

SAFETY AND TRAINING FOR SKI MOUNTAINEERING

Outings Safety and Training Policy

SKI MOUNTAINEERS SECTION
ANGELES CHAPTER-SIERRA CLUB

NOVEMBER, 1980

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Approved: By Majority Vote of the Ski Mountaineers Central Committee

_____ by _____, Secretary of the Committee
Kathy Crandall

By the Chapter Safety Committee

_____ by _____, Chapter Safety Chairman
Larry Tidball

The steeper and higher a mountain becomes, the more severe are the forces of nature that serve to tear it down. Wind, running water, changes of temperature, swift avalanches, slow-moving glaciers, ricocheting falling rocks - these elements are ever at work taking a mountain apart, reducing it to low-lying sediments which, in ages to come, will rise again to new heights. Much of the skill of the mountaineer is devoted, during the specific acts of tearing apart, to being somewhere else at the time. He must know the objective dangers of mountains - those which the mountain thrusts upon him; knowing them, he may avoid them. The better he knows their exact limits, the broader the routes of safe travel between them will seem to him, and the greater may be his accomplishment in mountains; more important esthetically, in an absence of unnecessary worry, he can enjoy his mountains immeasurably more.

- David Brower

Manual of Ski Mountaineering
Sierra Club, 1969

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- 1.0 Purpose - The Ski Mountaineers Section was founded November 7, 1934, and became the first self-governing section of the Sierra Club. The purpose of the section, as stated in its bylaws, is "To band together members of the Sierra Club in order to enjoy skiing in mountain wilderness with the comradeship and safety of a group." This safety and training policy establishes the procedures for safe conduct of section outings, and for carrying out another purpose of the section, namely, "To promote interest and ability in ski mountaineering and to provide instruction in ski mountaineering."
- 2.0 Approval - This policy shall become effective when approved by a majority of the elected Central Committee of the Ski Mountaineers and by the Angeles Chapter Safety Committee.
- 3.0 Safety and Training - This safety and training policy incorporates the current version of the outings safety standards of the Angeles Chapter of the Sierra Club, and establishes procedures for scheduling and conducting outings and for training leaders and participants, both for outings in general and for ski tours in particular.
- 3.1 General Outings Policy - The following shall apply to all outings:
- 3.1.1 Outings Skill Requirements - Outings often require specialized leadership and participant skills, good physical condition, and specialized equipment. These skill and equipment requirements shall be established and made known to prospective participants in advance of the outing, either in the Chapter Schedule, in the Mugelnoos, or by private communication between the leader and prospective participants.
- 3.1.2 Leadership Requirements - Each outing shall be conducted by a leader and at least one assistant leader listed in the Chapter Schedule, or by qualified substitutes, if necessary. The leader and principal assistant shall both be current members of the Sierra Club and qualified (rated) to conduct the outing. Leaders shall be capable of conducting the outing, controlling the group, and shall be capable of handling emergencies using appropriate Sierra Club procedures. Leaders shall know the areas to be entered and the conditions to be encountered. The leader shall obtain all required wilderness or campfire permits, releases for use of private property, medical releases for minor participants, and shall in general see that any similar arrangements are made.
- The leader shall see that all participants receive adequate instructions. Instructions shall include as applicable:
- a. Detailed physical condition, skill and equipment requirements.
 - b. Meeting place and time; directions to meeting place.
 - c. List of other participants (for car and equipment pooling).
 - d. Sign-in/Sign-out requirements.
 - e. Basic outing safety and conduct requirements.
 - f. Liability exclusions (club not responsible for travel by private car, public conveyance, or for search and rescue expenses).
- 3.1.3 Participant Requirements - The leader shall screen prospective participants to assure that they have the skills, conditioning, and equipment required for safety, and shall have the authority to reject unqualified participants. Persons less than 18 years old shall be accompanied by a parent or guardian or have written permission from same giving phone number and authorization for continuing medical treatment by an MD in case of necessity. The leader may require that participants reserve a place on the trip.
- 3.1.4 Outing Conduct - The leaders shall conduct outings in such a manner as to enhance safety. Participants are expected to cooperate in this effort. The leader shall have the authority to modify or terminate an outing if necessary for reasons of safety.

Sign-In/Liability Waiver- Before the trip commences, all participants shall sign the combined sign-in sheet/liability waiver that has been approved by the Angeles Chapter of the Sierra Club.

Equipment Check - Leaders shall encourage participants to perform a complete equipment check before leaving the roadhead.

Group Control - The leaders shall keep the group together at all times, and keep aware of the location and condition of all participants. One leader shall keep control of the front of the group, and another shall bring up the rear. The leaders shall modify the outing plan as necessary to avoid exceeding the capability of the group, and shall abort the outing objective if circumstances prevent its completion in safety. Especially in difficult terrain, bad weather, or conditions of poor visibility, it is essential that participants stay within sight of each other.

Group Size and Camping Restrictions - Groups under control of two leaders shall be limited in size as required by wilderness or other restrictions. All camping restrictions shall be observed, including respect for private property.

Leaving Base Camp - On overnight outings, base camp is not to be abandoned until all participants are accounted for, and on all outings, no one is to leave the roadhead until all participants are accounted for, and all motor vehicles are started.

Conduct - Personal conduct of all participants shall be in accordance with the RULES OF CONDUCT published in the Chapter Schedule, and with the bylaws of the Ski Mountaineers Section, which require an attitude of harmony and cooperation between members.

3.1.5 First Aid Kits - The leaders shall make certain that a suitable First Aid kit is carried on each outing.

3.1.6 Accidents, Injuries, and Emergencies - Leaders shall be prepared to deal with injuries, illness or other emergencies, recognizing emergencies early and responding completely. Other specific requirements shall be as follows:

1. In cases of an accident or sudden illness, at least one person shall stay with the injured or ill while others contact the leader.
2. All participants are expected to cooperate fully with the leader, and unless otherwise directed by the leader, to remain with the group in spite of previous personal commitments.
3. The group shall first draw upon its own resources in the resolution of the crisis. Should the situation be beyond the capabilities of the group, then the use of professional assistance is warranted. In the event of an emergency requiring search and/or rescue, leaders shall contact the National Park Ranger or the County Sheriff, and the Sierra Madre Search and Rescue Team.
4. The leader shall direct search and rescue efforts until legally responsible search and rescue personnel arrive.
5. All emergencies or accidents shall be reported to the Angeles Chapter Office as soon as possible. A copy of the report shall be provided to the chairman of the Chapter Safety Committee.

3.1.7 Transportation- Leaders cannot take an active role in making arrangements for participants' transportation. The leader supplies directions to the trailhead, but transportation arrangements, including ridesharing, are the responsibility of the participants. Club insurance does not extend to owners, drivers, or passengers of private cars. Contact the Angeles Chapter Bus Coordinator for current requirements before arranging transportation by operators licensed to carry passengers for hire.

3.2 Classification of Outings by Skill Requirements - The Chapter Safety Committee has established classifications for all Chapter sponsored outings to differentiate the levels of skill required of participants and the event leaders. These classifications, which shall be used to classify SMS outings, are listed in order of increasing skill requirements (except for technical outings, which may require essentially different and unrelated skills):

C- For events conducted by a non-Sierra Club entity (i.e. Concessionaire).

O- Applies to a variety of uncomplicated outings (i.e., city walks, bike rides, trail hikes, backpacking.) May involve simple off trail hiking not requiring navigation skills. Climbing level: "Class 1" terrain.

I- Includes outings that involve cross-country travel where navigation is necessary. Rougher ground than "O" outings may be traversed, and the use of hands for balance may be necessary. Includes outings that have snow travel or skiing on easy terrain. Climbing level: "Class 2" terrain.

M- Includes moderate level climbing: "Class 3" terrain. On rock, the hands are used for climbing. Some participants may want a safety belay. On snow, safety dictates the use of ice axes and the ability to self-arrest.

E- More exposed than an M outing. Climbing on "Class 4" terrain. Rock climbs will use a rope for all in the party. On snow, steeper terrain than M outings is permissible, and safety dictates the use of crampons.

T- Technical outings requiring specialized skills as identified in the sponsoring group's safety policy.

All ski tours conducted by the Ski Mountaineers Section shall be rated T (technical), including SMS ski tours that involve the use of ice axes as an aid to skiing, provided the leaders and participants are qualified. Tours planned to involve rock or snow climbing on foot on terrain requiring the use of a rope, ice axe, or crampons for safety shall be rated TM or TE in accordance with the definitions above, and subject to the Restricted Trips Policy in Appendix D.

For conducted outings (C), the safety responsibility shall be assumed by the guiding agency. Trip leaders shall verify that the guiding agency does in fact assume such responsibility and that adequate insurance is carried. Resort skiing shall be considered a conducted activity. Rating a trip (C) does not relieve the Sierra Club of liability.

3.3 Qualifications of Leaders - The ratings of all leaders shall be approved by the SMS Central Committee. The qualifications of leaders for non-technical outings (rated O, I, M, or E) shall be established and the ratings issued by the Chapter Safety Committee. In special circumstances one leader lacking the required rating may lead or assist on an outing with the prior approval of the SMS Central Committee and the Angeles Chapter Safety Committee. Rated leaders shall not be required for conducted outings or social events. The qualifications of T-rated ski mountaineering leaders shall be established as follows:

- 3.3.1 Section Membership - All ski tour leaders shall be members of the Ski Mountaineers Section, and therefore of the Sierra Club. (Qualified Sierra Club leaders who are not SMS members may lead non-technical or jointly sponsored outings.)
- 3.3.2 Chapter Rating - All ski tour leaders shall be rated by the Angeles Chapter Safety Committee to lead outings at the intermediate (I) level, or higher. Ski mountaineering training and experience trips may be used to satisfy the training requirements for this rating.
- 3.3.3 Prerequisite Experience - Candidates shall have had at least one season of ski mountaineering experience including two or more overnight ski tours with the Ski Mountaineers Section. These tours may be used to satisfy the requirements of the Ski Mountaineering Test (see below).
- 3.3.4 Technical Skills - All candidates shall have exhibited technical knowledge and experience equivalent to the requirements of the Sierra Club Ski Mountaineering Test. See Appendix A. Leaders who lead trips or portions of trips on foot that require the use of ice axes or snow climbing equipment shall be qualified as participants in the use of such equipment, and shall have additional skills required of leaders established by the Angeles Chapter Safety and Leadership Training Committees. See Snow Climbing Test in Appendix C and 3.3 Leader Qualifications in Appendix D, Restricted Trip Outings Policy.
- 3.3.5 Leadership Experience - Candidates shall lead one overnight experience tour and one other tour, each involving ascents of at least 1000 vertical feet, with a fully qualified assistant who shall act as an observer. For these tours, the candidate shall be provisionally rated by vote of the SMS Central Committee.
- 3.3.6 Review and Approval of Qualifications - Leadership qualifications shall be reviewed by the Ski Mountaineers Section Safety Committee, which shall be appointed by the Central Committee and which shall consist of three or more qualified ski mountaineering leaders. Upon the recommendation of this committee, the name of the candidate shall be submitted to the Central Committee and the Chapter Safety Committee for certification as a qualified ski mountaineering leader (T-rated). Leaders that qualify to lead restricted trips as defined in Appendix D shall be rated T2.
- 3.4 Qualification of Participants - Leaders shall have complete authority to accept or reject participants, but should follow the appropriate guidelines given in this section so that participants are treated fairly and uniformly by all leaders.
- 3.4.1 General Participant Qualifications - Participants should have appropriate hiking, backpacking, and general mountaineering experience or training. Completion of the Angeles Chapter Wilderness Training Course (WTC) or equivalent is appropriate for most trips. For advanced ski tours involving M- or E-level activities, appropriate additional training in the proper use of ice axes, crampons, and/or ropes is required.
- 3.4.2 Ski Tour Participants - Participants on Ski Mountaineers Section tours should meet the following requirements, unless waived for cause by the ski tour leader. These requirements shall be communicated to prospective participants.
- 3.4.2.1 Checkout Tour - Skiing ability and suitability of equipment shall be evaluated on a one-day checkout tour before participating on an over- night tour, or a day tour in rugged terrain. Participants shall check out on each substantially different type of equipment that they plan to use. (For example, Alpine or Nordic.) A list of qualified participants shall be maintained, showing the date(s) of qualification(s) and the type(s) of equipment used. Leaders shall not waive the checkout requirement except for members or other participants whose skiing ability is known, or for tours on very easy terrain.

3.4.2.2 Minimum Skiing Ability - All participants on Ski Mountaineers Section ski tours shall have the capability of passing all requirements of the Qualifying Test in Appendix B. Having the capability to pass this test is a requirement for membership in the Section, but a skier shall not have to be a member of the Section to participate on scheduled ski tours.

3.4.2.3 Ski Mountaineering Equipment Requirements - All participants shall use mountaineering ski equipment suitable for skiing steep slopes, unless the leader waives the requirement for a tour on easier terrain. Equipment requirements shall be as follows:

- a. Skis shall be designed for downhill capability and shall have full length metal edges. Poles should have wrist loops to prevent loss. The use of avalanche-probe poles is desirable.
- b. Bindings shall be rugged and permit heel lift for uphill travel. Bindings that hold the heel down for descent shall permit release at both toe and heel.
- c. Boots shall be designed for skiing steep terrain and shall be sufficiently rigid to provide control.
- d. Ski retention straps or ski brakes shall be used, with no exceptions.
- e. Climbing skins shall be carried on all tours, even if waxes are used.
- f. The leader may require avalanche probes, avalanche transceivers, shovels, and other safety equipment for some terrain and snow conditions.

Other equipment, such as suitable parka, clothing, sleeping bags, stoves, tents, shall be carried as necessary.

Additional recommendations on currently available equipment may be sent to prospective participants.

3.4.2.4 Advanced Tours - Leaders may require additional skills for advanced tours, such as advanced skiing ability, or passage of the Ski Mountaineering Test in Appendix A.

3.4.2.5 Snow Climbing on Ski Tours - All participants in tours requiring the use of ice axes or snow climbing equipment shall have the ability to use such equipment (see Snow Climbing Test in Appendix C). The SMS Safety Committee shall maintain a list of qualified snow-climbing participants.

3.5 Special Requirements for Ski Tour Conduct - The following additional requirements apply to the conduct of ski tours.

- a. To avoid delays, each tour should begin with a brief equipment check. Items to be checked should include such items as: binding attachment and lubrication, ski retention systems, pole basket condition, condition of flashlight and avalanche locator batteries. Participants may arrange to share equipment at this time.
- b. On ski tours, participants are expected to turn back when the leaders do, unless permission is granted for two or more skiers to continue.
- c. A skier who returns ahead of the main group shall follow the incoming route unless prior arrangements have been made.

- d. The group leaders shall not permit any skier to become separated from the group so far that he or she must ski alone.
- e. Routes shall preferably be chosen to avoid avalanche or crevasse hazard. In the event that a potentially dangerous avalanche slope must be crossed, participants shall ski separately across the hazardous area using appropriate safety precautions.

3.6 Training - The Ski Mountaineers shall provide training in ski touring and ski mountaineering, which shall be open both to Sierra Club skiers and non-members. The training policy shall be as follows:

3.6.1 Information Policy - The Ski Mountaineers shall encourage interested skiers to acquire the skills needed for safe and enjoyable ski mountaineering. The availability and advisability of ski mountaineering training shall be communicated through the Chapter Schedule and otherwise.

3.6.2 Ski Touring Skills - While formal ski instruction shall not be given (others do it better), evaluation of skiing ability may be performed on designated tours, especially local tours, which may be used for experience as well as to administer ski tests.

A skier who demonstrates on a ski tour of appropriate difficulty that he or she is an advanced skier shall be certified at the advanced as well as the qualifying level. Obviously skillful candidates need not complete every element of the ski tests if the leader(s) are satisfied that they ski well above the minimum level.

3.6.3 Ski Mountaineering Skills - Each year, the Ski Mountaineers shall provide opportunity for training in the skills required by the Ski Mountaineering Test, in particular: winter rescue techniques, snowcraft and avalanches, overnight ski touring, and peak climbing on skis. Emphasis shall be on training and experience, not on passing checkoffs. Passage of the elements of the Test shall, wherever possible, be accomplished by demonstration of ability on regular tours, as follows (numbers refer to elements of the Ski Mountaineering Test).

- a. Skiing Ability (1) - The Advanced Test may be passed on any tour of the requisite difficulty, with the prior concurrence of the tour leaders.
- b. Navigation (2) - Navigation training shall meet the requirements for leading Angeles Chapter intermediate outings (level I) and the additional requirements for winter navigation of the Ski Mountaineering Test, namely, the submission of an acceptable week's ski tour plan to the Outings and Safety Chairman, and knowledge of safe route and campsite selection demonstrated on ski tours.
- c. First Aid and Rescue (3) - In addition to holding the required proficiency cards, candidates shall demonstrate in the field the construction of a rescue sled and the methods of transporting and caring for an injured person, with emphasis on winter injuries.
- d. Snowcraft and Avalanche (4) - Candidates shall attend a field seminar organized or approved by the Ski Mountaineers, and shall participate in a simulated rescue.
- e. Snow Camping, Use of Equipment, Peak Climbing and Coping with Snow Conditions (5,6,7,8) - These requirements may be satisfied on any overnight tour involving an appropriate ascent, with the prior concurrence of the tour leaders.

All members and regular participants shall be encouraged to complete this training.

3.6.4 Qualifications of Training Leaders - The following shall be the qualifications of training leaders:

1. Qualifying Test - Any qualified ski mountaineering leader may certify a candidate.
2. Advanced Test- Two qualified ski mountaineering leaders shall concur in certifying a candidate.
3. Expert Test - Two qualified ski mountaineering leaders, at least one of whom has passed the expert test, shall concur in certifying a candidate.
4. Ski Mountaineering and Snow Climbing Tests - Each element of the Ski Mountaineering (Appendix A) and Snow Climbing (Appendix C) Tests shall be taught. Candidates' performance shall be judged, by leaders or agencies selected by the SMS Safety Committee with the concurrence of the Central Committee, or by agencies recognized by the Angeles Chapter Safety Committee, as appropriate.

3.6.5 Prior Experience Credit - A candidate may apply to the SMS and Chapter Safety Committees for credit for prior experience, but the requirements for actual proficiency in first aid, navigation, and avalanche safety and rescue shall not be waived.

4.0 Administration - This policy shall be administered by the SMS Outings and Safety Chairman, who shall be appointed by the SMS Central Committee. Whenever possible, the Outings and Safety Chairman shall be a qualified ski mountaineering leader familiar with the details of chapter safety policy leadership training, and trip conduct. The Outings and Safety Chairman shall:

1. Approve the proposed outing plans and skill requirements, and check that the leaders proposing the outing have the required qualifications. Doubtful cases shall be resolved by vote of the Central Committee.
2. Submit the outings writeups provided by leaders to the Chapter Schedule of Activities.
3. Arrange and publicize the schedule of coming events.
4. Prepare brief instructions, consistent with this policy and approved by the Central Committee, for leaders, participants, and trainees.
5. Maintain lists of qualified leaders. Leaders who have not led in three years may be placed on an inactive list, but their qualifications shall be withdrawn only upon resignation or for reasons of safety, by vote of the Central Committee upon recommendation of the Safety Committee.
6. Maintain lists of qualified participants.

APPENDIX A

The Sierra Club Ski Mountaineering Test

The Ski-mountaineering test is a measure of the ability required for safe ski mountaineering...it is not the purpose of the test, or of its detailed interpretation, to encourage memorizing. It is intended, rather, to bring out the resourcefulness and to weigh the judgment inherent in every skier, and vital to the meeting of frequent challenges to ingenuity that ski mountaineering so happily provides.

- Einar Nilsson

Manual of Ski Mountaineering
Sierra Club, 1969

SIERRA CLUB SKI MOUNTAINEERING TEST
(Revised January 2002 by the Ski Mountaineers)

To tour in mountainous terrain in winter, skiers must be thoroughly capable of coping with situations that may arise. The candidate must prove to the satisfaction of the judges that he has

1. Passed the Advanced (Third Class) Test.
2. Ability to use properly a topographic map and compass. To demonstrate use of map and compass, the candidate should be able to:
 - a. Understand the use of methods for compensating for magnetic declination without calculation.
(Revised 1980)
 - b. Determine on a map compass bearings of several courses of a route and explain the use of this information in a storm; plot on a map a given set of compass bearings.
 - c. Explain how to hold a compass course around impassable obstacles such as cliffs or streams.
 - d. Orient a map: by compass; by a known location on a map and a known landmark; by three known landmarks; by sun and watch.
 - e. Locate position on a map by intersection of lines from known landmarks.
 - f. Identify unknown landmarks with the aid of the map; determine intervisibility of two points on a map.
 - g. Understand the fundamentals of contour topography; draw simple forms; recognize and explain forms of topography shown on selected United States Geological Survey maps.
 - h. Plan a week's ski tour from selected maps of high-mountain ski terrain, with particular reference to angle of slope, sun and wind exposure, avalanche, campsite objectives, with alternate plans in case a severe storm or accident occurs at any point.
3. Knowledge of first aid and rescue technique, including the treatment of freezing and the ability to construct and use a two-ski rescue sled. The minimum requirements shall be:

First Aid - All candidates shall have satisfied the First Aid Requirements for the Angeles Chapter I-rating.

This training shall include the methods for prevention and care of cold weather injuries, including snow blindness, hypothermia, and frostbite. In addition, the candidate shall understand the precautions that must be taken when caring for a person injured while skiing; the methods for improvising splints and bandages and methods of "second" aid that would be used in caring for a person injured far from medical help.

Rescue - Candidates shall be familiar with Sierra Club search and rescue procedures, and also with methods for transporting injured skiers on snow, including demonstrating the ability to construct and use a two-ski rescue sled, with particular reference to methods of keeping the victim warm and comfortable.
(Revised 1980)

4. Knowledge of the basic principles of snowcraft, with special reference to avalanches. The candidate should:

- a. Explain the structure and hazard of wet snow, dry snow, and wind slab; the relation of anchorage and slope to avalanche danger; the basic effect of sun, wind, temperature, humidity, and time of day on snow in its relation to texture and avalanches.
 - b. Describe the precautions to be taken when traveling on slopes which may avalanche, including the responsibilities of the leader; review recommended conduct during an avalanche.
 - c. Show an understanding of the method of rescuing avalanche victims, including the use of avalanche probes, and transceivers and participate in a rescue exercise using these techniques.
5. Toured on skis two full days during the winter season, with at least one overnight camp on snow, carrying an appropriate share of total equipment during the entire tour. The candidate, on the tour, should:
- a. Demonstrate ability to use his energy so that at the end of each day he has enough reserve to make and care for camp. He should show proper rhythm and stride, and should avoid loss of energy through chilling or overheating.
 - b. Show a knowledge of selection, preparation, and use of the campsite.
 - c. Know a few basic ski-mountaineering menus and be able to prepare meals in camp.
 - d. Show a degree of stamina that will enable him to carry his share of equipment and food and to keep up with an average party.
6. Knowledge and demonstrated ability to use equipment necessary for safely undertaking a ski tour of several days' duration. The candidate is expected so to be able to select and use his equipment on a ski tour that he can tour in safety and relative comfort. He should use properly: clothing, pack, skis, bindings, skins, tent, sleeping bag, stove, cooking utensils; first-aid and repair equipment.
7. Completed the ascent and descent on skis of approximately 1500 feet of elevation, preferably on a peak, demonstrating a knowledge of proper equipment. The candidate should demonstrate an ability to climb efficiently, to handle himself safely in steep terrain, and to select a route of ascent and descent which will take advantage of snow texture and slope, thus making the best use of his energy.
8. Demonstrated ability on tour to cope with an average variety of snow conditions. Steadiness in skiing should be shown throughout the two-day tour; the candidate should be able to recognize and maintain control in several types of snow, such as hard crust, breakable crust, powder,- wind-cut, heavy, and wet. He need not show marked speed, but should not delay the party.

APPENDIX B

Ski Test Requirements

Qualifying Test
(Sierra Club Fourth Class Test)

Advanced Test
Sierra (Club Third Class Test)

Expert Test
(Sierra Club Second Class Test)

Revised by the Ski Mountaineers to provide modern standards. Many different versions of the Sierra Club Ski Tests exist, so the old names are not unique. The new names identify the tests to be used by the Ski Mountaineers Section in satisfying its membership and safety requirements.

QUALIFYING TEST
(A modernized version of the Sierra Club Fourth Class Test)
Revised by the Ski Mountaineers, January 2002

Purpose: To determine the candidate's competence to engage in easy cross-country ski trips. Good form is desirable but will not be insisted upon.

Demonstrations required:

1. Good form and effective propulsion on the level with the proper use of the poles.
2. Kick-turns to the right and left on the level.
3. Side-step up a steep slope.
4. Herringbone 50 feet up a 20-degree slope.
5. Traverse up a slope of 100 feet, using a kick-turn between traverses.
6. Gliding wedge 50 feet on a 15-degree slope to a standstill at a designated point from a direct descent.
7. Four connected wedge turns on hard snow.
8. Straight running in a downhill position for not less than 100 yards on a 10-degree slope, either direct descent or diagonal, under complete control (time not to exceed 20 seconds for the course).
9. Side-slipping for 20 feet to the right and to the left over a hard-packed surface, on a 15- to 20-degree slope. Controlled side-slipping to be either down the fall line or diagonal on both sides.
10. Four linked wedge christie or wedge telemark turns on a 10- to 15-degree slope, each through at least 120 degrees, executed slowly under complete control and separated by long traverses with skis parallel, either parallel traverses with upper ski leading or telemark traverses.
11. Ascent and descent of approximately 500 feet vertical elevation, with a pack as described below, to test reasonable climbing and downhill running ability. Proper right and left kick-turns must be demonstrated on the climb. Climbing aids are permitted. Proper use of the ski poles expected throughout the test. Time limits, depending upon snow conditions, will be fixed by the judges.

Alternative: A cross-country tour of from three to four miles in length, during which the candidate must demonstrate to the accompanying judge his ability to cope with ordinary obstacles, to use poles properly, to climb, to do kick-turns, and to run downhill for considerable distance. The number of falls must not be so great as to tire the candidate nor to slow up the tour. Climbing aids are permitted. The candidate must carry a pack of least 10 pounds containing the requirements for an easy day's tour.

Alternative: This test may be passed in the course of a ski tour involving the ascent of at least 500 vertical feet with an average slope of 15 degrees or more. A skier who exhibits adequate climbing techniques and who skis down without delaying the party and without the need for excessive kick-turns and traverses shall be deemed to have passed the test. In marginal cases, the specific skills listed above should be checked.

Judge: Certification shall be by a qualified ski mountaineering leader.

ADVANCED TEST

(A modernized version of the Sierra Club Third Class Test)
Revised by the Ski Mountaineers, January 2002

Purpose: To stimulate and measure the ordinary touring ability every skier should be ambitious to attain in order to enjoy all-day tours over mountain terrain. Fluency, assurance, steadiness are required rather than speed.

Demonstrations required:

1. Four linked wedge christie or wedge telemark turns in moderately soft snow on a slope of at least 15 degrees, executed slowly under complete control and separated by traverses with skis parallel, either parallel traverses with upper ski leading or telemark traverses.
2. Four linked parallel or telemark turns on hard snow on a slope of not less than 15 degrees.
3. A right and left turn to a standstill from a direct descent, the turns started at a speed of at least 10 miles per hour. Parallel, or telemark turns may be used; inside ski must not be lifted.
4. A right and left jump turn to a standstill from a downhill traverse through a minimum angle of 90 degrees, preferable on soft snow. One or two poles must be used. This turn should be done on a slope of approximately 15 degrees at a speed approaching three miles per hour.
5. From a direct descent on a slope of not less than 15 to 20 degrees, side-slip to the right and to the left far enough in each direction to demonstrate control of side-slip and speed by edging and weight shifting, linking each sideslipping with turns.
6. Kick-turns to right and left, both uphill and downhill, on a slope of at least 30 degrees.
7. Step turn to right and left at a speed of approximately 15 miles per hour.
8. The descent of a slalom course without a fall. The course requires the candidate to mix various turns and parallel running in a continuous descent of about 150 vertical feet. Ten or twelve turns are required with wide gates to allow smooth running. The time allowed shall not be more than 30 percent greater than that required for a steady (non-racing) run by a good slalom runner.

Alternative: If no course is set: follow the track of a good skier down a similar course without skiing substantially out of the track.

9. Ascent and descent of approximately 1,000 vertical feet. The candidate is required to carry a pack of at least 10 pounds, contents of which must satisfy the judges as being adequate for all-day touring. Climbing devices or appropriate waxing may be used. Time limits, depending upon snow conditions, will be fixed by the judges. The course must include a variety of terrain, including open woods, such as is encountered in ordinary touring.

Alternative: This test may be passed in the course of a ski tour involving the ascent of at least 1,000 vertical feet with an average slope of 20 degrees or more. A skier who exhibits competent climbing technique and skis down using primarily advanced linked turns (not wedging unless appropriate) with the required fluency, assurance, and steadiness shall be deemed to have passed the test.

Judges: Joint certification by two qualified ski mountaineering leaders is required.

EXPERT TEST
(A modernized version of the Sierra Club Second Class Test)
Revised by the Ski Mountaineers, January 2002

Purpose: To demonstrate mastery of touring technique and ability to cope with all conditions of snow and terrain, including steep slopes and open woods, that are not unjustifiably hazardous. Marked steadiness and a fluent style are required. The speed expected is approximately double that for the Advanced Test, but not necessarily more than half of racing speed. No kick-turns are permitted in any part of this test. Few falls are allowed.

Demonstrations required:

1. Four linked wedge christie or wedge telemark turns in soft snow on a 25- to 30-degree slope, turns separated by traverses with skis parallel, either parallel traverses with upper ski leading or telemark traverses.
2. Four linked parallel or telemark turns on a 25-degree slope, turns accurately placed as designated by the judges, in soft as well as hard snow.
3. Four jump-turns, linking traverses, preferably on breakable crust, on a slope of at least 20 degrees. The turns may be made with one or both poles. A momentary stop is permitted after each turn.

Alternative: Four linked telemark turns in soft snow, on a slope of approximately 25 degrees.

4. Skating stride, poling for quick acceleration.
5. Descent of a continuous slalom course, requiring not less than 15 turns on a slope some of which approximates 25 degrees and none of which is less than 10 degrees, with a vertical descent of 300 feet. The time allowed shall be not more than 30 percent greater than the better of two runs by a good slalom runner.
6. Descent of a standard course of at least 1,000 vertical feet in a fixed time limit, with but two falls allowed. The course must include slopes generally steeper than the Advanced run and some pitches of 30 degrees. The course must be run under conditions of soft as well as hard snow.

Alternative. A cross-country run of approximately six miles in one hour. This is to show all around proficiency in climbing and downhill, over country of varied features and broken terrain.

Judges: Joint certification by two qualified ski mountaineering leaders is required. At least one of the two judges shall have passed the Expert Test.

APPENDIX C

SNOW CLIMBING TEST

Purpose: Participants on SMS ski tours on which the leader requires the use of ice axes and crampons for safety shall have demonstrated their ability to use such equipment, or have known snow climbing ability and experience.

Minimum demonstrations required:

1. Understanding of the design, safe storage, and handling of the ice axe, including proper grip for climbing, step-cutting, and belaying, and use of leash or wrist loop.
2. Edging, step-kicking, rest step, and plunge step.
3. Self-arrest from various starting positions. Sitting glissade with ice-axe braking.
4. Use of crampons: proper fitting, attachment, and storage.
5. Ascent and descent of slope greater than 34 degrees with and without crampons: direct and diagonal with direction changes using ice axe self-arrest and self belay grasps, cross-body and stake positions, slip and recovery. Measurement of slope angle with compass as protractor.

Added for skiing:

8. Climbing technique on skis.
9. Self-arrest technique on skis.

Specific demonstrations shall be substantially equivalent to those required for Angeles Chapter M-level checkout, modified as indicated for skiing. Passage of the Angeles Chapter M-level snow checkout shall be adequate for the non-skiing aspects. Candidate leaders shall demonstrate the ability to assess participant skills and provide assistance to those participants who require it.

With the concurrence of the Central Committee, the SMS Safety Committee shall appoint qualified SMS ski tour leaders as judges of snow climbing skills.

APPENDIX D

RESTRICTED TRIP OUTINGS POLICY

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- 1.0 Purpose - This appendix specifies the policy the Ski Mountaineers will use to lead outings classified by the Angeles Chapter of the Sierra Club as restricted mountaineering outings.
- 2.0 References
- 2.1 Sierra Club Outings Policies and Procedures: - Mountaineering and Related Insurance Requirements, available at the Sierra Club Outings website (<http://mitchell.sierraclub.org/outings/policy>).
- 2.2 Required Forms (are available at the Sierra Club Angeles Chapter website (<http://angeleschapter.org/ltc/forms.html>)).
- Sign-In Sheet & Acknowledgment of Outing Member Responsibility, Express Assumption of Risk, and Release of Liability.
Application for Mountaineering Trip Certification: Non-Training Trips.
Application for Mountaineering Outing Approval: Training.
- 3.0 Restricted Mountaineering Outings - Restricted outings are only “those which require the use of ropes, pitons, jam nuts, runners, bolts, ice axes, crampons, carabiners, or belaying techniques.” The use of skis, snowboards, or ski crampons is not included.
- Trip participants may bring any equipment they want, but if that equipment is actually necessary to complete the trip safely in the opinion of experienced and prudent mountaineers, the trip is a “Mountaineering Outing,” requiring special approval.
- 3.1 Outing Approval - Leaders proposing restricted outings shall submit a Mountaineering Trip Application in the exact form required by the Mountaineering Oversight Committee. Such proposals shall include leader qualifications (unless on file) and participant screening methods. Applications shall be submitted to the SMS Outings and Safety Chair, approved by majority vote of the SMS Safety Committee, and transmitted through the person in the Angeles Chapter currently designated to receive and transmit such applications. Preliminary submission for comment may be emailed or faxed. Approval requires at least 8 weeks.
- a. Non-Training Outings - An application on the standard form shall be used for restricted trips not dedicated to training. Informal refresher training may be conducted on an outing in which the primary objective is not training. For example, a leader may ask participants to demonstrate arrests prior to climbing a slope where arrests may be necessary.
 - b. Training Outings - An application on a special form shall be used for trips to be dedicated to mountaineering training and may require sponsorship by the Angeles Chapter Leadership Training Committee.
- 3.2 Classification of Outings by Skill Requirements - The main body of this policy contains requirements for leader and participant skills for ski tours and other outings. The policy is to be interpreted as follows:
- a. Outings in which the leader plans to negotiate terrain on foot requiring the mountaineering equipment listed above and expects participants to bring and to use such equipment shall be classified as restricted.
 - b. Outings that are anticipated to include climbing on both rock and snow in exposed terrain and require the use of the mountaineering equipment defined above shall be rated TM or TE, and shall be classified as restricted.
 - c. Outings not using skis shall be rated O, I, M, or E in keeping with existing Angeles Chapter and Ski Mountaineers Section policy. Outings that require the use of mountaineering equipment shall be classified as restricted.
- 3.3 Leader Qualifications - Leaders of restricted trips shall have appropriate training and experience and submit résumés with their initial application. For trips involving rock climbing or

snow belays, leaders must be M or E-rated. For ski tours involving snow climbing on foot using ice axes, I-rated leaders must have passed an M-level snow climbing checkout administered by the Angeles Chapter Safety Committee and the Leadership Training Committee.

- 3.4 Participant Qualifications - All participants on restricted trips shall be current Sierra Club members and shall have passed the SMS Snow Climbing Test (Appendix C) or have equivalent documented training and experience. The leader must include screening criteria in the application. The purpose of establishing a test and a list is to allow people to qualify in advance.
- 3.5 Screening - The leader is responsible for screening participants for appropriate skills and experience according to reasonable standards established by SMS and Angeles Chapter policy, or otherwise acceptable to prudent mountaineers.
- 3.6 Sign-In Sheet/Liability Waivers - All participants shall sign the combined sign-in sheet/waiver form referred to in Paragraph 2.2 before the trip commences. This is the same form used on non-restricted outings except that participant Sierra Club membership numbers must be included for restricted outings.
- 3.7 Paperwork - Within 30 days after the completion of the outing, the leader shall submit the original trip sign-in sheet/ liability waivers directly to the Sierra Club Outings Department in San Francisco (see form). The leader shall retain a copy and shall send a copy to the SMS Outings and Safety Chair.
- 4.0 Enforcement - These requirements shall be enforced by the SMS Safety Committee. Leaders who attempt to circumvent these requirements will not be approved to lead future restricted outings.