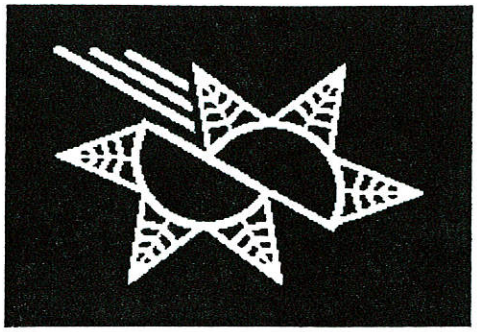

SUN VALLEY AVALANCHE CENTER

ANNUAL REPORT
1996-97

prepared by

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ACKNOWLEDGEMENTS

The Forest Service Sun Valley Avalanche Center (SVAC) is deeply indebted to the many who have helped support us this season.

The **Forest Service National Avalanche Center** (NAC) provided funds, leadership, and organizational direction. The NAC sponsored a pre-season discussion between Region 4 Forecast Centers. This provided a helpful exchange of ideas which will hopefully set the stage for greater collaboration and communication between the individual centers.

The **National Weather Service** issued a daily "Sawtooth Avalanche Guidance Forecast" for 6,000 and 9,000 ft. elevations in the Sun Valley/Sawtooth Valley area. This provided accurate target information for our forecast area and utilized data from our central weather station on Bald Mountain.

The **National Resource Conservation Service** contributed by relocating a snow depth sensor to a wind sheltered telemetry site on Galena Summit. For many years, the NRCS has allowed us access to their data from several remote Snotel sites. This data has been an important component for formulating our daily backcountry forecasts.

Sun Valley Heli-Ski purchased and helps to maintain a weather station on Galena Summit in partnership with the Forest Service. They also provide extensive daily observations and snow study data, backcountry access when possible and serve as a backup for computer operations at the SVAC.

Sun Valley Company provided daily support by maintaining a joint weather station at the top of Bald Mountain Ski Area.

The **Avalanche Awareness Committee** formed this season and provided invaluable enthusiasm and fundraising to promote the SVAC. **Martha Apshaga** donated many hours of time and talent to produce the SVAC brochure and logo design. Over one hundred and thirty donors contributed during this campaign. We can't thank them enough. Large contributions were made in memory of Peter Hall, Richard Reece and Jim Otteson.

Company and organization sponsors included Sawtooth Snowmobile Club, Research Dynamics, Blaine County Search and Rescue, Sun Valley-Ketchum Chamber of Commerce, Blaine County Commissioners, Bick, Norris, Sampson and MacKenzie and Co., KLM, The Board Bin, Sun Valley Trekking, Buncy's Catering, Swix Sport and G&H Sheet Metal.

The **Environmental Resource Center** took the Avalanche Awareness Committee and the Friends of the Sun Valley Avalanche Center under their wing as a project of the ERC. The ERC provided assistance in the way of tax exempt status, bulk mailing privileges and office support.

Wood River Journal Link gave us a good deal on their phone system for our daily hotline.
The **NAC** sponsored **Westwide Avalanche Network** provided a constant connection with the rest of the avalanche forecast community.
Dan Judd assisted us through out the season with of computer programming and data organization.

Volunteer Observers, from a variety of backgrounds and interests, contributed data that assisted us in our daily advisories. Training and expertise varied considerably, and all of the information reinforced our premise that every observation helps complete the puzzle.

The **Galena Nordic Ski Patrol** contributed funds raised by a telemark and snowboard race series. This amounted to over $1,000! Members were also active in reporting observations and snow study data.

TABLE OF CONTENTS

THE SUN VALLEY AVALANCHE CENTER

HISTORY

The Ketchum Ranger District of the Sawtooth National Forest has provided a recorded phone message since 1983, that gives callers daily avalanche and weather conditions. Butch Harper, district snow ranger from 1963 to 1994, implemented and directed this small program with help from Rick Barker, Sun Valley Heli-Ski, the National Weather Service and the Soil Conservation Service. Butch also taught basic avalanche awareness classes in the Sun Valley area. His programs were among the first in the country to reach out to the winter recreational user on national forest lands.

Butch retired in 1994 after completing an untold number of Forest Service projects that enhanced our community and surrounding forests. Doug Abromeit stepped up to bat as the Ketchum Ranger District Winter Recreation Specialist. Doug directs the National Avalanche Center (NAC) including managing the military artillery avalanche control program and the Forest Service avalanche control explosives program. He provides program direction for the avalanche forecast centers in Utah, Idaho and Wyoming, and assists in unifying all of the regional avalanche forecast centers. Doug serves on the National Avalanche Foundation, the National Avalanche School Steering Committee and the Avalanche Artillery Users Committee. Prior to directing the NAC, he worked 10 years as the Little Cottonwood Canyon snow ranger and many years as a ski patroller and as a smoke jumper.

Beginning in 1995-96, the forecast program expanded to provide a more thorough avalanche and mountain weather forecast based on improved weather instrumentation in remote sites and increased field observations. We became known as the Sun Valley Avalanche Center. Sun Valley Heli-Ski (SVHS) has provided an invaluable community partnership by sharing the expense and maintenance of our remote weather site and providing professional field observations. As more and more recreationists took to the backcountry, the SVAC increased the number of basic avalanche awareness classes, including on-snow sessions. SVAC provided daily avalanche hotline advisories based on data collected by forecasters, SVHS and volunteers. SVAC and Journal Link provided voice mail for volunteers' observations.

The success of the existing programs, the steady increase in backcountry user numbers, the improvements in technology that allow users to travel into increasingly steep and hazardous avalanche terrain, and the community interest in and support for the Sun Valley Avalanche Center have necessitated some key improvements. Forecaster positions will be Forest Service jobs in 1997-98. We have planned to expand our educational programs to the youth of the community, and will continue to operate on a level that matches or exceeds the quality of the leading avalanche centers in the country. The community has shown us great support and enthusiasm for the avalanche center and we remain optimistic about continued support and "ownership" of this community project. This is what it will take to be truly successful into the millennium.

TODAY

The Sun Valley Avalanche Center (SVAC) has three primary goals:

1. Issue daily avalanche advisories and warnings to the public via the avalanche hotline and the internet.

2. Issue daily mountain weather forecasts to the public via the hotline and the internet.

3. Provide avalanche education and information to the public, through avalanche awareness multimedia lectures and field sessions, and to provide media interviews and contacts.

OPERATIONS 1996-97

Hotline:

The Sun Valley Avalanche Center provided daily services from November 23 through April 13, and Friday afternoon updates for Spring weekends through May 9.
Calls to the avalanche hotline increased about 20 percent, totaling over **12,000** calls. The system had a capacity to handle six calls simultaneously. Peak calling time from 7:30am until 8:30 am was often saturated, with many callers unable to get in. Wood River Journal Link has assured us that the system has expanded to handle a greater volume of calls in the 1997-98 season. One consideration for the future would be to purchase and operate our own phone system.

The forecast area includes the Wood River Valley drainages from the town of Bellevue at the south end of the valley to the headwaters of the Salmon River at the north end of the valley. The geographic changes from Bellevue at 5,000ft to Galena Summit at 8,700 ft and the surrounding 10 to 11,000ft peaks, create a varied snowpack as one travels up the Wood River Valley. The forecast area was broken down into three major zones in order to identify these geographic/snowpack differences and communicate them to the public. North Valley, Central Valley and South Valley. (See Season Summary) At times, the hazard evaluation was similar for all zones, and at times the hazard was distinctly different for each zone.

Accidents:

There were no serious avalanche deaths or accidents in the SVAC forecast area this season. No complete burials were reported although several partial burials were. Some partial burials were not reported that we received vague, word of mouth about. However, three separate incidents elsewhere in Idaho did claim three snowmobilers.

Education:
Class attendance numbers were not as high this season as the past. One reason could be that the previous few years there were large attendance numbers and these students now need a higher level class and field session. Another reason is that the winter arrived fast and hard and most people were too busy dealing with or playing in all the snow to attend a class, (sad but true). A third reason is that the SVAC needs to publicize classes better with a promotional campaign including eye-catching posters and schedules that are posted early in November. Adequate funding will help us achieve this goal. Interest in education and requests for classes has increased.

During the 1996-97 season, SVAC instructors taught five classroom sessions, including a very well attended women's evening class and field session, a high school class and a Boise evening class. We had a good number of students turn out for the field session which had to be rescheduled due to the December rains.

Awareness appears to be increasing in the snowmobiler group as shown by shovel and beacon purchases in the area. However, state wide, the number of snowmachine avalanche accidents and incidents are increasing at an alarming rate. The Sawtooth Snowmobile Club continues to print and distribute cards with the SVAC advisory hotline phone number.

The Galena Nordic Ski Patrol and the Blaine County Rec. District taught a class and field session in early December. Johnna Pletcher, a member of the citizen's Avalanche Awareness Committee, traveled throughout Blaine County as a volunteer and offered basic avalanche awareness classes to children age K-5 in area schools. Locally, there exists a surge of interest to provide information to the younger age kids and to tie it into activities in the winter environment. It seems an important and logical direction for avalanche awareness to become a study that grows along with a young person's experiences in the snow.

Staff:
Doug Abromeit, director of the National Avalanche Center and Winter Recreation Specialist for Ketchum Ranger District, continued to direct the Sun Valley Avalanche Center as well as forecasting throughout the season. Rick Barker, Sandy Giltinan and Janet Kellam served as forecasters and instructors. Butch Harper, previous area snow ranger of many years, Bozo Cardozo, SV Heli Ski guide and avalanche forecaster, and David Gordon, recreation specialist, assisted with several "guest appearance" forecasts during early March.

Rick's background includes being a lead guide, and avalanche and weather forecaster for Sun Valley Heli-Ski since 1983, a USFS volunteer forecaster from 1985 to 1995, and a Forest Service avalanche forecaster since 1995. Sandy Giltinan has been a heli-ski guide for Ruby Mtn. Heli-ski and Sun Valley Heli-Ski, an American Ski-Guide in France, a volunteer forecaster with the USFS for 1994-95 and as a Forest Service avalanche forecaster since 1995. Janet Kellam has worked as a backcountry ski guide since 1981, including 5 years as a winter specialist and sound recordist for documentary films, has been Director of Galena Lodge and Nordic Center, and was an avalanche forecaster with the USFS for 1996-97.

Observer Network:
The observer network was much more successful and beneficial than in past years. An observer phone line is available for anyone to call in and record snow study and avalanche observations.

In addition to asking for general observations from listeners and readers of the advisories, we sometimes asked for specific information that was critical for stability evaluation at the time. The hope was to orient those interested, towards specific details that would help improve their own ability to make evaluations as well as to gather data for us. Results seemed positive. Some training was provided for a voluntary group of observers in order to raise proficiency, promote uniformity of tests and consistency of evaluations, and stimulate incentive. Continuation of this program and specific training could help to provide more information and increased participation.

Regardless of expectations, the amount of information received from the observer corps and the general public was much higher than in past years. The observer hotline and information is a tremendous asset to the program and worthy of continued development.

We can't say enough thank yous to the following volunteers who provided timely and accurate observations. Fairly regular volunteer observations were received from Victor Thomas, Rob King, Carol Brown, David Gordon and Shea Anderson and Jim Defenbau (JD). Other welcome observations were phoned in from Brian Dirksmeier, Scott Smith, Glenn and Kelly Allison, Julie Meissner, Kelly O'Neil, Mike Schley and Marck Sachs

The Avalanche Awareness Committee:
The Avalanche Awareness Committee is a group of local citizens who had the enthusiasm and dedication to assemble this winter and pursue a common goal. They were awesome and extremely professional in every aspect; we offer this group our heart felt thanks. Their mission statement is "The Avalanche Awareness Committee supports avalanche education and awareness in the Sun Valley area. In particular we encourage the community support for the independent operations of the Sun Valley Avalanche Center." The Awareness Committee steers the direction of the Friends of the Sun Valley Avalanche Center. Friends of the Sun Valley Avalanche Center was created as a project of the non-profit Environmental Resource Center to enable fundraising and encourage community participation in avalanche awareness.

The AAC produced a brochure which explains the goals, services and financial structure of the SVAC. This brochure was implemented in the AAC's fundraising mail campaign which achieved the committee's goal of nearly 15,000 dollars. Martha Apshaga graciously donated her design and production skills to develop the eye-catching logo and brochure.

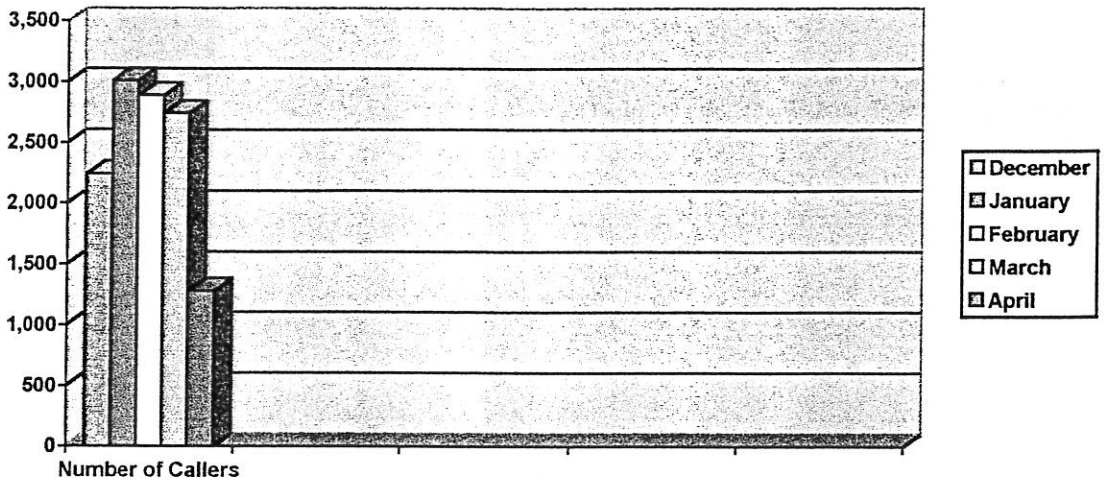
Committee members are: Sara Berquist, Tom Campion, Dennis Davis, Mark Deffe, Robin Eisenman, Butch Harper, Rob King, Michael Malko, Nancy Monk, Johnna Pletcher, Nils Ribi, and Steve Wolper. James Kennedy assists as a legal advisor. Thank you all!

Media:
Many exchanges between state and local media took place this season. This included news briefs in most high hazard periods on local radio stations and in local papers. Several radio interviews were conducted, covering a variety of subjects on local and Boise State University stations. Local newspaper stories and interviews were run, again covering a variety of avalanche related subjects. In general, the public's awareness of the SVAC was increased because of media coverage, the work of the newly created Avalanche Awareness Committee, educational classes and SVAC promotion, word of mouth amongst various winter recreation groups, SVAC sponsors, and the avalanche tragedies in January and February of 1996.

Public Survey:
A public survey was written and distributed at the close of the 1996-97 season. Unfortunately it was a bit late in the year and a minimum number of people responded. However, the results told us that we were on the right track. We received input from primarily skiers, some snowboarders and a few snowmobilers and snowshoers. Response varied from one person who had never called the hotline, to occasional callers, to some that called 5-7 times per week.

Many people thought that the amount of information was appropriate, some would like it simplified, although one response requested more information. Many people had attended and would attend a class, field session or beacon practice session. Field sessions seemed to be the area of greatest interest. Many users were unaware of our advisory being posted daily on a web site, in spite of our mentioning it in the text of our daily phone advisory. Most responses said that they did not have difficulty getting into the hotline when they called, although we know for a fact that on snowy weekend mornings, access was a problem.

We plan to update the survey and circulate it either at the beginning of next season or part way into the winter in order to attract an additional number of responses.



NUMBER OF CALLS BY MONTH

NOVEMBER:	Numbers unavailable
DECEMBER:	2244
JANUARY:	3009
FEBRUARY:	2888
MARCH:	2743
APRIL:	1283

TOTAL NUMBER OF CALLS :

12167 AS OF 5/1 1997

SUN VALLEY AVALANCHE CENTER

AVALANCHE ADVISORY HOTLINE 1996-1997

Sun Valley Avalanche Center 1996-97 Season Summary

All in all, the 1996-97 winter season was warmer, windier and snowier than any that we have seen in quite awhile. Bald Mtn. at 9,000ft elevation had received 239" of snow as of April 20th, and 27.78" of water. The thirty year average is 21" of water, so that's 132 % of normal for Bald Mtn. and the totals are higher in the backcountry. During early January, we experienced one of the biggest and most widespread avalanche cycles that occurred in anyone's memory. The good news is that in spite of a wild winter and some significant stretches of moderate to extreme hazard, we experienced no serious avalanche accidents in our area. There were three fatalities in Idaho, all snowmobilers.

This 1996-97 winter season, we divided our forecast area into three different zones that correspond to different snowpack characteristics. Due to the nature of the valley geography and weather patterns, these arbitrary zones seem to be representative of snowpack conditions most winters. The zones are South Valley: Bellevue to just south of Greenhorn Gulch and the East Fork of the Big Wood River. Central Valley: from Greenhorn and East Fork north to just south of the North Fork of the Big Wood River. North Valley: from the North Fork to Galena Summit and the Headwaters of the Salmon River. These three zones had regular field data collection and observations. For the Soldier Mountain area further southwest, and Sawtooth Valley area further north, we provided information whenever available. Each significant storm event was recorded with a start date, an ending date, and given a sequential number. Some of these storms contained several waves of precipitation events. This zone designation helped provide a continuity and clarity throughout the season for observers, forecasters and the general public.

During the month of **October**, the winter began with an early false start in the Sun Valley area. A series of cold storms brought 6" of snow to the town of Ketchum and more than 12" on Galena Summit. After unseasonably warm temperatures the next few weeks, almost the entire 12" of snow appeared to dissipate on even the most northerly aspects.

November 17, 1997, the "real" winter began in earnest. 18" of 18% density, wet snow fell at 9,000ft on Bald Mtn. and in the Galena Summit area. This created an unusually solid base layer to our snowpack.

December began with clear skies. From Dec. 7-13, a long period of unsettled weather, storms and winds culminated with rising temperatures and 3ft. of new snow over 6 days at upper elevations. During the middle of the storm, wind loaded slabs released on all aspects and exposures. These natural releases had approximately 20" deep crown faces.

Just in time for Christmas, our infamous storm cycle #8 began in earnest on December 20 and did not let up until January 3. The storm series began with cool temperatures above 9,000ft. and moderate temperatures below 9,000ft. On December 30, temperatures began to rise. At this point in the storm, we had received 37" of snow and 4.25" of water at 9,000ft. The storm pulses continued. Over 1.25 additional inches of water accumulated per day through January 2nd. Winds were moderate to strong throughout the period. The first slide cycle occurred prior to the Dec. 30 warming. This first cycle was a result of persistent south wind loading on upper elevation north slopes. Class 2 & 3 avalanches were common.

The events that followed were impressive and record setting. Precipitation continued and warmer temperatures nudged the rain line upwards to 9,000ft on January 2. Precipitation totals had reached just over 8" of water at 9,000ft. Up to this point, settlement rates on aspects other than north, kept pace with loading throughout the storm and little avalanche activity was observed.

When the clouds lifted the afternoon of Friday the 3rd, class 5 slides had released on all aspects, and elevations. Avalanches had initiated on slope angles as low as 25 degrees. Vast acreages of snow released, resulting in astounding quantities of debris on the canyon floors. Some deposition measured over 40ft deep and filled in large areas of canyon bottoms. Many climax growth spruce and fir trees were taken out. Highway 75 and upper Warm Springs road were blocked by slides. The avalanche cycle appeared most impressive in the Central Valley. The storm totals were greater in the North Valley zone, but in the Central Valley the rain line reached upper elevation starting zones where the terrain is more open and has sustained slope angles.

No accidents or near misses were reported at this time, partly due to the fact that the weather was so crummy for so long, that nobody was going out in it. (The Christmas time Lear jets were fleeing Sun Valley like lemmings). A summer cabin just upriver from Cathedral Pines, at aprx 7,000ft was destroyed on Jan. 2nd by a small climax slide that ran from above on a steep, treed slope. The west face of Galena Peak displayed a spectacular class 5 slide that ran from above 10,000ft to approximately 7,500ft. The crown traversed the entire upper face. The debris dissipated only a few hundred feet above the Galena Lodge cross-country trail system. The existing path appears to have been widened due to the large number of uprooted and broken off old growth trees in the debris and along a bottom arc of the slide path. No one knows the exact time of this release. Throughout the Boulder and Smoky Mountains similar avalanches were visible. Hundreds of class 2 and 3 avalanches were observed and probably dozens of class 4 and 5 avalanches had released between Bellevue and Galena Summit, in the Boulder, Pioneer and Smoky Mtns. (Thanks to Sun Valley Heli-Ski's aerial observations.) One slide in the Sawtooth Mtns. was estimated to have a 12ft. crown. Access and observations are limited in the Sawtooth and White Cloud Mountains, but similar snow conditions and weather scenarios had existed in these areas, and the resulting number of avalanches was probably similar to the Sun Valley region.

January 1st, at 8,700ft Galena Summit we had a total of 94" of snow on the ground representing 20.2" of water. Thirty year averages for January 1 are for 8.1"of water. We were at 240% of the thirty year average!

January 4-12 brought high winds that weathered the snow surfaces and formed dense wind slabs at upper elevations (above the 9,000ft rain line). January 12 brought extremely cold temperatures that accelerated the formation of surface hoar as well as faceted snow crystals beneath the rain crusts. At this point in time, the avalanche hazard was low. The cold temperatures progressed into a temperature inversion that promoted the development of faceted snow throughout the snowpack at mid to lower elevations and particularly where the New Year's rains had created a shallower snowpack at lower elevations in the Central Valley and the entire South Valley area.

January 21-23 we received 15" of cold, light density snow in storm #9 that bonded fairly well to the old snow surface. This new layer did present a consistent shear approximately 10" deep, (mid-layer), that we believed was due to a temperature/snow density change within the storm cycle. This weaker density layer, the new snow surface and the persistent buried, faceted snow on both sides of the rain crust became the avalanche components for our next two storms (#10& #11). We experienced widespread slide cycles with storm #10 and #11, near the end of the month.

Skier, snomobiler and snowboarder close calls were mentioned around town but we received no further information. A snowmobiler was partially buried while traveling out one of the South Valley side canyons, but received only minor injuries. Outside of our region, near Cascade, Idaho a high marking snowmobiler was buried and killed on February 1. He was in an area of significant wind loading along a steep upper elevation slope. Also outside of our region, but near Montpelier, Idaho, a snowmobiler was buried and killed on January 11.

February 1st at Galena Summit we had 96" of snow on the ground and 27.5" of water. The thirty year average is 13.5 inches of water. We had dropped to a mere 204% of the average.

We were plagued for several weeks with persistent weak layers and overlying slabs in the upper two to three feet of the snowpack. Higher elevations in the North Valley area appeared more homogeneous and stable than the slopes in the Central and South Valley. The buried weaker layers created a moderate hazard and had everyone a little skittish after last season's three fatalities during times of moderate, deep slab hazard. Winds continued to redistribute snow throughout February, just as they had during January and would continue to do so in March.

Reports of skier triggered and snowmobiler triggered releases filtered in during the month. No injuries or details were reported except for one backcountry skier that was buried up to his neck in a small class two slide that he released when skiing off of a steep breakover that he was warned not to venture onto by fellow skiers. Outside of our region, but near Priest Lake, Idaho, a snowmobiler was buried and killed at Sundance Mtn. on March 8.

March 1st found 88" of snow at Galena summit and 29.7" of water. The thirty year average for March 1 is 16.9" of water. We were dropping towards normal with a figure of 178% of the thirty year average.

Mid March was the beginning of a warming trend and the winter/spring transition. We experienced extremely warm temperatures and a period of marginal nighttime freezing. Some natural and human triggered slides were reported but no injuries. The reforming crust was acting like a slab on top of the wet, lubricated snow. The slabs and wet slides were running faster than a wet slide and traveling further than you would expect a wet slide to go. Releases were occurring primarily near weaker areas around rock bands, and areas of shallower snow from the Central Valley to the South Valley. The subsequent cooling cycle was not enough to penetrate well into the saturated snowpack until the end of the month. Once the freezing temperatures permeated the snowpack, we found some exceptionally stable conditions ever seen at all aspects and elevations in our area. The weak layers finally disappeared and consolidated, and the crusts became thick and strong.

April 1st the measurements at Galena Summit were aprx. 90" of snow and 32.3" of water. 151% of the normal amount of 20.2" of water.

We did experience an isothermic spell April 16 to 20. Skier released slides were observed in the backcountry but the crusts refroze after the 20th. April ended with a cold, cloudy spell that brought additional snow. Conditions remained firm at lower elevations and breakable up high.

May 1st, the totals at Galena Summit were aprx. 80" of snow and 32.5 inches of water. 155% of the thirty year average amount of 20.9" of water.

The first two weeks of May produced excellent corn snow conditions with extensive snow cover above 7,000ft. By mid- May, overnight freezing was minimal. The upper elevation snowpack was losing an inch of water per day. Flooding became the primary concern. With so much snow that will remain in the high country well into the summer months, summertime backcountry travelers will need to be encouraged to remember a little "snow sense" on their outings.

BUDGET: 1997-98

The Sun Valley Avalanche Center operates on a very modest budget. Operations would not be possible at such a professional level if not for numerous hours of volunteer time by forecasters and observers, sharing of services provided by the Boise National Weather Service, the Natural Resource Conservation Agency, and untold hours of data collection and analysis from Sun Valley Heli-Ski Guides. Sun Valley Heli-Ski also shares a remote weather station and computer data link to this site with the Sun Valley Avalanche Center. The local Community School has generously opened their classrooms for us to teach evening Avalanche Awareness Classes throughout the winter. Wood River Journal Link has donated the use of their computerized phone system at a reduced rate to provide our daily advisory and observer hotline as a community service. Next season they plan to obtain the remainder of the fees by selling advertising sponsorships The citizen's Avalanche Awareness Committee did a phenomenal job in reaching out to the community with a fundraising campaign that brought in over 14,000 dollars.

CONTRIBUTIONS AND FUNDING:

Friends of the Sun Valley Avalanche Center Donations	14,600	
Region 4 USFS	5,000	
USFS Winter Recreation Specialists, office and equipment use incl. Weather station, computer maintenance, travel and hotline expense	10,000	
	29,600	subtotal
Anticipated Fundraising 1997-98 (Film, slide shows, contributions and ongoing campaign)	2,000	
	31,600	total funding

EXPENDITURES:

Forecaster salaries	20,000	
USFS Winter Recreation Specialists, office and equipment use incl. Weather station, computer maintenance, travel and hotline expense	10,000	
ERC Administration Fee (5% of funds raised)	745	
	30,745	total expense
FOR 1998-99	+855	anticipated carry over of funds

IN-KIND CONTRIBUTIONS OF EQUIPMENT AND LABOR:

The Sun Valley Avalanche Center relies not only on cash contributions, but the more than $11,250 in donated equipment, services and labor from community members, businesses and agencies. It is unmistakable that the SVAC would not be able to operate at it's current level if not for these donations.

Boise National Weather Service: Services and equipment incl.
Specialized daily forecast for Sun Valley area at 6,000 and 9,000ft

Natural Resources Conservation Service (formerly SCS): Services and equipment incl. access to Snow Course sites and data for our area

Sun Valley Heli-Ski: Services and equipment including shared data, refuel flight air lifts and information from forecasters $3,500.00

Sun Valley Company: Services and equipment incl. Access to Bald Mtn. weather station, shared data and lift services. $5,000.00

Observer Network: Volunteers participating in data collection $2,000.00

Wood River Journal Link Hotline sponsors $125 x 6 months $750.00

THE FUTURE

"The future's so bright, I gotta wear shades." Huey Lewis

Indeed, the formative process of the SVAC seems to have jelled into a progressive, state of the art, diversely funded and community supported entity. It is exhilarating to be able to look ahead and plan to improve and expand our services. Many long term needs may be able to be addressed for avalanche awareness in the Sun Valley area, and potentially the rest of Idaho.

The Avalanche Advisory and Weather Forecast

The network of field observations is working reasonably well. Because of the diverse nature of the snowpack within the SVAC forecast area, and the ever diversifying patterns of recreational users, certain adaptations may help the quality and quantity of reported observations. Next season, the SVAC would like to:

1. Provide incentives for a corps of observers, including sponsor donated equipment. Increase public recognition of observers through the media and at events.

2. Expand snowmobiler and snowshoer participation.

3. Increase training for the observer corps, including more field sessions.

4. Distribute a public guideline or form to keep observations in a concise and orderly format and enhance communication of the observations.

5. Improve communication with the Sun Valley Ski Patrol and local guide services to get more information from these groups.

6. Establish a daily observation from Galena Lodge, especially for new snowfall amounts.

7. Establish a voluntary policy at sport shops to encourage and remind those venturing into the backcountry to call the hotline for forecasts and with observations. Quality posters at the shops could augment this effort. Some type of effort at the ski lifts could increase avalanche awareness amongst the surging numbers venturing out of the ski area boundaries.

Additional goals are to:

8. Increase pre-season rapport between the SVAC and the National Weather Service to enhance familiarity with each other's processes, problems and needs.

9. Establish regular updates (in addition to the daily forecast) to the Westwide Avalanche Organization and the Avalanche Review.

10. Develop a system and format in the daily advisory to provide a simple and clear answer to the general public's question of : "Here's the information, WHAT do I do with it and WHAT does it mean to me?"

Education:

Educational services offered by the SVAC have improved steadily over the years and there is great impetus to continue this trend. Future goals include:

1. Target education towards specific user groups and/ or ages to increase interest and address special needs of different groups.

2. Target education towards specific interests within the realm of avalanche and snow study, such as beacon searches, how to listen to and understand the terms used in the daily Avalanche Advisory and Weather Forecast, or an open class session for specific requests.

3. Pre season: establish, publish and promote a schedule of classes to be offered.

4. Additional funding may be offered next season from private sources for children's education. Development of a school program as well as a program to reach established children's groups and organizations that are already conducting snow activities (ex. ski and snowboard teams, Blaine County Rec. District classes). Youth education could become a large part of the SVAC programs. This would include developing specific content and format for different age groups.

The SVAC, with help from it's many supporters and contributors, has enjoyed a tremendously successful and rewarding 1996-97 season. We are looking forward to next season with confidence and enthusiasm.

SVAC Av Forecast Form

START
Good Morning, this is Doug with the Sun Valley Avalanche Center with the Backcountry Avalanche Advisory and Weather Forecast for Friday, Feb 28, 1997 at 7:00 a.m.

Titus Ridge,at 10,000' reports:
present temp: 1F Onite low: 1F max temp: 14F Hrs Freeze:
winds:current 12 SW 24hr av: 10 SW max gust: 24 SW
snow:new 0 density: storm # and total: total stake:

Bald Mt, at 9,000' reports:
present temp: 4F Onite low: 4F max temp: 20F Hrs Freeze:
winds:current: 15 SE 24 hr av: 13 SE max gust: 27 SE
snow:new: 0 density: storm total: total stake:

Valley Floor, at 5800' reports:
present temp: 10F Onite low: 7F max temp: 35F
snow:new: 0 density: storm total: total stake:

Weather: The present upper level low over the area exit today and another will aprroach the Pacific tonight. Expect partly cloudy skies toadys w/isolated snow showers over the Sawtooth Mtn as weak high pressure moves across the stae. Clouds will increase tonight w/snow probable in the mountains beginning Sat morning w/2"-4" by evening.

Specifically, at 9000' in the Wood River Valley, winds should be NW/N 15-30 w/a trace of snow, hi temp of 15 and a low of 5; at 6000' winds should be W/NW 10-20 w/a trace of snow.

The avalanche hazard is estimated to be: Moderate on aspects and all elevations in the Wood River Valley. Moderate hazard means that human triggered avalanches are possible and unstable slabs probable on steep terrain.

In this case, steep terrain is at least 35 degrees.

The near ridge top and cross loaded wind slabs continue to be sensitive, especially S tending aspects near ridge tops and cross loaded E and NE aspects. In addition, as Rick mentioned yesterday, there is a persistent and rather troubling weak faceted layer at about 18" on N and NW aspects. That layer is failing quite easily and cleanly during shovel shear and R-block tests. The clean planar failure indicates a well defined weak layer.

Faceted snow is snow that is cohesiveless or sugary, its the stuff can be easily brushed out of a snow pit, sometimes it literally pours out of the layer when you dig a pit. This particular layer is typically about 3" thick and R-blocks having been failing on # 4's or 5's on 30 degree plus slopes, 18" down. There was one report of a #3 failure. The #4/5's indicate fair stability, the #3 indicates poor stability.

So for today, I would advise keeping a wary eye out for wind loaded areas, they are predominantly near ridge tops on S tending aspects and on E/NE tending cross loaded aspects. Remember cross loaded means the wind parallel to the slope and loaded the gullies running up and down the slope.

I would also advise caution on steep N/NW slopes because of the persistent weak layer 18" down.

Best snow conditions: The skiing was excellent on N/NW slopes yesterday, so if you want powder that's where to get it and the slopes should be quite stable on slopes around 30 degrees. The corn skiing and snowmobiling should be pretty good on south tending slopes, especially in the mid and south valley.

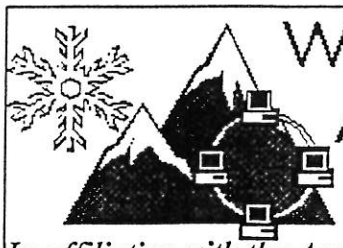
Tip for the Day: Keep your eye on the weak layer on N/NW, if it warms rapidly, that layer could cause trouble because of differenial rates of creep and glide. More about that later.

This forecast is also available daily on the internet at www.avalanche.org -Select products and services then select avalanche centers and forecasts

Please call 788-1200, ext. 8028 with snow &/or weather obs if you get out today.

This forecast only applies to the backcountry and it is based on a limited number of observations in specific locations.

The forecast is sponsored by the Ketchum Ranger District with help from many good friends including Sun Valley Heli Ski, Sun Valley Company, Journal Link, the Galena Nordic Patrol, the Sawtooth Snowmobile Club, Smith Sport Optics, Research Dynamics, and Blaine County Search and Rescue.
END



In affiliation with the American Association of Avalanche Professionals.

Thanks to our supporters:

Forest Service National Avalanche Center
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US Danger Scale

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[Avalanche Centers | Weather Page | Aval. Search Dogs]

United States Avalanche Danger Descriptors

Danger Level (& Color)	Avalanche Probability and Avalanche Trigger	Degree and Distribution of Avalanche Danger	Recommended Action in the Backcountry
...WHAT...	...WHY...	...WHERE...	...WHAT TO DO...
LOW (green)	Natural avalanches very unlikely. Human triggered avalanches unlikely.	Generally stable snow. Isolated areas of instability.	Travel is generally safe. Normal caution is advised.
MODERATE (yellow)	Natural avalanches unlikely. Human triggered avalanches possible.	Unstable slabs possible on steep terrain.	Use caution in steeper terrain on certain aspects (defined in accompanying statement).
MODERATE TO HIGH (orange)	Natural avalanches possible. Human triggered avalanches probable.	Unstable slabs probable on steep terrain.	Be increasingly cautious in steeper terrain.
HIGH (red)	Natural and human triggered avalanches likely.	Unstable slabs likely on a variety of aspects and slope angles.	Travel in avalanche terrain is not recommended. Safest travel on windward ridges of lower angle slopes without steeper terrain above.
EXTREME (black)	Widespread natural or human triggered avalanches certain.	Extremely unstable slabs certain on most aspects and slope angles. Large, destructive avalanches possible.	Travel in avalanche terrain should be avoided and travel confined to low angle terrain well away from avalanche path run-outs.

AVALANCHE SAFETY BASICS

Avalanches don't happen by accident, and most human involvement is a matter of choice, not chance. Most avalanche accidents are caused by slab avalanches which are triggered by the victim or a member of the victim's party. However, any avalanche may cause injury or death and even small slides may be dangerous. Hence, always practice safe route finding skills, be aware of changing conditions, and carry avalanche rescue gear. Learn and apply avalanche terrain analysis and snow stability evaluation techniques to help minimize your risk. Remember that avalanche danger rating levels are only general guidelines. Distinctions between geographic areas, elevations, slope aspects and slope angles are approximate and transition zones between dangers exist. No matter what the current avalanche danger there are avalanche-safe areas in the mountains.

Send mail to djudd@wasatch.com with questions or comments about this web site

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Please Send Your Tax-Deductible Contribution To:

Environmental Resource Center
P.O. Box 819
Ketchum, ID 83340

Please make checks payable to:
ERC / Sun Valley Avalanche Center

Thank You!

Avalanche Awareness Committee Members
Sara Berquist
Tom Campion
Dennis Davis
Mark Deffé
Robin Eisenman
Butch Harper
Rob King
Michael Malko
Nancy Monk
Johnna Pletcher
Nils Ribi
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SUN VALLEY AVALANCHE CENTER

The Sun Valley Avalanche Center operates under the direction of the National Avalanche Center.

Brochure and logo design donated by: Martha Apshaga 788-9029
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SUN VALLEY AVALANCHE CENTER

Please Don't Let Our Funding Slide.

MAKE A TAX-DEDUCTIBLE CONTRIBUTION TO THE SUN VALLEY AVALANCHE CENTER TODAY

Stress On The Snowpack

Each winter more and more skiers, snowmobilers, snowboarders, and snowshoers venture out into Central Idaho's backcountry. Some search for unspoiled beauty, some for challenge, and some for solitude. None come looking for an avalanche.

Ironically, the same improvements in equipment that have made the backcountry mountains so much more accessible and enjoyable, have also made them more dangerous by opening up steeper, more avalanche prone terrain. Four of the past five years have set new records for avalanche fatalities in the U.S., a trend that hit close to home the past year when three local men in two separate incidents died in avalanches.

The Sun Valley Avalanche Center is working to reverse this trend and we need your help.

A Generous Period Of Cold Hard Cash Is Needed For Stabilization To Occur

Demands for services continue to grow each year, but the Forest Service is only able to provide about half the funding needed for the Avalanche Center to operate. Meanwhile, calls to the Avalanche Hotline increase dramatically each year– about 15,000 in 1995-96. In addition, the forecast area is extensive, and requests for avalanche education have tripled. The Avalanche Center needs partners to share in the cost. We need *you* to provide the balance and help satisfy these demands.

This year we need to raise $15,000 by March 1 in order for the Avalanche Center to meet the following goals:

- Continue hiring avalanche professionals to monitor snow and weather conditions
- Expand the program of avalanche education to ensure that quality avalanche education is available in Idaho for all user groups
- Install and maintain remote weather stations to better predict changes in mountain weather and snowpack conditions
- Improve the accuracy of the avalanche and mountain weather advisories to provide the most useful information to backcountry travellers in avalanche terrain
- Cover the costs of adequate telephone lines to facilitate the increased demand, and upgrade computer equipment
- Provide a bulletin board for related community events and programs

With your help we can meet these goals and make the backcountry a safer, more enjoyable place for everyone.

Know Before You Donate

What is the Avalanche Hotline?

The Avalanche Hotline is a phone-accessed report of current snow and weather conditions, avalanche hazard evaluations, educational tips, and related current events, updated each morning. Call daily at 788-1200, ext. 8027.

Who is putting this fund drive together?

A recently-formed group of private citizens called the Avalanche Awareness Committee is responsible for the fund drive. They also promote avalanche education and awareness in the Sun Valley area, and in particular encourage community support for the independent operation of the Sun Valley Avalanche Center.

Is my contribution to the Sun Valley Avalanche Center tax-deductible?

Yes. The Environmental Resource Center (ERC) is the 501(c)3 non-profit organization collecting tax-deductible donations for the Avalanche Center.

What is the relationship between the Sun Valley Avalanche Center and the ERC?

The Sun Valley Avalanche Center operates as a "project" of the ERC.

Doesn't the U.S. Forest Service provide funding for the Avalanche Center?

The U.S.F.S. is only able to provide about half of the funding necessary to operate the Avalanche Center. The rest of the funding must come from the community.

What happens if the fundraising goal isn't met?

What money we do raise will be put toward forecasting equipment, salaries, and educational opportunities for the community. Less money means less services.

Quick! Somebody Help!

As of March 1, 1997, all present funding for the Sun Valley Avalanche Center will have been exhausted. To meet our goals we need to raise $15,000.

Help keep a valuable community resource from slipping away. Make a tax-deductible contribution of any size to the Sun Valley Avalanche Center today.

DECEMBER 1996

Avalanche advisory: Know before you go

When you venture out into the snow this winter, what kind of information would enhance your planning, enjoyment and safety? New snow amounts, temperatures, and winds from various locations? A bullseye weather forecast for our valley at 6000 feet or at 9,000 feet? A snow conditions report?

This is exactly what the Forest Service Central Idaho Avalanche Advisory produces for the Wood River Valley each day.

The Forest Service Central Idaho Avalanche Advisory (CIAA) is the current name for the avalanche advisory that has been in operation in the Ketchum/Sun Valley area since the 1960's. The purpose of the CIAA is to provide information and education about avalanche awareness to all winter user groups.

It provides information through a daily report that is available by 7:30 a.m. and which includes the following: Daily weather observations from several remote stations, an avalanche hazard evaluation based on weather observations, weather forecasts, and daily technical snow studies, educational tips relating to snow analysis, snow condition updates, a weather forecast specific to our valley, compiled each morning by the National Weather Bureau in Boise, utilizing local data from weather stations and observations; a bulletin board for related community events and programs; computer linking and access of this report to other forecast centers and the general pu through the internet; a ph accessed recording of this report.

The report enhances snowmo ing, snowshoeing, camping, trips, snowboarding, skiing a home weather recorders.

Education is provided within context of the daily report, and a through a series of avalanc awareness classes conduced. Th are appropriately tailored to the c ferent user groups and age grou These classes combine classroo discussion, slides, videos and fie sessions.

Forecasters with extensive ed cation, training, and experienc staff the CIAA. Field observatio come from a trained group of ass ciates, the general public, loc guide services. and the Sun Vall Ski Patrol Remote snow an weather data monitored by nume ous telemetry weather stations.

The Forest Service Central Idah Avalanche Advisory began regul reports on November 28 at 7 a.m Call the Avalanche Hotline at 78 1200 ext. 8027 for up to date infor mation. There is also an observe number if you would like to cal and leave your observations regard ing a tour or outing that you hav had. This greatly helps the report Call 788-1200 ext. 8028 to leav your observations.

In addition, you can look up the West Wide Avalanche Network website in the Internet at www.avalanche.org

DECEMBER 1996

EVENTS

Community Offers Snow Safety Classes

This winter, a variety of introductory and advanced classes are available for back-country recreationists. The classes are seen as an elementary component of any back-country skier, snowboarder or snowmobiler's preparations.

Avalanche safety classes range from an introductory, or "basic" course, a Level One certification, or a more advanced Level Two class.

Most classes involve classroom education, as well as field days to apply new lessons. Students in avalanche classes are taught to recognize "warning signals" in the weather and immediate snowpack. Classes also emphasize safe travel in avalanche country, and how to organize a rescue using avalanche beacons.

Dec. 22, the Middle School at the Community School. Doug Abromeit and others at the Sun Valley Avalanche Center will be teaching a "basic" course with a field day Jan 3. A donation to cover expenses is requested. Class is at 7 p.m. this Friday.

Jan. 10, 11, 12. A Level On course offered by Sun Valle Trekking provides instruction the Tornock backcountry hu Costs include food, lodging an instruction for $250.

Jan. 11, 12. The America Avalanche Institute will be offer ing a Level Two course at Soldie Mountain in Fairfield. Studen will be put up in nearby condo during the class, which will uti lize snowcat skiing. Cost is $32 Call 764-2106 to register.

Jan. 20-24. The Sawtoot Mountain Guides will be offerin a four-day Level Two course the Williams Peak Hut. The cours will emphasize forecasting ar tour leadership. Cost is $450, an covers food, lodging and instru tion. Call (208) 774-3324 to re ister.

In addition to these form classes, Backwoods Mountai Sports hopes to offer inform clinics on avalanche beacon us Call 726-8818 for information o their beacon rental program.

— IDAHO MTN. EXPRESS —

Spring Turns a Skier's Fancy to Avalanches

by Shea Andersen
Express Staff

The heavy snow dumped on Idaho throughout the winter is likely to be here for a while. Forecasters with the Sun Valley Avalanche Center said this week the skiing ain't over yet.

"Skiing is going to be awesome in the backcountry for some time," said Rick Barker.

An estimated 18-inch crust of hardened snow is providing a "phenomenal" surface for skiers and other winter recreationalists.

But the possibility of avalanches, especially wet, heavy ones common to spring, has yet to go away. Last week's cold weather solidi-

See **AVALANCHES** *on page 5*

A local skier takes advantage of easy lines and springtime snow in the backcountry at Galena Summit. Skier are encouraged to call the Avalanche Hotline at 788-1200 ext. 8027. (Photo by Warren Cornwall).

IDAHO MTN. EXPRESS

April 9, 1997

THANKS

The Sun Valley Avalanche Center would like to extend a huge thank you to the Avalanche Awareness Committee and our supportive community. The committee is a group of private citizens which formed this season to promote avalanche education and awareness in the Sun Valley area, and in particular to encourage community support for the independent operation of the Sun Valley Avalanche Center. The committee, with help from the Environmental Resource Center, initialed a fund raising drive which raised close to the goal of $15,000 from the community. This money will go towards forecaster salaries, equipment, and scheduled educational opportunities for the community next season. Members of the committee also extended avalanche education to elementary school and older students this season.

It has been rewarding and fun to experience this high powered group in action this season. The committee consists of Martha Apshaga, Sara Berquist, Tom Campion, Dennis Davis, Mark Deffe, Robin Eisenman, Butch Harper, Rob King, Michael Malko, Nancy Monk, Johnna Pletcher, Nils Ribi. and Steve Wolper. And, once again, our community showed tremendous support for public services.

Thank you, Avalanche Awareness Committee and our community!

Sincerely,
The Sun Valley Avalanche Center

Avalanches...

Continued from page 3

fied the snowpack considerably, prompting forecasters to rate the avalanche hazard in the backcountry as "low" for most of the week.

As the sun shines on different slope aspects during the day, the quality and stability of that snow can change. As warm spring sunshine heats up the snow, water can infiltrate deeper into the snowpack and weaken the snow. Barker cautions skiers or snowmobilers who find themselves sinking deep into wet snow to find a better, safer place to be.

Naturally, the sun hits east-facing slopes soonest, before moving around the compass to north- and west-facing slopes. Barker encouraged skiers and snowmobilers who were planning late-day excursions to remember this sundial effect.

"The timing is hard to predict, but you want to move through that progression as the different aspects heat up," said Barker. Catching a south- or west-facing slope late in the day, for example, could be advantageous on a cold day, or hazardous on a hot one.

The Sun Valley Avalanche Center is currently able to maintain a daily avalanche safety hotline, with weather forecasts and assessments of what's out there. Barker estimates the service will be up and running until mid-April, when it will likely shift to weekly service.

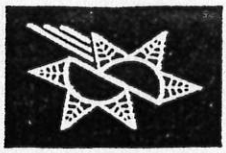
Funding for the service comes largely through the Avalanche Awareness Committee, a local group dedicated to raising snow-safety education levels. The service also gets technical assistance from the U.S. Forest Service, the Natural Resource Conservation Services, and the National Weather Service.

Last year the hotline received an estimated 10,000 calls. This year, the center received up to 11,525 calls in four months.

A critical component of the hotline's success, said Barker, was the participation of voluntary "observers," who provided first-hand information about the snowpack. Observations ranged from very basic reports to more detailed snowpack analysis from snow test pits. Getting citizens involved in the hotline, said Barker, was the most positive part of the system.

"That's still one of the most important components of the forecast," said Barker. "Every single observation, regardless of how simple or obvious, enlightens the forecaster's depth of knowledge. Similarly, every observation enhances the clarity of the observer's perception."

People who interacted with the hotline or the Avalanche Awareness Committee this past season are encouraged to pick up a survey at local shops, available later this month. The survey is designed to elicit feedback about the hotline and the Avalanche Awareness Committee's activities this winter.



Sun Valley Avalanche Center Spring Survey 1997

We would like to find out how well the SVAC is meeting the needs of the public. This survey will help us to provide you with a better service next season. Please answer as many questions as possible and return this to any of the listed locations. Thanks for all of your support!

Surveys available at: Sun Summit and Sun Summit South, The Elephant's Perch, Backwoods Mtn Sports, Ketchum Ranger District, Woodside RV, Pro-Line, Sun Valley Heli-Ski's front box, and The Board Bin

- How often do you call the avalanche forecast hotline?
  1. never
  2. occasionally
  3. 1-2 times per week
  4. 2-4 times per week
  5. 5-7 times per week
  6. Weekends only

- Do You receive our information via the hotline phone number, the Internet Web Site or both?
  Are you aware of our Daily forecast on the Internet Web Site?

- Have you attended an Avalanche Awareness or Snow Study Class in the past 5 years?
  1. Sponsored by the Forest Service Sun Valley Avalanche Center
  2. Sponsored by another organization (please list name)

- Would you plan on attending an Avalanche class next season?
  1. classroom session (evening) Yes/No
  2. In the field session (Full Day) Yes/No
  3. Avalanche Beacon instruction and/or practice searches Yes/No

- Did you feel that the Daily Forecast had:
  1. The right amount of information
  2. Not enough information
  3. Too much information

- Is there additional information that you would like to hear/see? Is so, please specify.

- Would you like a different format? If so, what would you recommend ?

- What are your winter backcountry activities?

- Has our information been useful to your backcountry travels and outings?

- Do you have a difficult time getting through to our line for information? If so, when do you usually call?

- Have you phoned information into our observer hotline? What would help to make it easier or encourage more observations to be called in?

- Would you be interested in being a regular trained observer?
  If so , list name phone number and address:

Any comments or suggestions: We'd love to hear.....(Use back of survey) THANKS!!!!!

The Avalanche Awareness Committee