

## THE FUTURE ROLE OF THE U.S. FOREST SERVICE IN AVALANCHE PROGRAMS

H. Peter Wingle<sup>1</sup>

### ABSTRACT

In the early years of ski area development in the west, the U.S. Forest Service assumed a leadership role in both avalanche and snow science related research, in using military ordnance to control avalanches, performing avalanche forecasting and leading the avalanche control efforts at the ski areas. As ski area growth expanded rapidly in the late 1960's, the Forest Service started the National Avalanche School and began a process of developing avalanche expertise in the private sector. This served both developed ski areas and expanding ski touring operations. Currently the Forest Service maintains centers of excellence in many staff areas, including the use of ordnance, and has changed its role from active participation to one of setting standards for permittees and monitoring performance relative to the land use permits under which they operate. The National Avalanche Foundation, made up of the private sector with Forest Service memberships oversees a variety of avalanche related work and conducts the National Avalanche School on the odd years. Forest Service policy is to avoid closing the back country in order to prevent avalanche related accidents and to compensate with avalanche information services, user education and a policy that governs skiing out from existing ski areas. Military ordnance is losing its effectiveness because of supply and age. Alternatives will be needed in the future.

### OUR HISTORICAL ROLE IN AVALANCHE RESEARCH AND CONTROL OPERATIONS

We believe the role of the Forest Service, USDA, has appropriately changed. In the early years of the Forest Service involvement with ski areas, the private sector did not have expertise in avalanche forecasting or control. Since we were inviting skiers to visit ski areas on National Forest lands, we assumed the responsibility for forecasting and actually doing the control work. Our people liked to do it. I used to do it and it was fun. In the 1950's and 60's avalanche schools were alternated between Berthoud ski area in Colorado and Alta, Utah. occasional schools were held in the Pacific Northwest. They were not attended exclusively by Forest Service people. Volunteer National Ski Patrol people attended, as well as an occasional person from a ski area. Monty Atwater ran a few schools at Squaw Valley, California, but these were not regularly scheduled like the other schools. Other schools for Forest Service people were also held at places such as Crystal Mountain, in Washington. We had separate schools for use of artillery. Early pioneers such as Monty Atwater, helped bring military ordnance into use. Our arrangements with the U.S. Army dictated that Forest Service employees actually did

---

<sup>1</sup>. Director, Recreation Management, Forest Service, USDA, Rocky Mountain Region, P.O. Box 25127, Lakewood, CO 80225 USA. Member, Board of Directors, Tenth Mountain Trail Association.

the artillery firing.

A career ladder for snow rangers and winter sports specialists was developed in the early 1960's. Before many people could use it, budget cuts greatly reduced the number of Forest Service people working in winter sports. By the late 1960's it was apparent that the Forest Service could no longer, and should no longer be doing all of the traditional ski area winter sports work. The industry was growing rapidly and more people were needed to meet industry needs. There was no career arrangement for Forest Service people in that field, as most were professional foresters and were moving through the "snow ranger" positions. There was a need for people who could and would guide the public in the undeveloped areas outside of ski areas. There were very few avalanche experts outside of the Forest Service. Several were contracting work with highway departments or were working for mining companies in Canada or Alaska. It simply made sense that we change.

During the 1940's, 50's and early 60's, Monty Atwater, Dick Stillman and Ed LaChapelle began a snow avalanche research program. Although it was not under the Forest Service Experiment Stations, the research arm of the Forest Service, it was truly research, and provided the basis for control methods, mechanical and thermal properties of snow, rescue techniques, and provided the background and foundation for later research by our Experiment Stations. At the same time, because of the recognized need for snow safety on the National Forests, the Forest Service research arm began intensive research in snow science. Mario "Pete" Martinelli led the research effort at the Rocky Mountain Forest and Range Experiment Station out of Fort Collins, Colorado, as part of our Watershed Research program. The Fort Collins research concentrated more on the snow physics and blowing snow aspects. Between the two efforts and the application assistance provided by the Research Station, considerable advances were made that affected the practical forecasting and control programs conducted at ski areas and along highways.

"Pete" Martinelli and his staff were always involved with the avalanche training, but he acknowledged, that he had done as much as was practical without making a quantum leap forward into new technology. Except for work with blowing snow, the Forest Service avalanche research essentially ended in the late 1980's. By this time, there were other pressing research needs in the Watershed and Air Quality areas. Important data were collected over the years, which has been and can be used for tracking avalanche conditions and trends. We are still doing this in cooperation with others. Currently the Forest Service in the Rocky Mountain Region makes the largest contribution to operating the Colorado Avalanche Information program, which is run by Knox Williams.

When we stopped this research, we were doing what we had done way back in the 30's, when the Forest Service had been a pioneer in developing crawler tractors and portable hand held radios. The time had come to turn this over to an industry that could move it ahead effectively while the Federal Government put its energies elsewhere.

In 1971 I was given the job of organizing the first National Avalanche School, which was held in Reno, Nevada. Over 200 people from Canada, Japan and the United States attended. It was and still is a three step effort, where academic training is given every two years at the school. It can be followed up by sending participants to areas such as Jackson, where they can get the field training and further by having consultants come to an individual's home area to help him apply what he or she has learned at the home area.

As you all recognize, the private sector has taken the lead. A strong cadre of

avalanche experts has developed within the ski industry. Few permanent Forest Service employees no longer fire the single operating howitzer nor the recoilless rifles. Ski area employees, who are hired on a very part time basis as Forest Service employees during the firing exercises, do most or all of the shooting. For a variety of realistic reasons, the Forest Service is in more of a standard setting and monitoring role to ensure that our public service resort and guiding operations are run properly. A lot more could be said about this, but this summarizes how we got to the point where we are.

#### CURRENT PARTICIPATION, PROGRAMS AND POLICIES

The Forest Service does not and cannot have experts in all of our specialties in all areas where they are needed. However, we do make a concerted effort to have some "Centers of Excellence" where the heavy workload exists, and to share those individuals among our Regions and National Forests. It is a financial necessity and also provides extra incentives for individuals to excel in their particular specialties. Doug Arbromeit, who was on the program this morning, is our expert with military weapons for avalanche control programs.

The National Avalanche Foundation was formed which is made up mostly of ski industry people. This foundation deals with a variety of avalanche related problems facing the ski area industry, and it meets regularly to deal with and solve these problems. There are two Forest Service members, both from the Chief's Office. One is Richard Woodrow who had been Forest Supervisor of the White River National Forest in Colorado where the majority of our ski capacity exists. He is currently the Assistant Director of Recreation for the Forest Service in our Washington, D.C. office. The other is Lynne Sprague, currently Director of Mineral Management in the Chief's Office. He had been the District Ranger on the Salt Lake Ranger District of the Wasatch National Forest, responsible for the administration of the Alta, Snowbird and other ski area permits where extensive avalanche forecasting and control work was conducted. These two people are well able to give direction to the program because of their on-the-ground experience.

Dick is also on the Steering Committee for the National Avalanche School, which is held each October on the even numbered years. The National Ski Patrol System has taken a lead role in conducting this school. The Forest Service will continue to provide instructors where we have the expertise. However, our major energies will go into ensuring that ski area developments are planned and constructed properly, ensuring that our permittees have good and effective operating plans and programs, and in monitoring operations to ensure that agreed upon standards are achieved.

We recognize that more and more winter recreation is occurring outside of developed ski areas, and that the public will be exposed to avalanche hazards. Despite recent fatalities, we steadfastly are taking the position that we do not want to close the back country to winter use. We believe:

the public should be allowed to enjoy the back country in the winter with a minimum amount of regulation and an emphasis on self reliance.

it would be unfortunate if the American public was so coddled by its government that all believed that they would be protected from any injury. It is important that people prepare themselves to avoid accidents and to cope with unexpected problems.

some public and ski area operator protection is needed, particularly in severe

situations. Our policy about back country access from ski areas will be presented on Friday based on a paper prepared by John Korb, winter sports specialist on the Rocky Mountain Region Recreation Management staff.

it is essential that there are opportunities for back country users to learn about winter travel safety. We encourage establishment of schools available to the public at a nominal charge. If the public is going to use the back country, there should be ample opportunities for people to learn the skills that they need in order to safely enjoy their sport. There should also be opportunities for them to be guided by qualified guides.

there should be an opportunity for guide services to be created that give the owners and guides reasonable assurances that long term business opportunities can be established using the National Forest lands.

avalanche hazard information should be reasonably available to back country users, recognizing that forecasts cannot be accurate over broad areas.

The Forest Service will continue to support the establishment and operation of avalanche information networks throughout the western states. The National objective is to pattern them after the system that we have in Colorado. In FY 1991 we will be providing \$60,000 toward the operation of the Colorado Avalanche Information program. We also will continue to provide the telephone answering service to make that information easily accessible. The other western regions have somewhat different programs. In some cases, the Forest Service actually is doing the forecasting.

Military ordnance for shooting down avalanches is in short supply. We are running low on 75mm howitzer ammunition. There is a better supply of the 105mm ammunition, but the dud rate in some cases is becoming unacceptable. We have about five years supply remaining. Refurbishing of the recoilless rifle ammunition will cost about \$45. per round. We have a ten year supply of 106mm recoilless rifle ammunition, but it is all of an armor piercing variety. It is not as good as we would like, but it does the job.

Currently funding is not available for Forest Service research in snow and avalanches. However, with the increase in networking and technology transfer, we in the United States are able to keep current with research in other countries. This conference certainly makes that networking easier and more effective. We trust that we will be able to continue to work with the industry and cooperators in the future. Winter sports is a very important to the public and the National Forests provide the land for this form of recreation and is an extremely high priority for the Forest Service. In fact, we are anxious to expand our efforts to be more responsive to winter users and those who help make safe recreation in the winter time possible.