



**HELI-SKI U.S. ASSOCIATION, INC.**

**Heli-Skiing Safety and Operating Guidelines**

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THE HELI-SKIING SAFETY & OPERATING GUIDELINES.**

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## I. INTRODUCTION

These Heli-Skiing Safety & Operating Guidelines (HSOGs) are intended to provide the helicopter pilot, helicopter operator, outfitter and guide with an introduction to the fundamentals of helicopter skiing operations, to help establish guidelines for standard practices within the helicopter skiing industry, to provide a framework for continuing development of training and safety programs and to promote safety by identification of best practices in the industry. The HSOGs guidelines should be supplemental to the helicopter operator's 14 CFR Part 135 certificate requirements and Outfitter operations, safety and training programs. In addition, the HSOGs require that each helicopter skiing outfitter develop, adopt and implement its own Safety and Operations Plan and daily Operating Procedures.

Importantly, these HSOGs should not be regarded as establishing rigid standards that allow for only one method of addressing a particular safety or operations element. Operational circumstances may make variance from HSOGs guidelines and the outfitter's Safety and Operations Plan appropriate. Similarly, the unique circumstances of a particular Helicopter Skiing Operation may dictate procedures that vary from those of other operations. Even careful implementation of a well-conceived Safety and Operations Plan will not eliminate the risks that are inherent in backcountry winter recreation activities. Ultimately, it is an Outfitter's successful prudence in avoiding, mitigating, and/or warning the underlying risks to Clients and employees that is most important.

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II. Definitions

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## II. DEFINITIONS

- A. Helicopter Skiing: Guided winter recreation activities including, but not limited to skiing, snowboarding, touring and snowshoeing where a helicopter is utilized to provide transportation for participants. Helicopter Skiing may include transportation of models, athletes and photographers for photography and film making. However, professional photography and filmmaking are not included in “regular operations” as that phrase is used herein. All aviation activities during Helicopter Skiing should be conducted in a manner consistent with 14 CFR Part 135 regulations.
- B. Outfitter: A person or organization that provides Helicopter Skiing services to the public and that meets the guidelines established under the HSOGs.
- C. Operator: A person or organization that provides helicopters and Pilots to an Outfitter under a Part 135 Certificate issued by the Federal Aviation Administration and that meets the guidelines established under the HSOGs.
- D. Helicopter Skiing Operation: A combination of the resources and efforts of the Outfitter and Operator.
- E. Heli-Ski U.S. Association, Inc.: A Utah not-for-profit corporation which serves as a trade association for Helicopter Skiing Outfitters and having as its mission: “To promote and sustain helicopter skiing in the United States while developing and upholding the highest safety and operating standards.”
- F. Guide Qualification Guidelines: Guidelines setting out recommended qualifications for Associate Guides, Guides and Lead Guides as adopted by Heli Ski U.S. A copy of the Guide Qualification Guidelines, as are in effect at the date these revised HSOGs are adopted, is annexed hereto as Appendix 1. In these HSOGs, where the term “guide” is used in lower case, it is intended to refer collectively to Associate Guides, Guides and Lead Guides.
- G. Associate Guide: An individual designated by the Outfitter who meets the recommended qualifications for that position as set forth in the Guide Qualification Guidelines (See Appendix 1). A Qualifying Associate Guide is one who meets the recommended qualifications to lead a Group, under the direction of a Lead Guide, as set forth in the Guide Qualification Guidelines.
- H. Guide: An individual designated by the Outfitter to supervise the Helicopter Skiing of a Group of Clients and who meets the recommended qualifications for that position as established in the Guide Qualification Guidelines (See Appendix 1).
- I. Lead Guide: An individual designated by an Outfitter to supervise the activities of one or more Groups and who meets the recommended qualifications for that position as established in the Guide Qualification Guidelines. At least one Lead Guide should be designated to each helicopter in operation, each day (See Appendix 1).
- J. Outfitter Safety Officer: A position within the Outfitter management team that coordinates and oversees the implementation of the guidelines set forth herein and in the Operator’s Safety and Operations Plan. An Outfitter Safety Officer may also be given responsibility to oversee OSHA and/or environmental regulation compliance. This position may be assigned to a single qualified individual or shared among team members.
- K. Client: An individual participant in Helicopter Skiing, but not a guide when working in his/her professional capacity. However, “Client” shall include any Outfitter or Operator employee that is participating in Helicopter Skiing activities and who is not at that time qualified and acting as a guide. Example: a member of Ground Crew or office staff that joins a Group shall be treated as a Client for purposes of pre-flight safety briefings, use of safety equipment and other operating procedures.
- L. Group: A number of Clients in the company and under the supervision of one or more guides participating in Helicopter Skiing, the total of which shall be at or less than the full passenger capacity of the helicopter used for their transportation. Multiple Groups may be combined to work together, provided that the combined Group is led by a Guide or Lead Guide and an Associate Guide or Guide accompanies the second Group. A guest to guide ratio is defined by the safety and operations plan for each Outfitter. Each helicopter load is comprised of at least one Guide supervising a number of Clients.



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- M. Skiing Activities: All activities by Clients and guides, whether or not actually skiing, occurring between successfully exiting from under the rotor of a helicopter at a Landing Zone and coming under the rotor of a helicopter at a Pick-up Zone.
- N. Ground Crew: All personnel who have received training as set forth herein and who assist in ground operations, including but not limited to Flight Following, Client loading and unloading, and refueling.
- O. Flight Following: An ongoing process of tracking and recording the location, status and intentions of aircraft. The location and status of Groups should also be tracked and recorded as part of the Flight Following function. Flight following is ordinarily conducted at an Operations Base or Day Staging Area. Outfitters are encouraged to utilize evolving technologies to enhance Flight Following functions. See VI(C).
- P. Landing Zone: Location conforming with the requirements of Section IX(D) of the HSOGs, where Guides and Clients are intended to disembark the aircraft to commence Skiing Activities (sometimes herein, "LZ").
- Q. Pickup Zone: Location conforming with the requirements of Section IX(F) of the HSOGs, where Guides and Clients are intended to board the aircraft for transport to re-commence Helicopter Skiing Activities or return to the Outfitter's operations base or staging area (sometimes herein, "PZ").
- R. Operating Season: Operating seasons are defined in each Outfitter operational plan. In cases where seasons overlap years, the season yearly name should be denominated by the year in which the season ends.
- S. Operating Area: All that area on public and/or private lands where the Heli Skiing Operation legally conducts Helicopter Skiing.
- T. Operations Base: A fixed location from which an Outfitter conducts Helicopter Skiing Operations. The Operations Base may be in a permanent or seasonal facility. The Operations Base should include adequate facilities for daily guide meetings, secure space for maintenance and storage of emergency equipment, and communications equipment to facilitate communication with guides, Ground Crew, Pilots, Flight Following personnel and emergency coordination. Except where emergency equipment is cached or is transported in an appropriate vehicle to facilitate remote operations, it should be stored at the Operations Base.
- U. Day Staging Area: Location from which Helicopter Skiing operations are staged on any particular day. The Day Staging Area may be the same as the Operations Base or a remote staging area. Flight Following may be conducted at the Day Staging Area or at the Operations Base if adequate communications can be maintained.
- V. Emergency Manual: A compilation of the Outfitter's Emergency Communications Plan (including a table of emergency contacts with phone numbers), Field Evacuation Plan, and Emergency Response Plans for Missing or Overdue Aircraft, Aircraft Accident, Aircraft Mechanical Failure, Missing Skier, Skier Injury or Medical Emergency, Avalanche and Fuel Spill. The Emergency Manual can be a dedicated subsection of the Safety and Operations Plan.
- W. Performance Reviews, Performance Review Checklist: Outfitter and Operator conformance to the guidelines set forth in these HSOGs will be established through periodic Performance Reviews as described at Section XIII. Performance Reviews will utilize the Performance Review Checklist annexed hereto as Appendix 2. The checklist will reflect the most current HSOGs as amended and approved by the HSUS Board.



### III. SAFETY AND OPERATIONS PLAN

At or before beginning operations for any season, the Outfitter and Operator should agree upon and then follow a safety and operations plan (as defined in this Section, “Safety & Operations Plan”) and operating procedures (as defined at Section IX, below, “Operating Procedures”).

- A. Safety & Operations Plan. The Outfitter should establish and implement a Safety & Operations Plan that is consistent with the guidelines set forth herein, which satisfies the requirements of the Heli Ski U.S. Performance Review checklist, and which corresponds to its Emergency Manual. In addition, the Outfitter should appoint an Outfitter Safety Officer or other managers designated by the Outfitter who will coordinate and oversee implementation of the Safety & Operations Plan and who should coordinate Guide-Pilot co-training with the Lead Pilot.
- B. Operations Map & Catalogue of Runs.
1. Operations Map. To facilitate efficient operations, Outfitters are encouraged to develop, regularly update and keep available during their Operating Season a composite Operations Map (or Maps where appropriate) of the Operating Area. The Operations Map should be an evolving asset of the Outfitter, expanding in detail and function over time. A copy of the Operations Map should be kept on display at the Operations Base in the location where guide meetings are conducted. It is recommended that a second copy be available at the Day Staging Area, kept with Emergency Manual to facilitate emergency rescue response. It is recommended that the Operations Map(s) include:
    - a. Permit area boundaries and exclusion zones and wildlife avoidance areas within permit areas;
    - b. Primary flight paths, no-fly zones and special aviation hazards (i.e. elevated power lines, antennae, etc.);
    - c. Primary ski zones, named runs (as practical), staging areas and significant landmarks;
    - d. Air and ground evacuation routes and/or strategies;
    - e. Communication equipment locations and remote weather station locations;
    - f. Emergency equipment cache locations, emergency shelter locations and fuel cache locations (if any); and
    - g. Other items as determined by the Outfitter and Operator.
  2. Run Catalogue. To facilitate daily operations, guide training and pilot orientation, develop a catalogue of ski runs that it uses on a regular basis. The Run Catalogue may be kept in hard-copy or digital format. It is suggested that the catalogue include:
    - a. GPS coordinates for at least one LZ and PZ in each area where Skiing Activities are regularly conducted. Additional GPS coordinates for LZ's and PZ's can be added at Outfitter and Operator discretion;
    - b. Digital or film photographs of runs used on a regular basis;
- C. Coordination of Operations. Where other flight operations, including other helicopter skiing operations regularly use the same or partially co-extensive operating area, the Operator should meet with other operators to establish a communications plan and, as necessary, to coordinate routes, position reporting, noise, safety procedures, and other matters as appropriate.
- D. Regular Cessation of Operations. Regular operations should terminate not less than one (1) hour before sunset.<sup>1</sup>
- E. Special Termination of Operations. Each Pilot and Lead Guide shall have authority to cancel operations and to order any or all Groups to be evacuated from the field any time conditions warrant in his or her opinion. Neither the Lead Guide nor the Pilot shall have authority to overrule an affirmative decision by the other to remove Groups from the field. Conditions warranting termination of operations and/or evacuation from the field may include, but are not limited to:
1. Visibility or conditions deteriorating (or, within relevant time periods, likely to deteriorate) to marginal VFR and/or to Instrument Meteorological Conditions (IMC).
  2. Flat light or other conditions that do not provide sufficient visibility for safe operation.
  3. Increasing or erratic winds preventing safe operation of the aircraft.
  4. Matters relating to the condition of an aircraft.
  5. Matters relating to snow stability and/or avalanche danger.
  6. Conduct or condition of Pilots, Clients, guides, Ground Crew or other employees.
  7. The inability to effectively manage Risks, as defined at Section V (B) hereof.
  8. Other matters relating to the safety of Clients, guides, Ground Crew, Pilots or aircraft.

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<sup>1</sup> Professional film and photographic work are excluded from “regular operations.”



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**III. Operating Plan**

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- F. In Season and Annual Reporting. Outfitters should report any significant avalanche or other significant incident to Heli-Ski U.S. Members within 24 hours. At or before the Heli-Ski U.S. annual meeting, operating summaries are required to be presented annually to Heli Ski U.S.



#### IV. OUTFITTER AND OPERATOR INTERFACE

##### A. Operator and Outfitter Responsibility.

1. It is the responsibility of the Operator to work with the Outfitter to establish a clear Safety and Operations Plan and Operating Procedures, to effectively communicate those guidelines to its Pilots, to provide consistent day-to-day interpretation of those guidelines and to properly support implementation of those guidelines by the Pilots.
2. It is the responsibility of the Outfitter to establish and implement a Safety and Operations Plan, to work with the Operator to establish clear Operating Procedures, to effectively communicate those guidelines to its guides and Ground Crew, to provide consistent day-to-day interpretation of those guidelines and to properly support implementation of those guidelines by the guides, Ground Crew and Pilots. Outfitters shall not seek to overrule, pressure or otherwise inappropriately influence a Pilot's professional judgment.
3. Nothing in this the HSOG Program shall be interpreted to make an Operator responsible for the safety and wellbeing of Clients during Skiing Activities or to make an Outfitter responsible for the activities of an Operator working under its Part 135 Certificate.
4. Because Outfitter-Operator relationships are so critical to the overall safety of a Heli ski Operation, in certain cases Operators may delegate or share certain duties to the Outfitter. These may include Flight Following, refueling, safety briefings, or other duties.

##### B. Pilots. Qualification for pilots to function as Heli-Ski pilots is conducted through specific training and experience levels overseen and determined by the Operator. This information is shared with the Outfitter and meets all FAA requirements. Specific standards for pilots to qualify for heli-skiing are ultimately determined by the Operator and in compliance with the FAA. The operator will ensure the hourly experience levels are appropriate and conduct any training necessary to build and maintain these technical skills and knowledge within their team. The Operator will employ pertinent feedback from the Outfitter to continuously improve safety standards and practices when needed and as appropriate within their expertise. The Outfitter and Operator will communicate to ensure part B is completed annually.

##### C. Where more than one pilot is assigned to a Heli Skiing Operation, the Operator may designate a single pilot as the Point of Contact (POC) for that Heli Skiing Operation.

##### D. Safety Priority. It should be emphasized to the Pilot during his/her that flight safety, attention to detail and compliance with Federal Aviation Regulations (FAR), the Outfitter's Safety and Operations Plan and Operating Procedures are of paramount importance and should take precedence over Skiing Activities and Outfitter, Guide and Client requests. It is the Pilot's responsibility to follow the Operator's FAA OpSpecs and GOM and only deviate in the case of an emergency.





## V. PILOT – GUIDE CO-TRAINING

To help assure safe and efficient coordination of Operator and Outfitter activities and consistent interpretation and implementation of these HSOGs and the Safety and Operations Plan, Pilots, guides and Ground Crew should co-train, as set forth in this section.

- A. Coordinated Training. Pilots, guides and Ground Crew should jointly train on and follow consistent practices regarding:
1. The Outfitter's Safety & Operations Plan.
  2. Radio communications protocols
  3. Use of hand signals.
  4. Pre-flight briefing procedures.
  5. Procedures at Landing Zones and Pick-up Zones.
- B. Application Specific Training for Pilots. Each Pilot must receive Helicopter Skiing specific training, including:
1. Terrain and operating area familiarization, including:
    - a. Location of particular aviation hazards within the operating area, including power lines, radio towers, waterfowl habitat and gathering areas and other potential hazards.
    - b. Exit routes for inadvertent IMC.
    - c. Noise abatement areas.
    - d. Restricted areas, private property, wildlife avoidance and "No-fly Zones."
  2. Landing Zone and Pick-up Zone selection and documentation.
  3. Identification and management of the following risks ("Risks"):
    - a. Avalanche Paths. Avalanches can travel substantial distances across relatively flat areas and pilots must learn to recognize and avoid avalanche paths. Pilots and Guides should communicate to determine appropriate location for aircraft.
    - b. Seracs and Icefalls. Seracs are large towers of ice that form at the foot of glaciers and at steep drop-offs within glaciers. Icefalls can form on the sides of mountains and on cliffs and steep mountain faces. Seracs and ice falls can break loose unexpectedly and travel substantial distances across relatively flat areas. They are also capable of triggering an avalanche, even during times of stable snowpack. Pilots and Guides should communicate to determine an appropriate location for aircraft to avoid seracs and icefalls.
    - c. Crevasses. Crevasses tend to form where glaciers travel over headwalls, down steeper terrain, along lateral moraines, into obstructing topography, and where glaciers round corners. Large crevasses under snow can usually be identified by depressions on the snowpack surface. Lateral (side) views of the proposed landing area, obtained in ascent or descent can be helpful in identifying potential hazard areas. Pilots and Guides should communicate to determine an appropriate location for aircraft to avoid crevasses.
    - d. Cornices. Cornices, large accumulations of wind deposited snow, tend to form on ridges, summits, in saddles, and occasionally in unexpected locations. Though frequently quite strong, cornices can be severely cantilevered and/or poorly adhered to underlying surfaces and can release or partially collapse without warning. Pilots should keep aircraft adequate distances from the edges of cornices and be aware of parking aircraft directly below an overhanging cornice. Pilots and Guides should communicate to determine an appropriate location for aircraft where dangers relating to cornices are present.
    - e. Rock falls. Rock falls can occur at any time and are most often a product of frost wedging and solar radiation. Pilots must exercise caution and should maintain adequate flight and parking distances from large cliffs and rock faces.
    - f. Winds. Pilots should look for wind signs (typically blowing or "flagging" snow from ridge tops and peaks and blowing flagging from marker stakes/wands at Landing and Pick-up zones), prior to each take-off and landing. Atmospheric conditions and terrain features may combine to create wind shear at ridge tops and mountain peaks. Pilots should confirm wind conditions on windward and lee sides of a mountain, prior to a ridge-top or peak landing and respect terrain features that can deflect wind and create unstable air.
    - g. Flat Light, Low Light and Difficult Visibility. See Section VI(K), below.
    - h. Backcountry Users. Pilots must be aware of and maintain adequate distances from other backcountry users. Skiers, cross-country skiers, bikers, snowmobilers and mountaineers and others may be found within operations areas and, as a matter of courtesy, efforts should be made to maintain reasonable separation from these multiple users.
  4. Although compliance with Outfitter permit requirements and restrictions shall remain the responsibility of the Outfitter, Pilot knowledge of those matters can help to assure compliance and Pilots should therefore receive training with respect to:
    - a. Wildlife avoidance and documentation requirements.
    - b. Avoidance and documentation of other back country users, including minimum separation from Groups and aircraft.
    - c. Outfitter use documentation requirements.
    - d. Such other requirements and restrictions as may be imposed in the Outfitter's permit.





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### V. Pilot – Guide Co-Training

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- C. Helicopter Specific Training for Guides & Ground Crew. Each guide and Ground Crew member should receive training specific to the helicopter or helicopters to be used in operations with respect to:
1. Location and operation of ELT, Fire Extinguisher, First Aid Kit and other emergency equipment.
  2. Proper operation of cargo compartment and ski basket latches, door handles, etc.
  3. Loading and unloading procedures.
  4. Proper use of seatbelts and shoulder harnesses.
  5. Use of intercom equipment.
  6. Emergency exit procedures.
  7. Proper Client pre-flight briefing procedures, covering all of the above and such other matters as the Operator, Outfitter and FAA deem appropriate.
  8. Aircraft performance capabilities and limitations.
  9. Emergency aircraft shut-down procedures.
  10. Implementation of the Outfitter's Emergency Manual plans (see Section XI, below).
  11. Such other matters as the LP deems appropriate.
- D. Remedial Training. Guides, Pilots and Ground Crew joining the operation subsequent to initial training should complete the above training by working on a one-on-one basis with a qualified Guide or Lead Guide and a Pilot, prior to commencing field work.



## VI. GROUND SUPPORT PERSONNEL AND PROCEDURES

Ground Crew and Guides acting in ground support roles provide a significant contribution to the overall safety of the Helicopter Skiing Operation. Accordingly, Ground Crew and other personnel that regularly work in proximity to flight operations should be appropriately trained with respect to safety and operating procedures and ground support activities should be regularly monitored for compliance with proper procedures by the Outfitter Safety Officer or other managers designated by the Outfitter. Open lines of communication should be established to allow reporting of hazardous situations and submission of ideas and suggestions concerning safety, at daily briefing and/or debriefing sessions.

### A. Flight Line

1. Guides or Ground Crew shall brief Clients with respect to loading, unloading and emergency procedures, from an established checklist, prior to their boarding the helicopter for Helicopter Skiing activities.
2. All Clients, Guides, and Pilots shall be required to wear an avalanche transceiver. Each day, prior to their boarding a helicopter, a Guide or Ground Crew member should check each Guide, Client and Pilot to assure that they are wearing and have turned on their avalanche transceiver. The Outfitter should establish a procedure to assure that transceiver batteries and function are checked periodically during the Operating Season.
3. If there are glaciers within the Operating Area, it is recommended that all Clients and Guides be required to wear a climbing harness during Helicopter Skiing activities. If the Outfitter elects to require climbing harnesses, prior to boarding a helicopter each day a Guide or Ground Crew member should check each Guide and Client's harness for proper buckling and fit.
4. The Operations Base and any remote staging area should have clear demarcations and/or barriers indicating areas where Clients are not permitted, except in the company of a Guide or Ground Crew member.
5. Guides or Ground Crew should escort all Clients to the helicopter while supervising Client movements.
6. Guides or Ground Crew should assist Clients with loading, initial seat belt fastening, and any specific information relative to the aircraft and flight routine.
7. Guides or Ground Crew should monitor and assist movement of the helicopter in congested areas and at the request of the Pilot.
8. Guides or Ground Crew should assist Clients upon landing by opening the helicopter door, deplaning, and escorting the Clients from the helicopter activity area.

### B. Training of Ground Crew. Training should be established and documented to ensure understanding and implementation of the following practices:

1. Helicopter safety and awareness both inside and outside the aircraft.
2. Client briefing procedures.
3. Loading and unloading Clients.
4. Flight Following.
5. Emergency Manual and Emergency Plan implementation.
6. Ground guiding and communication with the Pilot when appropriate.
7. For persons otherwise authorized to refuel aircraft, fueling procedures (see Section VI D, below).
8. Load manifest preparation.
9. Ground Operations emergency procedures and location of emergency equipment in case of ramp mishap.
10. Records of Ground Support Personnel training should be kept in appropriate training or personnel folders, and it is recommended that the Outfitter Safety Officer review those records at least once each season to assure that all Ground Crew members have received appropriate training.

### C. Flight Following

1. The Outfitter shall establish a Flight Following program and a Flight Following Log should be kept during all periods in which flight operations are conducted. The Flight Following Log should include provision to note time of check in, Guide or Pilot name for identification, location and intended direction of travel or destination. Flight Following check-ins for all Groups and helicopters at least once each hour is recommended. Pilots and/or Guides shall also report to Flight Following personnel any time Groups or aircraft relocate to a different operating area. Flight Following personnel should be appropriately trained and Flight Following logs should be reviewed for compliance with procedures. Flight Following reference locations may be based on widely used names, map references or GPS coordinates.
2. Outfitters should work with their Operator to implement an automated GPS flight tracking system (i.e., Blue Sky or equivalent) to supplement and as a back-up for the Flight Following program.
3. Two-way radio communication should be maintained when practical. Outfitters are encouraged to utilize remote radio repeaters to expand the range of two-way radios. In addition, it is recommended that Outfitters supply at least one satellite telephone for each helicopter in service, to provide a back-up means of communication for emergencies. In the event that the Operating Area is served by cellular phone communications, the Outfitter may substitute cellular phones for satellite phones. In terrain where



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**VI. Ground Support Personnel and Procedures**

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radio and repeater applications are not practical, an Outfitter may substitute a combination of satellite telephones and digital texting devices, provided that the flight following location is appropriately equipped to receive the calls and texts and that guides are able to communicate with each other by radio.

4. Except where a qualified Guide is available at the Operations Base or Day Staging Area, implementation and coordination of the appropriate Emergency Plan will be the responsibility of Flight Following personnel. Complete copies of the Outfitter's Emergency Manual should be kept on hand for immediate reference at the Operations Base and at the Day Staging Area. Flight Following personnel should be trained in proper use and implementation of the Emergency Plans and documentation of training should be maintained by the Outfitter Safety Officer or other personnel designated by the Outfitter.

D. Refueling. Responsibility for proper operation and maintenance of fuel storage, transport and transfer systems will ordinarily rest with the party owning or leasing that equipment. Without altering those relationships:

1. Only persons who are properly trained and jointly authorized by the Lead Pilot and chief management officer of Outfitter should refuel the aircraft.
2. Minimum refueling personnel training should include
  - a. Safety precautions including open flame/smoking prohibitions and prohibitions on use of a cell phone or radio when fueling.
  - b. Proper use of "Personal Protective Equipment," which should include eye protection, chemical resistant gloves, hearing protection and such other equipment as may be required by law.
  - c. Proper operation of fuel caps and hatches.
  - d. Refueling equipment operations training.
  - e. Fuel use documentation.
  - f. Spill Response Procedures.
  - g. Fire extinguisher operation.
3. Mobile fuel trucks and trailers shall comply with applicable state and federal laws and regulations and should be equipped with, at minimum:
  - a. Personal Protective Equipment.
  - b. Container to collect residual fuel from nozzle.
  - c. Spreadable absorbent, shovel and container for collection of contaminated absorbent.
  - d. Absorbent wipes.
  - e. Fire Extinguisher.
4. Stationary fuel supply tanks should comply with applicable state and federal laws and shall be equipped with, at minimum:
  - a. Personal Protective Equipment.
  - b. Container to collect residual fuel from nozzle.
  - c. Spreadable absorbent, shovel and container for collection of contaminated absorbent.
  - d. Absorbent wipes.
  - e. Fire Extinguisher.
  - f. Material Data Safety Sheets (MSDS).
  - g. If not otherwise required by state or federal laws or regulations, it is recommended that Operators and/or Outfitters consider use of double walled tanks or secondary containments for stationary fuel supply tanks.
5. Provided that the helicopter manufacturer's certificate otherwise permits such and that Clients are de-boarded and a safe distance from the aircraft, Operators and Ground Operations Personnel may perform Helicopter Rapid Refueling (HRR) (a/k/a Hot Refueling). Ground Crew must be specifically trained in HRR and the Operator is responsible for compliance with industry standard practices and/or local laws and regulations.



## VII. AIRCRAFT & PILOT EQUIPMENT

- A. General. The following guidelines reference FAA requirements, and in many cases the Outfitter will lack any official qualifications or authority to check. In such cases, the following section is meant as a reference, or as a tool to be shared with the Operator.
1. IMC Instrumentation. All aircraft shall be equipped and operated with appropriate instrumentation to recover from inadvertent Instrument Meteorological Conditions (IMC). The installed equipment shall meet, at a minimum, FAR Part 135.159 night VFR instrumentation standards.
  2. Emergency Locator Transponders. All aircraft shall be equipped with an Emergency Locator Transmitter (ELT). It is recommended that Operators consider GPS integrated ELT's.
  3. Anti-Collision Equipment. Aircraft shall be equipped with, and shall use as appropriate:
    - a. Alternating avoidance lights.
    - b. Minimum of one strobe light.
  4. Communications Equipment. All aircraft shall be equipped with appropriate aviation communications equipment and Pilots should monitor Unicom Channels. In addition, aircraft and Guides must be equipped with appropriate radio communications equipment to allow direct Pilot – guide communication.
  5. Covers, Heaters and Tie-Downs. Aircraft that are not regularly kept in hangars should be equipped with fuselage covers, rotor and tail rotor covers, transmission and cockpit heaters as recommended by the aircraft manufacturer for winter operations and tie-downs to secure the main rotor. In addition, aircraft should be outfitted with and should be kept on board during field operations, appropriate intake plugs.
  6. Ski Basket. Skis and snowboards shall be carried in FAA approved, externally affixed baskets or other approved devices. Skis and Snowboards should not be directly affixed to landing gear or landing gear support structures.
  7. Skis. Helicopters should be equipped with FAA approved skis, bear-paw pads, or other devices designed to help support the weight of a helicopter in snow. It is recommended that skis be equipped with gripping devices to prevent the aircraft from sliding or rotating on slick surfaces.
  8. Baffles. If recommended by the manufacturer, approved baffles shall be available for installation on the aircraft as conditions warrant, in the judgment of the Pilot, as recommended by the manufacturer or required by the FAA.
  9. Pilot Personal Equipment. At all times during operations, Pilots should:
    - a. Have on board, and as appropriate, wear an avalanche transceiver.
    - b. Wear or have onboard appropriate winter clothing and foot gear.
    - c. Have on board a VHF (or other appropriate band) handheld radio for communications with Guides and Flight Following personnel when the aircraft is shut down.
  10. Emergency Equipment. In addition to emergency equipment required by the Operator's Part 135 certificate, the Outfitter may provision additional emergency equipment onboard. This equipment will vary between Outfitters and may vary based on the terrain and weather within the Operating Area and based on the specific needs of each Operation.
- B. Additional Emergency Equipment. At the discretion of the Operator and Outfitter, the aircraft may also be equipped with: Avalanche or high-angle rescue pack, additional first aid equipment including oxygen pack, and automated external defibrillator (AED), evacuation sled or backboard, extra avalanche transceiver.



## VIII. SNOW SAFETY & WEATHER FORECASTING PROGRAM

- A. General. Each Outfitter shall establish a program to gather snow and weather data and to make a daily forecast of snow stability and weather conditions. Snowpack data should be gathered daily, throughout the Operating Season to support daily stability forecasts, long-term trend analysis and year-to-year comparisons. That data and resulting profiles should be compiled and stored in notebooks or electronic files, for future reference.
- B. Snow Safety Director. Each company should appoint a Snow Safety Director to implement the snow safety and weather forecasting program. Minimum qualifications for a Snow Safety Director are an American Avalanche Association Sanctioned Level 3 or Pro 2 Certificate; a Level II Professional Operations Certificate issued by a Canadian Avalanche Association recognized program; or an equivalent certification by another recognized sanctioning body. In addition, a Snow Safety Director should have no fewer than four (4) seasons of experience in an active role in a snow stability forecasting program with a professional ski patrol, avalanche forecasting service, helicopter skiing operation or other backcountry guiding operation. It is the Snow Safety Director's job to prepare or oversee preparation of daily weather and snow stability forecasts and to develop and maintain a snowpack database. Subject to the requirement that he or she shall retain supervisory responsibility, the Snow Safety Director may delegate responsibility for developing and maintaining the snowpack database to other qualified Guides.
- C. Data Guidelines. All snow, weather and avalanche observations should be collected and reported as specified in the most current edition of: "Snow, Weather, and Avalanches: Observation Guidelines for Avalanche Programs in the United States" American Avalanche Association.
- D. Data Sources.
1. Snow Data. The primary source for snow data should be that gathered by the Outfitter's own trained personnel. Each guide should be required to report daily field observations to support development of the snowpack database. It is recommended that the Outfitter and Snow Safety Director establish a data collection program which assures that each guide will regularly collect and report observations and that sufficient observations from relevant areas, aspects and elevations are available to support the stability forecasts and snowpack database for long-term trend analysis. It is also recommended that the forecasting program obtain additional data from external sources, (i.e., avalanche forecasting services, highway department avalanche forecasting departments and other Outfitters) when available.
  2. Weather Data. Primary sources for obtaining data in support of the weather forecast will ordinarily be external (i.e., NOAA/National Weather Service and aviation, marine and industrial data collection systems). While use of such services is appropriate and recommended, the Heli-Ski Operation may prepare its own weather forecast for the Operating Area. In the event that available data services do not provide data specific to the Operating Area, the Outfitter may establish its own remote weather station(s). The daily weather forecast should be shared with the company pilots.
- E. Stability Forecast Guidelines. The daily snow stability forecast should be specific to the areas, elevations, slope aspects and geographic features that will or may be utilized on that date.
- F. Snow Stability Rating System. The snow stability forecast may be given in terms of the Snow Stability Scale (Very Good to Very Poor) or the North American Public Avalanche Danger Scale (Low to Extreme). *See* Appendix G, Table G.1 and Figure G.3 to the Observation Guidelines. However, it is recommended that the Outfitter and Snow Safety Director agree upon one forecast format and that it be used throughout the Operating Season to assure consistency and clear communications.
- G. Training. At or prior to the start of each Operating Season, the Snow Safety Director (or a person designated by the Snow Safety Director) should conduct a training session with all guides. Topics should include standard tests to be utilized, snow and weather data collection procedures, snow study pit craftsmanship and the snow stability rating system that the Outfitter will utilize. Topics may also include evolving standards, technology and techniques in the snow science community.



## IX. OPERATING PROCEDURES

### A. Daily Schedule & Briefings.

1. Schedule. A daily schedule should be established that provides for termination of regular operations not less than one (1) hour prior to sunset and which allows for compliance with Pilot duty-day limitations.
2. Morning Guide Meeting/ Pre-Operations Briefing. Each operating day should begin with a briefing attended by guides and Ground Crew and run by a Lead Guide. At the morning, Pre-Operations Briefing:
  - a. The Snow Safety Director or Assistant Snow Safety Director should present their weather and snow stability forecasts at the start of the Briefing. Provided that one individual has final responsibility for forecasting and database management, Outfitters may rotate responsibility for daily forecasting among appropriately qualified guides to achieve greater participation and buy-in to the forecasting process.
  - b. Following presentation of the snow stability and weather forecast, operational planning for the day should be discussed. To the extent that the area of operations can be selected in advance, there should be a review of primary ski zones, runs, PZ's, LZ's and significant landmarks using the Operations Map and Run Catalogue;
  - c. Using the Operations Map, there should be a brief review of relevant permit area boundaries, exclusion zones, wildlife avoidance areas and the location of known, unusual hazards, emergency caches and shelters (if any).
  - d. There should be a review of evacuation routes, fuel caches and special aviation hazard.
  - e. Pilots should be invited to attend the morning pre-operations briefing, as their duty day restrictions permit, and encouraged to utilize the meeting as a forum to address matters bearing on the safety and/or efficiency of the operation. If a Pilot or Lead Pilot is unable to attend the Pre-Operations Briefing, the Lead Guide should separately review the information in items a-d above with the Pilot(s) to the extent necessary to assure safe and efficient operations.
3. Evening Guide Meeting/Post-Operations Debriefing. At conclusion of regular operations for the day, there should be an evening guide meeting/ Post Operations Debriefing. Pilots should be welcome, but not required to participate in the Post Operations Debriefing. At the Post Operations Debriefing:
  - a. Each guide should communicate any unusual occurrences (including relevant avalanche observations), information concerning the clients in his/her Group, wildlife sightings and other matters necessary to ensure continued safe and efficient operations; and
  - b. The Lead Guide or his/her designated surrogate should provide an overview of the day's operations including ways in which operations can be made safer and/or more efficient, going forward.
4. Communication. It is the strong belief of Heli Ski U.S. that open communication between Lead Guides, Guides, Associate Guides, Ground Crew, Pilots and Outfitter officers helps to facilitate safe and efficient operation of the Helicopter Skiing Operation. The Pre-Operations Briefing and Post Operations Debriefing are intended to provide an opportunity for communication that allows the Helicopter Skiing Operation to continually improve in safety and efficiency.

### B. General Requirements for Aviation Operations.

1. Aircraft orientations should be given prior to each Group's first flight using a briefing checklist, with instruction on loading, unloading, emergency procedures and general conduct around the aircraft. Briefings should include instruction that use and/or possession of alcohol and drugs is prohibited in and about the aircraft and during all field operations.
2. Guides and Clients shall wear seat belts and as provided, shoulder harnesses.
3. The combined weights of all Clients and Guides in each group will be noted and totaled on a load manifest which will be delivered to the Pilot prior to any flight involving that group. The Pilot should be notified of changes/substitutions in persons and weights during the day. The load manifest should also include notation of any compressed gas cylinders carried aboard (avalanche airbag systems), their location on the aircraft, the type of gas (air or nitrogen) and the volume of that gas.
4. No items or equipment should be put onboard the helicopter without knowledge and approval of the Pilot.

### C. Pre-Flight Procedures. In addition to all standard, FAA, manufacturer and Operator required pre-flight inspections, prior to the first departure each day and following any extended shutdown or any shutdown due to weather conditions, each Lead Guide should:

1. Check ramp safety, including wind direction and speed, clearance of employees and guests from helicopter, presence of potential hazards such as FOD, and other items as may be necessary.
2. Radio-check flight-following, aircraft radio and hand-held VHF or UHF radios.
3. Confirm Automated Flight Following.
4. Ensure Pilot, Ground Support, and Guides have been briefed on the plan.

### D. Landing Zone Selection and Preparation.

1. Landing Zones should:
  - a. To the extent practical, be improved such that they are capable of supporting the fully loaded helicopter in place.
  - b. Provide safe clearance for the main and tail rotors.





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- c. Be large enough to safely unload the Clients and the guide and their equipment and provide sufficient additional clearance to allow for safe, unobstructed departure of the aircraft.
2. As conditions warrant, where a Landing Zone is to be re-used, it should be improved by:
  - a. Creation of a landing platform of compacted snow, large and strong enough to meet the criteria set forth at item 1, of this Section.
  - b. Installation of wind flagging (survey ribbon or other appropriate, high visibility material) securely affixed to a wand, stake or other appropriate device.
  - c. Use of additional visibility aids, including chalk, wands, stakes, walking patterns, etc.

**E. Landing Zone Procedures.**

1. Pilot should:
  - a. Before landing, discuss safe Pick-up Zone location and Hazards with Guide.
2. Guide should:
  - a. Before landing, assist Pilot with Hazard and PZ identification.
  - b. On short final, observe clearances to terrain features.
  - c. Upon landing, unload and secure equipment and closely direct Clients to appropriate location.
  - d. Reconfirm that all latches, doors and ski basket cover are properly secured.
  - e. Visually check aircraft for unusual conditions and/or fluid leaks.
  - f. After reconfirming location of Clients, signal aircraft to depart.

**F. Pick-Up Zone Selection and Preparation.**

1. All Pick-up Zones should:
  - a. Meet all requirements for Landing Zones.
2. Under normal conditions, Operators and Outfitters should not:
  - a. Allow Clients to board a helicopter except at a Pick-up Zone meeting the above criteria.
  - b. Use “toe-in” or single ski landings as a means to allow Clients to board a helicopter.
3. Conditions permitting, Pick-up Zones should be improved by:
  - a. Creation of a landing platform of compacted snow, large and strong enough to meet the criteria set forth at item D(1a) above.
  - b. Installation of wind flagging (survey ribbon or other appropriate, high visibility material) securely affixed to a wand, stake or other appropriate device.
  - c. Use of additional visibility aids, including chalk, wands, stakes, walking patterns, etc.

**G. Pick-Up Zone Procedures.**

1. Pilot should:
  - a. Contact guide by radio prior to approach to determine readiness.
  - b. Obtain wind and other pertinent information from Guide.
  - c. Familiarize with surrounding terrain to confirm approach, prior to commencing short final.
  - d. On short final, confirm main and tail rotor clearances to terrain.
  - e. Following landing, signal guide to commence loading.
2. Guide Should:
  - a. Secure all packs and equipment at appropriate location.
  - b. Place Clients in appropriate location (typically 10:00 to Pilot).
  - c. If preferred by Pilot, direct landing using hand signals.
  - d. Load Clients and equipment using appropriate procedures.
  - e. Confirm that all doors, hatches and ski basket lid are properly secured and visually scan helicopter for unusual conditions or fluid leaks.
  - f. Confirm that Client seat belts are secure.
  - g. Confirm clear left and above, to pilot, prior to aircraft departure.

**H. Special Procedures for Flat Light and Low Visibility Conditions.** Because Helicopter Skiing Activities typically require visibility equal to or greater than that required for flying, operations are rarely conducted in poor visibility and the potential for Controlled Flight into Terrain (CFIT) should be low. However, Pilots must maintain awareness for momentary reduced visibility from blowing snow, changing weather conditions and flat light. Pilots should not hesitate to terminate operations where visibility is insufficient for safe flight.

1. Reduced Visibility. Loose snow becoming airborne from rotor wash can create momentary visibility difficulties, even in periods of good visibility. Pilots should utilize fixed reference points such as LZ-PZ flagging on wands and stakes, equipment





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secured in place by Guide, rocks, shrubs, ridgelines, and people. Pilots should not hesitate to abort an approach to an LZ or PZ due to marginal visibility and as conditions warrant require a guide at a Pick-up Zone place additional flagging ribbon or additional visibility aids on surrounding terrain.

2. **Changing Weather.** Helicopter Skiing takes place in mountain environments that can sometimes create clouds, frozen fog and microclimate storms. Changing weather can require Pilots and Guides to make prompt decisions to terminate or relocate field operations. In addition to their own experience and instincts, Pilots should utilize the experience of the Lead Guides and available weather data in making a decision to withdraw from the field. It is recommended that Flight Following and other Ground Operations personnel be trained for and assigned weather monitoring tasks, utilizing weather services, remote contact points and pre-established terrain features as benchmarks for changing weather.
3. **Flat Light.** Usually caused by overcast skies, flat light may also be the product of shadows and late afternoon light effects.
  - a. When flying in flat light, horizon-less conditions, Pilots should substantially reduce airspeed and check instruments to guard against unintended descent.
  - b. Prior to approaching a Pick-up Zone in flat or low-light conditions, Pilots should require that the guide on the ground place additional flagging or other visibility aids on surrounding terrain, with particular emphasis on high points and the intended approach and departure routes.

## X. EMERGENCY RESPONSE PLANNING

No matter how well conceived and executed, no Safety and Operations Plan can eliminate all risks associated with Helicopter Skiing. Risks and other hazards will always remain, and accidents will occur. Outfitters must therefore have emergency plans in place to facilitate an appropriate response to an accident. However, accidents do not follow scripts and will rarely occur under the circumstances an Outfitter has planned for. Emergency planning and training should, therefore, emphasize communications and the skill sets of guides and Ground Operations personnel to coordinate resources in an emergency. The ability to overcome unanticipated complications or system failures is of greater importance than any specific plan.

All Helicopter Skiing Operations should have a written Emergency Manual, which includes:

A. Emergency Classification System.

1. Class I – Resources at site sufficient to meet needs.
2. Class II – Additional, internal Heli-Skiing Operation resources required.
3. Class III – Outside resources required.

B. Specific Emergency Plans. The Emergency Manual should have sections addressing:

1. Emergency Communications Procedures (See Section C, below);
2. Field Evacuation Plan (See Section D, below);
3. Missing or overdue aircraft;
4. Aircraft accident;
5. Aircraft mechanical failure;
6. Missing skier;
7. Injured skier or skier with medical emergency;
8. Avalanche;
9. High angle/crevasse rescue; and
10. Environmental Emergency (e.g., Fuel Spill).

C. Guide Pack & Class I Emergencies. Because many emergencies can be handled with resources present at the scene and because stabilization of a victim and/or accident circumstances pending arrival of additional resources may be necessary, each Outfitter should develop a standardized minimum equipment list for guides to carry in the field. A suggested minimum equipment list is set out in Appendix 3 to these Guidelines. Items on the Outfitter's list may be carried in the guide's backpack (the Guide Pack) or elsewhere on the guide's person. The desire to have rescue equipment immediately available must be balanced against safety concerns that can arise from excessive weight in a Guide Pack. Where a guide and tail guide will be working together throughout a day, it is acceptable to eliminate duplication of heavier and bulkier items by having them in one of the two Guide Packs, only.

D. Emergency Communications Plan.

1. Plan. Each Outfitter should establish an Emergency Communications Plan to ensure that third party emergency response resources can be engaged without delay. As to each resource, the Emergency Communications Plan should identify primary and secondary points of contact, the persons or agencies with authority to initiate an emergency response and the capabilities of the resource. Resources that should be included in the Emergency Communications Plan, to the extent available:
  - a. Other Helicopter Skiing Operations;
  - b. Search and Rescue Services;
  - c. Law Enforcement Agencies (and accident reporting agencies, if different). Note: In some jurisdictions, search and rescue services can only be called into action by a particular law enforcement agency and the Emergency Communication Plan should identify that agency;
  - d. Landowner Agencies (USFS, BLM, State Agencies);
  - e. Clinic, Hospital and/or Trauma Center;
  - f. Air Ambulance evacuation services if local hospital/clinic services are limited;
  - g. Fire Department;
  - h. Aviation Operators and/or government aviation operators such as Coast Guard and Air National Guard;
  - i. Environmental Clean-up Contractor;
  - j. Ski Area Rescue and Medical Personnel;
  - k. Snowmobile clubs or tour operators.

E. Implementation. Copies of the Emergency Communications Plan should be located at the Operations Base and the Day Staging Area. Prior to commencement of an Operating Season, contact should be made with each resource to determine that the contact

and resource information remains current and correct. In the event that one or more communities in close proximity to the Helicopter Skiing Operation conduct joint emergency response drills or have some other program to ensure coordinated emergency responses, it is recommended that Outfitter representatives participate in or observe training exercises and/or resource coordination meetings occurring during its Operating Season.

- F. Two-Way Emergency Communications. Outfitters are encouraged to establish a two-way communications and response relationship with third party emergency response resources such that those organizations can call upon the Outfitter and Operator for emergency assistance in an appropriate case, during the Operating Season.
  
- G. Field Evacuation Plan. Based on the assumption that the Operator's aircraft will not be available, the plan shall include at least two alternate methods for evacuating personnel from the field. One evacuation plan, for application in marginal and changing weather conditions, should be independent of aircraft. Areas that cannot be evacuated without use of aircraft should not be utilized for Helicopter Skiing Operations during periods where unflyable weather conditions are expected outside of a reasonable window for operating.
  
- H. Trauma/Medical Emergency. Outfitters must be prepared to confront trauma and medical emergencies occurring in the course of regular operations. The Outfitter should be prepared to render first aid and to transport the patient/victim to the nearest hospital or clinic that is capable of providing a higher, professional level of care.
  - 1. Internal Medical Resources. The Heli-Ski Operation should have on hand or immediately available:
    - a. Trained Personnel. Per the Guide Qualification Guidelines, all guides are required to be trained in emergency first aid. Acceptable training certifications include: Emergency Medical Technician (EMT), Wilderness Emergency Medical Technician (WEMT), Outdoor Emergency Care (OEC), Wilderness First Responder (WFR) or any equivalent or greater domestic or foreign certification (i.e. Paramedic, Nurse, Physician, etc.). Each guide should be responsible to keep his/her certifications in force through recurrent training and re-certification and to ensure that the Outfitter has evidence of the guide's certification(s) and recurrent training. The Outfitter should keep copies of those certifications and training certificates in the guide's personnel file or other appropriate file. It is recommended that the Outfitter review those files at least once each season to ensure that all first aid training certificates are current.
    - b. Trauma Pack. Including, at minimum, limb, spine and cervical stabilization devices, supplies for advanced 1<sup>st</sup> aid treatment of wounds, apparatus for assisted breathing, and bodily substance isolation supplies. The Trauma Pack should be available in the helicopter, at the Day Staging Area or at another location in reasonable proximity to the location where Helicopter Skiing Operations are being conducted.
    - c. Oxygen Pack. Including compressed oxygen, masks and nasal cannula and appropriate airway devices. The Oxygen Pack should be available in the helicopter or at the Day Staging Area.
    - d. Automated External Defibrillator ("AED"). It is recommended that Outfitters have an AED available. Because they are relatively small and light, and given the advantages accruing from immediate access, it is recommended that the AED be placed on board the helicopter at the start of each day and removed to a warm location overnight to protect its batteries.
    - e. Rescue sled/litter together with appropriate devices for securing a patient.
  - 2. External Medical Resources. The Outfitter should have a working knowledge of the capabilities of near-by clinics, hospitals and medical centers and the location of the nearest Trauma Center. The Emergency Communications Plan should include contact information for the Clinic, Hospital and Trauma Center and identify the process by which those resources can be accessed.
  - 3. Trauma & Medical Evacuation
    - a. Slope Side Evacuation. The Outfitter must have resources on hand or available without delay to remove an injured skier from a mountain side or other location where helicopter transport would not be available.
    - b. Trauma/Medical Evacuation from Field. The Outfitter must have resources on hand or available for access on short notice to remove an injured skier from the field by helicopter and by other means if a helicopter is not available. Ground Crew and guides should practice procedures required to outfit the helicopter for evacuation of an injured skier on backboard or litter at the start of each Operating Season and similarly should practice evacuation of a litter borne injured party by snowmobile or other alternate conveyance.
    - c. Trauma/Medical Evacuation to Definitive Care Center. In the event that local resources are limited, the Outfitter's emergency planning should include provision to engage an air ambulance service for transportation of more serious cases<sup>2</sup>
  
- I. Avalanche Rescue. The potential for avalanche exists whenever Helicopter Skiing operations are ongoing. In addition to an avalanche forecasting program, each Outfitter must have an avalanche rescue plan in place that primarily relies upon on-site

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<sup>2</sup> Because of the expense of such evacuations, it is suggested that the Outfitter advise clients to purchase appropriate insurance prior to their trip.

resources to rescue buried victims. Speed is critical; delays in rescue to bring personnel and/or equipment to a search location can diminish the likelihood of a successful outcome. For this reason, it is suggested that clients be trained in rudimentary avalanche search and rescue techniques and that guides practice their search and rescue skills several times each season. Each guide and client must be equipped with an avalanche transceiver and the guide and a second guide, tail guide or one client in each group should be equipped with a shovel and probe. To protect against the possibility that the guide may be buried, at least one client in each group should be equipped with and trained in the use of a radio by which other guides, the Pilot and/or Flight Following may be contacted to request assistance. It is suggested that all radios bear a label indicating appropriate channels for emergency communications. In addition, the Helicopter Skiing Operation shall maintain and have available in the helicopter, Day Staging Area or remote cache as appropriate, an Avalanche Rescue Pack equipped with probes, marker flags, shovels and equipment to treat hypothermic victims (i.e., blankets, sleeping bags, etc.). In the event of an avalanche emergency, the Trauma Pack should be dispatched to the site with the Avalanche Rescue Pack. The Avalanche Rescue Pack should be clearly labeled as such. It is suggested that the pack bear a laminated inventory card and that the Outfitter establish a practice to re-inventory the pack at the start of each season and following any use of its contents.

- J. High Angle Rescue. The mountainous terrain where Helicopter Skiing Operations take place frequently includes cliffs and other precipitous terrain features. For some Outfitters, crevasses and ice falls present additional hazards. Where the Operating Area includes terrain that presents the risk that a high angle rescue will be required, Outfitters should assume that their own resources and skills for high angle rescue will exceed those possessed by local search and rescue organizations and governmental entities and that it will be up to the Outfitter's personnel to effect any necessary high angle rescue. Each Outfitter should assess its terrain and operating style for high angle hazards and determine what resources and skills would be required to rescue a skier (injured and uninjured) from those features. Each Outfitter must evaluate the possibility of needing high angle rescue equipment and select and distribute their resources accordingly. To determine High Angle Rescue Pack contents, Outfitters should take into account the resources carried by guides, the terrain necessary to travel with it, and the weight limitations of the helicopters.
1. Suggested High Angle Rescue Resources to be selected and distributed between Base and Day Staging, High Angle Rescue Pack, and Guide and Client Packs:
    - a. Climbing Harnesses
    - b. Dynamic Rope
    - c. Static Rope
    - d. Locking Carabiners
    - e. Pulleys
    - f. Tubular Webbing
    - g. Cordellete
    - h. Prussic loops
    - i. Ascenders or equivalent
    - j. Belay Devices
    - k. Anchors
    - l. Ice Screw
    - m. Crampons
    - n. Ice Axes
  2. The High Angle Rescue Pack should be clearly labeled as such. It is suggested that the pack bear a laminated inventory card and that the Outfitter establish a practice to re-inventory the pack at the start of each season and following any use of its contents.
- K. Fuel Spill Response. As to remote fuel caches, Operations Base Fuel systems and mobile fuel systems, each Heli Ski Operation should have a Spill Prevention, Control and Counter Measures Plan (SPCC) in place, in advance. The SPCC should include all equipment and training required by law and, without limiting the foregoing:
1. Training of personnel for handling small scale spills and reporting larger spills;
  2. Adequate supply of Personal Protective Equipment, spill mitigation materials and tools on-hand for small scale spills;
  3. Containers for removing contaminated materials from small scale spills;
  4. Identification of contractors authorized to receive contaminated materials from small scale spills and prior agreement by such parties to receive such materials;
  5. Identification (including names of contact persons and phone numbers) of third-party contractors that are able to handle larger spills on an emergency basis; and
  6. Identification of Federal, State and/or local agencies that are required to be notified in the event of a fuel spill.
- L. Recurrent Training & Drills. To assure competency and to identify and resolve problems in implementation, it is recommended that each Helicopter Skiing Operation establish a schedule for training and drills with respect to the foregoing emergency plans.



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**X. Emergency Response Planning**

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The Outfitter Safety Officer or other managers designated by the Outfitter should be given responsibility to plan and verify all training and drills.

1. Emergency Communications Plan.
  - a. Resource and contact verification: Annually
  - b. Training of Guides and Ground Crew: Twice (beginning and near the mid-point) each season.
  - c. Internal drill: Annually in conjunction with training on a specific emergency skill set.
  - d. Co-training with external resources: Bi-annually, as available.
2. Field Evacuation Plan.
  - a. Resource verification and contact verification: Annually
  - b. Training of Guides and Ground Crew: Annually
  - c. Actual evacuation drill: Not Required.
3. Trauma/Medical Emergency.
  - a. Verification of guide certificate status: Annually
  - b. Inventory of contents of Trauma Pack and other medical supplies: At the beginning of each Operating Season and following any use of the equipment.
  - c. Emergency Evacuation Drill: Annually (once each).
4. Avalanche Emergency.
  - a. Inventory of Avalanche Rescue Pack: At the beginning of each Operating Season and following any use
  - b. Avalanche Beacon single and multi-unit burial drills for guides: Regularly during Operating Season.
5. High Angle Rescue (if terrain conditions require):
  - a. Inventory of High Angle Rescue Pack Contents: At the beginning of each Operating Season and following any use of the equipment.
  - b. High Angle Rescue Drill: Once Annually for Helicopter Skiing Operations without glaciers but with precipitous terrain features and twice annually for Helicopter Skiing Operations with glaciers in their Operating Area. It is suggested that all operations make one high-angle rescue drill simulating rescue of a non-ambulatory victim.
6. Environmental Emergency:
  - a. Resource and Contact Verification: Annually.
  - b. Training of Ground Personnel for implementation of the SPCC Plan: Annually or more often if required by law.
  - c. Inventory of spill mitigation materials and tools: Weekly for fixed location fueling systems. Daily for mobile refueling systems.



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**XI. Disbursement of Explosive Testing Devices**

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**XI. DISBURSEMENT OF EXPLOSIVE TESTING DEVICES**

No Outfitter or Operator shall use aircraft as a means of aerial disbursement of explosive testing devices except upon compliance with the following:

- A. Explosive Testing Device Safety Plan. The Outfitter shall develop and implement a written plan meeting all federal and state laws and regulations governing the handling, storage, use and disposal of explosive testing devices. Clients shall not be permitted to be on board any aircraft carrying explosive testing devices.
- B. Licenses. All persons handling explosive testing devices shall possess all necessary licenses for possession and use of those devices.
- C. Permits. The Outfitter's operating permit must expressly allow for use of explosive testing devices.



## **XII. SUSTAINABILITY & ENVIRONMENTAL PROGRAMS.**

- A. General. The members of Heli-Ski U.S. recognize that they are privileged to operate on public lands and, to maintain that privilege and the public's trust, they must act as competent stewards of their Operating Areas during their Operating Season. The members of Heli-Ski U.S. also recognize that, as good global citizens, they must seek to limit and offset the carbon footprint created by their Helicopter Skiing Operations.
- B. Education of Clients. Helicopter Skiing Operations should perform a public service by educating clients about the land management environment of the Operating Area, by advising clients on appropriate handling of trash and waste and by teaching ethical practices for use of back-country areas
- C. Permit Conditions & Restrictions. Outfitters are responsible to assure that all Pilots, Guides and relevant Ground Personnel are aware of and sufficiently trained to comply with all conditions, requirements, restrictions, boundaries and exclusion zones associated with its permit(s) and consents to operate on public and private land.
- D. Care of Operating Area:
1. Minimal Impact. Consistent with good safety practices, economical operation and the purpose of helicopter skiing, each Outfitter should conduct its operations in a fashion that minimizes impacts on its Operating Area. It is the objective of Heli-Ski U.S. that outfitters conduct operations such that little or no evidence of the Helicopter Skiing Operation exists in the Operating Area following completion of the Operating Season.
  2. Flagging & LZ/PZ Marking. Outfitters should use bio-degradable flagging and naturally occurring materials (i.e., alder wands) to mark LZ's, PZ's, equipment caches and fuel caches. To the extent that other materials are used, the Outfitter should seek to remove those items at season end or to conceal items that will be re-used at the same location in the following Operating Season.
  3. Fuel Caches. Remote fuel caches shall comply with all applicable laws and regulations. Fuel caches should be equipped with secondary containment. Remote fueling must occur with spill mitigation materials and an appropriate fire extinguisher on site. Fuel placement and disbursement should be logged to assure that all petroleum products placed in the cache are accounted for at season end. The use of locks on fuel pumps and removal or concealment of wrenches for opening of containers is encouraged to discourage vandalism.
- E. Wildlife. In addition to maintaining full compliance with permit conditions and applicable laws, Helicopter Skiing Operations shall:
1. Keep aircraft a reasonable vertical and horizontal distance from known wildlife, goat kidding areas, active raptor nests and animal dens.
  2. Avoid engaging in activities that may cause unnecessary stress to wildlife and select areas for daily operation that avoid recently observed wildlife likely to remain in the area of observation.
  3. Consistent with safe practices, direct Clients to routes that avoid wildlife that have been encountered or observed during Helicopter Skiing Activities.
  4. Report third party harassment or poaching of wildlife to appropriate officials.



### XIII. IMPLEMENTATION & PERFORMANCE REVIEWS

- A. Implementation by Member Companies of Heli Ski U.S. All member companies of Heli Ski U.S. shall make continuing good-faith efforts to fully implement the HSOGs and shall seek to engage Operators who agree to implement the HSOGs. To facilitate full implementation, Outfitters should forward copies of this program to proposed Operators sufficiently in advance of their Operating Season to allow Operators to adopt and implement necessary compliance procedures.
- B. Performance Reviews. To help assure the effectiveness of the HSOGs, Heli Ski U.S. will conduct Performance Reviews of its members and their Operators for compliance with the terms hereof. Performance Reviews shall be carried out by appropriately skilled individuals (Performance Reviewers) appointed by the Review Committee and the results of each Performance Review shall be reported to the Outfitter and the Operator by the Reviewer(s).
1. Objective, Notice. Performance Reviews shall be carried out cooperatively, with the objective of enhancing Outfitter and Operator performance, increasing safety in the Helicopter Skiing industry and developing an inventory of industry best practices to be shared among Outfitters and Operators. Except as set forth at Subsection 7, all Performance Reviews shall be upon reasonable advance notice.
  2. Standard. Performance Reviews shall be conducted using the Heli-Ski Performance Review Checklist, as same may be amended from time-to-time. Operator performance shall be graded on a scale that indicates whether the Outfitter's compliance with that provision is "Complete," "Substantially Complete" or "Incomplete."<sup>3</sup>
  3. Flexibility in Application of HSOGs. These HSOGs should not be regarded as establishing rigid guidelines that allow for only one method of addressing a particular safety or operations element. The unique circumstances of a particular Helicopter Skiing Operation may dictate processes that vary from those of other operations. Further, these HSOGs are intended to allow for an evolution of safety processes over time that encourages innovation and application of new technology and better risk mitigation techniques. Provided that variations in processes reasonably address underlying risks, Performance Reviewers should accept them as compliant with the requirements of these HSOGs.
  4. Duty of Cooperation. Outfitters are obligated to provide reasonable cooperation to the Performance Reviewer(s). Such cooperation shall include access to morning and evening guide meetings, access to all Guides and Ground Crew, access to training and snow safety program records and access to other records demonstrating compliance with these HSOGs. The Outfitter shall identify its Outfitter Safety Officer and either that individual, a Lead Guide or another individual designated by an officer of the Outfitter shall provide such assistance with the Performance Review as the Reviewer may reasonably request. The Outfitter shall inform its personnel and the Lead Pilot of their duty to cooperate in the Performance Review process. In addition, the Outfitter shall allow Performance Reviewer(s) a total of two days of participation in Helicopter Skiing for observation and review purposes, without charge. It is preferable that the Performance Reviewer be permitted to observe the performance of at least two different guides, one selected by the Outfitter and one selected by the Reviewer.
  5. Performance Review Process. The Performance Reviewer(s) should contact the Outfitter at or near the commencement of an Operating Season in which a Performance Review is to be held to schedule mutually convenient dates for the review. Changes to the schedule shall be made only with approval of both parties. The Outfitter shall provide the Performance Reviewer(s) with copies of its Safety & Operations Plan and Emergency Manual in advance of the Performance Review. It is anticipated that Performance Reviews will take two to three days, but should be conducted in a fashion to minimize disruption of the Outfitter's regular operations. The Performance Reviewer(s) should note all areas in which the Outfitter's conformance to the HSOG program is Complete, Substantially Complete and Incomplete, but should also note all areas in which the Outfitter's program is exceptional and which should be considered for inclusion in a Heli-Ski U.S. inventory of best practices.
  6. Performance Review Reports, Remedial Action Plans. The Performance Reviewer(s) should provide each Outfitter with a copy of the completed Performance Review Checklist within five (5) business days of completion of the on-site Performance Review. Within ten (10) days following delivery of the completed Performance Review Checklist, the Outfitter shall supply the Performance Reviewer(s) with a schedule for rectifying each performance element identified as Incomplete (the "Remedial Action Plan"). The Remedial Action Plan shall be subject to approval by the Reviewer(s), which approval shall not be unreasonably withheld. Outfitters shall implement all elements of a Remedial Action Plan within a reasonable time period and shall provide the Performance Reviewer(s) with written certification of completion of Remedial Action Plan items. Within a reasonable period from completion of a Performance Review, the Performance Reviewer shall deliver a final Performance Review report to the Outfitter and the Safety and Practices Review Committee. The final report shall note actual or scheduled completion of the Remedial Action Plan items and practices followed by the Outfitter which should be considered for inclusion in an industry best practices inventory.
  7. Performance Review Cycle.

<sup>3</sup> These terms are defined in the Performance Review Checklist.



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**XIII. Implementation and Performance Reviews**

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- a. Where a Performance Review rates a Heli-Ski Operation as Complete in all components on the Performance Review Checklist, the Outfitter shall be scheduled for its next Performance Review in the fifth (5<sup>th</sup>) following season.
  - b. Where a Performance Review stipulates a Corrective Action Plan, the Outfitter may be scheduled for its next Performance Review as soon as the next season and may require additional subsequent reviews or site visits.
  8. Supplemental Performance Reviews, Disciplinary Action.
    - a. Any Outfitter that has been found in Material Breach of the HSOG Program may be subject to a Supplemental Performance Review, without notice, during the same and the next two following Operating Seasons. An Outfitter which is found in Material Breach of the HSOG Program a second time within three (3) years shall be placed on notice of pending suspension from Heli Ski U.S. pursuant to Article III, Section 7 of the Heli-Ski U.S. Bylaws.
    - b. Whenever an Outfitter has certified its completion of a Corrective Action Plan, its implementation of the Corrective Action Plan may be subject to a Supplemental Review, without notice, at any time prior to its next scheduled Performance Review. Misrepresentation of completion of a Corrective Action Plan may subject the Outfitter to discipline pursuant to Article III, Section 7 of the Heli-Ski U.S. Bylaws.
    - c. Only the Board of Directors shall have authority to impose a disciplinary sanction on an Outfitter.
  9. Appeals. An Outfitter shall have a two-level right of appeal from an adverse Performance Review. An adverse Performance Review shall include any outcome which does not result in a five (5) year Performance Review interval under Section 7(a) of this Article XIII B.
    - a. An Outfitter may next appeal an Adverse Performance Review to the Board of Directors of Heli-Ski U.S. In an appeal to the Board of Directors, the Board of Directors shall consider such evidence as the Outfitter wishes to present and such additional evidence as the Board shall request.
  10. Expenses of Performance Reviews. The Outfitter that undergoes a Performance Review shall reimburse the Performance Reviewer(s) for travel, meals and incidental expenses. Heli-Ski U.S. shall pay a review stipend to the Performance Reviewers at such rate as the Board shall determine from time-to-time. Outfitters that are Performance Reviewed shall bear all costs associated with the Reviewer's use of a Client seat that would otherwise be sold to the public.
- C. New Members. The procedure for becoming a member of Heli-Ski U.S. is set forth in the Association's bylaws. As part of that process, a Prospective Operator Member must go through a Performance Review within two Operating Seasons of becoming a Prospective Operator Member. That process is commenced by the Prospective Operator's submission of a request for review to the Safety and Practices Review Committee.
1. Self-Audit, Operations & Safety Plan. Prior to the Performance Review, the Prospective Operator Member must conduct a self-audit of its operations and must certify that it believes that its Helicopter Skiing Operations are in compliance with substantially all requirements set forth in these HSOGs. Together with the request for review, the Outfitter shall submit three (3) copies of its Operations and Safety Plan, its Emergency Manual and such additional documentation as Heli Ski U.S. may reasonably require;
  2. Cooperation. By submission of the request for review, the Prospective Operator Member shall be deemed to have agreed to give full cooperation to a review of its operations by Heli Ski U.S., as set forth in Article XIII (B) above.
  3. Review Fee. Prior to the Performance Review, the Prospective Operator Member shall make a deposit against the costs to the Association of performing a compliance audit, in an amount determined by the President of the Association (the "Review Fee").
  4. Implementation of Corrective Action Plan. To the extent that any operational requirement is found to be "Substantially Complete" or "Incomplete," the Prospective Operator Member shall not be admitted as an Outfitter until completion of implementation of a Corrective Action Plan is verified by a Performance Reviewer.
  5. Review Cycle for New Members.
    - a. Where a Performance Review rates a new Member Heli-Ski Operation as Complete in all components classified on the Performance Review, the Outfitter shall be scheduled for its next Performance Review in the third (3rd) following season.
    - b. Where a Performance Review stipulates a Corrective Action Plan, the prospective Outfitter may be scheduled for its next Performance Review as soon as the next season and may require additional subsequent reviews or site visits.

#### XIV. APPENDIX 1: Guide Qualifications & Experience Guidelines.

##### Level I – Associate Guides:

**Defined:** Associate Guides are guide trainees, apprentice and/or assistant guides and tail guides. Unless in the immediate company of a Level II or Level III Guide, Associate Guides cannot lead a group of skiers or riders except on meeting the requirements for a Qualifying Associate Guide as set forth in this section.

##### **Training Pre-Requisites & Essential Skills:**

- **Snow Safety & Weather:** An Associate Guide should hold: **A AAA-sanctioned Pro 1 Certificate, or a Level II Certificate** issued by the American Avalanche Institute (AAI), American Institute for Avalanche Research and Education (AIARE), Level I Certificate issued by the Canadian Avalanche Association or equivalent certificate issued by a recognized sanctioning body.
  - **An Associate Guide should be able to demonstrate:**
    - A basic understanding of mountain weather as it pertains to avalanches, aviation, and mountaineering.
    - A basic understanding of avalanche hazard evaluation and mitigation.
    - Ability to successfully search for multiple buried avalanche beacons.
    - Knowledge of avalanche rescue principles and techniques sufficient to act as hasty search leader or fill other rescue roles as directed.
- **Emergency Medical Care, Rescue and Evacuation:** An Associate Guide should hold one of the following emergency medical certifications: Wilderness First Responder (WFR), Outdoor Emergency Care Technician (OEC), Emergency Medical Technician (EMT) or Wilderness Emergency Medical Technician (WEMT). Higher, professional certifications may be substituted – i.e., Paramedic, Physician’s Assistant, Nurse, Nurse Practitioner or Physician, provided that his/her area of practice or training includes emergency work.
  - **Additional Training or Experience.**
    - Basic life support skills and certification (valid American Red Cross *CPR for the Professional Rescuer* or American Heart Association *Health Care Provider BLS* certification), and training in proper use of Automated External Defibrillators (AED).
    - Technical rescue training or experience as a ski patroller or other mountain rescue technician. Formal training should include basics of technical extrication, stabilization, evacuation, and transportation of sick and/or injured patients, pertinent to the terrain and conditions likely to be encountered within a given operation.
- **Operations & Emergency Planning:** An Associate Guide should have a substantial knowledge of the Helicopter Skiing Operation’s Safety and Operations Plan and its Emergency Manual and should be able to demonstrate:
  - Basic competence in normal operating procedures used in the Helicopter Skiing Operation.
  - A thorough knowledge of the procedures used for loading and unloading guests and their equipment in a helicopter and the ability to supervise guests while loading and unloading.
  - A clear understanding of the Outfitter’s Emergency Manual and the ability to implement an emergency response through communication of the essential facts of an emergency to the appropriate persons within the organization, as specified in the Emergency Manual.
- **Winter Backcountry Travel and Skiing/Riding Skills:** An Associate Guide should be able to demonstrate or provide evidence of:
  - Expert skiing and/or snowboarding skills, including the ability to carry a heavy backpack and/or other equipment (skis, poles or rescue gear).
  - Basic competence in route finding, navigation, map and compass use.
  - Competence in winter camping and survival skills.
  - Substantial experience in winter backcountry travel and skiing/riding.

##### **Qualifying Associate Guides:**

**Defined:** Provided that their activities should be monitored and closely supervised by a Lead Guide, Associate Guides may lead a Group (and therefore be a “Qualifying Associate Guide”) if they have demonstrated competency in all relevant guiding skills to the satisfaction of a Lead Guide and have additional experience and training set forth in this section. All runs, Landing Zones and Pick-up Zones utilized by a Qualifying Associate Guide and Group should require approval by the Lead Guide.



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**XIV. Guide Qualifications and Experience Guidelines**

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**Experience Requirements:** The point at which an Associate Guide is able to lead a Group is dependent on individual aptitudes and experience. For example, a ski patroller with several years of active participation in an avalanche forecasting and mitigation program may be capable of leading a group safely after only a few days of tail guide training and a patroller coming from a resort with no avalanche program might never reach that threshold. With the understanding that the Lead Guide must make the final determination, suggested guidelines for Qualifying Associate Guide experience are:

- Twenty (20) days of on-snow guiding experience with a Helicopter Skiing Operation as a tail guide under the direct supervision of a Guide; or
- Fifteen (15) days of on-snow guiding experience with a Helicopter Skiing Operation as a tail guide under the direct supervision of a Guide and successful completion an appropriate Mechanized Ski Guide course.
- Ten (10) days of on-snow guiding experience with a Helicopter Skiing Operation as a tail guide under the direct supervision of a Guide and successful completion of the AMGA Aspirant exam or equivalent examination sponsored by another recognized sanctioning body.
- Ten (10) days of on-snow guiding experience with a Helicopter Skiing Operation as a tail guide under the direct supervision of a Guide and at least 30 days of on-snow guiding experience with a back-country skiing guide service or similar operation. Up to five (5) days of an appropriate Mechanized Ski Guide course may be substituted for back-country guiding experience.
- Ten (10) days of on-snow guiding experience with a Helicopter Skiing Operation and five (5) or more years' active participation in an avalanche forecasting and mitigation program with a professional ski patrol.

**Training Prerequisites & Essential Skills:** Qualifying Associate Guides should be able to demonstrate:

- **Training:** In addition to the training and skills required for an Associate Guide, he/she should have completed the Operator's internal annual operations, safety and emergency training.
- **Snow Safety & Weather:**
  - An understanding of mountain weather as it pertains to avalanches, aviation, and mountaineering.
  - An understanding of avalanche hazard evaluation and mitigation through route selection and hazard avoidance.
  - The ability to successfully search for multiple buried avalanche beacons.
  - The ability to organize an avalanche rescue.
- **Operations & Emergency Planning:** A Qualifying Associate Guide should have:
  - A thorough understanding of the Outfitter's Emergency Manual.
  - The ability to implement an emergency medical/trauma response and to organize a field rescue, search or evacuation.
- **Guiding / Interpersonal Skills:** A Qualifying Associate guide should possess:
  - The ability to effectively communicate with others involved in the Helicopter Skiing Operation orally, by radio, telephone and face-to-face communication and through written material.
  - The ability to communicate essential information to skiers/riders in a clear and concise manner.
  - Fundamental interpersonal skills that build teamwork within the Helicopter Skiing Operation and relationships with clients.

**Level II – Guides:**

**Defined:** Level II Guides are able to lead groups of helicopter skiers under the supervision of a Lead Guide. Guides generally have the capacity to select runs, Landing Zones & Pick-up Zones within an area selected or approved by the Lead Guide for that date or timeframe. In addition to the skills, training, knowledge and experience of Level I Qualifying Associate Guides, Level II Guides should be able to demonstrate and/or document the experience, skills and training described in this section.

**Experience Requirements:** Minimum of 20 *additional* days of on-snow guiding experience, in at least two ski seasons, with a Helicopter Skiing Operation.

**Training Pre-Requisites & Essential Skills.** Level II Guides should be able to demonstrate:

- **Weather, Avalanches and Snow Safety.**
  - Additional participation in formal avalanche courses, seminars, workshops or training sessions and/or continued employment as a snow safety technician with frequent and regular participation in avalanche control and/or snow safety work.
  - Level II Guides must have must hold a AAA sanctioned Pro 2 Certificate, or a Level III Certificate issued by the American Avalanche Institute (AAI), American Institute for Avalanche Research and Education (AIARE), AVPRO by American

Avalanche Association (AAA), Level II Professional Operations Certificate issued by the Canadian Avalanche Association or equivalent certificate issued by a recognized sanctioning body.

- A thorough understanding of mountain weather as it pertains to avalanches, aviation and backcountry winter recreation.
- The ability to evaluate weather conditions and make recommendations and/or decisions regarding the effects of weather on heli-skiing operations.
- Knowledge of and skill in the observation and recording of avalanche activity and in the gathering and recording of weather, avalanche and snowpack data.
- A thorough understanding of avalanche hazard evaluation and mitigation, including knowledge of navigation and route finding in avalanche terrain.
- Knowledge and understanding of use of avalanche rescue beacons sufficient to prepare and present orientations and training for others.
- Knowledge of avalanche rescue principles, procedures, and techniques sufficient to act as accident site commander or incident commander and to fill other leadership roles specified in the Outfitter's Emergency Manual during an avalanche rescue.

- **Emergency Medical Care, Rescue and Evacuation.**

- Recurrent training and continuing certifications of emergency medical credentials as described for Associate Guides.
- Valid American Red Cross *CPR for the Professional Rescuer* or American Heart Association *Health Care Provider BLS* certification and AED training.
- Continued experience and/or training in technical extrication, stabilization, evacuation, and transportation of sick and/or injured patients, pertinent to the terrain and conditions likely to be encountered within a given operation.
- The ability to fill a leadership role in the assessment, extrication, stabilization, evacuation and transportation of sick or injured patients.
- Knowledge of the Outfitter's policies and procedures regarding emergency medical care, rescue and evacuation, including risk management procedures.
- Thorough knowledge of the Outfitter's Emergency Manual, including available rescue resources (equipment, manpower, EMS and agency contacts).

- **Winter Backcountry Travel and Skiing/Riding Skills:**

- Continued development of skiing and/or snowboarding skills with the objective of achieving high-level expert skills in all terrain relevant to the Helicopter Skiing Operation.
- The ability to demonstrate and teach intermediate level skiing and/or snowboarding techniques.
- Continued experience and development of expertise in winter backcountry travel and recreation.
- The ability to teach and demonstrate expertise in route finding and navigation.
- The ability to teach and demonstrate expertise in winter camping and survival skills.

- **Knowledge of Operations:**

- The Helicopter Skiing Operation's Operating Area, including permit boundaries, no-fly zones, restricted use zones, peaks and other landmarks and drainages and runs where operations are regularly conducted.
- The conditions of any permits under which a particular operation is conducted.
- The location of emergency evacuation routes, equipment caches and other pertinent matters relating to emergency operations.
- Emergency shut-down procedures for helicopters used by the Helicopter Skiing Operation.
- The location and general contents of the emergency packs specified in the company's Emergency Manual.
- Local terrain, climate and weather patterns, snowpack, and surface snow conditions.
- The policies and procedures of a particular Helicopter-Skiing Operation, including but not limited to procedures for regular or standard operations, custom or special operations and emergency operations.
- An understanding of interactions with and impacts upon recreationists and other land users.
- The company's guidelines and/or procedures for selecting and preparing landing zones.
- The procedures for communications between guides, pilots, base stations, and others.
- Understanding of the content of safety briefings and the ability to prepare and present safety briefings and training sessions for clients and other employees of the Helicopter Skiing Operation.
- A basic understanding of business and operating costs of a particular Helicopter Skiing Operation.

- **Guiding & Interpersonal Skills:**

- Public speaking and group management skills, including the ability to deliver safety briefings and demonstrations to clients, utilizing checklists and other media the Outfitter may utilize.
- Continued development of the "soft" interpersonal skills used in guiding Helicopter Skiing clients.





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- Continued development of the ability to communicate effectively and work closely with co-workers in the Helicopter Skiing Operation, including the ability to provide effective supervision of portions of the operation.
- Basic conflict resolution skills to help assure continued communication of pertinent safety and operations information by and between co-workers, pilots, guides and clients.
- The ability to evaluate guests' needs and lead them to the best, most appropriate snow and terrain available at a given time, considering each group's impact on other groups within the same operation.
- Understanding of and ability to mitigate environmental impacts and impacts upon communities and other backcountry users.

**Level III – Lead Guides:**

**Defined:** Level III guides are Lead Guides or supervisors, able to lead groups of helicopter skiers without supervision and to oversee the activities of all groups operating from a single helicopter. Level III Guides are viewed as leaders, both within and outside of a Helicopter Skiing. In addition to the skills, knowledge, education, and experience of Level I and Level II guides, Level III guides should be able to demonstrate and/or document the experience, skills and training described in this section.

**Experience Requirements:**

Minimum of 40 *additional* days of on-snow guiding experience, in at least two ski seasons, with a Helicopter Skiing Operation.

**Training Pre-Requisites & Essential Skills.** Level III Guides should be able to demonstrate/hold:

• **Weather, Avalanches, and Snow Safety:**

- Level III guides must have must hold a AAA sanctioned Pro 2 Certificate, or a Level III Certificate issued by the American Avalanche Institute (AAI), American Institute for Avalanche Research and Education (AIARE), AVPRO by American Avalanche Association (AAA), Level II Professional Operations Certificate issued by the Canadian Avalanche Association or equivalent certificate issued by a recognized sanctioning body.
- Ongoing participation in formal avalanche courses, seminars, workshops or instructor courses, and/or continued employment as a snow safety technician with frequent and regular participation in avalanche control and snow safety work.
- A thorough understanding of, and the ability to access and utilize, information and data for the forecasting of mountain weather and avalanche hazard.
- A thorough understanding of, and the ability to supervise, avalanche hazard evaluation and mitigation for a heli-skiing operation.
- Knowledge of, and the ability to supervise, the observation and recording of avalanche activity and the gathering and recording of weather, avalanche, and snowpack data.
- Knowledge of avalanche rescue principles, procedures, and techniques sufficient to prepare and present briefings and training sessions and to fill any leadership role during an avalanche rescue.

• **Emergency Medical Care, Rescue, and Evacuation:**

- Recurrent training and continuing certifications of emergency medical credentials as described for Associate Guides and Guides.
- Valid American Red Cross *CPR for the Professional Rescuer* or American Heart Association *Health Care Provider BLS* certification and AED training.
- Continued experience and/or training, and the ability to provide training, in technical extrication, stabilization, evacuation, and transportation of sick and/or injured patients, pertinent to the terrain and conditions likely to be encountered within a given operation.
- Thorough knowledge of all available rescue resources.
- Understanding of the relationships between the Helicopter Skiing Operation and other entities (Forest Service, BLM, States, landowners, Law Enforcement, EMS) as they pertain to rescue and evacuation of injured persons and participation in other Search and Rescue (SAR) events.

• **Winter Backcountry Travel and Skiing/Riding Skills:**

Continued pursuit of the development of high-level expert skills in skiing and/or snowboarding; the ability to accurately and objectively evaluate the skills of others; and the ability to provide training in a wide range of those skills.

• **Helicopter Skiing Operations:**

- Knowledge of the policies and procedures of a particular Helicopter Skiing Operation including, but not limited to, procedures for regular or standard operations, custom or special operations, and emergency operations; and the ability to supervise others in the implementation of those policies and procedures.
  - A thorough knowledge of the Operating Area, including Permit Boundaries, No-Fly and Restricted Use areas, major landmarks, emergency evacuation routes and aviation hazards.
  - A thorough knowledge of areas of operation, peaks, drainages, runs, climate, weather, snowpack, and surface snow conditions.
  - A thorough knowledge of the conditions of any permits under which a particular operation is conducted, and the ability to supervise and direct operations in accordance with those permits.
  - An understanding of interactions between and impacts upon different groups within a Helicopter Skiing Operation and the ability to supervise operations in such a way as to minimize internal conflicts and negative impacts upon recreationists and other land users.
  - Knowledge of and the ability to instruct others on procedures for communications between guides, pilots, and other participants in the Helicopter Skiing Operation and the ability to direct the flow and improve the efficacy of those communications.
  - Knowledge, understanding and ability sufficient to prepare and present safety briefings and training sessions for other employees of the Helicopter Skiing Operation.
  - A reasonable understanding of the operating costs associated with a particular Helicopter Skiing Operation and the ability to conduct operations in a businesslike manner while maintaining safety as a priority.
- **Guiding / Interpersonal Skills**
    - Continued development of public speaking and group management skills.
    - Continued development of the “soft” interpersonal skills used in guiding Helicopter Skiing clients.
    - Continued development of the ability to communicate effectively and work closely with co-workers in the Helicopter Skiing Operation, while filling a supervisory role.
    - Experience, education and training contributing to the development of the skills and knowledge involved in managing the field operations of a helicopter skiing business.
    - Advanced conflict resolution skills.
    - The ability to manage and supervise heli-skiing operations, using feedback from other team members, to provide guests with the best possible experience on a given day, while simultaneously paying attention to safety and the business aspects of the Helicopter Skiing Operation.





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**XV. APPENDIX 2. Performance Review Checklist**

**CRITERIA**

This Helicopter Skiing Performance Review Checklist is based on the guidelines established under the Helicopter Skiing Safety & Operations Guidelines (HSOGs). Where any conflict may exist between the Checklist and the HSOGs, the guidelines in the HSOGs shall prevail. Prospective Outfitter Members must self-declare compliance with the checklist prior to a compliance review which must be completed not later than the second season of membership. Outfitter Members must meet all components as self-declared by the Outfitter and substantiated by a Performance Review by HeliSki US (HSUS). Scheduling of subsequent Performance Reviews of Outfitter Members is determined by criteria set forth in Section XIII the HSOGs. Conformance to HSOGs performance criteria shall be rated according to the following scale:

**A – Complete:** The Heli-Ski Operation’s program meets all requirements for the indicated item.

**B – Substantially Complete:** The Heli-Ski Operation’s program is functional and meets most of the requirements for the indicated item.

**C – Incomplete:** The Heli-Ski Operation’s program is not functional for the indicated item or fails to meet sufficient requirements for that item.

DESCRIPTION	RESULT A; B; C
<b>III. Operating Plan</b>	
A. Safety & Operations Plan established and documented, with implementation of plan assigned to Safety Officer or Other Managers.	
B. Operations Map: <ol style="list-style-type: none"><li>1. Displayed or digitally available at Operations Base, guide meeting room and with Emergency Manual where operations are conducted from remote locations.</li><li>2. Run Catalogue of ski runs used on a regular basis, in hard-copy or digital format</li></ol>	
C. Coordination of Operations: Established communications plan with other operators, if applicable.	
D. Regular Cessation of Operations documented.	
E. Special Termination of Operations.	
F. In Season and Annual Reporting.	
<b>IV. Outfitter and Operator Interface</b>	
A. Operator and Outfitter Responsibility. <ol style="list-style-type: none"><li>1. Operator Safety and Operations Plan and Operating Procedures established and shared with Outfitter.</li><li>2. Outfitter Safety and Operations Plan and Operating Procedures established and shared with Operator.</li><li>3. Clear distinction between Outfitter responsibilities during skiing activities and Operator responsibilities under its Part 135 Certificate.</li><li>4. Clear delegation of responsibilities between Operator and Outfitter, including Flight Following, refueling, safety briefings, etc.</li></ol>	
B. Outfitter and Operator have established clear communications about the Operator’s pilot training and qualifications program, and Outfitter provides feedback on company pilots to Operator.	
C. Where more than one pilot is assigned to a Heli Skiing Operation, the Operator may designate a single pilot as the Point of Contact for that heliskiing Operation.	
D. Safety Priority: FAR, Safety and Operations Plan, other legal or documented requirements prioritized over Outfitter, Guide, or Client Requests.	
<b>V. Pilot – Guide Co-Training</b>	
A. Coordinated Training Documented: <ol style="list-style-type: none"><li>1. Safety and Operations Plan</li></ol>	



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2. Radio communication protocols	
3. Use of hand Signals	
4. Pre-flight briefing procedures	
5. Procedures at Landing Zones and Pickup Zones.	
B. Application Specific Training Documented:	
1. Terrain and Operating Area	
2. Landing Zone and Pickup Zone selection and documentation	
3. Identification of specific risks: Avalanche Paths, Seracs and Icefalls, Crevasses, Cornices, Rock Falls, Winds, Flat Light/Poor Visibility, Backcountry Users, Other(s).	
4. Compliance Issues, including Wildlife avoidance and documentation, Avoidance requirements of backcountry users, Outfitter use documentation, other permit requirements.	
C. Helicopter Specific Training for Guides and Ground Crew:	
1. (1-11). Location of ELT, Fire Extinguisher, First Aid Kit, and other emergency Equipment; Proper operation of cargo and basket latches, door handles, etc.; Loading and Unloading Procedures; Proper use of seatbelts and shoulder harnesses; Use of intercom equipment; Emergency exit procedures; Proper client pre-flight procedures; Aircraft performance capabilities and limitations; Emergency aircraft shut-down procedures; Implementation of Outfitter Emergency Manual; Other.	
D. Remedial Training for Guides, Pilots, and Ground Crew that missed initial training.	
<b>VI. Ground Support Personnel and Procedures</b>	
A. Flight Line	
1. Guides or Ground crew brief clients from an established checklist prior to boarding	
2. All Clients, Guides, and Pilots wearing avalanche transceiver; transceivers checked daily, and function checked periodically through the season.	
3. Clients and Guides wear climbing harnesses if necessary; harnesses checked for proper use and fit.	
4. Clients attended by ground crew or guides while at Operations base and staging areas, or areas properly demarcated.	
5. Guides or Ground Crew escort clients to helicopter and supervise Client movements.	
6. Guides or Ground Crew assist clients with loading.	
7. Guides or Ground Crew monitor and assist movement of the helicopter in congested areas and at the request of the pilot.	
8. Guides or Ground Crew should assist Clients upon landing by opening the helicopter door, deplaning, and escorting the Clients from the helicopter activity area.	
B. Training of Ground Crew	
1. Helicopter safety and awareness both inside and outside the aircraft.	
2. Client briefing procedures.	
3. Loading and unloading Clients.	
4. Flight Following.	
5. Emergency Manual and Emergency Plan implementation.	
6. Ground guiding and communication with the Pilot when appropriate.	
7. For persons otherwise authorized to refuel aircraft, fueling procedures (see Section VI D, below).	
8. Load manifest preparation.	
9. Ground Operations emergency procedures and location of emergency equipment in case of ramp mishap.	
10. Records of Ground Support Personnel training kept in appropriate training or personnel folders.	
C. Flight following	
1. Outfitter flight following program established, with logs for all flight operations, including times, names, locations, and intended direction of travel or destination, with check-ins at least once per hour.	
2. GPS tracking system implemented.	
3. Appropriate communications equipment utilized: A combination of two-way radios, repeaters, cellular phones, satellite phones, satellite texting devices should be used to maintain reliable, redundant communications.	
4. Flight following personnel trained in proper use and implementation of the Emergency Plans and has Emergency plan on hand.	
D. Refueling	
1. Refueling Staff properly authorized by Operator and/or Operator, with documented training.	



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2. Minimum refueling personnel training should include:
  - a. Safety precautions including open flame/smoking prohibitions and prohibitions on use of a cell phone or radio when fueling.
  - b. Proper use of "Personal Protective Equipment," which should include: eye protection, chemical resistant gloves, hearing protection and such other equipment as may be required by law.
  - c. Proper operation of fuel caps and hatches.
  - d. Refueling equipment operations training.
  - e. Fuel use documentation.
  - f. Spill Response Procedures.
  - g. Fire extinguisher operation.
3. Mobile fuel trucks and trailers shall comply with applicable state and federal laws and regulations and should be equipped with, at minimum:
  - a. Personal Protective Equipment.
  - b. Container to collect residual fuel from nozzle.
  - c. Spreadable absorbent, shovel and container for collection of contaminated absorbent.
  - d. Absorbent wipes.
  - e. Fire Extinguisher.
4. Stationary fuel supply tanks should comply with applicable state and federal laws and shall be equipped with, at minimum:
  - a. Personal Protective Equipment.
  - b. Container to collect residual fuel from nozzle.
  - c. Spreadable absorbent, shovel and container for collection of contaminated absorbent.
  - d. Absorbent wipes.
  - e. Fire Extinguisher.
  - f. Material Data Safety Sheets (MSDS).
  - g. If not otherwise required by state or federal laws or regulations, it is recommended that Operators and/or Outfitters consider the use of double walled tanks or secondary containments for stationary fuel supply tanks.
5. Training and protocols in place for Helicopter Rapid Refueling ("Hot Refueling")

## VII. Aircraft and Pilot Equipment

- A. Given that the Outfitter generally lacks qualifications or authority to check, the outfitter has done due diligence in seeking aircraft from the Operator meet the following criteria:
  1. IMC Instrumentation.
  2. Emergency Locator Transponders.
  3. Anti-Collision Equipment.
  4. Communications Equipment.
  5. Covers, Heaters and Tie-Downs.
  6. Ski Basket.
  7. Skis or Bear-paws.
  8. Baffles.
  9. Pilot Personal Equipment: avalanche transceiver, appropriate winter clothing and foot gear, handheld radio for communications with Guides and Flight Following personnel when aircraft is shut down.
  10. Emergency Equipment: per Operator and/or Outfitter requirements for the terrain and season.
- B. Additional Emergency Equipment. At the discretion of the Operator and Outfitter, the aircraft may also be equipped with: Avalanche or high-angle rescue pack, additional first aid equipment including oxygen pack, and automated external defibrillator (AED), evacuation sled or backboard, and extra avalanche transceiver.

## VIII. Snow Safety and Weather Forecasting

- A. General. Daily snow stability and weather forecasting program established. Daily data gathered and stored.
- B. Snow Safety Director. Snow safety director appointed. Snow safety director appropriately qualified, with AAA Level 3, Pro 2, or equivalent; minimum of 4 seasons in relevant avalanche/forecasting program. Snow safety director manages forecasts and relevant data, and delegates duties to other qualified Guides.



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C. <u>Data Guidelines.</u> All snow, weather and avalanche observations should be collected and reported as specified in the most current edition of: “Snow, Weather, and Avalanches: Observation Guidelines for Avalanche Programs in the United States” American Avalanche Association.	
D. <u>Data Sources:</u> <ul style="list-style-type: none"><li>a. Guides report daily field observations, from relevant areas, aspects, and elevations to support daily forecasting and long-term trend analysis. Data is also incorporated from other sources, when possible</li><li>b. Appropriate weather data incorporated into forecasts, and any daily weather forecasting should be shared with relevant pilots.</li></ul>	
E. The daily snow stability forecast should be specific to the areas, elevations, slope aspects and geographic features that will or may be utilized on that date.	
F. Forecast presented in terms of Snow Stability Scale or North American Public Avalanche Danger Scale and maintains forecast format through the season.	
G. Snow Safety and Avalanche training presented to all guides, including standard tests, snow and weather data collection procedures, snow study pit craftsmanship, snow stability rating system, and other topics the Outfitter or Snow Safety director deem appropriate.	
<b>IX. Operating Procedures</b>	
A. <u>Daily Schedule &amp; Briefings.</u> <ul style="list-style-type: none"><li>1. Daily Schedule terminates regular operations not less than one hour prior to sunset and allows for compliance with Pilot duty-day limitations.</li><li>2. Morning Guide Meeting / Pre-Operations Briefing attended by Guides and Ground Crew. Weather and Snow Stability Forecasts presented. Operational Planning discussed, including review of primary ski zones, runs, PZs and LZs, landmarks, permit area boundaries, exclusion zones, wildlife avoidance areas, the location of known, unusual hazards, emergency caches and shelters, review of evacuation routes, fuel caches, known unusual hazards, emergency caches and shelters (if any), and other relevant topics. Pilots should be invited to attend and should be briefed to the extent necessary prior to operations if they do not.</li><li>3. Evening Guide Meeting/Post-Operations Debriefing attended by guides at conclusion of regular operations. Guides communicate unusual occurrences, information regarding clients, wildlife sightings, and other relevant matters. Lead guide or surrogate provides an overview of day’s operations including ways to improve safety and efficiency.</li><li>4. Pre-Operations and Post-Operations meetings provide an opportunity for communication that allows the Operation to continually improve in safety and efficiency.</li></ul>	
B. <u>General Requirements for Aviation Operations.</u> <ul style="list-style-type: none"><li>1. Aircraft orientations should be given prior to each Group’s first flight using a briefing checklist, with instructions on loading, unloading, emergency procedures and general conduct around the aircraft. Briefings should include instruction that use and/or possession of alcohol and drugs is prohibited in and about the aircraft and during all field operations.</li><li>2. Guides and Clients wear seat belts and, as provided, shoulder harnesses.</li><li>3. Weights are properly noted and totaled on load manifest and delivered to pilot. Additional equipment, including rescue gear, skis, or any compressed gas should also be noted.</li><li>4. No items or equipment put onboard the helicopter without knowledge and approval of the Pilot.</li></ul>	
C. <u>Pre-Flight Procedures.</u> In addition to all standard, FAA, manufacturer and Operator required pre-flight inspections, prior to the first departure each day and following any extended shutdown or any shutdown due to weather conditions, each Lead Guide should: <ul style="list-style-type: none"><li>1. Check ramp safety, including wind direction and speed, clearance of employees of guests from helicopter, presence of potential hazards such as FOD, and other items as may be necessary.</li><li>2. Radio-check flight-following, aircraft radio and hand-held VHF radios.</li><li>3. Confirm Automated Flight Following.</li><li>4. Ensure Pilot, Ground Support, and Guides have been briefed on the plan.</li></ul>	
D. <u>Landing Zone Selection and Preparation.</u> <ul style="list-style-type: none"><li>1. Landing Zones capable of supporting the helicopter, provide safe clearance for rotor systems, and large enough to safely unload clients and guides and equipment and provide departure clearance for aircraft.</li><li>2. When practical or warranted, landing zones improved by enlarging platform, installing wind flagging, and/or using additional visibility aids.</li></ul>	
E. <u>Landing Zone Procedures.</u>	



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<ol style="list-style-type: none"><li>1. Pilot and guide discuss safe Pick-up Zone location and hazards prior to landing.</li><li>2. Prior to landing, Guide assists Pilot with Hazard and PZ identification; observes clearances to terrain features; unloads and secures equipment, directs Clients to appropriate location; confirms all latches, doors, and ski basket are secured; visually checks aircraft for unusual conditions or fluid leaks; reconfirms client location, and signals aircraft to depart.</li></ol>	
<p>F. <u>Pick-Up Zone Selection and Preparation.</u></p> <ol style="list-style-type: none"><li>1. Pick-up Zones meet all requirements for Landing Zones.</li><li>2. Operators and Outfitters do not allow Clients to board a helicopter except at a Pick-up Zone meeting the above criteria, or Use “toe-in” or single ski landings as a means to board a helicopter.</li><li>3. As necessary Pick-up Zones are improved by creation of a landing platform of compacted snow, Installation of wind flagging, use of additional visibility aids.</li></ol>	
<p>G. <u>Pick-Up Zone Procedures.</u></p> <ol style="list-style-type: none"><li>1. Pilot should contact guide by radio prior to approach to determine readiness, obtain wind and other pertinent information from Guide, familiarize with surrounding terrain to confirm approach, prior to commencing short final, on short final, confirm main and tail rotor clearances to terrain, following landing, signal guide to commence loading.</li><li>2. Guide should secure all packs and equipment at appropriate location, place Clients in appropriate location, if preferred by Pilot, direct landing using hand signals, load Clients and equipment using appropriate procedures, confirm that all doors, hatches and ski basket lid are properly secured and visually scan helicopter for unusual conditions or fluid leaks, confirm that Client seat belts are secure, confirm clear left and above, to pilot, prior to aircraft departure.</li></ol>	
<p>H. <u>Special Procedures for Flat Light and Low Visibility Conditions.</u> Pilots should not hesitate to terminate operations where visibility is insufficient for safe flight.</p> <ol style="list-style-type: none"><li>1. Pilots should utilize fixed reference points such as LZ-PZ flagging on wands and stakes, equipment secured in place by Guide, rocks, shrubs, ridgelines, and people. Pilots should not hesitate to abort an approach to an LZ or PZ due to marginal visibility and as conditions warrant require a guide at a Pick-up Zone place additional flagging ribbon on surrounding terrain.</li><li>2. Pilots should utilize the experience of the Lead Guides and available weather data in deciding to withdraw from the field. Flight Following and other Ground Operations personnel trained for and assigned weather monitoring tasks, utilizing weather services, remote contact points and pre-established terrain features as benchmarks for changing weather.</li><li>3. When flying in flat light, horizon-less conditions, Pilots should substantially reduce airspeed and check instruments to guard against unintended descent. Prior to approaching a Pick-up Zone in flat or low-light conditions, Pilots should require that the guide on the ground place additional flagging or other visibility aids on surrounding terrain.</li></ol>	
<b>X. Emergency Response Planning</b>	
<p>A. Emergency Manual includes Emergency Classification system</p> <ol style="list-style-type: none"><li>a. Class I – Resources at site sufficient to meet needs.</li><li>b. Class II – Additional, internal Heli-Skiing Operation resources required.</li><li>c. Class III – Outside resources required.</li></ol> <p>B. <u>Specific Emergency Plans.</u> The Emergency Manual should have sections addressing:</p> <ol style="list-style-type: none"><li>1. Emergency Communications Procedures</li><li>2. Field Evacuation Plan</li><li>3. Missing or overdue aircraft</li><li>4. Aircraft accident</li><li>5. Aircraft mechanical failure</li><li>6. Missing skier</li><li>7. Injured skier or skier with medical emergency</li><li>8. Avalanche</li><li>9. High angle/crevasse rescue</li><li>10. Environmental Emergency</li></ol>	



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C. <u>Guide Pack &amp; Class I Emergencies.</u> The Emergency Manual includes a standardized equipment list for guides to carry in the field	
D. <u>Emergency Communications Plan.</u> Emergency Communications plan established, including primary and secondary points of contact, persons or agencies with authority to initiate an emergency response, and the capabilities of the resource, including as pertinent, other Helicopter skiing operations, Search and Rescue Services; Law Enforcement Agencies, Landowner Agencies, Clinic, Hospital and/or Trauma Center; Air Ambulance evacuation services, Fire Department; Aviation Operators and/or government aviation operators such as Coast Guard and Air National Guard; Environmental Clean-up Contractor; Ski Area Rescue and Medical Personnel; Snowmobile clubs or tour operators.	
E. <u>Implementation.</u> Copies of the Emergency Communications Plan located at the Operations Base and the Day Staging Area.	
F. <u>Two-Way Emergency Communications.</u> Outfitters have established a two-way communications and response relationship with third party emergency response resources such that those organizations can call upon the Outfitter and Operator for emergency assistance in an appropriate case, during the Operating Season.	
G. <u>Field Evacuation Plan.</u> Emergency Manual includes alternate methods for field evacuation, including provisions for changing or marginal weather, and including ground evacuation where possible.	
H. <u>Trauma/Medical Emergency.</u> The Outfitter should have available: <ol style="list-style-type: none"><li>1. Internal resources, including guides trained to a minimum standard of OEC, WFR, EMT, or greater equivalent, with certifications on file; Trauma Pack, in the helicopter, day staging area, or another proximate location, including, at minimum, limb, spine and cervical stabilization devices, supplies for advanced 1<sup>st</sup> aid treatment of wounds, apparatus for assisted breathing, and bodily substance isolation supplies; Oxygen Pack. Including compressed oxygen, masks and nasal cannula and appropriate airway devices. The Oxygen Pack should be available in the helicopter or at the Day Staging Area; Automated External Defibrillator (“AED”); Rescue sled/litter together with appropriate devices for securing a patient.</li><li>2. External Medical Resources. The Outfitter should have a working knowledge of the capabilities of nearby clinics, hospitals and medical centers and the location of the nearest Trauma Center. The Emergency Communications Plan should include contact information for the Clinic, Hospital and Trauma Center and identify the process by which those resources can be accessed.</li><li>3. Trauma &amp; Medical Evacuation: The Outfitter must have resources to remove an injured skier from a mountain side or other location where helicopter transport would not be available; Trauma/Medical Evacuation from Field. The Outfitter must have resources to remove an injured skier from the field by helicopter and by other means if a helicopter is not available. The Outfitter’s emergency planning should include provision to engage an air ambulance service for transportation of more serious cases.</li></ol>	
I. <u>Avalanche Rescue.</u> The Outfitter must have an avalanche rescue plan in place that primarily relies upon on-site resources to rescue buried victims. Clients trained in rudimentary avalanche search and rescue techniques and that guides practice their search and rescue skills several times each season. Each guide and client must be equipped with an avalanche transceiver and the guide and a second guide, tail guide or one client in each group should be equipped with a shovel and probe. At least one client in each group should be equipped with and trained in the use of a radio by which other guides, the Pilot and/or Flight Following may be contacted to request assistance. The Helicopter Skiing Operation maintains and has available in the helicopter, Day Staging Area or remote cache as appropriate, an Avalanche Rescue Pack equipped with probes, marker flags, shovels and equipment to treat hypothermic victims (i.e., blankets, sleeping bags, etc.)	
J. <u>High Angle Rescue.</u> The Outfitter has assessed its terrain and operating style for high angle hazards and determined what resources and skills would be required to rescue a skier (injured and uninjured) from those features. The Outfitter has evaluated the possibility of needing high angle rescue equipment and selected and distributed their resources accordingly.	
K. <u>Fuel Spill Response.</u> The Heli Ski Operation should have a Spill Prevention, Control and Counter Measures Plan (SPCC) in place, in advance. The SPCC should include all equipment and training required by law and, without limiting the foregoing: <ol style="list-style-type: none"><li>1. Training of personnel for handling small scale spills and reporting larger spills;</li><li>2. Adequate supply of Personal Protective Equipment, spill mitigation materials and tools on-hand for small scale spills;</li><li>3. Containers for removing contaminated materials from small scale spills;</li><li>4. Identification of contractors authorized to receive contaminated materials from small scale spills and prior agreement by such parties to receive such materials;</li></ol>	





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5. Identification (including names of contact persons and phone numbers) of third-party contractors that are able to handle larger spills on an emergency basis; and
  6. Identification of Federal, State and/or local agencies that are required to be notified in the event of a fuel spill.
- L. Recurrent Training & Drills. The Operation has established a schedule for training and drills:
1. Emergency Communications Plan, including annual Resource and contact verification; Training of Guides and Ground Crew: Twice (beginning and near the mid-point) each season; Internal drill: Annually in conjunction with training on a specific emergency skill set; Co-training with external resources: Bi-annually, as available.
  2. Field Evacuation Plan. Including annual Resource verification and contact verification, annual Training of Guides and Ground Crew
  3. Trauma/Medical Emergency, including annual Verification of guide certificate status; Inventory of contents of Trauma Pack and other medical supplies: At the beginning of each Operating Season and following any use of the equipment; and Emergency Evacuation Drill: Annually (once each).
  4. Avalanche Emergency: Inventory of Avalanche Rescue Pack: At the beginning of each Operating Season and following any use; and Avalanche Beacon single and multi-unit burial drills for guides: Regularly during Operating Season.
  5. High Angle Rescue (if terrain conditions require): Inventory of High Angle Rescue Pack Contents: At the beginning of each Operating Season and following any use of the equipment; High Angle Rescue Drill: Once Annually for Helicopter Skiing Operations without glaciers but with precipitous terrain features and twice annually for Helicopter Skiing Operations with glaciers in their Operating Area.
  6. Environmental Emergency: Resource and Contact Verification: Annually, Training of Ground Personnel for implementation of the SPCC Plan: Annually or more often if required by law, Inventory of spill mitigation materials and tools: Weekly for fixed location fueling systems. Daily for mobile refueling systems.

## XI. Disbursement of Explosive Testing Devices

No Outfitter or Operator shall use aircraft as a means of aerial disbursement of explosive testing devices except upon compliance with the following:

- A. Explosive Testing Device Safety Plan. The Outfitter shall develop and implement a written plan meeting all federal and state laws and regulations governing the handling, storage, use and disposal of explosive testing devices. Clients shall not be permitted to be on board any aircraft carrying explosive testing devices.
- B. Licenses. All persons handling explosive testing devices shall possess all necessary licenses for possession and use of those devices.
- C. Permits. The Outfitter's operating permit must expressly allow for use of explosive testing devices.

## XII. Sustainability and Environmental Programs

- A. The Outfitter acts as competent steward of its Operating Area.
- B. The Heliskiing operation educates clients about the land management environment of the Operating Area.
- C. Outfitter assures all Pilots, Guides, and relevant personnel are aware of and sufficiently trained to comply with all conditions, requirements, restrictions, boundaries and exclusion zones associated with its permit(s) and consents to operate on public and private land.
- D. Care of Operating Area:
  1. The Outfitter conducts its operations in a fashion that minimizes impacts on its Operating Area,
  2. Use of bio-degradable flagging and naturally occurring materials (i.e., alder wands) to mark LZ's, PZ's, equipment caches and fuel caches; or removal or concealment of other materials; and
  3. Remote fuel caches shall comply with all applicable laws and regulations. Fuel caches should be equipped with secondary containment. Remote fueling must occur with spill mitigation materials and an appropriate fire extinguisher on site. Fuel placement and disbursement should be logged to assure





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that all petroleum products placed in the cache are accounted for at season end. The use of locks on fuel pumps and removal or concealment of wrenches for opening of containers is encouraged to discourage vandalism.

- E. **Wildlife.** In addition to maintaining full compliance with permit conditions and applicable laws, Helicopter Skiing Operations shall:
1. Keep aircraft a reasonable vertical and horizontal distance from known wildlife, goat kidding areas, active raptor nests and animal dens.
  2. Avoid engaging in activities that may cause unnecessary stress to wildlife and select areas for daily operation that avoid recently observed wildlife likely to remain in the area of observation.
  3. Consistent with safe practices, direct Clients to routes that avoid wildlife that have been encountered or observed during Helicopter Skiing Activities.
  4. Report third party harassment or poaching of wildlife to appropriate officials.

## GUIDE QUALIFICATION & EXPERIENCE GUIDELINES

### Level I – Associate Guides

- A. Guide Trainees, Apprentice, and/or Assistant Guides, only lead groups if in the immediate company of Level II or Level III Guides, except on meeting the requirements for a qualifying Level I Guide.
- B. Hold AAA sanctioned Pro 1 Certificate; or a level II Certificate issued by AAI or AIARE; or a Level I Certificate issued by the CAA; or another recognized equivalent.
- C. Hold WFR, OEC, or EMT or higher emergency medical certification, with valid CPR or BLS training.
- D. Skills, Understanding, Training, and Experience as set out in the qualifications guidelines and by the Outfitter.

### Qualifying Associate Guides

- A. Qualified Associate Guides may lead groups, provide competency and skills set forth in the guidelines. All runs, Landing Zones, and Pickup Zones utilized by a Qualifying Associate Guide and group should require approval by the Lead Guide.
- B. Suggested Experience Guidelines:
  1. 20 field days with a Helicopter Skiing Operation as a Tail Guide; or
  2. 15 Fifteen (15) days of on-snow guiding experience with a Helicopter Skiing Operation as a tail guide under the direct supervision of a Guide and successful completion of an appropriate Mechanized Ski Guide course.
  3. Ten (10) days of on-snow guiding experience with a Helicopter Skiing Operation as a tail guide under the direct supervision of a Guide and successful completion of the AMGA Aspirant exam or equivalent examination sponsored by another recognized sanctioning body.
  4. Ten (10) days of on-snow guiding experience with a Helicopter Skiing Operation as a tail guide under the direct supervision of a Guide and at least 30 days of on-snow guiding experience with a back-country skiing guide service or similar operation. Up to five (5) days of an appropriate Mechanized Ski Guide course may be substituted for back-country guiding experience.
  5. Ten (10) days of on-snow guiding experience with a Helicopter Skiing Operation and five (5) or more years' active participation in an avalanche forecasting and mitigation program with a professional ski patrol.
- C. Hold AAA sanctioned Pro 1 Certificate; or a level II Certificate issued by AAI or AIARE; or a Level I Certificate issued by the CAA; or another recognized equivalent.
- D. Hold WFR, OEC, or EMT or higher emergency medical certification, with valid CPR or BLS training.
- E. Skills, Understanding, Training, and Experience as set out in the qualifications guidelines and by the Outfitter.

### Level II - Guides

- A. Level II Guides are able to lead groups of helicopter skiers under the supervision of a Lead Guide. Guides generally have the capacity to select runs, Landing Zones & Pick-up Zones within an area selected or



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approved by the Lead Guide for that date or timeframe. In addition to the skills, training, knowledge and experience of Level I Qualifying Associate Guides, Level II Guides should be able to demonstrate and/or document the experience, skills and training described in the guidelines.	
B. Minimum of 20 <i>additional</i> days of on-snow guiding experience, in at least two ski seasons, with a Helicopter Skiing Operation.	
C. Level II Guides must have must hold a AAA sanctioned Pro 2 Certificate, or a Level III Certificate issued by the American Avalanche Institute (AAI), American Institute for Avalanche Research and Education (AIARE), AVPRO by American Avalanche Association (AAA), Level II Professional Operations Certificate issued by the Canadian Avalanche Association or equivalent certificate issued by a recognized sanctioning body.	
D. Recurrent training and continuing certifications of emergency medical credentials as described for Associate Guides and Valid American Red Cross <i>CPR for the Professional Rescuer</i> or American Heart Association <i>Health Care Provider BLS</i> certification and AED training.	
E. Skills, Understanding, Training, and Experience as set out in the qualifications guidelines and by the Outfitter.	
<b>Level III – Lead Guides</b>	
A. Level III guides are Lead Guides or supervisors, able to lead groups of helicopter skiers without supervision and to oversee the activities of all groups operating from a single helicopter. Level III Guides are viewed as leaders, both within and outside of a Helicopter Skiing. In addition to the skills, knowledge, education, and experience of Level I and Level II guides, Level III guides should be able to demonstrate and/or document the experience, skills and training described in the guidelines.	
B. Minimum of 40 <i>additional</i> days of on-snow guiding experience, in at least two ski seasons, with a Helicopter Skiing Operation.	
C. Level III guides must have must hold a AAA sanctioned Pro 2 Certificate, or a Level III Certificate issued by the American Avalanche Institute (AAI), American Institute for Avalanche Research and Education (AIARE), AVPRO by American Avalanche Association (AAA), Level II Professional Operations Certificate issued by the Canadian Avalanche Association or equivalent certificate issued by a recognized sanctioning body.	
D. Recurrent training and continuing certifications of emergency medical credentials as described for Associate Guides and Guides and Valid American Red Cross <i>CPR for the Professional Rescuer</i> or American Heart Association <i>Health Care Provider BLS</i> certification and AED training.	
E. Skills, Understanding, Training, and Experience as set out in the qualifications guidelines and by the Outfitter.	