



National Ski Patrol Certified Program

Study Guide

September 2013

NATIONAL SKI PATROL SYSTEM
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This study guide is intended as a supplemental aid for patrollers involved in the Certified process with the National Ski Patrol (NSP). Its purpose is to help prepare candidates for Certified education and testing. This guide is not intended to be interpreted as a manual for ski patrollers or ski areas, and it is not intended to act as a set of guidelines or policies and procedures at snow sports areas. This document is ever changing and updated regularly.

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INSTRUCTOR DISCRETION

The instructor has discretion to restrict the participation of a student in all or any part of the program. For instance, the instructor may restrict participation when, in the instructor's judgment, the student cannot complete the program objectives even with available reasonable accommodations, or the student's participation will be significantly detrimental to the completion of the program objectives with other students.

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LIABILITY RELEASE

All participants, both instructors and candidates, in any Certified event (training, clinic, testing) need to sign liability releases. One release, which covers a three-year period, is to be signed and on file at the time a candidate applies. A Certified patroller is also expected to sign a new release every three years at each recertification. These releases are to be kept on file until they are replaced by new ones.

Divisions may use their own releases but it is recommended that using short, simple and plain language that a non-high school graduate can clearly understand make releases more enforceable. Of course, if a ski area requires a separate release to host an event, then it should also be used.

ACKNOWLEDGEMENTS

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BETA

INTRODUCTION

This Certified program study guide is intended to aid patrollers in building on the experiences gained through patrolling and through NSP programs, i.e., Senior, Outdoor Emergency Care (OEC), Outdoor Emergency Transportation, Avalanche, Mountain Travel and Rescue, Leadership, and Instructor Development. The program requires independent training and advanced research much the same as a university's advanced degree program. The intent also is to identify and supplement training resources and to provide training clinics as focusing tools, skill checkpoints and verification of personal progress. The Certified committee strongly recommends that all patrollers complete the NSP Senior program prior to entering the Certified program.

Certified patrollers need to possess highly developed teamwork skills. They must be excellent leaders able to effectively direct personnel providing patrol services on a day-to-day basis and in mass casualty incidents. As with any true leader, they need to have the attitude and ability to subordinate themselves to other leaders and be effective team players. Certified patrollers are expected to be good instructors, demonstrate outstanding communication skills, and possess extensive knowledge of patrol and ski area management operations.

Candidates are required to demonstrate skills in hands-on situations. Progressing through the program requires demonstration of strong physical, leadership, instruction, problem management, decision-making and communication skills. The process also requires the ability to demonstrate experience and knowledge, and to develop various plans and programs that could be needed to manage a patrol or area.

When you as a candidate pass all modules in the Certified program, you receive a unique number that is yours for the rest of your life. As of September 2013, less than 800 numbers have been issued in the NSP's 75-year history. "Certified Patroller" is truly a special status.

It is important that Certified patrollers remain active to share their knowledge and mentor other patrollers. If a patroller remains active and makes continued contributions, divisions may select the individual for a Lifetime Certified Recognition award.

The information presented in this study guide may not be applicable in all situations. NSP education programs or membership requirements should not be confused with operating requirements of government and private entities that NSP supports.

If you are not currently in the Certified program, you are encouraged to give it a try. Candidates traditionally find it a rewarding experience.

Certified mission statement

Certified is a national educational and skill verification program that provides a readily identifiable resource of highly motivated, skilled and knowledgeable patrollers to better serve the National Ski Patrol's (NSP) mission of public safety as a patriotic organization.

Program goals

- To provide performance standards and evaluation on a broad range of patrol skills and knowledge
- To increase patroller's awareness of issues relevant to ski area operations
- To provide a readily identifiable resource of highly skilled, motivated and knowledgeable patrollers to better serve NSP, ski area management and the outdoor recreation community through instruction and/or leadership
- To promote interaction and exchange between paid and volunteer patrollers
- To build on but not duplicate the other NSP educational programs by providing a flexible, self-directed training program to develop member skills

Program content

The National Certified Committee sets the standards for the National Program.

The Certified program is to be administered by each division consistent with the provisions outlined in this study guide. Each division is responsible for maintaining the integrity of the content of Certified programs held within its jurisdiction.

Application requirements

- ◆ NSP member who has advanced beyond the candidate level
- ◆ Due dates, fees, etc. satisfied as mandated by division
- ◆ Recommendation signature from supervisor (patrol director, area manager, etc.)
- ◆ Recommended: Senior status before entering the Certified program

Program requirements

In order to achieve Certified status, an applicant must complete each of the following modules within three consecutive ski seasons starting with the season the candidate's application is approved:

1. Area Operations

Demonstrate a working knowledge of ski area operations that affect patrol activities, including but not limited to lift operations, hill safety, disaster preparations, budgeting, staffing, planning, public relations, paid and volunteer patrollers, and NSP management interaction with other ski area departments.

2. Avalanche Hazard Assessment

Demonstrate a thorough knowledge and understanding of avalanche hazard assessment techniques, proper use and storage of equipment, and safety procedures.

3. Avalanche Risk Mitigation

Demonstrate a thorough knowledge and understanding of NSP's avalanche program curriculum, snow physics/science, avalanche prediction techniques, and rescue plans and protocols.

4. Avalanche Rescue

Demonstrate a working knowledge of self, companion, group and organized avalanche search and rescue principles plus rescue team leadership and scene management under the Incident Command System (ICS).

5. Outdoor Emergency Care (OEC)

Demonstrate the knowledge and ability to instruct others in OEC. Demonstrate leadership, problem management, decision-making and awareness of ski area operational issues. As an option, each division can include staged responses to multiple-patient, multiple-injury incidents under difficult conditions. Demonstrate the ability to think through an OEC problem and develop a plan of response.

6. Risk Management

Demonstrate a working knowledge of ski area risk management including but not limited to liability, elimination of risk, mitigation of risk, and transfer of risk, as well as applicable local, state and federal laws, sovereign immunity, Good Samaritan laws, accident investigations (what, how, when and where), documentation, and the role of the ski patrol in risk management.

7. Rope Rescue & Lift Evacuation

Demonstrate smooth, confident and fluid techniques in knots, rope handling and proper belay techniques in rope rescue scenarios, including the ability to set up a rescue system. Demonstrate a clear understanding of area management, NSP and patroller roles in practical applications in lift evacuations that may involve several different types of lifts.

8. Alpine Skiing, Telemark Skiing & Snowboarding

Demonstrate exceptional skiing or snowboarding ability on all terrain and snow conditions. Prior to participating in the skiing component, divisions may require a candidate to participate in and receive a recommendation signature at a division-authorized orientation/safety clinic.

9. Toboggan Handling

Demonstrate exceptional toboggan-handling ability on all terrain and snow conditions. Prior to participating in the toboggan component, divisions may require a candidate to participate in and receive a recommendation signature at a division-authorized orientation/safety clinic.

Evaluation

It is the intent of the Certified committee for this program to be as consistent as possible with other NSP programs. The national 0-100% scoring method is the preferred system of choice; a candidate passing with an 80% proficiency or greater is considered Certified. Divisions not currently using this method are encouraged to transition to this system.

The division Certified advisor or designee is responsible for selecting the evaluators from the pool of *eligible* individuals.

- ◆ Ideally all evaluators are both NSP instructors and Certified patrollers in their testing disciplines.
- ◆ The pool of eligible individuals includes those patrollers who have completed the module being tested but not necessarily all modules.
- ◆ When resources are available, each evaluation team should have at least two evaluators.

Recertification

To maintain classification, Certified patrollers are required to successfully demonstrate ski and toboggan handling skills in division authorized recertification events once every three years. If a Certified patroller is not able to meet the performance standards at a recertification event, he or she will be given a grace period of one ski season to bring those skills up to standard.

Reciprocity

Division-Certified advisors, with concurrence of their division director, may approve as appropriate partial or full reciprocity for individuals in their division who have received Certified status or completed modules with another group such as the Association of Professional Patrollers (APP). There is automatic reciprocity between NSP divisions as long as the patroller complies with the current division recertification requirements.

Resources

The most current editions are recommended for all educational materials.

- ADA, OSHA, U.S. Forest Service
- ANSI B.77 Codes (The most current codes should be followed where they have been adopted, on a state-by-state basis.)
- Area policies and procedures, i.e., patrol, grooming, snowmaking, lift operations and evacuation
- *Avalanche Rescue Fundamentals*, Lin Ballard and Dale Atkins
- *Blasters Handbook*, DuPont
- Current NSP and NSAA catalogs for videos and publications
- *Explosives Use in Avalanche Control: National Ski Areas Association Guidelines*
- ICS 100, 200 and 700 certification (online courses at www.training.fema.gov)
- *Ski and Toboggan Training*
- *Mountain Travel & Rescue*, National Ski Patrol
- *Mountaineering, The Freedom of the Hills*, The Mountaineers Books
- *Outdoor Emergency Care*, National Ski Patrol
- *Snow, Weather and Avalanches: Observation Guidelines for Avalanche Programs in the United States (SWAG)* by the American Avalanche Association and the USDA Forest Service National Avalanche Center
- *Staying Alive in Avalanche Terrain* by Bruce Tremper
- *The Avalanche Handbook* by McClung & Schaerer
- *The Ski Patroller's Manual*, National Ski Patrol
- *The Lift Evacuation Manual*, National Ski Areas Association
- Your Responsibility Code, National Ski Areas Association

See each module for resources regarding specific topics of study.

CERTIFIED MODULE 1:

Area Operations

Suggested resources (use latest publication editions)

- HKD Snowmakers' website, snowgun.com
- Local area on-mountain staff, workshops and publications
- National Ski Areas Association (NSAA) seminars, workshops and publications
- Ratnik Industries' website, www.ratnik.com
- SMI Snowmakers' website, www.snowmakers.com
- TechnoAlpin's website, www.technoalpin.com

◆ Essential knowledge of local area management policies, procedures and general daily operations

○ Slopes and trails

▶ Slope signage

- Handling closures
- Signage and fencing
- Obstacle hazard marking
 - Marking
 - Removal
 - Natural versus manmade
- Snowboard considerations

▶ Techniques for closing a slope or trail – when/how

▶ Knowledge of ski industry practices

- Trail design/maintenance factors necessary to mitigate risks
- Padding issues

▶ Special snowboard maintenance and patrol issues

- Benches
- Loading/unloading
- Parks

○ Over-the-snow vehicle operations

▶ Grooming purposes and procedures

- Movement of snow
 - When/how far
 - Why/why not
- Special considerations
 - Terrain parks
 - Half pipes
- Skier accessibility
- Stabilization
- Grooming reports
- Ski patrol involvement

▶ Grooming equipment and uses

- Types

- Various manufacturers, e.g. Thiolkol, Pisten Bully, Bombardier, etc.
 - Winch cats
 - Other
- Accessories
 - Tiller
 - Compactor bar
 - 12-way blade
 - Hydrostatic drive
 - Other
- Managing nonfunctioning grooming equipment on-mountain
 - Cat
 - Pipe dragon
 - Snowmobile
- ▶ Snowmobile operations
 - Training programs
 - Helmet requirements
 - Required routes
 - Safety inspections
- **Snowmaking**
 - ▶ Purpose and procedures
 - Training programs
 - Effect of temperature and humidity
 - Ski patrol involvement
 - Limitations
 - Skier concerns
 - ▶ Snowmaking equipment
 - Hydrant placement concerns
 - In woods
 - At edge of trail
 - In middle of trail
 - Anatomy
 - Snowmaking gun
 - Airless
 - Air/water systems
 - Safety issues of high-pressure water and air
- **Lift operations**
 - ▶ American National Standards (ANSI) codes and design criteria
 - ▶ Vertical clearances
 - ▶ Horizontal clearances
 - ▶ Chair clearances at loading and unloading ramps
 - ▶ Max slope at an unloading ramp
 - ▶ Operator's training log and chain of command
 - ▶ Supervision and responsibility (who/how)
 - ▶ Lift maintenance intervals
 - ▶ Lock-out/tag-out procedures for maintenance or rescue

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- ▶ Signage requirements
- ▶ Lift components
 - Braking systems/purposes
 - Emergency systems
 - Types of carriers
 - Wire rope splice
 - Creep-back marks
 - Location of wire rope tuck
 - Inspection certificate and by what authority
 - Items to look for while riding chair during opening
 - Lubrication of wire rope, specifically different types of cores
- ▶ Auxiliary power source
 - Starting (how often/purpose)
 - Maintenance log (why)
 - Types of fuels
 - Electrical systems
 - Controls
 - Communications while in use
 - Alternate if auxiliary power does not operate
- ▶ Lift evacuation (see Module 7: Rope Rescue & Lift Evacuation)
 - Alternative if auxiliary power does not operate
 - Lift evacuation (see Module 7: Rope Rescue & Lift Evacuation)
- **Interfacing with area operations/departments/management**
 - ▶ Rental and retail shops
 - Ski/snowboard rental procedures
 - Rental injury procedures (post-accident inspection)
 - Release reviews
 - Equipment issues
 - Clothing
 - Other
 - ▶ Special events (races, etc.)
 - Coordination of patrol responsibilities
 - Course maintenance
 - Food service
 - Day care/children's ski school
 - Ski school
 - Safety rules and procedures
 - Location and protection of teaching areas
 - Value of lesson program
 - Guests
 - Patrollers
 - ▶ Maintenance
 - Communication
 - Documenting problems
 - ▶ Marketing/customer relations

- Speeder control
- Skier/snowboarder/Nordic programs
 - Skier safety education/re-education
 - Skier safety enforcement and confrontational techniques/issues
- Safety awareness
- Skier's Responsibility Code
- Special snowboarder considerations
- Information/maps
- Mountain host program
- ▶ Facilities
 - Parking
 - Drop-off and pick-up areas
 - Housekeeping
 - Security/police
 - Terrain park interaction
- **Ski patrol (alpine and Nordic)**
 - ▶ Paid versus volunteer
 - ▶ On-the-hill and aid room
 - ▶ Advanced life support programs (AED, ACLS, etc.)
 - ▶ Transfer to EMS system
 - ▶ Immediate access to medical facility
 - ▶ Equipment (emergency care, radios, toboggans, evacuation gear, etc.)
 - ▶ Medical waste and disposal
 - ▶ OSHA requirements
 - ▶ Sign-in/sign-out logs (purpose)
 - ▶ Critical incident stress debriefing
 - ▶ Responsibilities of patrol representative
 - ▶ Value of a NSP affiliation
 - ▶ Purpose of the joint operating statement between the NSP and NSAA
 - ▶ Patrol director's expectations of his/her NSP division
- **Emergency response written plans and procedures**
 - ▶ Search and rescue
 - ▶ Avalanche
 - ▶ Mass casualty/disaster
 - ▶ Lift evacuation
 - ▶ Emergency vehicle access and evacuation
 - ▶ Operations guidelines
 - EMS/fire department
 - Security
 - Alcohol/drug consumption
 - Lift maintenance
 - Grooming
 - Snowmaking
 - Human resources

◆ **Evaluation criteria**

- Oral discussion and/or written exam score of 80% or better

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CERTIFIED AVALANCHE MODULES 2-4

The following three modules are unique in the NSP Certified patroller program in that there are two levels of certification for each module. Baseline certification qualifications apply to all patrollers in the program; advanced qualifications apply to certification in divisions that adopt those qualifications. Anyone, certified by passing just the baseline module tests in one division, who then moves to a division that requires the advanced qualifications, will need to pass the advanced module tests before their certified status is validated by that division.

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CERTIFIED MODULE 2:

Avalanche Hazard Assessment

Baseline certification

Suggested resources (use latest publication editions)

- *Backcountry Avalanche Safety* by Tony Daffern
- *NSP Backcountry Avalanche Safety: A Level 1 Summary* by Mike Laney
- *Snow Sense* by Jill Fredston and Doug Fesler

Baseline qualifications (applies to all Certified candidates)

◆ Prerequisite background education

- **Minimum:** NSP Introduction to Avalanche Safety and Rescue course
- **Recommended:** NSP Level 1 Avalanche for Rescue Personnel course

◆ Essential knowledge

○ Avalanche classification discussion

- ▶ Basic types
 - Loose snow
 - Slab
 - Wet
- ▶ Generic path anatomy
- ▶ Size relative to path (R1-R5)
- ▶ Size relative to destructiveness (D1-D5)
- ▶ Triggers (examples of natural and artificial)

○ Contributory factors discussion

- ▶ Weather factors
 - Temperature
 - Wind
 - Precipitation
- ▶ Snowpack factors
 - Layering
 - Metamorphism processes
 - Rounding
 - Sintering
 - Faceting
 - Melt-freeze
 - Snow profiles
 - Strength measurements
 - Critical structures
 - Energy
- ▶ Terrain factors
- ▶ Human factors

○ Snow mechanics/avalanche dynamics discussion

- ▶ Loading and stress

- ▶ Stress and deformation
- ▶ Deformation and fracture
- ▶ Loose snow release sequence
- ▶ Slab avalanche release sequence
- ▶ Wet snow release sequence
- **Hazard evaluation discussion**
 - ▶ Avalanche center bulletins
 - ▶ North American Avalanche Danger Scale
 - ▶ Danger Rose Diagrams
 - ▶ Snow pits and profiles
 - ▶ Spatial variation principle
 - ▶ “Bull’s-eye” data prioritization
 - ▶ Obvious Clues Method (OCM)
 - ▶ NSP Avalanche Hazard Checklist
- ◆ **Evaluation criteria**
 - **Written pretest**
 - **Oral discussion** based on essential content described above
 - **Skills demonstration** (show and tell)
 - ▶ Interpret a Danger Rose Diagram
 - ▶ Interpret a snow profile
 - **Oral discussion and/or written exam score of 80% or better**

Advanced qualifications (division option)

Suggested resources (use latest publication editions)

- *NSP Backcountry Avalanche Safety: A Level 1 Summary* by Mike Laney
- *Snow, Weather and Avalanches; Observation Guidelines for Avalanche Programs in the United States (SWAG)* by the American Avalanche Association and USDA Forest Service National Avalanche Center
- *Staying Alive in Avalanche Terrain* by Bruce Tremper
- *The Avalanche Handbook* by David McClung and Peter Schaerer

- ◆ **Prerequisite background education**
 - **NSP Level 2 Avalanche for Rescue Personnel course**
- ◆ **Essential knowledge**
 - **Avalanche classification**
 - ▶ Primary
 - ▶ Secondary
 - **Weather factors**
 - ▶ Atmospheric pressure
 - ▶ Radiation
 - Types
 - Sources
 - Heating/cooling effects
 - ▶ Temperature and relative humidity
 - ▶ Atmospheric lifting
 - Types

- Effects
- Importance
- Adiabatic lapse rates
- ▶ Precipitation processes
 - Condensation process that forms cloud droplets
 - Vapor deposition process that forms ice crystals
 - Role of nuclei in condensation and crystallization
 - Riming process
 - Surface hoar formation
 - International Commission on Snow and Ice (ICSI) system of snow classification
- ▶ Principal snow climate zones in the U.S.
- ▶ Wind velocity, transport and deposition
- ▶ Weather plot instrumentation and measurements (what, when, where, how, why)
- **Snowpack factors**
 - ▶ Snowpack development
 - Structure
 - Principles of cohesion and adhesion
 - Viscous and elastic properties of snow
 - Slabs and interfaces
 - Cornice formation
 - ▶ Metamorphism
 - General description
 - Rounding process
 - Sintering process
 - Faceting process
 - Melt-freeze process
 - Crusts and ice layers
 - ▶ Snow layer hardness
 - Relationship between snow hardness and strength
 - Strong and weak layers in a snowpack
 - ▶ Snow layer density and water equivalent
 - How measured/calculated
 - Relationship between density and water equivalent
 - Density and loading
 - ▶ Stress in the snowpack
 - Sources
 - Location in the snowpack
 - How observed/measured
 - Deformation
 - Settlement
 - Creep
 - Glide
 - Significance relative to avalanche potential
 - ▶ Free water in the snowpack
 - Sources

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- Pendular regime
- Funicular regime
- Percolation
- Significance relative to avalanche potential
- ▶ Snowpack data gathering methods
 - Study pit
 - Test pit
 - Observations
 - Tests
 - Observations and tests on the move

○ **Terrain factors**

- ▶ General terrain features and relationship to avalanche potential
 - Elevation
 - Angle
 - Aspect
 - Contour
 - Anchors
 - Vegetation
- ▶ Specific terrain structures and their relationship to avalanche potential
 - Ridges
 - Knobs
 - Bowls
 - Couloirs
 - Chutes
 - Spines
 - Gullies
 - Isolated rocks/trees
 - Brushy areas
- ▶ Terrain influence on weather
 - Temperature changes
 - Precipitation rates
 - Snow transport and loading patterns
 - Inversions
 - Surface hoar and rime
- ▶ Terrain influence on snowpack
 - Heat gain/loss
 - Stress vectors and amplifiers
- ▶ Cornice formation
- ▶ Avalanche path recognition and history
- ▶ Examples of “terrain traps”

○ **Human factors**

- ▶ Risk and vulnerability
- ▶ Attitudes and heuristics
- ▶ Managing risk
- ▶ Managing uncertainty

BETA

○ **Avalanche release discussion**

- ▶ Failure dynamics
 - Stress vectors
 - Stress building factors
 - Stress relief factors
 - Snowpack structures that concentrate stress
 - Distinctions between “failure,” “fracture” and “propagation”
- ▶ Avalanche release mechanics
 - Loose snow
 - Slab
 - Wet
 - Ice
 - Slush
- ▶ Avalanche trigger descriptions and examples
 - Natural
 - Artificial
- ▶ Components of a standard avalanche observation (SWAG)
 - Observation components
 - Classification codes

○ **Hazard assessment discussion**

- ▶ Role of avalanche center bulletins
 - Features/data provided
 - Advantages
 - Disadvantages
- ▶ Role of local observations during travel
 - Weather factors
 - Snowpack stability factors
 - Strength
 - Ski/Boot Penetration Test
 - Shovel Shear Test
 - Compression Test
 - Extended Column Test
 - Propagation Saw Test
 - Hand Shear Test
 - Ski Pole Penetrometer Test
 - Structure (“lemons,” “yellow flags”)
 - Energy (shear quality, propagation)
 - Spatial variation
 - Terrain factors
 - Altitude
 - Aspect
 - Contours
 - Vegetation

○ **Decision-making discussion**

- ▶ Prioritization of data

- Terrain
- Weather
- Snowpack
- Human
- ▶ Decision-making aids
 - Purpose
 - Examples
 - Preference

◆ Evaluation criteria

- **Demonstrate accurate measurement of:**
 - ▶ Slope angle
 - ▶ Aspect
 - ▶ Elevations
- **Identify** terrain features, including slide paths and terrain traps in the field
- **Interpret** a Danger Rose Diagram in terms of relative hazard
- **Make a stability assessment** based on a graphical format snow profile
- **Create a snow profile** (tabular or graphical) from provided data (examples from the candidate's personal avalanche handbook will satisfy this item)
- **Use terrain clues** to identify avalanche paths
- **Use terrain and snowpack clues** to determine direction of prevailing winds and lee slopes
- **Dig a suitable test pit**
 - ▶ Location
 - ▶ Dimensions
 - ▶ Observations/measurements
 - Stratigraphy
 - Layer hardness
 - Temperature gradients
 - Grain types
 - Grain sizes
 - Critical structures ("lemons," "yellow flags")
 - ▶ Standardized strength tests for instability (including scoring parameters)
 - Shovel Shear
 - Compression
 - Extended Column
 - Propagation Saw
 - ▶ Assess fracture (shear) quality
 - ▶ Draw a snow profile
 - ▶ Make a stability assessment based on findings
- **Conduct non-standardized tests for instability**
 - ▶ Ski Pole Penetrometer
 - ▶ Hand Shear
 - ▶ Switchback
 - ▶ Ski/Boot Penetration
- **Demonstrate appropriate use** of at least two hazard assessment/decision-making tools

- Oral discussion and/or written exam score of 80% or better

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MODULE 3:

Avalanche Risk Mitigation

Baseline certification

Suggested resources (use latest publication editions)

- *Snow Sense* by Jill Fredston and Doug Fesler
- *Backcountry Avalanche Safety* by Tony Daffern
- *NSP Backcountry Avalanche Safety: A Level 1 Summary* by Mike Laney
- *The Avalanche Handbook* by David McClung and Peter Schaerer (explosives component only)

Baseline qualifications (applies to all Certified candidates)

◆ Prerequisite background education

- **Minimum required:** NSP Introduction to Avalanche Safety and Rescue course
- **Recommended:** NSP Level 1 Avalanche for Rescue Personnel course

◆ Essential knowledge

○ Risk mitigation principles

- ▶ Concept and general purpose of avalanche risk mitigation practices
- ▶ Individual risk mitigation
 - User education
 - Advance planning
 - Terrain selection principles
 - Travel rituals

○ Passive measures by resorts and communities/agencies

- ▶ Zoning/access control/signage
- ▶ Stabilization structures/reforestation
- ▶ Defense structures

○ Active measures by resorts and communities/agencies

- ▶ Slope compaction
- ▶ Slope cutting
- ▶ Artificial triggering with explosives
 - Types of explosives
 - Delivery methods
 - Regulatory entities

◆ Evaluation criteria

- **Oral interview** using a checklist form
- **Score at least 80% to pass**

Advanced qualifications (division option)

Suggested resources (use latest publication editions)

- *Staying Alive in Avalanche Terrain* by Bruce Tremper
- *The Avalanche Handbook* by David McClung and Peter Schaerer
- *Explosives Use in Avalanche Control*, National Ski Areas Association Guidelines
- *Recommended Safe Working Practices*, Orica Avalanche Products, Orica Mining Services, www.oricamining.com

- ◆ **Prerequisite background education**
 - **NSP Level 2 Avalanche for Rescue Personnel course**
 - **Association of Professional Patrollers blasting seminar**
- ◆ **Essential knowledge**
 - **Definitions**
 - ▶ Avalanche hazard
 - ▶ Avalanche risk
 - ▶ Vulnerability
 - ▶ Mitigation
 - **Need from ski industry standpoint**
 - ▶ Transportation routes
 - ▶ Resorts
 - ▶ Guided backcountry and heli-ski services
 - **Avalanche problem factors**
 - ▶ Type
 - ▶ Magnitude/destructive potential
 - ▶ Return period
 - ▶ Forecasting/decision responsibility
 - ▶ Rescue capability
 - **Passive methods**
 - ▶ Access control
 - Delineation
 - Closures
 - Warnings/education
 - Zoning for commercial/residential properties
 - Limitations of signage, closures and other forms of access control
 - ▶ Limiting devices
 - Wind fencing; jet roof, etc.
 - ▶ Supporting structures
 - Starting zone support structures
 - Reforestation
 - ▶ Deflection and retarding of avalanche flow
 - Catchment trenches/basins
 - Diversion berms and mounds
 - ▶ Direct protection of structures
 - Splitters
 - Tunnels/sheds
 - Reinforced structures
 - **Active methods**
 - ▶ Compaction
 - Machine
 - Boot packing
 - Recreational traffic
 - ▶ Ski cutting

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- ▶ Cornice breaking/cutting
- ▶ Explosives
 - Mechanics of explosive release
 - Thrust/pressure
 - Ground stress waves
 - Air stress waves
 - Effect on snowpack
 - Mechanical fracture
 - Compaction columns
 - Dry versus wet snow
 - Methods of delivery
 - Hand charges
 - Types of explosives used
 - Charge sizes
 - Cornice blasting
 - Fusing issues
 - Delivery methods
 - Large charges
 - Blasting agents versus explosives
 - Conditions where advantageous
 - Delivery methods
 - Artillery
 - Military
 - Avalauncher
 - Gaz-Ex
 - General principles
 - Fixed systems
 - Portable systems (e.g. "Daisy Bell")
 - Placement considerations
 - No-lights and misfires
 - Relight issues
 - Time factors
 - Projectiles
 - Dealing with negative results
 - Regulatory authorities and regulation issues
 - Federal
 - State
 - Local
 - Safety/security issues
 - Communication
 - Training
 - Storage
- **User group education discussion** (descriptions, effectiveness and limitations)
 - ▶ Signage
 - ▶ Avalanche center bulletins

- ▶ Awareness presentations
- ▶ Avalanche education courses
 - Target audiences
 - Levels
 - Standards
 - Providers
- ◆ **Evaluation criteria**
 - **Oral discussion and/or written exam** covering the aforementioned material
 - **Oral discussion and/or written exam score of 80% or better**

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CERTIFIED MODULE 4:

Avalanche Rescue

Baseline certification

Suggested resources (use latest publication editions)

- *NSP Avalanche Rescue Fundamentals* by Lin Ballard and Dale Atkins
- *NSP Backcountry Avalanche Safety: A Level 1 Summary* by Mike Laney

Baseline qualifications (applies to all Certified candidates)

◆ Prerequisite background education

- **Minimum required:** NSP Introduction to Avalanche Safety and Rescue course
- **Recommended:** NSP Level 1 Avalanche for Rescue Personnel course

◆ Essential knowledge

○ Self-rescue/survival

- ▶ Overall survival chances if caught and buried
- ▶ Minimum equipment for travel in avalanche terrain, including purpose, types, care and usage of each item
- ▶ Purpose, advantages and disadvantages of adjunct survival/self-rescue equipment, such as Avalung® and air bag systems
- ▶ Precautions to take immediately before and while crossing a suspect slope
- ▶ Techniques to help escape and/or survival if caught in an avalanche

○ Companion/group search

- ▶ What to do if witnessing someone caught in an avalanche
- ▶ Advantages and disadvantages of search and rescue by companions
- ▶ Leadership requirements and options for companion rescue
- ▶ Basic companion search processes
 - Narrowing the search area
 - Surface (audio-visual) search
 - Transceiver search
 - Clue and catchment search
- ▶ Search skills
 - Transceiver use
 - Probes and probing methods
 - Shovels and shoveling methods
- ▶ Emergency care
 - Extrication
 - Trauma considerations and treatment
 - Suffocation considerations and treatment
 - Hypothermia considerations and treatment
 - Emergency transportation
- ▶ Process for groups to merge efforts (group search)
- ▶ Pros and cons of seeking outside help

○ Organized Search and Rescue (SAR)

- ▶ Status and effectiveness
- ▶ Rescue organization and management
 - Purpose, functional goals and effectiveness of organized avalanche rescue
 - Incident Command System (ICS)
 - When it becomes operational
 - Immediate priorities of the Incident Commander
 - How the system grows with time, resources and complexity
 - Functions of each Section
 - Authority and roles of non-patrol agencies that may affect the patroller's role and functions
- ▶ Initial search team
 - Composition
 - What to take, what to leave behind
 - Functions enroute to incident site
 - Team safety considerations
 - Functions upon arrival
- ▶ Additional resources
 - Type and amount
 - Deployment
- ▶ Rescuer safety
 - Risks
 - Consequences
 - Management
- ◆ **Evaluation criteria (within limits of available snowpack and terrain)**
 - **Find two transceivers** within a 100 m by 100 m area within five minutes
 - **Demonstrate proper spot-probing technique**
 - ▶ Transceiver pinpoint
 - ▶ Clues and catchments
 - **Demonstrate proper probe-line technique**
 - **Demonstrate effective shoveling methods** for uncovering a buried avalanche victim

Advanced qualifications (division option)

Suggested resource (use latest publication edition)

- *NSP Avalanche Rescue Fundamentals* by Lin Ballard and Dale Atkins

◆ Prerequisite background education

- **NSP Level 2 Avalanche for Rescue Personnel course**

◆ Essential knowledge

- **Self-rescue/survival**
 - ▶ Overall survival chances if caught and buried
 - ▶ Minimum equipment for travel in avalanche terrain, including purpose, types, care and usage of each item
 - ▶ Function and effectiveness of adjunct survival/self-rescue equipment, such as
 - Avalung®
 - Air bag systems

- ▶ Precautions to take immediately before and while crossing a suspect slope
- ▶ Techniques to help one escape and/or survive if caught in an avalanche
- **Companion/group search**
 - ▶ What to do if witnessing someone caught in an avalanche
 - ▶ Advantages and disadvantages of search and rescue by companions
 - ▶ Basic phases/functions of companion search and rescue
 - ▶ Leadership requirements and options for companion rescue
 - ▶ Seeking outside help
 - Pros and cons
 - Methods
- **Organized Search and Rescue (SAR)**
 - ▶ Need and effectiveness
 - ▶ Rescue organization and management
 - Primary functional goals of organized avalanche rescue
 - Incident Command System (ICS)
 - When it becomes operational
 - Immediate priorities of the Incident Commander
 - How the system grows with time, resources and complexity
 - Functions and priorities of each Section
 - Authority and roles of non-patrol agencies that may affect the patroller's role and functions
 - ▶ Initial alert and response
 - Dealing with the reporting party
 - Initial search team
 - Composition
 - What to take, what to leave behind
 - Functions enroute to incident site
 - Team safety considerations
 - Functions upon arrival
 - ▶ Site leader responsibilities
 - Communications
 - Additional resources
 - Type and amount
 - Deployment
 - Site marking
 - ▶ Adaptations for special search settings
 - Buildings
 - Vehicles
 - ▶ Resort avalanche alerting and rescue plans
 - ICS compatibility
 - Agency involvement
 - Decision-making priorities
 - Utilization of non-patrol personnel
 - Methods for dispatching and tracking personnel and other resources
 - Handling of out-of-bounds incidents

- ▶ Rescue leadership and teamwork
 - Qualities of effective leadership/followership
 - Initial information and planning
 - Critical information to seek from a witness
 - Strategies for identifying and systematically focusing on problems
 - Appropriate communications with personnel connected with the problem
 - Prioritizing data
 - Components of an effective plan of action
- ▶ Rescue personnel safety
 - General
 - Special human factor considerations
 - Assumptions about hazards when responding to an avalanche incident
 - Consequences of rescuer(s) caught in avalanche enroute to an incident
 - Ways to promote personnel safety in rescue operations
- ▶ Specific hazards and precautions
 - Access route hazards
 - Incident site hazards
 - Evacuation route hazards
 - Unauthorized persons accessing the site
 - Mechanized transport
 - Over-snow vehicle
 - Helicopter
- ▶ Avalanche dog teams
 - Advantages and limitations
 - Methods of deployment
 - Incorporating dogs into a search already underway
 - Appropriate rescuer behavior when rescue dogs are working a site
- **Emergency medical care and evacuation of avalanche victims**
 - ▶ Physiologic factors leading to avalanche death
 - ▶ Associated mechanisms of injury
 - ▶ Extrication principles
 - ▶ Frequently needed emergency care
 - ▶ Triage principles associated with multiple avalanche casualties
 - ▶ Special transportation considerations
- **Avalanche incident documentation**
 - ▶ Importance of accurate and detailed documentation
 - ▶ Kinds of information that needs to be documented
 - ▶ Source of standard avalanche reporting forms
- ◆ **Evaluation criteria**
 - **Given a hypothetical last seen area (LSA) and flow pattern**, identify likely burial areas on a given slope
 - **Find two transceivers** buried within a 100 m by 100 m area within five minutes (Critical performance indicator (CPI) – must be passed in order to certify)
 - **Demonstrate effective spot-probing techniques** for clues and catchments

- **Demonstrate effective probe-line management**
 - ▶ Group size
 - ▶ Spacing (with and without a guide cord)
 - ▶ Alignment
 - ▶ Commands
 - ▶ Use of guide cord
 - ▶ Marking
 - ▶ Procedures for potential “strike”
 - ▶ Offset for second pass
- **Demonstrate effective shoveling methods and techniques**
 - ▶ Side-by-side (strategic) method
 - ▶ V-shaped (conveyor) method

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CERTIFIED MODULE 5:

OEC Module for the Certified Program

Suggested resources (use latest publication editions)

- Local continuing education Outdoor Emergency Care (OEC) sessions
- Local EMT/ambulance squads
- *Outdoor Emergency Care*, National Ski Patrol
- *The Ski Patroller's Manual*, National Ski Patrol

◆ Essential knowledge

- **Demonstrate superior knowledge of OEC concepts**
- **Demonstrate superior knowledge of OEC management**, principles and techniques:
 - ▶ Situation assessment and management
 - ▶ Ski area operational factors
 - ▶ Decision making
 - ▶ Leadership
 - ▶ Resource management
- **Demonstrate the ability to develop and communicate** a written or oral emergency care plan in response to a written scenario (division option)

◆ Evaluation criteria

- **Candidate evaluated as a leader** of at least one complex OEC scenario, which may include:
 - ▶ (A) trained patroller(s)
 - ▶ (An) untrained bystander(s)
- **Problems to be evaluated** may include the following:
 - ▶ Multiple victims
 - ▶ Multiple injuries
 - ▶ Challenging terrain
 - ▶ Challenging scene
- **Division-developed written evaluation** may include the following:
 - ▶ Essays
 - ▶ Questions from the OEC test bank
- **Oral discussion and/or written exam score of 80% or better**

CERTIFIED MODULE 6:

Risk Management

Suggested resources (use latest publication editions)

- Local area's liability carrier's materials
- Local area's insurance information
- National Ski Areas Association (NSAA) risk management materials

◆ Concluding objectives

- **Provide an overview** of local ski area's operational policies, and review and compare various area programs regarding risk mitigation
 - ▶ Slopes and trails
 - ▶ Over-the-snow vehicle operations
 - ▶ Snowmaking
 - ▶ Lift operations
 - ▶ Interfacing with area operations/departments/management
- **Provide an understanding** of local area's planning and procedures regarding risk mitigation
 - ▶ Obtain copies of appropriate local area's written documents to review for interview and/or questioning process

◆ Essential knowledge

- **Ski industry risk management issues**
 - ▶ Definition of term 'risk management'
 - ▶ Area and trail design
 - Crowd control
 - Parking/parking lots
 - Trail design/maintenance risks
 - Actual examples
 - ▶ Pre- and post-loss goals
 - ▶ Safety and risk management training types and availability
 - Educational objectives for each training program
 - Reduction of employee skiing injuries, ACL awareness training, etc.
- **Ski industry insurance issues**
 - ▶ Local area's insurance carrier(s)
 - Coverage
 - Types of lift inspections required
 - Types of liability releases
 - Possible insurance losses through employees, through the public
 - Employee versus guest insurance
 - Area's non-skiing exposure to risk
 - Slipping, falling
 - Day care
 - Food and beverage

- Liquor liability
 - Property loss
 - Workers' compensation
 - Instructional exposure
- ▶ Local area's risk management/insurance budgeting
- ▶ Cost per skier
- ▶ Inspections
- ▶ Workers' compensation for paid versus volunteer
- **Emergency response/planning documents**
 - ▶ Actual examples
 - Search and rescue
 - Avalanche
 - Mass casualty
 - Lift evacuation
 - Emergency vehicle access
 - Operations guidelines
 - ▶ Implementation
- **"Red Flag" incident reporting procedures**
 - ▶ Purpose and type of reports
 - Lift incident
 - Slope incident
 - Ski school incident
 - Employee
 - Other
 - ▶ Liability releases
 - ▶ Investigation kit
 - Photos/diagrams
 - Who, what, where
 - ▶ Witness(es) statement(s)
 - Purpose
 - Employee versus public
 - Who receives copies and why
- **Legal implications of risk management**
 - ▶ What, why, where, when and how
 - ▶ What to do if contacted by:
 - Injured guest
 - Friend or relative of injured guest
 - News media
 - Opposing attorney
 - Insurance attorney
 - Other employees
 - Others
- **Compliance issues**
 - ▶ National, state and local agencies that affect ski area operations
 - Americans with Disabilities (ADA)

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- Equal opportunity including tramway use, safety and special emergency evacuation considerations
- Occupational Safety and Health Act (OSHA)
 - Forms No. 200, 101
 - Hazardous materials communication program (Material Safety Data Sheet)
 - Injury and Illness Prevention Program (IIPP)
 - Medical waste management (regulations vary per state)
- U.S. Forest Service (for ski areas on USFS land)
 - Special use permit provisions
 - Winter operation plan
 - Monitoring reports
- Regulatory environmental organizations
 - American National Standards Institute (ANSI)
 - State and local regulations affecting ski area operations
 - Lift construction and evacuation
 - Risk management issues

◆ **Evaluation criteria**

- **Oral discussion and/or written exam score of 80% or better**

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CERTIFIED MODULE 7:

Rope Rescue & Lift Evacuation

Suggested resources (use latest publication editions)

- *The Lift Evacuation Manual*, National Ski Areas Association (NSAA)
- *Mountain Travel & Rescue*, National Ski Patrol (NSP)

◆ Concluding objectives

○ **Demonstrate a clear understanding of area management**, NSP and patroller roles in practical applications of evacuation by practical, written and/or oral examination

- ▶ Aerial rescue, e.g. lifts, trams
- ▶ Ground rescue, e.g. toboggan, cliff, off trail

○ **Demonstrate a smooth, confident and fluid technique** when tying knots, handling rope and using evacuation equipment in common as well as complicated situations (*NOTE: In accordance with NSP in the interest of risk management, the NSP lift evacuation component will not include the actual lowering of people.*)

○ **Demonstrate proper belay techniques**

◆ Essential knowledge

○ **Lift operations**

- ▶ Design and codes
 - Line setup (mazes, ropes, fences, etc.)
 - Ramps (on and off)
 - Emergency gate
 - Stabilization pump
 - Consistency between lifts

- ▶ Lift components
- ▶ Auxiliary power sources
- ▶ Risk management issues
 - Guest relations
 - Lift signage

○ **Evacuation planning**

- ▶ Advance preparation
 - Knowledge of relevant laws and regulations
 - Safety considerations
 - Equipment selection and storage
 - Personnel training
 - Coordination with appropriate outside organizations
 - Coordination with government agencies
 - Coordination with other ski area departments
 - Designing techniques based on lifts, terrain, etc.
- ▶ Guidelines for an evacuation alert
 - Calling an alert
 - Reassuring passengers
 - Establishing communication

- Designating evacuation leaders
- Preparing rescuers
- ▶ Specific procedures of evacuation
 - Lift power lockout
 - Team deployment
 - Evacuation process
 - Ascending
 - Special situations
 - Ground care

○ Implementation

- ▶ Use of the plan
 - Serving as a leader
 - Establishing teams
- ▶ Appropriate equipment
 - Proper use
 - Placement and removal
 - Proper positioning
- ▶ Rope handling
 - Types
 - Knots
 - Other applicable rescue techniques
 - Care and storage
- ▶ Belay techniques
 - Anchoring
 - A strong stable position established from which to initiate a static belay using a hip belay position or fixed object
 - Belay position best suiting for the type of belay selected
 - Communication
 - All parties involved (ready, alert)
 - Controlled descent
 - Friction devices
 - Body
 - Mechanical
 - Other, e.g. tree, lift tower, snowcat
- ▶ Post evacuation activities
 - Equipment care
 - Reports
 - Information release
 - Critique

◆ Certified training activity

- Describe a specific situation where you have served as an evacuation leader at local area

◆ Evaluation criteria

- Oral discussion and/or written exam score of 80% or better
- Through interview, discussion and/or written format, demonstrate superior proficiency:
 - ▶ Knots

- ▶ Rope handling
- ▶ Evacuation equipment

(Note: Candidates must bring their own evacuation equipment to the evaluation.)

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CERTIFIED MODULE 8:

Alpine Skiing, Telemark Skiing & Snowboarding

Suggested resources (use latest publication editions)

- Current National PSIA and AASI certification standards, Professional Ski Instructors of America (PSIA) and American Association of Snowboard Instructors (AASI)
- *Outdoor Emergency Transportation Manual*, National Ski Patrol
- NSP Certified Program clinics or evaluation sessions, National Ski Patrol
- Ski Trainer's Workshop materials, National Ski Patrol
- PSIA American Teaching System materials, PSIA
- Skiing/Snowboarding Enhancement Seminars, National Ski Patrol
- PSIA or AASI workshops, PSIA or AASI
- Skiing Enhancement Seminar materials, National Ski Patrol

◆ Purpose

- **Prepare the Certified candidate** for the Certified alpine skiing, telemark skiing or snowboarding test
 - ▶ Test verifies superior skiing or snowboarding skills in challenging snow conditions and terrain

◆ Concluding objectives

- **Exhibit superior skiing or riding ability** in varied terrain and snow conditions including:
 - ▶ Steep terrain
 - ▶ Moguled surfaces
 - ▶ Groomed surfaces
 - ▶ Ungroomed surfaces (crud, cement, deep snow, hard pack, ice, corn, breakable crust, etc.)
 - ▶ Gladed areas
- **Exhibit superior skiing or riding ability** while performing typical patrolling duties including:
 - ▶ Skiing/riding as a presence on the slopes
 - ▶ Carrying and setting up equipment
 - ▶ Looking for a reported accident
 - ▶ Transporting an injured guest in a toboggan
- **Serve as a role model** for safe skiing/riding, adhering to the Skier's Responsibility Code

◆ Essential knowledge

- **General characteristics of superior skiing/riding**
 - ▶ Anticipating how snow conditions and terrain affect equipment and abilities and making appropriate adjustments in skiing/riding
 - ▶ Making short, medium and long radius turns with little or no skidding
 - ▶ Maintaining flow/rhythm whether increasing or decreasing speed
 - ▶ Adapting to terrain and conditions
 - ▶ Using a variety of turn sizes and shapes (e.g. every doesn't have to be round)
 - ▶ Ability to maintain lateral and fore/aft balance throughout all phases of a turn
 - ▶ Progressively increasing and decreasing edge angles throughout all phases of a turn
 - ▶ Making turns with minimal tail displacement

- ▶ Maintaining snow contact at turn initiation
 - ▶ Maintaining a stable upper body while keeping an active lower half
- **Characteristics of superior telemark or alpine skiing**
 - ▶ Tipping the skis before steering the skis towards the fall line
 - ▶ Skiing dynamic parallel turns on all inbounds terrain
 - ▶ Guiding both feet into and out of the fall line, leaving two well-defined arcs before the fall line through turn completion
- **Characteristics of superior snowboarding**
 - ▶ Tipping the board before steering the board towards the fall line
 - ▶ Controlling the performance of the board towards the intended outcome (tail following the path of the nose)
 - ▶ Extending to initiate a new turn
 - ▶ Extending to release the edge
 - ▶ Flexing to initiate a new turn (moving the center of mass into the new turn)
 - ▶ Flexing to release the edge
 - ▶ Keeping both legs active
 - ▶ Applying equal flexion/extension movements from both legs
 - ▶ Using a variety of ways to unweight the board
 - ▶ Applying independent flexion/extension movements from both legs
 - ▶ Maintaining reference alignments as appropriate to terrain and task
 - ▶ Intentionally separating the upper and lower body for specific outcomes (i.e. butters or 'late' spins)
 - ▶ Applying an active athletic stance
 - ▶ Using an appropriate range of motion
- ◆ **Preparation suggestions**
 - **Maintain physical fitness**
 - ▶ Cardiovascular fitness
 - ▶ Strength conditioning
 - ▶ Stretching
 - ▶ Balance
 - ▶ Stamina
 - **Use equipment that is versatile** and in good working order
 - **Practice fundamentals**
 - ▶ Wedge
 - ▶ Sideslip
 - ▶ Kick turn
 - ▶ Transitions
 - ▶ Skating
 - **Practice skiing/riding in challenging conditions**
 - ▶ Moguls
 - ▶ Steeps
 - ▶ While carrying equipment
 - ▶ Look far ahead and to the sides of a slope as if looking for distressed skiers/riders
 - **Ski/ride with skilled skiers and snowboarders**
 - **Find a PSIA/AASI instructor** training for a Level III certification

- ▶ Equivalent to Certified program level
 - ▶ Opportunity to receive instruction at a higher level in preparation for that exam
- **Participate in seminars**
 - ▶ NSP Ski Enhancement Seminars
 - ▶ NSP toboggan skills clinics
- **Attend a Certified program clinic** or test in your division
 - ▶ Participate in clinics and forums
 - ▶ Take pretests, if available, to identify strengths and weaknesses
 - ▶ Audit skill tests if possible
 - ▶ NSP toboggan skills clinics
- **Seek out and develop a mentor/mentee relationship** with a Certified patroller
 - ▶ Ask mentor to evaluate current skills
 - ▶ Ask mentor to suggest ways to improve performance
 - ▶ Ask mentor to suggest resources to improve skills
- ◆ **Evaluation criteria**
 - **Format varies** from division to division
 - ▶ Can be as formal as involving a specialized team of evaluators and completing specific tasks on specific slopes with specific courses or routes
 - **Involves situations that challenge** the skier/snowboarder candidate
 - ▶ Skiing/riding on steep slopes, bumps and ungroomed surfaces
 - ▶ Performing a skill in a designated area or on a designated part of the slope
 - ▶ Multitasking, i.e. carrying equipment or looking for injured guest while skiing/riding
 - ▶ Performing skills typically associated with sled handling
 - **Involves safety considerations** while performing tasks
 - ▶ Adhering to the Skier's Responsibility Code
 - ▶ Ensuring the safety of the public, peers and self
 - ▶ Proceeding only if the indicated task can be safely performed on the indicated terrain conditions
 - **Exam score of 80% or better**

CERTIFIED MODULE 9:

Toboggan Handling

Suggested resources (use latest publication editions)

- *Outdoor Emergency Transportation*, National Ski Patrol
- PSIA American Teaching System materials, Professional Ski Instructors of America
- Skiing Enhancement Seminar materials, National Ski Patrol
- Ski Trainer's Workshop materials, National Ski Patrol
- Toboggan Enhancement Seminar materials, National Ski Patrol

◆ Concluding objectives

- **Unloaded toboggan skills**
- **Loaded toboggan** – front operator skills
- **Loaded toboggan** – tail rope skills (division option)

◆ Essential knowledge

- **Ability to demonstrate various toboggan-handling skills** on specific terrain to fulfill

Certified objectives, such as:

► Unloaded toboggan skills

- Select appropriate route
- Maintain a safe and controlled speed appropriate to terrain and skier traffic
- Exhibit solid skiing stance including balance and stability
- Perform transitions
- Perform a variety of smooth turns as needed
- Perform sideslips
- Keep toboggan in or close to fall line
- Perform left and right traverses
- Maintain proper body position
- Ensure minimal bouncing or slipping of toboggan
- Appear at ease and in control of toboggan under all conditions
- Perform emergency stops
- Demonstrate recovery techniques

► Loaded toboggan

- Front operator
 - Select appropriate route
 - Control speed, ski safely and expediently
 - Provide smooth, safe and comfortable ride for the guest
 - Ski in a balanced and stable position
 - Control descent with wedge or sideslip
 - Control direction with turns, falling leaf
 - Brake toboggan as needed
 - Communicate as necessary with patient and tail operator
 - Perform effective transitions between wedge and sideslip with control
 - Avoid slipping during traverse

- Tail rope operator (division option)
 - Identify appropriate rope type, diameter, length and attachment to sled at candidate's area
 - Maintain appropriate hand position on rope
 - Maintain distance from sled
 - Manage rope slack
 - Demonstrate appropriate:
 - Sled braking
 - Traversing
 - Turn synchronization
 - Demonstrate proper:
 - Changing of positions
 - Belay of sled and front operator

◆ **Certified training activities**

○ **Training clinics' purpose**

- ▶ Provide a supportive environment
- ▶ Focus on improving patroller's ability to safely, smoothly and efficiently bring an injured skier down the hill in controlled toboggan runs
- ▶ Accident-site approach and management to be included

◆ **Evaluation criteria**

○ **All Certified toboggan events to be held on expert terrain**

- ▶ In the event that conditions (weather, grooming) produce a lack of bumps, crud and other variable conditions, the Certified exam schedule (and the candidate's three-season window) may be adjusted
- ▶ Division Certified supervisor will evaluate the terrain and the available conditions on exam day

○ **Exam score of 80% or better**

◆ **Continuing education**

○ **Toboggan recertification**

- ▶ Provides evaluation of toboggan-handling skills at Certified performance level
- ▶ Conducted on a Certified-approved hill
- ▶ To maintain Certified status, all Certified patrollers must complete this review once every three years
- ▶ To qualify for Certified continuing education, the toboggan refresher must be conducted by a qualified evaluator
- ▶ Refresher must contain instructional components followed by evaluation and direct feedback to patrollers following Certified toboggan handling guidelines

National Ski Patrol

Certified Program Study Guide

APPENDIX

- ◆ Appendix 1: Sample Multiple Casualty Plan
- ◆ Appendix 2: Sample Ski Patrol Skier Education Training Meeting
- ◆ Appendix 3: Performance Evaluations
 - A. Area Operations & Risk Management Performance Evaluation
 - B. Avalanche Performance Evaluation
 - C. Emergency Care Evaluations
 - D. Rope Rescue & Lift Evacuation Evaluation
 - E. Skiing Performance Evaluation
 - F. Toboggan Performance Evaluation

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Appendix 1: Sample Multiple Casualty Plan

Suggested resources (use latest publication editions)

- ICS Resource Center, www.training.fema.gov/EMI/IS/ICSResource/index.htm
- *Outdoor Emergency Care*, 5th edition, National Ski Patrol, <http://www.fema.gov/national-incident-management-system>

Knowing how to handle a multiple casualty incident is essential for patrollers involved in a disaster with numerous injured and otherwise distressed people.

The following information in no way sets an operational standard, but provides examples of what may be included in a typical mass casualty plan. (Sample questions follow.)

OVERVIEW

A mass casualty incident is any situation in which the number of injuries overwhelms or exceeds the available resources of the rescue force, therefore causing the need for cooperation with numerous external agencies, e.g., police, sheriff, fire, emergency services, and search and rescue.

The nature and scope of a mass casualty may range from an avalanche to a fire, a lift-related incident, or an explosion. Multiple casualty training and evaluation provides ski area management with staff who are equipped to handle public and employee safety while managing the crisis at hand.

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INCIDENT COMMAND SYSTEM (ICS)

The Incident Command System (ICS) is a nationwide standardized tool used to manage emergency situations. Emergency personnel developed ICS in the 1970s after a series of wildfires in California's urban interface. They discovered that more problems arose from lack of consistent, unified communication between and management of staff from various agencies rather than from a lack of resources.

Today, the primary goal of ICS is to ensure more efficient utilization of all available resources for effective control of any emergency. ICS should be activated from the time the incident occurs and continue until the need for management and operations no longer exists.

ICS is widely applicable, meaning it can be used for a wide range of emergencies by diverse groups, from all levels of government to private sector and nonprofit organizations, such as the NSP. Combining forces from these various entities requires a mutual understanding and agreement on organizational structure, common terminology, and operating procedures, and an acceptance of the qualifications of all involved personnel.

An Incident Command Post (ICP) is the field location where the primary tactical-level, on-scene incident command functions are performed. The ICP's location should be determined at the time of mobilization and depends on the specific site of the emergency. Location should be

determined with some or all of the following criteria in mind: access to authorized and unauthorized personnel, communications equipment, and visual contact to the emergency area.

An organized management system is critical to ICS. The Incident Commander (IC) is the individual responsible for all incident activities, including the development of strategies. Two members of the Command Staff, a Public Information Officer (PIO) and a Liaison Officer (LO) report directly to the IC. The PIO interfaces directly with the public, the media and other agencies involved in the incident. In the case of an on-mountain ski area emergency, the LO should have extensive knowledge of mountain topography and of the local terrain.

TRIAGE/EMERGENCY CARE

In the event of a crisis involving injuries to multiple victims, one of the first priorities will be the stabilization of those injured.

The triage process involves the following processes:

1. Assessing the situation and notifying the proper authorities through the ICP of the need for activating standby crews and support.
2. Setting up staging areas for the injured according to the protocols of the ski area and medical advisors in agreement with other outside agencies. Note: Triage sites for different areas of the mountain should be designated when preparing a plan. Always place the staging areas in the safest possible location, using indoor space if possible.
3. Placing victims in appropriate staging areas immediately after at least one other emergency medical person is available to assist in stabilization according to protocol.
4. After receiving proper approval, transporting victims.

VICTIM'S ASSISTANCE PLAN

In the event of any emergency involving injuries to multiple parties, a victim's assistance program should be initiated at both the ski area base and the hospital to aid victims and their families during the period immediately following the incident.

A representative should be assigned to each victim and/or family as a primary source of information and contact. The program should be managed by a department supervisor capable of coordinating details such as location and condition of victims, travel and lodging details for the family, personal property location, etc. It often is advisable to enlist the help of senior members of the accounting department to help facilitate record keeping of victim assistance activities. In some cases, it may be necessary to send the representative to the location where the victim is hospitalized.

MULTIPLE CASUALTY STUDY QUESTIONS

1. Define 'multiple casualty incident.'
2. Why is it important for patrollers to be aware of procedures to follow during a multiple casualty incident?
3. What is an incident command post (ICP)?
4. Who operates an ICP? Why?

5. How long is the ICP operated?
6. What is the location of the ICP?
7. Name several procedures that may be necessary for most incidents.
8. How should an incident be reported?
9. What information is important to obtain? Why?
10. What is triage? How should it be used?
11. What is a victim's assistance program? Why is it a good idea?

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Appendix 2: Sample Ski Patrol Skier Education Training Meeting

(Schedule near the beginning of the ski season)

Welcome and introductions	Patroller
Area viewpoint	Area Management
Ski patrol role/security role	Patroller/Security Rep
Security: Who are they? How do we communicate? How do they get out on the hill?	Security Rep
Guidelines for operating procedure	Patroller
Issuing cautions	Patroller
Break	
How to approach skiers	Patroller
Role playing	Patrollers
Wrap up	Patroller

BETA

ROLE PLAY SCENARIO

It is an average weekday night, 9:30 p.m. The temperature is 5°F, with 35 mph winds.

There is snowmaking in progress on chairs #11, #12, #14, #16, and #17. You know the "Rat Pack" is on the hill because their trucks are parked on the snow between the patrol room and chair #14. You are skiing the north side of chair #18 and witness two accomplished skiers cross the closed signs into the new snow under chair #14.

First group role play

1st Patroller: Hey you! Where do you think you're going! I want to talk to you!

2nd Patroller: You in the red coat, STOP! NOW!

1st Skier: You talking to me?

2nd Skier: What's your problem?

1st Patroller: You two are out of here; give me your tickets.

2nd Skier: What's your problem? What did we do anyway?

2nd Patroller: You skied a closed run. We are kicking you out.

Second group role play

Patroller: Excuse me, could I talk to for you for minute?

1st Skier Who me? Why?

Patroller: (Extend hand) Hi, my name is _____. I would like to talk to you about one of our policies here at _____ (ski area).

1st Skier: Well OK.

2nd Skier: (Approaches patroller and other skier) What's the problem?

Patroller: No problem. Would you join us ...(Extend hand) My name is _____. What's yours?

2nd Skier: Everyone calls me Randy.

BETA

Patroller: It's nice to meet you Randy. (Looks to the other skier) What is your name?

1st Skier: My name is Debbie.

Patroller: Debbie, it's nice to meet you, too. Occasionally our policy at _____ (ski area) requires us to close a ski run. We hate to do it, but don't have a choice. Most often the run is closed for safety reasons. Skiers violating closures have committed a dangerous and serious offense. We just watched both of you skiing; you two are among the best skiers at the area. Unfortunately the run you just skied is closed.

2nd Skier: That's the best snow on the mountain. We didn't know it was closed. We didn't do anything wrong.

Patroller: I know it's great snow. I have been skiing the edge myself, but there are high pressure water hoses and high voltage power lines running all over the closed area. You can't see them because they are covered by the new snow. That's why we put up the closed signs.

1st Skier: We didn't see any signs?

Patroller: So ... if you knew the run was closed, you would have avoided it?

1st Skier: No question ...we never ski closed runs.

Patroller: That's all we ask. You two have a good night. (Making eye contact) Debbie ... (making eye contact) Randy, we need to keep a record of talking to you about this. If another patroller were to see you on a closed run, our policy here requires that we suspend your skiing privilege.

2nd Skier: No problem, we're not going near any high voltage lines.

Patroller: Thanks for your cooperation. Have fun and come back again. Hopefully we will have all the runs open.

Additional Role Play Scenarios

- ◆ You are riding up chair #16 and see a skier coming down the hill. He sees a fallen skier and purposely skis very close and sprays the skier with snow. As he crosses under the chair, he looks up and sees you watching him. You wait at the top. As he gets off the chair, he sees you and takes off for the bottom.
- ◆ It is a very busy Saturday afternoon. There are ski club races on the north side of chair #18. You witness three expert skiers come off the top of chair #14. They tuck, avoiding several skiers, all the way to the top of Chuck's Corridor and do incredible jumps. They get cheers from the race crowd and from the chair. You have talked to them twice before. Each time they were very polite and promised not to do it any more.
- ◆ A father and his young daughter were skiing down Puppy Run when a teenage boy came off of chair #13 in a tuck and ran into the little girl at high speed. The little girl is standing and seems to be okay but is upset and crying. The father has one of the boy's skis and wants to "kill" him.
- ◆ Two teenage girls "ski" chair #18 top to bottom in a straight line doing a weak wedge, screaming all the way. You approach them and are talking to them about moving to a less challenging hill when one of their boyfriends who is intoxicated skis up wanting to know what is going on.
- ◆ It is 8 at night. You have been trying to control jumping under chair #18 all night. You have torn the jump down several times and have issued two caution stickers to skiers for continuing to build the jump after a verbal warning. You feel like you have talked to every skier on the hill. The slope leader has decided that a quick fence is necessary. You will be working under the chair and expect to be hearing from chair riders. When you arrive at the jump, you find three skiers building another jump.

Appendix 3: Performance Evaluations

A. Area Operations & Risk Management Performance Evaluation

B. Avalanche Performance Evaluation

C. OEC Performance Evaluation

D. Rope Rescue & Lift Evacuation Performance Evaluation

E. Skiing/Telemarking/Boarding Performance Evaluation

F. Toboggan Performance Evaluation

BETA

Appendix 4A: Area Operations & Risk Management Performance Evaluation

Home Area Management Policies, Procedures and General Daily Operations Evaluation Criteria <ul style="list-style-type: none"> Slopes and trails Over-the-snow vehicle operations Snowmaking Lift operations Interface with area operations, departments and management 	+ = - Comments:	+ = - Comments:	+ = - Comments:
Existing Written Planning Documents Evaluation Criteria <ul style="list-style-type: none"> Search and rescue Avalanche Multiple casualty Lift evacuation Emergency vehicle access Operations guidelines 	+ = - Comments:	+ = - Comments:	+ = - Comments:
General Risk Management Issues Evaluation Criteria <ul style="list-style-type: none"> Ski industry/area management goals Trail design Insurance Safety and risk management training 	+ = - Comments:	+ = - Comments:	+ = - Comments:
Incident Investigation Evaluation Criteria <ul style="list-style-type: none"> "Red flag" types of incidents Investigation kits Incident report procedures Implications for area's risk management 	+ = - Comments:	+ = - Comments:	+ = - Comments:
Compliance Issues Evaluation Criteria <ul style="list-style-type: none"> Regulatory environment Lift operations-ANSI B77 ADA OSHA Forest service Risk management 	+ = - Comments:	+ = - Comments:	+ = - Comments:
AREA OPERATIONS & RISK MGMT PERFORMANCE OVERALL SCORE Candidate Name:	+ = -	+ = -	+ = -

Evaluators must make a clear decision as to whether or not a candidate has met the objective. Passing scores are + and =. Non-passing score is -. These scores have no numeric value and cannot be averaged. The Certified candidate must receive an overall passing score (+ or =) from a simple majority of evaluators in order to complete the component. Partial completion may not be carried from year to year.

EVENT LOCATION _____
 DIVISION _____

DATE _____
 EXAMINER _____

Appendix 4B: Avalanche Performance Evaluation

Avalanche Management Evaluation Criteria <ul style="list-style-type: none"> Avalanche hazard assessment Personal safety Avalanche rescue teamwork Avalanche rescue procedures Rescue decision making Leadership and effectiveness in search procedures 	+ = - Comments:	+ = - Comments:	+ = - Comments:
Avalanche Mitigation Evaluation Criteria <ul style="list-style-type: none"> Closure Compaction Slope and cornice control Explosives 	+ = - Comments:	+ = - Comments:	+ = - Comments:
Avalanche Rescue Evaluation Criteria (as defined by division) <ul style="list-style-type: none"> Transceiver search Spot probing Formal probe line Shoveling 	+ = - Comments:	+ = - Comments:	+ = - Comments:
OVERALL SCORE Candidate Name: _____	+ = -	+ = -	+ = -

Evaluators must make a clear decision as to whether or not a candidate has met the objective. Passing scores are + and =. Non-passing score is -. These scores have no numeric value and cannot be averaged.

EVENT LOCATION _____

DATE _____

DIVISION _____

EXAMINER _____

Appendix 4C: Certified OEC Performance Evaluation

TEAM SCENARIO # _____

Candidate #1: _____

Date: _____

Candidate #2: _____

Candidate #3: _____

	Value	CANDIDATE #1	CANDIDATE #2	CANDIDATE #3	Scenario Specific CPIs (Trainee must have all boxes checked in this section)	CANDIDATE #1	CANDIDATE #2	CANDIDATE #3
SCENE SIZE-UP								
Surveys scene	1							
Initiates BSI precautions	CPI							
Introduces self	1							
Asks permission to help	1							
PRIMARY ASSESSMENT								
AVPU	1							
Airway: Assesses and maintains	CPI							
Breathing: Assesses respirations	CPI							
Circulation: Assesses pulse	CPI							
Circulation: Assess and manage bleeding	CPI							
Stabilizes ABCs	1							
HISTORY AND EXAM								
Determines major complaint and MOI	CPI							
Obtains S A M P L E	1							
Conducts a focused exam	1							
Calls for help and equipment	CPI							
SECONDARY SURVEY								
Head - ears, pupils	1							
Neck and cervical spine	1							
Chest, ribs, abdomen	1							
Shoulders, clavicles and upper arms	1							
Pelvis and lower extremities	1							
Back (T through S spine)	1							
Finds all injuries	1							
GENERAL OBSERVATIONS								
Correctly prioritizes interventions	1							
Treats for shock	1							
Quickly deals with situation	1							
Correctly handles patient and injury	1							
Demonstrates skill competency	1							
Communicates with patient	1							
Directs others capably	1							
Follows direction of leader	1							
Performs ongoing assessment	1							
# CPIs performed by candidate								

Candidate #1: - = +

Candidate #2: - = +

C

# Other tasks performed by candidate				Candidate #3: - = +
Does candidate demonstrate the necessary				
skills required of a Certified patroller?		Evaluator's signature: _____		

Appendix 4C (continued): Certified OEC Practical Station Performance Evaluation

Evaluation Scenario: Unresponsive

Candidate : _____

Date: _____

	PTS/CPI	CANDIDATE #1	Scenario Specific CPIs (Candidate must have all boxes checked in this section)	CANDIDATE # 1
SCENE SIZE-UP			OEC SKILLS	
Surveys scene	1		* Maintains C-spine stabilization while positioning for Interventions	
Initiates BSI precautions	CPI			
Introduces self	1			
Asks permission to help	1		* Inserts oral/ nasopharyngeal airway	
PRIMARY ASSESSMENT				
AVPU	1			
Airway: Assesses and maintains	CPI		* Initiates CPR with competency	
Breathing: Assesses respirations	CPI			
Circulation: Assesses pulse	CPI		* Utilizes AED with competency	
Circulation: Assesses and manages bleeding	CPI			
Stabilizes ABCs	1			
HISTORY and EXAM				
Determines major complaint and MOI	CPI		SCENE MANAGEMENT SKILLS	
Obtains S A M P L E	1		* Communicates status to dispatch	
Conducts a focused Exam	1			
Calls for help and equipment	CPI		* Manages witness competently	
SECONDARY SURVEY				
Head - ears, pupils	1			
Neck and cervical spine	1			
Chest, ribs, abdomen	1			
Shoulders, clavicles and upper arms	1			
Pelvis and lower extremities	1			
Back (T through S spine)	1			
Finds all injuries	1			
GENERAL OBSERVATIONS				
Correctly prioritizes interventions	1			
Treats for shock	1			
Quickly deals with situation	1			
Correctly handles patient and injury	1			
Demonstrates skill competency	1			
Communicates with patient	1			
Directs others capably	1			
Follows direction of leader	1			
Performs ongoing assessment	1			
TOTAL POINTS 36 (minimum passing 29)				
			Does candidate demonstrate the necessary skills required of a Certified patroller?	
			Candidate: Final Score: - = +	

Evaluator's signature: _____

Appendix 4C (continued): Certified OEC Performance Evaluation

Team Scenario #3

Candidate #1: _____

EVALUATOR: _____

Date: _____

Candidate #2: _____

Candidate #3: _____

+ ABOVE STANDARD = MEETS STANDARD = NO DIRECT IMPACT / PARTICIPATION - BELOW STANDARD		CANDIDATE			Scenario Specific CPIs	CANDIDATE		
		# 1	# 2	# 3		#1	#2	#3
SCENE SIZE-UP					OEC SKILLS			
Surveys Scene					* Correctly prioritizes care of			
Initiates BSI precautions	CPI				injuries			
Introduces self					* Controls bleeding at compound			
Asks permission to help					fracture site			
PRIMARY ASSESSMENT					* Applies appropriate bandage to			
AVPU					compound fracture site			
Airway: Assesses and maintains	CPI				* Selects proper delivery method			
Breathing: Assesses respirations	CPI				for O2 (device and flow rate)			
Circulation: Assesses pulse	CPI				* Checks CMS before splinting			
Circulation: Assess and manage bleeding	CPI				- Tib/Fib			
Stabilizes ABC's					- Femur			
					- Humerus			
HISTORY AND EXAM					* Provides stabilization for			
Determines major complaint and MOI	CPI				- Tib/Fib			
Obtains S A M P L E					- Femur			
Conducts a focused Exam					- Humerus			
Calls for help and equipment	CPI				* Checks CMS splinting			
SECONDARY SURVEY					- Tib/Fib			
Head - ears, pupils					- Femur			
Neck and cervical spine					- Humerus			
Chest, ribs, abdomen					* Correctly removes helmet			
Shoulders, clavicles and upper arms					* Correctly applies C-collar and			
Pelvis and lower extremities					backboard			
Back (T through S spine)					* Checks CMS after secured to			
Finds all injuries					backboard			
GENERAL OBSERVATIONS								
Correctly prioritizes interventions					SCENE MANAGEMENT SKILLS			
Treats for shock					* Contacts management for AIK			
Interventions conducted in timely manner					* Requests appropriate transport			
Correctly handles patient and injury								
Demonstrates skill competency								
Communicates with patient								
Directs others capably	CPI							
Proactively supports team process	CPI							
Performs ongoing assessment								
Number of + / = (minimum pass 39)								
Any CPIs missed (minimum pass 0)								

CANDIDATE #1: PASS FAIL

CANDIDATE #2: PASS FAIL

CANDIDATE #3: PASS FAIL

Appendix 4C (continued): Cardiac Arrest Management/AED Performance Evaluation

Start Time: _____

Stop Time: _____ Date: _____

Candidate's Name: _____

Evaluator's Name: _____

	Points Possible	Points Awarded
ASSESSMENT		
Takes, or verbalizes, body substance isolation precautions	1	
Briefly questions the rescuer about arrest events	1	
Directs rescuer to stop CPR	1	
Verifies absence of spontaneous pulse (skill station examiner states "no pulse")	1	
Directs resumption of CPR	1	
Turns on defibrillator power	1	
Attaches automated defibrillator to the patient	1	
Directs rescuer to stop CPR and ensures all individuals are clear of the patient	1	
Initiates analysis of the rhythm	1	
Delivers shock (up to three successive shocks)	1	
Verifies absence of spontaneous pulse (skill station examiner states "no pulse")	1	
TRANSITION		
Directs resumption of CPR	1	
Gathers additional information about the arrest event	1	
Confirms effectiveness of CPR (ventilation and compressions)	1	
INTEGRATION		
Verbalizes or directs insertion of a simple airway adjunct (oral/nasal airway)	1	
Ventilates, or directs ventilation of the patient	1	
Assures high concentration of oxygen is delivered to the patient	1	
Assures CPR continues without unnecessary/prolonged interruption	1	
Re-evaluates patient/CPR in approximately one minute	1	
Repeats defibrillator sequence	1	
TRANSPORTATION		
Verbalizes transportation of the patient	1	
Total	21	

Critical Criteria

_____ Did not take, or verbalize, BSI

_____ Did not evaluate the need for immediate use of AED

_____ Did not direct initiation/resumption of ventilation/compressions at appropriate times

_____ Did not assure all individuals were clear of patient before delivering each shock

_____ Did not operate the AED properly (inability to deliver shock)

_____ Prevented the defibrillator from delivering indicated stacked shocks

Appendix 4C (continued): Patient Assessment/Management – Trauma Performance Evaluation

Start Time: _____

Stop Time: _____ Date: _____

Candidate's Name: _____

Evaluator's Name: _____

		Points Possible	Points Awarded
Takes, or verbalizes, body substance isolation precautions		1	
SCENE SIZE-UP		1	
Determines the scene is safe		1	
Determines the mechanism of injury		1	
Determines the number of patients		1	
Requests additional help if necessary		1	
Considers stabilization of spine		1	
PRIMARY ASSESSMENT		1	
Verbalizes general impression of the patient		1	
Determines responsiveness/level of consciousness		1	
Determines chief complaint/apparent life threats		1	
Assesses airway and breathing	Assessment	1	
	Initiates appropriate oxygen therapy	1	
	Assures adequate ventilation	1	
	Injury management	1	
Assesses circulation	Assesses/controls major bleeding	1	
	Assesses pulse	1	
	Assesses skin (color, temperature and conditions)	1	
Identifies priority patients/makes transport decision		1	
FOCUSED HISTORY AND PHYSICAL EXAMINATION/RAPID TRAUMA ASSESSMENT			
Selects appropriate assessment (focused or rapid assessment)		1	
Obtains, or directs assistance to obtain, baseline vital signs		1	
Obtains S A M P L E history		1	
SECONDARY EXAMINATION		1	
Assesses the head	Inspects and palpates the scalp and ears	1	
	Assesses the eyes	1	
	Assesses the facial areas including oral and nasal areas	1	
Assesses the neck	Inspects and palpates the neck	1	
	Assesses for JVD	1	
	Assesses for tracheal deviation	1	
Assesses the chest	Inspects	1	
	Palpates	1	
	Auscultates	1	
Assesses the abdomen/pelvis	Assesses the abdomen	1	
	Assesses the pelvis	1	
	Verbalizes assessment of genitalia/perineum as needed	1	
Assesses the extremities	1 point for each extremity	1	
	includes inspection, palpation, and assessment of motor, sensory and circulatory function	1	
		1	
Assesses the posterior	Assesses thorax	1	
	Assesses lumbar	1	
Manages secondary injuries and wounds appropriately		1	
1 point for appropriate management of the secondary injury/wound		1	
Verbalizes re-assessment of the vital signs		1	
Total:		40	

Critical Criteria

- _____ Did not take, or verbalize, BSI
- _____ Did not determine scene safety
- _____ Did not assess for spinal protection
- _____ Did not provide for spinal protection when indicated
- _____ Did not provide high concentration of oxygen
- _____ Did not find, or manage, problems associated with airway, breathing, hemorrhage or shock (hypo perfusion)
- _____ Did not differentiate patient's need for transportation versus continued assessment at the scene
- _____ Did other detailed physical examination before assessing the airway, breathing and circulation
- _____ Did not transport patient within 10-minute time limit

BETA

Appendix 4C (continued): Patient Assessment/Management – Medical Performance Evaluation

Start Time: _____

Stop Time: _____ Date: _____

Candidates Name: _____

Evaluator's Name: _____

Evaluator's Name: _____						Points Possible	Points Awarded
Takes, or verbalizes, body substance isolation precautions						1	
SCENE SIZE-UP						1	
Determines the scene is safe						1	
Determines the mechanism of injury/nature of illness						1	
Determines the number of patients						1	
Requests additional help if necessary						1	
Considers stabilization of spine						1	
PRIMARY ASSESSMENT						1	
Verbalizes general impression of the patient						1	
Determines responsiveness/level of consciousness						1	
Determines chief complaint/apparent life threats						1	
Assesses airway and breathing		Assessment				1	
		Indicates appropriate oxygen therapy				1	
		Assures adequate ventilation				1	
Assesses circulation		Assesses/controls major bleeding				1	
		Assesses pulse				1	
		Assesses skin (color, temperature and condition)				1	
Identifies priority patients/makes transport decisions						1	
FOCUSED HISTORY AND SECONDARY EXAMINATION/RAPID ASSESSMENT							
Signs and symptoms (Assess history of present illness)						1	
Respiratory	Cardiac	Altered Mental Status	Allergic Reaction	Poisoning/Overdose	Environmental Emergency	Obstetrics	Behavioral
*Onset? *Provokes? *Quality? *Radiates? *Severity? *Time? *Interventions?	*Onset? *Provokes? *Quality? *Radiates? *Severity? *Time? *Interventions?	*Description of the episode *Onset? *Duration? *Associated Symptoms? *Evidence of Trauma? *Interventions? *Seizures? *Fever?	*Substance? *When did you ingest/become exposed? *How much did you ingest? *Over what time period? *Interventions? ? *Estimated weight?	*Source? *Environment? *Duration? *Loss of consciousness? *Effects-general or local?	*Source? *Environment? *Duration? *Loss of consciousness? *Effects-general or local?	*Are you pregnant? *How long have you been pregnant? *Pain or contractions? *Bleeding or discharge? *Do you feel the need to push? *Last menstrual period?	*How do you feel? *Determine suicidal tendencies *Is the patient a threat to self or others? *Is there a medical problem? *Interventions?
Allergies						1	
Medications						1	
Past pertinent history						1	
Last oral intake						1	
Event leading to present illness (rule out trauma)						1	
Performs focused physical examination (assesses affected body part/system or, if indicated, completes rapid assessment)						1	
Vitals (obtains baseline vital signs)						1	
Interventions (obtains medical direction or verbalizes standing order for medication interventions and verbalizes proper additional intervention/treatment)						1	
Transport (re-evaluates the transport decision)						1	
Verbalizes the consideration for completing a detailed physical examination						1	
ONGOING ASSESSMENT (verbalized)						1	
Repeats initial assessment						1	
Repeats vital signs						1	
Repeats focused assessment regarding patient complaint or injuries						1	
Total:						30	

Critical Criteria

- _____ Did not take, or verbalize, BSI
- _____ Did not determine scene safety
- _____ Did not obtain medical direction or verbalize standing orders for medical interventions
- _____ Did not provide high concentration of oxygen
- _____ Did not find, or manage, problems associated with airway, breathing, hemorrhage or shock (hypo perfusion)

- _____ Did not differentiate patient's need for transportation versus continued assessment at the scene
- _____ Did detailed or focused history/physical examination before assessing the airway, breathing and circulation
- _____ Did not ask questions about the present illness
- _____ Administered a dangerous or in appropriate intervention

BETA

Appendix 4D: Rope Rescue & Lift Evacuation Performance Evaluation

Lift Operations Evaluation Criteria <ul style="list-style-type: none"> • Design and codes • Lift components • Auxiliary power sources • Risk management issues 	+ = - Comments:	+ = - Comments:	+ = - Comments:
Evacuation Planning Evaluation Criteria <ul style="list-style-type: none"> • Advance preparation • Specific procedures 	+ = - Comments:	+ = - Comments:	+ = - Comments:
Implementation Evaluation Criteria <ul style="list-style-type: none"> • Use of plan • Appropriate equipment • Rope handling • Lift evacuation • Belay techniques 	+ = - Comments:	+ = - Comments:	+ = - Comments:
Post Evacuation Evaluation Criteria <ul style="list-style-type: none"> • Equipment care • Reports • Information release • Critique 	+ = - Comments:	+ = - Comments:	+ = - Comments:
Rope Rescue & Lift Evacuation OVERALL SCORE Candidate Name: _____	+ = -	+ = -	+ = -

Evaluators must make a clear decision as to whether or not a candidate has met the objective. Passing scores are + and =. Non-passing score is -. These scores have no numeric value and cannot be averaged. The Certified candidate must receive an overall passing score (+ or =) from a simple majority of evaluators in order to complete the component. Partial completion may not be carried from year to year.

EVENT LOCATION _____
 DATE _____
 DIVISION _____
 EXAMINER _____

Appendix 4E: Alpine & Telemark Skiing/Boarding Performance Evaluation

Crud skiing/boarding: Most difficult terrain Evaluation Criteria <ul style="list-style-type: none"> • Demonstrate balance, stability, and control • Perform lined, parallel turns • Demonstrate a moderate, safe speed appropriate for ability level 	+ = - Comments:	+ = - Comments:	+ = - Comments:
Groomed skiing/boarding: Most difficult terrain Evaluation Criteria <ul style="list-style-type: none"> • Demonstrate rounded turn shape • Demonstrate an efficient mix of long, medium, and short radius turns • Perform parallel turns • Demonstrate constant, controlled speed • Demonstrate weight transfer to outside ski • Demonstrate turn completion during carved turns • Keep the upper body moving toward the inside of the turn • Demonstrate a balanced fluid stance • Demonstrate stability • Demonstrate fluid vertical motion • Perform turns as connected arcs without traverses • Absorb moguls smoothly (between turns) • Adapt to changing terrain 	+ = - Comments:	+ = - Comments:	+ = - Comments:
Mogul skiing/boarding: Most difficult terrain Evaluation Criteria <ul style="list-style-type: none"> • Perform a fall-line descent with minimum traverse and side slipping • Demonstrate an effective combination of turn size, shape, and technique • Demonstrate consistent, controlled speed • Demonstrate the effective use of edges • Make sure the upper body faces downhill during fall-line turns • Demonstrate balance and stability • Ski with lower body in almost continuous motion while upper body remains relatively quiet • Demonstrate appropriate independent and simultaneous leg action • Use edge and pressure to complete turns • Perform controlled direction changes • Adapt to terrain changes 	+ = - Comments:	+ = - Comments:	+ = - Comments:

Appendix 4E (continued): Skiing Performance Evaluation

Skill emphasis for local conditions: Most difficult terrain Evaluation Criteria <ul style="list-style-type: none"> Demonstrate balance, stability and control 	+ = - Comments:	+ = - Comments:	+ = - Comments:						
Skiing overall Score Candidate Name: _____ Numerical Equivalentents (Division Option) <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;">Plus</td> <td>100, 95, 90</td> </tr> <tr> <td>Equal</td> <td>85, 80</td> </tr> <tr> <td>Minus</td> <td>75, 70, 65, 60, 55</td> </tr> </table>	Plus	100, 95, 90	Equal	85, 80	Minus	75, 70, 65, 60, 55	+ = -	+ = -	+ = -
Plus	100, 95, 90								
Equal	85, 80								
Minus	75, 70, 65, 60, 55								

Evaluators must make a clear decision as to whether or not a candidate has met the objective. Passing scores are + and =, non-passing score is - or numeric scores as above. Mixed scoring may not be used. The Certified candidate must receive an overall passing score (+ or =) or (80 or higher) from a simple majority of evaluators in order to complete the component. Partial completion may not be carried from year to year.

EVENT LOCATION _____
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DIVISION _____
EXAMINER _____

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Appendix 4F: Toboggan Performance Evaluation

<p>Unloaded toboggan skills: Most difficult mogul terrain</p> <p>Evaluation Criteria</p> <ul style="list-style-type: none"> • Select appropriate route • Operate at efficient, safe and controlled speed that is appropriate to terrain and skier traffic, yet reach accident site quickly • Perform smooth, parallel turns as needed • Maintain proper body position • Perform transitions • Perform sideslips • Ensure minimal bouncing or slipping of toboggan • Perform emergency stop • Demonstrate at least one Recovery technique • Demonstrate static belay techniques 	<p>+ = -</p> <p>Comments:</p>	<p>+ = -</p> <p>Comments:</p>	<p>+ = -</p> <p>Comments:</p>
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Appendix 4F (continued): Toboggan Performance Evaluation

[illegible]

Appendix 4F (continued): Toboggan Performance Evaluation

<p>Loaded toboggan front operator: More to most difficult terrain, in moguls and on smooth slopes</p> <p>Evaluation Criteria</p> <ul style="list-style-type: none"> Select appropriate route Control speed, ski safely and expediently Provide a smooth, safe and comfortable ride for patient Ski in balance and stable position Control descent with wedge or sideslip Control direction with turns and falling leaf Brake the toboggan as needed Communicate as necessary with patient and tail rope operator Perform effective wedge, sideslip, and transitions with stability and control Avoid slipping during traverses <p>Numerical Equivalents (Division Option)</p> <p>Plus 100, 95, 90</p> <p>Equal 85, 80</p> <p>Minus 75, 70, 65, 60, 55</p>	<p>+ = -</p> <p>Comments</p>	<p>+ = -</p> <p>Comments</p>	<p>+ = -</p> <p>Comments</p>
BETA			
<p>TOBOGGAN OVERALL</p> <p>Candidate Name: _____</p>	<p>+ = -</p>	<p>+ = -</p>	<p>+ = -</p>

Evaluators must make a clear decision as to whether or not a candidate has met the objective. Passing scores are + and =, non-passing score is - or numeric scores as above. Mixed scoring may not be used. The Certified candidate must receive an overall passing score (+ or =) or (80 or higher) from a simple majority of evaluators in order to complete the component. Partial completion may not be carried from year to year.

EVENT LOCATION _____

DATE _____

DIVISION _____

EXAMINER _____

BETA