
- **Slope size**
- **Start zone terrain shape (trigger points):**
- **Mid slope ridges and cliffs**
- **Terrain traps**

What do you do if you get caught in an Avalanche?

- Yell AVALANCHE!
- Try to get off the slope
- Swim to stay on top and to move away from objects
- Make an air pocket – thrust your hands upwards
- Relax! Conserve your energy, it's up to your friends to rescue you

Rescue

- You are the help! Call for assistance.
- Determine scene safety
- Choose a leader, appoint roles and duties
- Switch all beacons to Search
- Mark Last Scene Area (L.S.A.)
- Head downhill looking for a signal
- Probe until you find buried person
- Leave Probe in and begin shoveling downhill
- Make a large hole
- Shovel out an airway and perform first aid

North American Public Avalanche Danger Scale

Avalanche danger is determined by the likelihood, size and distribution of avalanches.

Danger Level		Travel Advice	Likelihood of Avalanches	Avalanche Size and Distribution
5 Extreme		Avoid all avalanche terrain.	Natural and human-triggered avalanches certain.	Large to very large avalanches in many areas.
4 High		Very dangerous avalanche conditions. Travel in avalanche terrain not recommended.	Natural avalanches likely; human-triggered avalanches very likely.	Large avalanches in many areas; or very large avalanches in specific areas.
3 Considerable		Dangerous avalanche conditions. Careful snowpack evaluation, cautious route-finding and conservative decision-making essential.	Natural avalanches possible; human-triggered avalanches likely.	Small avalanches in many areas; or large avalanches in specific areas; or very large avalanches in isolated areas.
2 Moderate		Heightened avalanche conditions on specific terrain features. Evaluate snow and terrain carefully; identify features of concern.	Natural avalanches unlikely; human-triggered avalanches possible.	Small avalanches in specific areas; or large avalanches in isolated areas.
1 Low		Generally safe avalanche conditions. Watch for unstable snow on isolated terrain features.	Natural and human-triggered avalanches unlikely.	Small avalanches in isolated areas or extreme terrain.

Safe backcountry travel requires training and experience. You control your own risk by choosing where, when and how you travel.

Remember good back-country habits can help you avoid avalanche danger

- Always tell someone where you're going
- Carry Safety equipment (shovel, probe, transceiver, water, food and extra clothes)
- Travel with a Partner and keep your partner in sight.
- Expose only one person at a time
- Get out of the way at the bottom
- Never cross above your partner
- Have an escape route planned
- Travel to points of safety

NOTES:

SECTION II Avalanche Awareness COMPREHENSION ASSESSMENT

1. Name two terrain traps: _____, _____.

2. T or F. Avalanches can occur on small slopes (less than 300 feet)

3. What can add stress or change the strength of the snowpack?

   a. Sun

   b. Wind

   c. Temperature

   d. Humans

   e. All of the above

4. T or F Poor decision making can lead to accidental injuries in the backcountry.

5. T or F. If you have an avalanche transceiver, you do not need to practice.

6. The safest place to watch your buddy highmark from is:

   a. In the middle of a 30 degree slope

   b.. At the bottom of the slope he is on.

   c. Out of the way of the runout zone

   d.. None of the above

7. When preparing to go into the backcountry, what steps should you take?

   a. Get a weather and avalanche forecast

   b. Make a trip plan to tell someone where you are going and when you'll be back

   c. Pack extra clothes, water, food, shovel, and probe

   d. Wear an avalanche beacon

   e. All of the above

8. T or F - You should always have an escape route when crossing dangerous terrain?

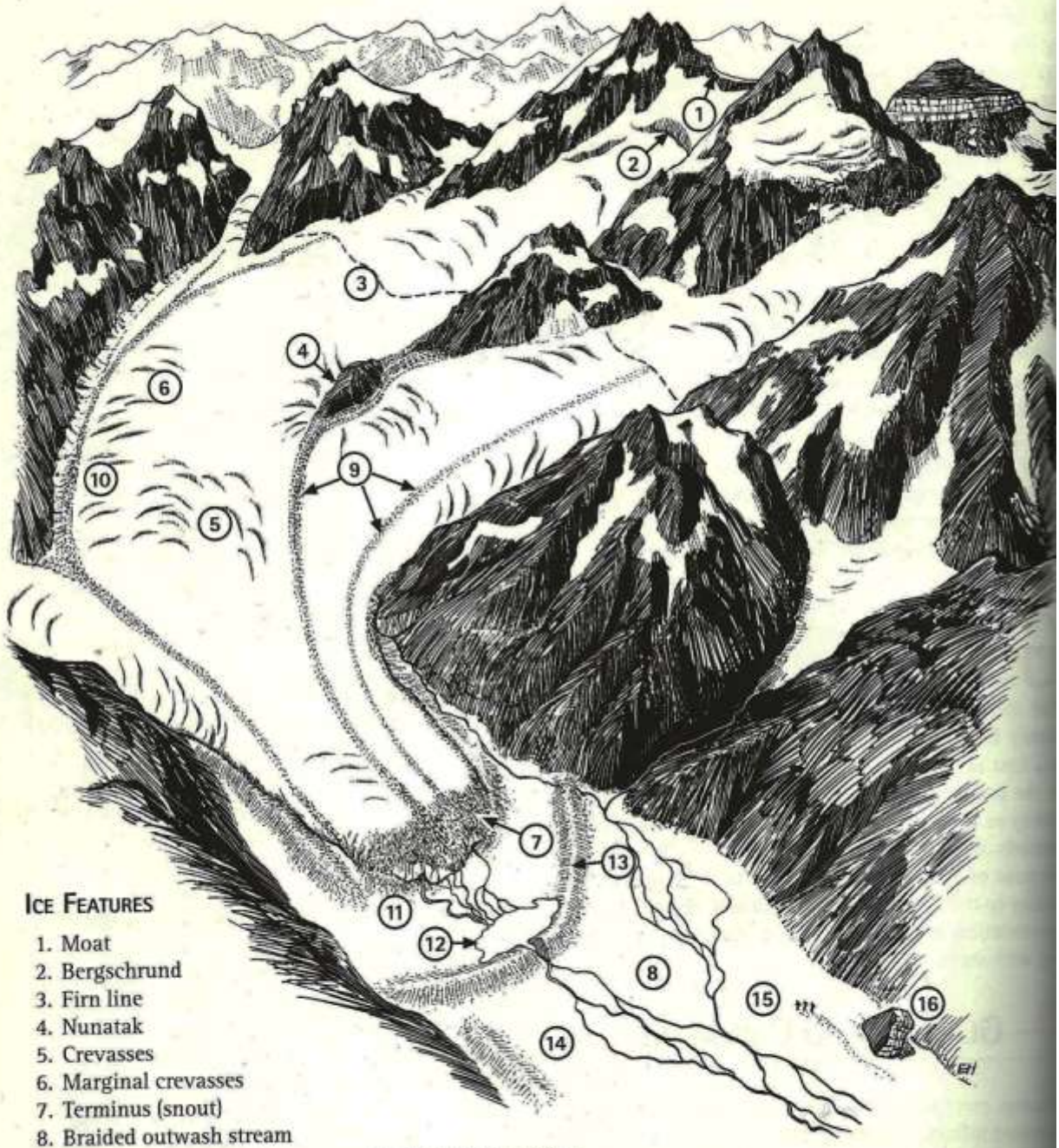
9. What can transport snow faster than it falls from the sky?

   _____

SECTION III—GLACIER TRAVEL

Anatomy of a glacier

Kennicott Glacier, Wrangell Mountains AK



ICE FEATURES

1. Moat
2. Bergschrund
3. Firn line
4. Nunatak
5. Crevasses
6. Marginal crevasses
7. Terminus (snout)
8. Braided outwash stream

MORAINE FEATURES

9. Medial moraine
10. Lateral moraine
11. Terminal moraine
12. Moraine lake
13. Old terminal moraine
14. Old lateral moraine
15. Outwash plain (and ground moraine
16. Erratic (boulder)

Fig. 14-1. Aerial view of a glacier showing some principal features

From Freedom of the Hills, 6th edition

Nabesna Glacier, Wrangell Mts

D. Adler photo

Crevasses are most dangerous in the accumulation zone, that portion of a glacier high enough to receive more snow every year than it loses to melting. Here, crevasses are frequently covered with snow bridges that may be too weak to support a climber. Below the accumulation zone is the area of the glacier where annual melting matches or exceeds the yearly snowfall. Between the two zones is the firm line (also known as the névé line), named for the words that designate old snow.

The deeper layers of a glacier, denser and more

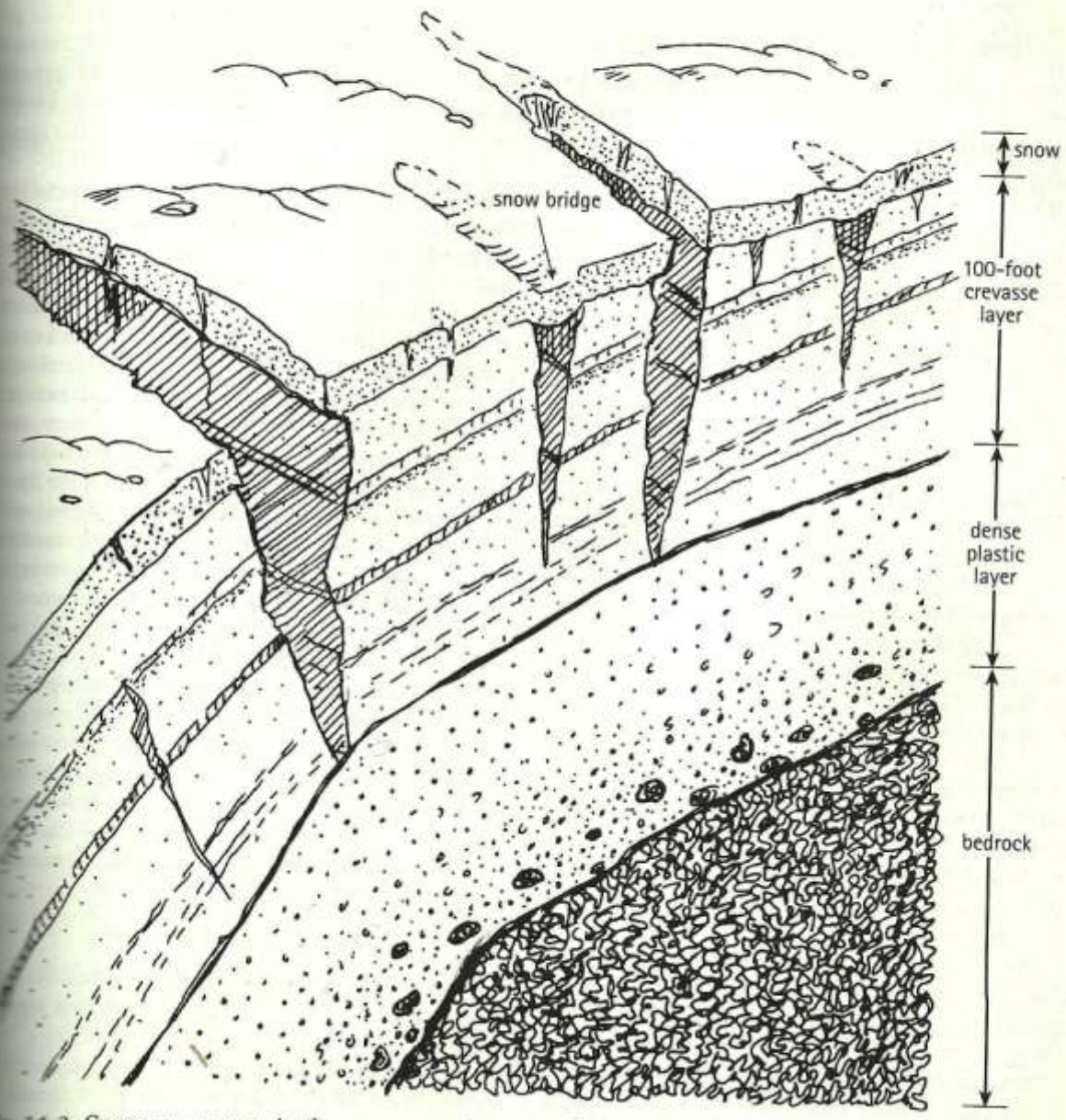


Fig. 14-2. Crevasses open up in the upper snow layers as glacier angle increases. The denser lower area moves without splitting.

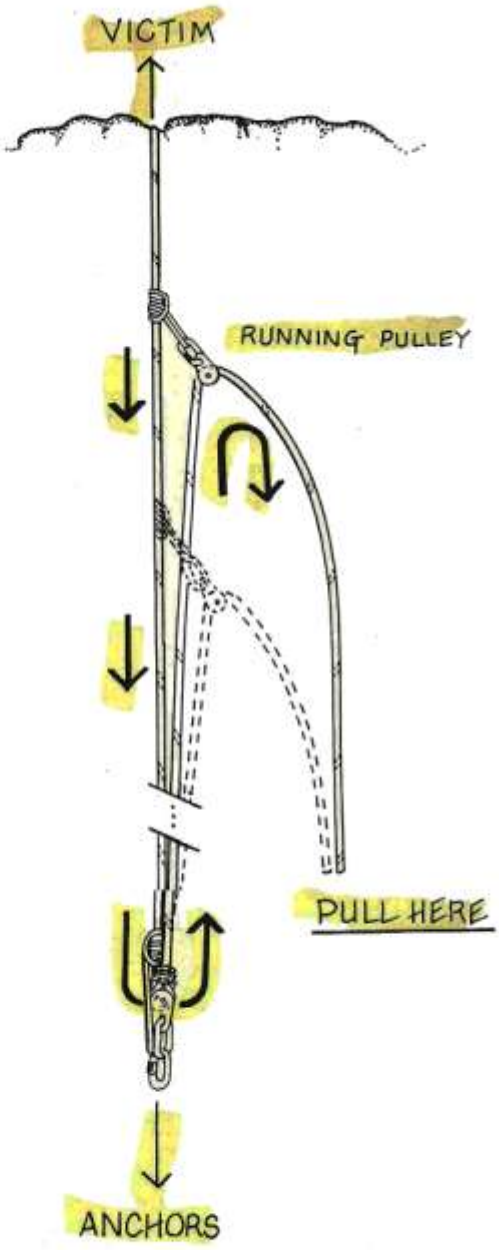


Figure 3.15c Z system for hauling: ready to haul

From Glacier Travel and Crevasse Rescue

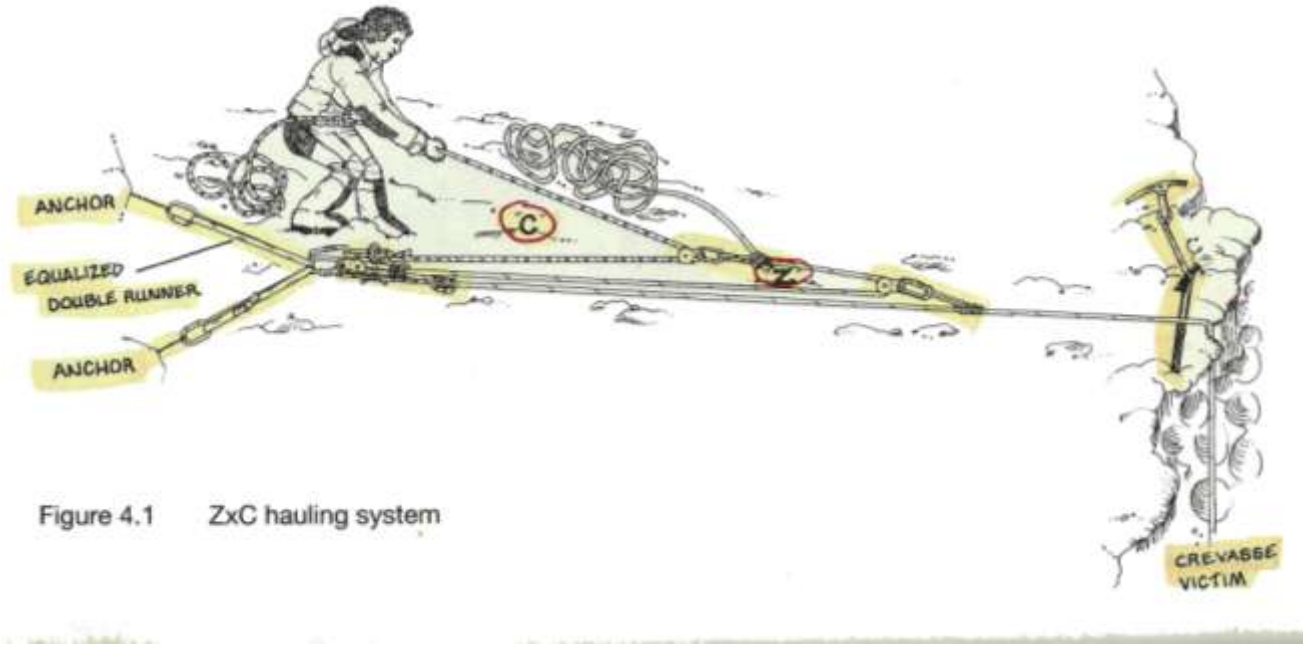


Figure 4.1 ZxC hauling system

From Glacier Travel and Crevasse Rescue

Snowmobile Extraction

- Most importantly, rescue the rider first and make sure the scene is safe!
- Build an equalized anchor keeping the angle of pull as parallel to the surface as possible.
- Probe and mark off a safe working perimeter around the crevasse before extracting the snowmobile.
- The crevasse edge must be thoroughly prepared before attempting a snowmobile extraction. Dig a ramp the width of the machine and deep enough to reach very hard snow. Place suitable edge protectors on the lip of the crevasse; tie them off so they don't fall in. These will minimize rope drag during hauling.
- Before hauling, put the snowmobile in neutral gear, or cut the drive belt so that the tracks can turn. Snow and ice may need to be cleared from tracks to free them.
- If possible, raise the snowmobile's back end first. Position a person on the crevasse edge for communication and observation. If you have enough people, position another person in the crevasse. This person can ensure that the ski is straight and that the track can spin. Secure this person to a safety rope anchored separately to one side of the main anchor.
- Use three people pulling on a 6:1 pulley system to extract the snowmobile. Or, use snowmobiles to help pull it out. Snowmobile tracks should be pre-packed, and the pull path must be free of anchors and ropes.

NOTES;

SECTION III GLACIER TRAVEL QUIZ

1. T / F : It is safest to travel one at a time in a single-file line when traveling through crevassed areas.

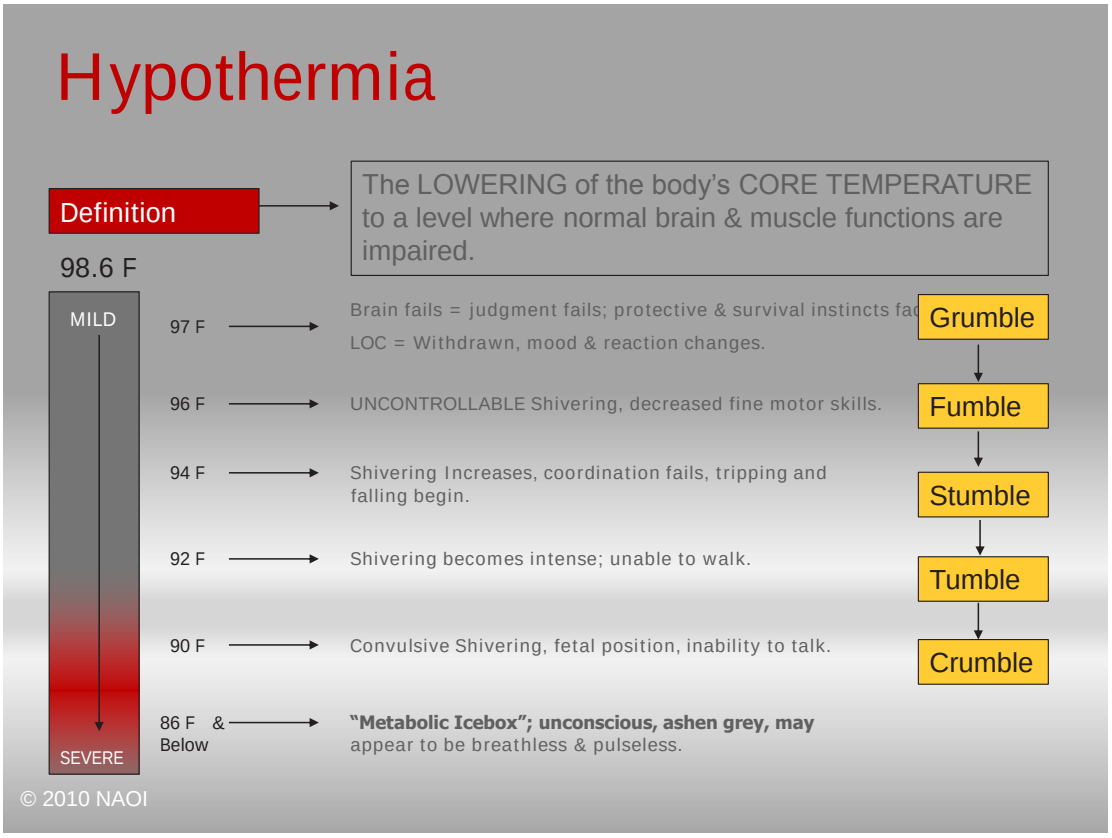
2. If you must cross a crevasse, always do so _____ to the line of the crevasse.

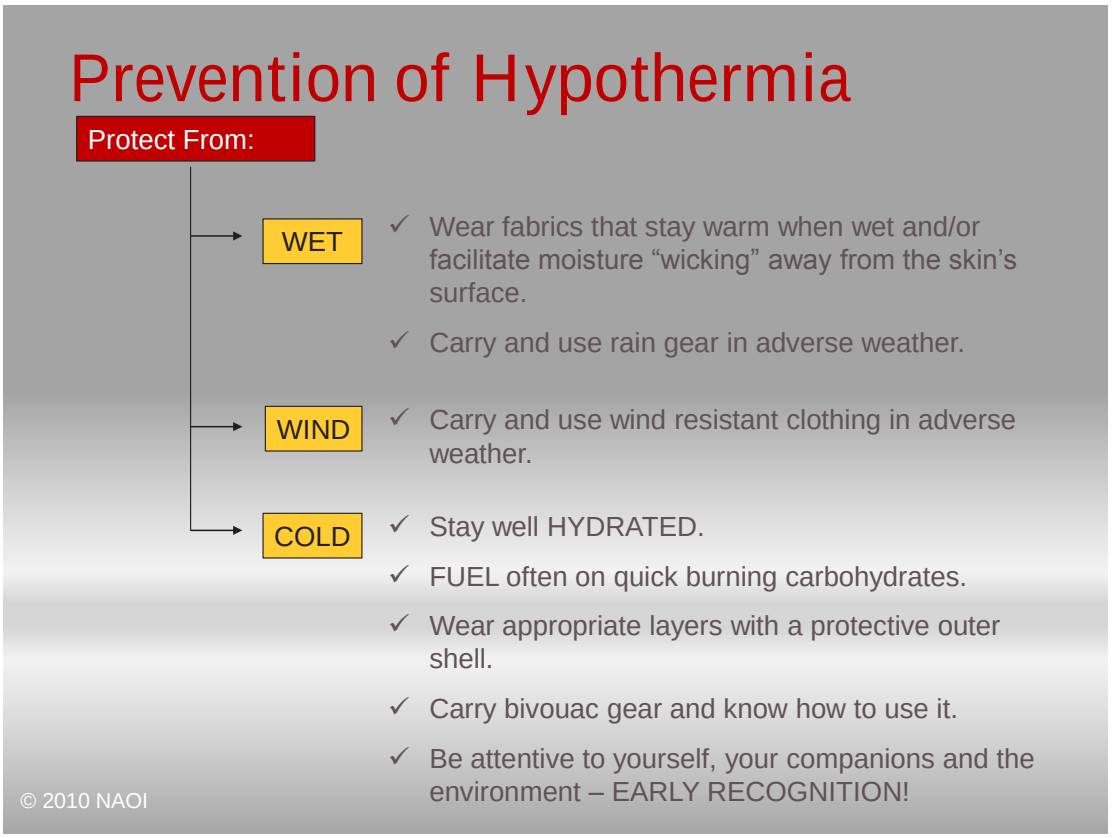
3. Name two critical points to remember to stop a fall into a crevasse on your machine. _____, _____.

4. T / F: Crevasses can easily be detected from a seated position on your snowmobile.

5. Describe the steps that are taken to extricate a snowmachine from a crevasse.

- **SECTION IV - COLD WEATHER INJURIES**





Using a tarp, sleeping bag or other material, create a hypo-wrap (burrito-wrap) to quickly raise the temperature of a hypothermic victim.

A mnemonic useful for remembering early stages of hypothermia:

- Fumble (impairment of motor functions)
- Stumble (motor functions)
- Tumble (motor functions)
- Mumble (intellectual impairment)
- Grumble (intellectual impairment)
- Crumble

The first three reflect impairment of motor functions, fine and then gross motor.

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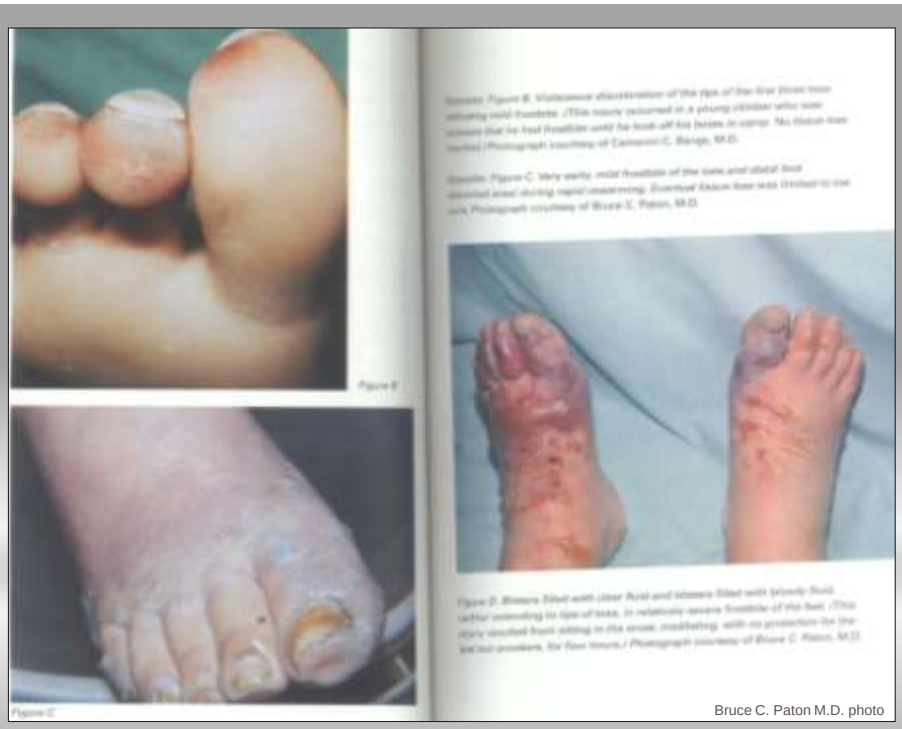
- *FROSTBITE*

Local Cold Injuries

FROSTBITE:

Localized freezing of tissue caused by constriction of blood vessels and shunting of blood away from cold areas of the body.

Superficial (1st)	Partial Thickness (2nd)	Full Thickness (3rd)
Signs & Symptoms • Skin is soft, cold and pale in color. • Patient complains of numbness.	**Signs & Symptoms** • Skin is soft, cold, pale in color and numb • Painful on thawing forming blisters/blebs	**Signs & Symptoms** • Skin is hard/frozen, cold and white. • Patient complains of lack of sensation.
Treatment • Field re-warm using skin-to-skin contact. • Keep warm and protect from further exposure.	**Treatment** • Field re-warm using skin-to-skin contact. • Protect blisters/blebs and beware of refreezing. • Evacuate	**Treatment** • DO NOT field re-warm. • Immobilize to prevent further damage. • Evacuate



Bruce C. Paton M.D. photo

Classic looking frostbite after one day trip in backcountry, Yellow-knife, NT Canada. This Frostbite looks white and waxy, which is common. Not all frostbite looks this way.

Photos below taken 2 and 4 weeks post Frostbite

Cold Injuries CAN Be Prevented

- Stay Hydrated, even in the cold
- Pay attention to your body and its limits
- Avoid overheating in the cold
- Be sure your boots are not too tight
- Communicate with your partners and don't be afraid to say "when"
- Dress appropriately and always have dry layers available should your clothes get wet
- Being prepared and informed can save you from hypothermia and/or frostbite

Dan Darley photos

NOTES:

Section IV COLD WEATHER INJURIES
COMPREHENSION ASSESSMENT

Circle *True* or *False* in regard to the following statements about Hypothermia:

1. T / F Hypothermia is most commonly associated with cold, wet, windy conditions.
2. T / F We are designed to lose heat when wet.
3. T / F Hypothermia has little or no effect on the brain.
4. T / F We burn glucose as a fuel to help maintain body temperature.
5. T / F Shivering is involuntary muscular contractions that produce heat.
6. T / F Shivering does NOT impair other physical activity.
7. T / F Conscious hypothermic patients need water and glucose.
8. T / F Never expose and dry off a wet hypothermic patient.

9. Which of the following is incorrect regarding frostbite?
   a. 1st degree can be field re-warmed using skin-to-skin contact
   b. 3rd degree should not be field re-warmed, but should be protected from further damage
   c. Refreezing recently thawed frostbite can cause more damage
   d. It is preferable to use hot air to thaw frostbitten hands

RISK MANAGEMENT

Risk management is a logical process or approach that seeks to eliminate or at least minimize the level of risk associated with any outdoor field activity. Essentially, the process identifies any type of situation that could result in damage or injury, then taking the steps necessary to correct factors that are highly likely to result in that damage or injury.

By preparing in advance, you can avoid many of the risks associated with outdoor activities and travel.

Developing a Risk Management Plan:

One of the most important tasks recreationalist should do is to manage the risks inherent to snowmobile riding. Consider that prevention is an absolutely necessary component to reducing risk on any snowmobile course. The following should be considered basic steps.

- Consider possible situations
- Consider the geographic areas and any specific challenges or potential hazards you may face
- Communicate concerns and a clear plan to all fellow riders
- Prepare with proper equipment and supplies
- Tell someone where you are going and when to expect you to return
- Leave a note in your vehicle with a map and detailed information about your planned adventure

By taking time in advance to consider potential areas of high-risk and creating a plan to communicate and mitigate those risks, your exposure and everyone in your group can be greatly reduced or eliminated.

REFERENCES

Information in this manual was provided by the following organizations/agencies/companies.

H2O Guides Inc.—
Avalanche /
Glacier Travel—Technical Engineering
Contact: Den Cummings—907-831-1386
P.O. Box 2501
Valdez, AK 99686

AIARE—Avalanche and Decision Making
Contact: Tom Murphy—970-209-0486
211 S. Teller
Gunnison, CO 81230

Big Mountain Taxi—Maintenance / Mechanical
Contact: Jeremy Martin—907-255-1817
P.O. Box 1882
Valdez, AK 99686

SOLO—Wilderness Medical
Contact: Dorothy Adler—907-982-6945 / 603-447-6711
PO Box 3150, Conway, NH 03818

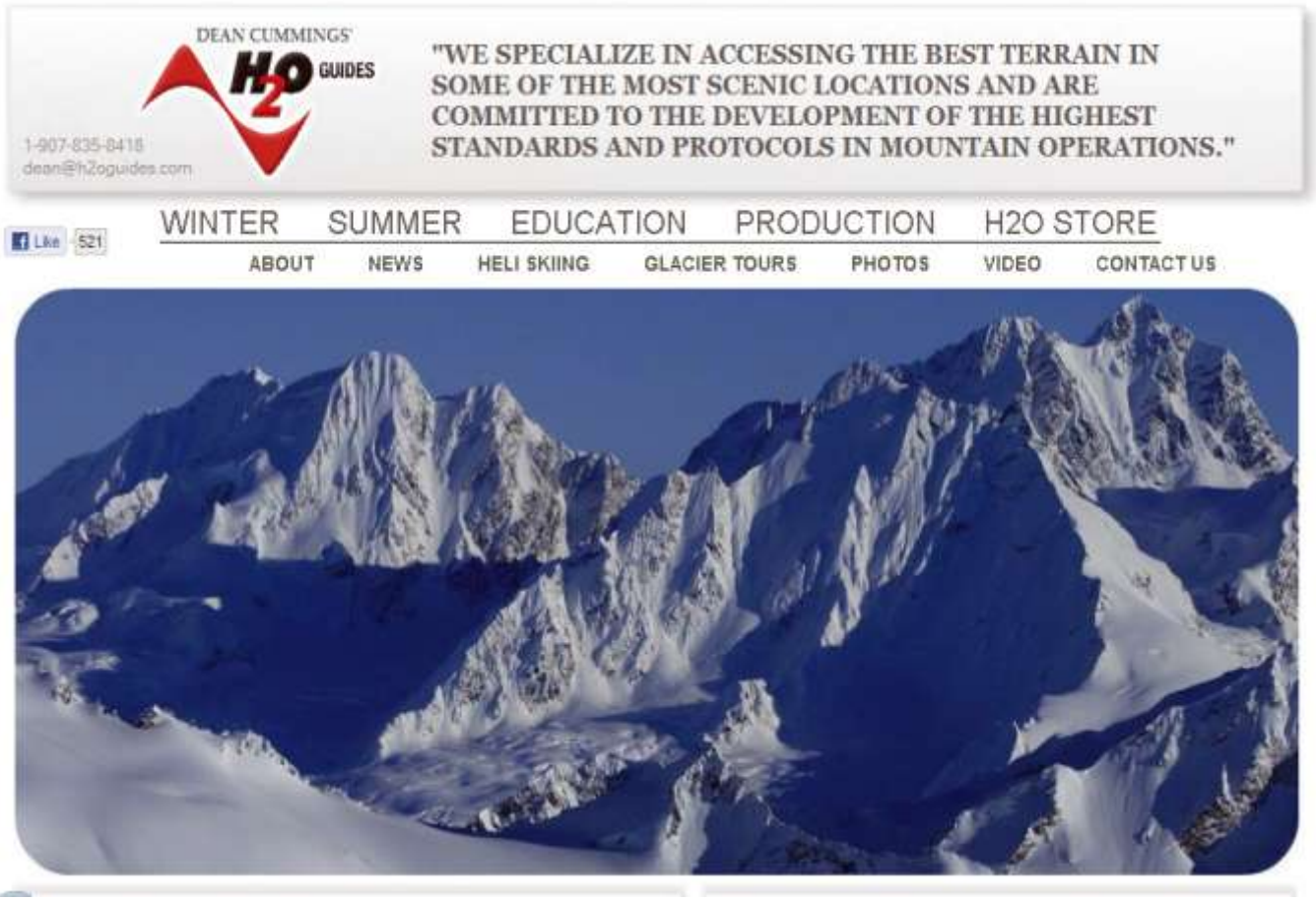
Freedom of the Hills—6th Edition—Mountaineers
Field Manual for the US Antarctic Program—Chapter 19
Glacier Travel & Crevasse Rescue—Andy Selters

NAOI Accident / Incident Report

In case of incident, this form to be completed by a staff member immediately following an accident or incident.

ENTRY #

INJURED INDIVIDUALS NAME	DATE	TIME
STAFF ON DUTY		
STATEMENT (describe event: how, why and what was done)		
STAFF SIGNATURE	SUPERVISOR SIGNATURE	
PARENT OR GUARDIAN NOTIFICATION DATA		
NAME OF PARENT NOTIFIED	DATE	TIME
METHOD OF NOTIFICATION	PERSON WHO CONTACTED PARENT	
in person telephone in writing		
PARENT'S RESPONSE		
Parent or Guardian Signature (If available)		
Other relevant comments or information:		



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