

## AVALANCHE INCIDENT COUNTERMEASURES BY THE JAPAN AVSAR COUNCIL

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**ABSTRACT:** Against a background of the diversification of winter recreation and increasing numbers of backcountry skiers and snowboarders, mountain fields in popular areas have become extremely congested in Japan over recent years. Because of this, large-scale accidents in which multiple groups are involved and many people are affected by avalanches could occur. Once an avalanche has occurred, it goes without saying that prompt action by people in the vicinity—rather than waiting for governmental rescue teams—is the most important element in saving lives. There are multiple mountain-related organizations in Japan, each of which have conducted education on avalanches in their own manner up to now. However, the content of this education has not been standardized among the various groups involved, and there have been differences in both terminology and methods in relation to Search and Rescue. Against this backdrop, the Japan AvSAR Council has been established, bringing together six major mountain-related groups, and operating under the theme of how the people in the vicinity of an accident—including the people caught up in it—can “cooperate to save the lives of those in need of rescue.” Up to now in Japan, while there have been cases of groups involved in mountain Search and Rescue coming together to meet for joint conferences, no standardized, consistent program has ever yet been put into effect. We thus report a new initiative which has started in Japan.

**KEYWORDS:** avalanche search & rescue, avalanche education, avalanche incidents

### 1. INTRODUCTION

In Japanese avalanche education, various efforts have been made by organizations with diverse characteristics. From the 1980s to the 1990s, a group of amateur mountaineers belonging to an alpine club that lost one of its members on the mountain became the leaders of avalanche education. Through their efforts, the Japanese-made avalanche beacon began being sold in 1993 and it was widely announced that beacons are necessary as avalanche countermeasure equipment.

In the late 1990s, with the initial backcountry boom begun by snowboarders, the number of compa-

nies importing and selling avalanche beacons increased and the beacon spread rapidly among skiers and snowboarders.

In the 2000s, with the establishment of NPOs specializing in avalanches, the recreation of avalanche education for professionals such as mountain guides progressed and practitioners with North American-style avalanche skills became active in the field. This has had a positive effect for the general mountain enthusiasts such as skiers, snowboarders, and climbers as well.

In 2007, the Japanese Society of Snow and Ice held the Avalanche Education Symposium; however, at that time, the educational content of each organization was only just introduced. It was consented that standards were necessary for avalanche education for general mountain users, although a member proposed it, the standards did not specifically progress.

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After the symposium, cooperative relationships among organizations advanced slowly in areas where user characteristics and goals aligned.

For example, the participant proportions in lectures was biased toward skiers and snowboarders, organizations with few alpinists and organizations with a majority of alpinist members often co-hosted snow lectures and safety seminars. In one case, an organization adopted another organization's program content for their own textbook. In other cases, organizations shared accident data of alpinists belonging to alpine club.

Thus, content and program sharing are gradually progressing within individual organizations, and there has been a diversification of outdoor activities in recent years along with the backcountry boom and several large avalanche incidents. Additionally, there has been a remarkable increase in backcountry skiers visiting from overseas.

## 2. SITUATION AND TASKS

Organization-based education and training for avalanche search and rescue thus far has been centered on "Companion Search & Rescue" and content addressing large avalanche incidents was inadequate. Therefore, avalanche search and rescue sites were regulated and the training for site commander managing the activities lacked sufficient structure and systematization.

There are 2 factors related to this situation. First, the prefectural police in areas with popular large mountains such as Nagano, Toyama, and Gunma, have specially trained alpine rescue teams and if weather conditions permit, rescue helicopters land within in an hour of the dispatch report.

When the police arrive, on-site leadership is controlled by the police and even if there is a professional mountain guide on the scene, the guide is required to leave the site if he/she does not belong to the local volunteer search and rescue team. Then, search and rescue activities are conducted under the police department's leadership. Therefore, in large-scale accidents in which search and rescue activities are carried out over a long period, since on-site leadership rights are transferred to the police at a relatively early point, a need to have systematized and large-scale rescue activities was not felt. Civilians cannot work with police due to the potential of accidents and responsibility during rescue activities as well as the issue of insurance for civilians.

The second factor is related to the actual number of avalanche accident deaths in Japan. In mountain recreation over the past 25 years (1991-2015), the percentage of accidents in which 3 or more people died is about 10%. In other words, most avalanche accident deaths in alpine recreation are incidents occurring in small groups with 1-2 deaths. Thus, efforts are being made by mountain related organizations to increase the potential of on-site survival by planning search and rescue by fellow mountaineers. Even if only 1 person is buried in an avalanche, if the person was not carrying an avalanche beacon, the search will be long, and therefore, the police will lead the search activities.

## 3. TURNING POINTS AND ESTABLISHMENT OF ORGANIZATIONS

An avalanche accident in Toyama's Masago-dake on November 23, 2013 led to the tragic death of 7 skiers. Immediately after the size 3 avalanche, skiers in the vicinity gathered and eventually search and rescue activities were conducted by over 30 people. The skiers, including guides, located and excavated 6 victims in approximately 1 hour. Then, the police arrived and the scene was handed over to the police and the remaining person was rescued.

The initial members of the search and rescue group did their best; however, at the same time, problems and lessons regarding on-site management remained. The social impact was also a major part of the incident (Degawa, 2014).

Additionally, with the recent growing popularity of backcountry skiing, there have been multiple reports of size 2 to 2.5 avalanche incidents induced in crowded mountain areas. Some of these had the potential to be accidents with serious damage as there was another group caught in the avalanche induced by a group higher up the mountain. These kinds of incidents are reported every season.

For example, Hakuba, where many foreign skiers and snowboarders visit. The main Happo-One area is very congested on the weekends because it is a 30-minute walk to the top of the ski resort lift and because the altitude difference of 1000 meters makes it skiable. On the other hand, the slope face is a big Terrain Trap, and as can be seen from the photo (Figure 1), large avalanche incidents involving multiple groups can occur.



Figure 1: Happo-One, Hakuba

People with a sense of danger who are involved in these situations have stayed in contact and 2016 began a movement to share avalanche search and rescue programs.

In February 2017, the Canadian Avalanche Association implemented the AvSAR Response Course as a reference for avalanche search and rescue program development and members from each organization came together. They discussed not only technical aspects but also management of search and rescue activities overall and methodologies considering Japanese social background.

In September 2017, the Japan AvSAR Council was founded with the “goal of responding to recommendations issued by international organizations by continuously updating the program and performing strategic search and rescue activities at avalanche accident sites in Japan by standardizing systematized search and rescue methods and implementing training courses that can respond to even large-scale avalanche sites.” Affiliated organizations at the time of the council’s foundation are as follows.

JMGA (Japan Mountain Guide Association) is an organization for professional mountain guides in Japan. Guides belong to guide associations in the area and the regional associations are organized through affiliation with the JMGA. Many guides serve as regional search-and-rescue volunteers and in the event of an incident, they participate in rescue activities under the leadership command of the police. The JMGA is affiliated with the IFMGA and ICAR and is a public interest incorporated association approved by the Cabinet Office.

JMSCA (Japan Mountaineering and Sport Climbing Association) is an organization of amateur mountaineers belonging to regional mountain associations. The regional mountain associations are organized through affiliation with the JMSCA. The JMSCA is affiliated with the UIAA, ISMF, and IOC (Japanese Olympic Committee), and it is a public interest incorporated corporation approved by the Cabinet Office.

NPCMC (Nagano Prefecture Comprehensive Mountaineering Center) is an educational institution for general mountaineers established by Nagano Prefecture. In Japan, an unprecedented mountaineering boom arose following the climbing of Manaslu in 1956. With this boom, many alpine accidents occurred. Since Nagano is a prefecture within the Japanese Alps, in 1969, the NPCMC established a center to prevent accidents and promote safe mountaineering activities and to spread nature conservation awareness.

JAC (The Japanese Alpine Club) is the oldest alpine association in Japan, established in 1905. It contributes a wide-range of mountaineering activities from alpinism to Japanese mountain climbing, as well as social contributions such as nature conservation and educational activities. A youth club related to training the next generation of mountaineers, which is an important component of JAC’s activities, is actively involved in this council’s activities. JAC is a public interest incorporated association approved by the Cabinet Office.

Similar to JMSCA, the JWAF (Japan Workers' Alpine Federation) is an organization of amateur

mountaineers belonging to regional mountain associations. The regional mountain associations are organized through affiliation with the JWAF. In the 1990s, JWAF made great contributions to the spread of avalanche beacons in Japan.

JAN (Japan Avalanche Network) is a non-profit specialized organization that implements programs such as avalanche education, avalanche bulletin, and accident investigation. In addition to lectures organized on its own, JAN has conducted avalanche education for general mountain users in cooperation with JMSCA, JAC, and NPCMC. Additionally, JAN's professional education program has been adopted by JMGA and JAN has had a cooperative relationship with CAA as well since 2001. Furthermore, JAN has released avalanche bulletin for Japan's 4 mountain regions standardized in the North American style.

#### 4. DEVELOPMENT OF A COUNCIL

The council was established in alliance form that adopts collaborative management by member organizations and respects the identity of individual member organizations. The council has created a standardized avalanche search and rescue manual "Avalanche Incident Management" and an educational program. Using the manual, a basic avalanche search and rescue course is held by each organization belonging to the council. In 2019, the council will host advanced courses focusing on training on-site commanders.

Additionally, based on the current manual, the definition of "incident" and reporting forms have been unified, and data pertaining to avalanche incidents will be developed. When the data is able to be organized, the council plans to make a report on the data at the ISSW.

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