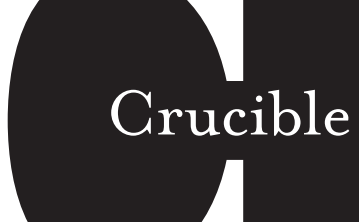


TRADE PLACEMENTS



THE AVALANCHE REVIEW

The RECCO Rescue System

Story by Dale Atkins Photos by Dan Kostrzewski

Terskol, Caucasus, Russia. February 10 2004. A large avalanche buried seven teenage snowboarders. For more than a week, 160 ski patrollers and soldiers and nine avalanche dogs searched but found no one. On February 20, two mountain rescuers from Germany started to search with RECCO and found the first victim in five minutes. Buried three meters deep, the boy had reflectors on his ski pants. Fifteen minutes later, another victim is found. His cell phone had responded to the detector. The next day, detectors located two other victims. One carried a walkie-talkie, the other a cell phone.

You may know of RECCO, some of you even know how use it, but what do you know about RECCO? To answer this question requires a closer look at the RECCO Rescue System and how it might make the search and rescue and education jobs of avalanche workers easier. Like any technology, it is not only important to learn how to use the equipment, but it is also important to learn why and when to use it.

A new technology?

The roots of RECCO go back to the early 1970s in response to a personal experience with an avalanche tragedy. In December 1973, Magnus Granhed was halfway up a lift in Are, Sweden, when an avalanche swept away two skiers. For the next three hours, he and others searched with probes and dogs before finding the two dead. One victim was a friend who left behind a wife and child. Magnus's experience in the rescue and with the tragedy motivated him to find a better way to search for buried victims.

In 1974, Magnus collaborated with researchers from the Royal Institute of Technology in Stockholm. A research team first studied all the existing and proposed technologies for locating buried avalanche victims, including magnetism, radiometry, radar and transceivers. Transceivers were found to be the most effective but suffered three disadvantages: high cost, they require user interaction to turn on and off, and batteries can go bad. The Swedish team was not alone in seeking better search technologies. Researchers in Austria, Germany, Italy, and the United States were also looking for better ways to find avalanche victims.

By the mid-'70s, it seemed the most interesting solution would be to provide every skier with some sort of passive responder or reflector. Ground-penetrating radar was not practical. The echo or return signal was not specific enough to determine whether the target was a body, rock, ice or wood. The better solution was thought to be secondary (also termed responder or harmonic) radar.

Skiers could carry a small reflector that would double the radar's frequency and reflect it back. Thus, the echo produced by the responder could be identified with a high degree of accuracy. In 1975, American John Lawton—inventor of the Skadi avalanche transceiver—suggested a system where the responder would be part of a ski lift card. What was a simple and elegant idea on paper was only that. It would be years before the idea could be applied, as there was literally nothing known about the effects of snow on microwave signals.

To learn more, Magnus, in cooperation with Stockholm's Royal Institute of Technology, set up and conducted a painstaking experiment during the winter of 1978-79. All winter long, every two hours, signals of different

frequencies were transmitted into the snow. This was long before today's age of digital convenience, and all observations and data collection had to be done manually. In 1980, Magnus formed RECCO AB and created the first prototype. Later that winter, Magnus could search for and detect the reflected signal when the search antenna was aimed toward a buried reflector. The monumental problem of how to filter out the strong search signal so the much weaker return signal could be detected had been solved.

"We like to compare that with standing next to a jet plane as it takes off and being able to hear the rustling of leaves being raked together just close by," Magnus says. The detector weighed 16 kilos and had a range of five meters. In 1984, the first commercial detectors were placed in Zermatt, Switzerland, and after considerable testing by Air Zermatt and Bruno Jelk, head of Mountain Rescue Zermatt, the system was incorporated in their avalanche-rescue plan and response. By 1987, the RECCO system was in use by about three dozen ski areas in six countries.

Fast-forward nearly 20 years. Today's detector weighs one-tenth the weight of the original and has a maximum range of 200 meters in the air and 30 meters in snow. Detectors are in place at more than 440 ski areas, heli-ski operations, national parks, and with mountain rescue teams in 17 different countries. In addition, it has also been adopted by a number of departments of transportation and the militaries of several NATO countries.

What is the RECCO system?

Readers of *The Avalanche Review* may remember two detailed articles about RECCO that appeared in the January 1994 issue, so only a quick summary is presented here. The RECCO system consists of two parts: a detector and a reflector. Rescue groups use the detector; reflectors are integrated into shell clothing, boots, helmets or protection gear. The system uses harmonic radar to provide a precise location of a buried victim.

The system works on the principle of frequency doubling. The detector transmits a microwave sign that is doubled in frequency and bounced back when it hits a specially tuned reflector. The signal is directional so the operator can follow it straight to a buried victim. The range of the detector is a complex calculation of many variables, including moisture content of snow and orientation of the detector to the buried RECCO reflector. Because range is so affected by orientation—like a transceiver—and snow wetness, RECCO recommends a 20-meter search corridor—10 meters on each side of the operator's path.

The detector can be used from the ground on foot or skis but is even more effective when used from the air. The signal's greater range through air and more perpendicular line of penetration through the snow enhance detection performance. This additional strength has made it a regularly utilized primary search tool on almost every European rescue helicopter and a new choice of heli-skiing operations like Bella Coola Heli Sports.

The reflector is a small electronic transponder with a copper aerial and a diode covered in protective plastic. In the factory, it is mounted by the clothing/equipment manufacturer to the outside of gear. During its early years, RECCO sold individual self-adhesive reflectors, but is moving away from that strategy and now works directly with manufacturers. The reflector works best when worn on a helmet or in pairs: pant and jacket or right and left boot. Many major snow-sports brands, about 70, including The North Face, Vans, Atomic, Arc'teryx, Sessions, Millet, and Quiksilver, now incorporate RECCO reflectors into their products.

Has it found anyone alive?

The first live victim located was a woman in 1987 found in Lenzerheide, Switzerland. She had been given a pair of reflectors earlier in the day and absentmindedly stuck them in a pocket. It was good enough. Later that

afternoon while skiing, she was caught and buried; probing and dogs failed to find her. Once the detector arrived, she was quickly located and recovered alive. Though success came early, it was not until January 2001 when a snowboarder was buried and found alive at Les 2 Alpes (France) that resorts and rescue teams took serious notice of the technology. In 2002, the detector technology was improved, netting greater range and increased accuracy and, as a result, there have been more successes in recent years.

*On March 4, 2002, a group of eight snowboarders triggered an avalanche while riding off-piste in Savognin (Switzerland). They carried no transceivers, shovels or probe. Two were completely buried. The alarm was sounded by cell phone and the first ski patrollers arrived within eight minutes. A helicopter with more rescuers arrived 20 minutes after the alarm. At 40 minutes after the alarm, the first victim was found by probing as a second helicopter arrived with a RECCO detector. (This victim died two days later in the hospital.) The second victim, carrying RECCO reflectors, was found within five minutes using the detector. Unfortunately, the rider could not be revived. At the time of the accident, Savognin did not have a detector.

*In November 2002, a snowboarder ventured off-piste and fell into a crevasse on the Kaunertal Glacier (Austria). None of his five companions saw him disappear. It was only at the end of the day that they realized their friend was missing. The usual ski-area search—checked the slopes and bars—failed to locate the rider. Well after sundown, rescuers returned to the glacier and two teams set out to search the crevasses. The victim had RECCO reflectors and was soon found alive and uninjured 15 meters down in a crevasse.

*On March 4, 2004, one backcountry skier in Pragratzen, Austria was buried. Neither the victim nor his friend carried transceivers or RECCO reflectors. The companion called the OAMTC (Austrian Helicopter Service), and thanks to the cell-phone network's GPS system, the caller's position was immediately located. Two rescue helicopters with a dog team and RECCO responded. The victim carried electronic gear that responded to the detector. As rescuers were following the signal to the victim, they spotted a ski tip just above the surface. The buried skier was found alive. It was probably the cell phone or camera detected by the RECCO detector.

RECCO reflectors are tuned to the detector and give the best range, but there are other reflectors that can respond to a signal. The most common are the diodes in electronic gear. The equipment does not need to be turned on. The devices can include, but are not limited to, radios, transceivers, some cell phones, electronic cameras and video recorders. In these cases, the range is reduced dramatically to perhaps as little as two to 20 meters, but this does present another reason to reach for the detector at the earliest possible stage of the search.

What are the limitations?

All rescue technologies (whether probes, dogs, transceivers, radar, etc.) have limitations and this applies to RECCO as well. Wet snow—liquid water—will attenuate or decrease the search signal. Wet snow is certainly an avalanche problem, but wet-snow avalanches claim relatively few deaths, accounting for only 9 percent of all U.S. avalanche victims.

For a victim not equipped with RECCO reflectors but suspected of carrying electronic gear, the search range must be reduced. Instead of a 20-meter width, a 10-meter search width should be tried first. If that fails, the distance should be cut in half again. In water, the range will be less than 30 cm. False-positive signals are relatively rare, but sometimes do occur. In very shallow snow, I have found large-diameter rebar and large aluminum signs. The range in these cases was very short.

Is RECCO a body recovery tool?

The simple and short answer is no. RECCO is a rescue system designed for organized rescue by ski patrols and mountain rescue teams and has found people alive. The sad fact is that outside of a ski-area boundary, rescue teams seldom find buried victims alive: only 6 percent of the time.

Typically, by the time an organized rescue team is notified, responds and finds the victim, too much time has transpired and the victim has expired. But, in the United States during recent years, three factors have come together to provide optimism for rescue teams: cell phones (faster notification), helicopters (faster travel), and more accidents happening near ski areas (shorter distance). Responses are getting faster.

Time is certainly the enemy of buried victims, but some victims do survive long burials. Every buried victim should be given the benefit of the doubt that he might survive. In the United States there have been a couple of recent burials where victims survived about 24 hours, including a 2003 burial at Mt. Baker, Washington. The longest time for a survivor buried in direct contact with snow (known to this author) is 43 hours for an American woman buried while walking along a road near Macugnaga, Italy, in March 1972.

Incorporating RECCO into the rescue

Integrating RECCO into a rescue requires thought, preparation and practice. The process starts by evaluating potential problems to formulate needs. When considering resources such as dogs, RECCO, snowmobiles, or any other resource, rescue leaders must determine how many are required to effectively and efficiently cover their resort or area of responsibility. Then the rescue leader must plan how to best utilize the resource. This means planning:

- Where will it be cached
- Who will maintain it
- Who will organize trainings
- Who will respond with it
- Who will operate it
- When will it be used
- How will it be used at the accident site
- Reviewing its performance after use

The first seven steps should be written into an organization's rescue plan and practiced. RECCO provides training and can offer suggestions as to how to best incorporate it into rescue plans. The last step, which is important when utilizing any type of search technology, is key for any organization to best learn how to take advantage of RECCO.

To become proficient requires practice—practice finding reflectors, practice using the detector around other rescuers, and practice in the worst possible weather. To become successful during rescues requires practice in realistic avalanche-rescue exercises, so the operator can be confident using the detector in all situations. Like a well-practiced avalanche dog and handler who can work in and among rescuers, a well-practiced RECCO operator can do the same, even when other rescuers are equipped with reflectors.

Integrating RECCO into rescues

- Keep the detector with other hasty-search gear
- The detector and operator should respond with the hasty team.
- The operator must be electronically “clean.” (Transceivers should be still worn, but can be carried on the back. Same with handheld radio.)
- The detector search can be done simultaneously with the transceiver, dog, spot probe and clue searches.
- The operator should carry (or better yet, have a helper) and place flags along the search route. This keeps track of searched areas and allows for areas to be re-searched accurately.
- As with the transceiver search, once the slide has been searched with RECCO and no victim are found, the task can be marked as completed and the operator can assist in other ways.
- Searchers can use RECCO belts on days with significant hazard and a sufficient number of transceivers are not available. A belt can also be used to mark a victim who could not be immediately recovered due to worsening danger and subsequent reburial.

RECCO and education

Working and playing in avalanche terrain is a risk best mitigated with education and good judgment. RECCO is active in avalanche awareness education and has distributed 250,000 copies of their White Book, which has been translated into four different languages. This pocket-sized book is available to avalanche educators—for free—around the world. In addition, by incorporating avalanche-rescue technology directly into consumer products, RECCO has served to introduce the topic of snow safety to skiers and snowboarders on a mass scale and in environments where education was not often discussed.

Final thoughts

RECCO is not a companion rescue system or an alternative to a transceiver. It is a system for organized rescue teams and complements other rescue methods such as avalanche dogs, transceivers and probe lines. RECCO can make rescues easier and faster, and if rescues can be done faster, rescues will save lives. It gives the buried victim one more chance to be found alive.

Radar Comes to the Rescue with RECCO Technology

By Dale Atkins

On December 31, 2005, a man and woman set out on snowshoe from the German village of Hinterstein with plans to ring in the New Year at an alpine hut. As the pair started across a steep, snow-covered slope in fading twilight, the snow suddenly fractured like a pane of glass and swept the woman into a narrow gully.

Her companion called the police, who immediately summoned the local mountain rescue squad. With darkness beginning to fall, a helicopter ferried two rescuers and an avalanche dog to the site. One rescuer worked with the dog while the other scanned the debris field with a RECCO detector. Within 15 minutes the RECCO device detected a signal likely coming from a reflector integrated into the woman's jacket or pants. Using a probe pole, the rescuer confirmed her location beneath 5 feet of snow, whereupon manic digging by both rescuers uncovered the woman alive and conscious after a 45-minute burial.

As a ski patroller you may have heard of RECCO, but what do you actually know about this radar-based rescue system? Some think RECCO makes search and rescue missions easier, but, as with any technology it's not only important to learn what the equipment is and how to use it, but also why you might need it and when and where it should be adapted.

History Lesson

The roots of RECCO reach back to December 1973 when—from the relative safety of a chairlift—Magnus Granhed watched with dread as a friend and one other skier were swallowed up by an avalanche in Are, Sweden. For the next three hours, Granhed and others frantically searched with probes and dogs, finally finding both skiers dead. Granhed's experience, made all the more tragic because his friend left behind a wife and child, motivated him to come up with a better way to search for people buried in snow slides.

In 1974, Granhed collaborated with researchers from the Royal Institute of Technology in Stockholm to create better search technologies. Research and testing continued for years and finally, in 1980, Granhed formed RECCO AB and developed the first prototype of a system that uses radar reflectors and detectors to locate avalanche victims. With the invention, Granhed could hunt for and detect the reflected signal when the search antenna was aimed toward a buried reflector. In addition, he solved the monumental problem of how to filter out the strong search signal so the much weaker return signal could be detected. Unlike radar, where the signal is pulsed (e.g., the transmit signal is stopped so the return signal can be received), RECCO uses harmonic radar that sends a constant signal, while the much weaker return signal is reflected back and must be detected through the outgoing signal. Granhed likened the challenge to "...standing next to a jet plane as it takes off and being able to hear the rustling of leaves close by." The detector weighed 35 pounds and had a range of almost 16 1/2 feet. Four years later, the first commercial detectors were placed in Zermatt, Switzerland, after considerable testing by the Air Zermatt Rescue Company and Mountain Rescue Zermatt. By 1987, the RECCO system (consisting of detectors for rescue teams and adhesive-backed reflectors that skiers could stick onto boots) had been adopted by three dozen resorts in six countries and was credited with helping searchers in Lenzerheide, Switzerland, find an avalanche victim alive. Making this all the more remarkable was the fact that probe lines and rescue dogs had been unsuccessful.

Though success came early, it was not until January 2001 when a snowboarder was buried and found alive at Les 2 Alpes resort in France that other resorts and rescue teams took serious notice of the technology. During the late 1980s and throughout the

1990s RECCO's efforts were focused mainly in Europe; only a handful of U.S. ski resorts had RECCO. In 2002, the detector technology was improved, netting greater range and increased accuracy and, as a result, there have been more live recoveries in recent years. In Europe this winter four victims have been found alive, though one died later in the hospital. One victim even survived a five-hour burial. Today, the detector weighs in at a mere 3 pounds and has a maximum range greater than 600 feet in the air and nearly 100 feet in the snow. More than 440 ski patrols and rescue teams worldwide—including heli-ski operations, national parks, and mountain rescue teams in 17 different countries—have detectors. In addition, the system has been adopted by a number of departments of transportation and the militaries of several NATO countries. In this country RECCO detectors are used by more than 50 ski resorts, four helicopter ski operations, and the National Park Service. To clue in guests, ski areas post yellow signs around the mountain that simply state: "We are equipped with RECCO rescue system." Also, some resorts are starting to add the RECCO logo—or yellow RECCO sign—on trail maps.

Modern Technology

Today's RECCO system still consists of two parts: a detector that makes use of harmonic radar to precisely locate a reflector worn by the buried victim. Rescue groups use the detector, while reflectors are now integrated into shell clothing, boots, helmets, protection gear, and the Barryvox PRO analog avalanche transceiver. Snowmobile manufacturers have caught on as well; Ski-Doo and Yamaha are integrating reflectors into some of the outdoor clothing they'll be selling for winter 2007. The system works on the principle of frequency doubling, which means the detector transmits a microwave signal that is double in frequency and bounced back when it hits a RECCO reflector. The audible, chirp-like signal is directional, so the headset-equipped detector operator can follow it straight to a buried victim. The RECCO reflector is specially tuned to the RECCO frequencies and provides optimal range. The actual range of the detector can vary depending on snow conditions and the orientation of the buried reflector (just like a transceiver). Because this range is impacted by such factors as snow moisture level and reflector position, RECCO recommends a 20-meter (roughly 65 feet) search corridor—10 meters (nearly 33 feet) on each side of the operator's path.

The detector can be used on the ground, but is even more effective when used from an aircraft, which permits searchers to cover a greater range and create a more perpendicular line of penetration through the snow. This additional strength has made it a primary search tool on almost every European rescue helicopter and a new safety accessory among heli-skiing operations.

The reflector is a small electronic transponder with a copper antenna and a diode covered in a protective plastic. Clothing and equipment manufacturers place the reflectors on the exterior surface of the gear. In its early years, RECCO sold individual self-adhesive reflectors but is moving away from that strategy, as people mistakenly put reflectors on equipment like skis. The consequences could have been tragic had a rescue team found buried skis before finding the person. Now RECCO works directly with manufacturers. Many rescuers believe the reflector works best when worn on a helmet, guiding the search directly to the victim's head, or in pairs—pant and jacket or right and left boot—as two reflectors can improve detection ability. The North Face, Van, Atomic, Arc'teryx, Sessions, Marmot, Millet, and Quiksilver are a few of the nearly 70 brands now incorporating RECCO reflectors into their products.

An Additional Tool

Like rescue dogs and probe poles, the RECCO system is just one more option in a search team's arsenal of rescue tools. In some situations, however, RECCO can work in secondary ways to detect buried avalanche victims when other methods of recovery have failed. RECCO reflectors are tuned to the detector and give the beset signal, but some electronic devices can also

reflect a signal, even when not turned on.

These devices may include but are not limited to radios, transceivers, some cell phones, electronic cameras, and video recorders. In these cases the range is reduced dramatically—from upwards of 65 feet to as little as six feet—but this presents another reason to use the detector at the earliest possible stage of the search.

A good example of secondary detection occurred in early 2004 in Russia's Caucasus Mountains. On February 10 of that year, a massive avalanche buried seven teenage snowboarders outside of Terskol (near Mount Elbrus). For more than a week, 160 ski patrollers and soldiers and nine avalanche dogs searched, but found no bodies. Eventually, a call was placed through diplomatic channels to the German Bergwacht (mountain rescue). On February 20, two mountain rescuers from Germany started to search with RECCO and found the first victim in five minutes. Buried 10 feet deep, the boy had reflectors on his ski pants. Fifteen minutes later, another victim was found. A signal was reflected by his turned-off cell phone. The next day, detectors located two other victims. One carried a walkie-talkie, the other a cell phone.

On February 2, 2006, RECCO was used in Alaska to find a buried snowmobiler. Sadly, the man had been buried 10 days earlier, but in a state with wide-open spaces and few detectors it took some time to get a detector. An Alaskan search and rescue team used RECCO to locate the buried snowmobile, and then probed to find the victim immediately next to his machine under seven feet of snow.

RECCO-GNIZE The Limitations

All rescue technologies (whether probes, dogs, transceivers, or radar) have limitations, and this applies to RECCO as well. Wet snow—which contains liquid water—will decrease the search signal. Saturated snow can certainly slide, but relatively few wet-snow avalanches prove deadly, accounting for only 9 percent of all avalanche fatalities in the United States.

As mentioned before, a person wearing a RECCO reflector is going to have the best chance of being found by a RECCO detector. When looking for victims who likely are not equipped with RECCO reflectors but are thought to be carrying electronic gear, the search range must be reduced. Instead of a 60-foot width, a 30-foot search width should be tried first. If that fails, the distance should be cut in half again.

Some in the avalanche community have described RECCO as little more than a body recovery tool. Obviously, the avalanche victims who, thanks to this system, have been found alive would disagree. RECCO is a rescue system designed for organized rescue by ski patrols and mountain rescue teams and has found people alive, both inside ski area boundaries and in the backcountry. The sad fact is that organized rescuers find few people alive (14 percent). Beyond ski-area boundaries, rescue teams find even fewer buried victims alive (6 percent). In terms of personal safeguards, the RECCO system is designed to aid organized rescue and is not intended for companion rescue. Those traveling in the backcountry and other areas prone to avalanches should still equip themselves with an avalanche transceiver and shovel. A buried victim's best chance of survival is in the hands of his or her friends. Rescue statistics reveal that most victims are found alive by their companions (67 percent).

Typically, by the time an organized rescue team is notified, responds, and finds the victim, too much time has transpired for the victim to still be alive. But in the United States, several recent developments provide optimism to rescue teams. Among these are widespread use of cell phones (which allows for faster notification of an avalanche and more immediate deployment of rescue teams and helicopters) and a trend in which more people-triggered avalanches are occurring, not in the remote backcountry, but near ski area boundaries (which reduces rescuers' travel time to slide sites). As a result, responses are getting quicker. Of the 92 backcountry, out-of-area skiers, snowboarders, and climbers killed in the United States during the past six winters, 38 (41 percent) occurred within two miles of a ski area.

RECCO Response

Though originally developed as an in-area rescue tool, RECCO is also valuable just beyond area boundaries and in the far reaches of the backcountry. RECCO has a proven record of finding people. Given that more are carrying electronic equipment on their forays into winter recreation and more companies are integrating RECCO reflectors into clothing and gear, it stands to reason that RECCO detectors will likely be pressed into greater service in the immediate response to avalanches.

Ski areas that wish to integrate RECCO into their in-bounds or out-of-area rescue plan will want to consider three P's: patrol involvement, preparation, and practice. Certainly the patrol is the logical entity to implement the area's rescue plan, but it is area management that makes the call on whether RECCO could be a useful component of that plan. Preparation conducted by the patrol on behalf of area management starts with an evaluation of potential problems to determine resource needs. When considering the use of resources such as dogs, probe poles, RECCO, snowmobiles, etc., rescue leaders must determine how many are required to effectively cover their resort or area of responsibility and how to best use each resource. With regard to including the RECCO system in a given rescue plan, the following considerations come into play:

Where will the detector be cached?

Who will maintain it?

Who will organize RECCO training?

When will the detector be used?

Who will respond with the detector?

Who will operate the detector?

How will it be used at the avalanche site?

How will its performance be reviewed?

In addition to this sort of preparation, area managers who gravitate toward RECCO might also wish to a) promote to guests and the public at large that the area has a RECCO detector (of potential interest to those who buy RECCO-equipped gear or clothing) and b) offer for purchase or rent in the resort's shops or rental facilities equipment in which a RECCO reflector has been integrated.

While RECCO is relatively easy to learn how to use, becoming proficient requires practice—practice finding reflectors, practice using the detector around other rescuers, and practice in the worst possible weather. To become successful during rescues requires practice in realistic avalanche rescue exercises, so the operator can be confident using the detector in all situations. RECCO provides training and can offer suggestions as to how to best incorporate it into rescue plans. Here are some tips:

- Keep the detector with other hasty search gear
- The detector and operator should respond with the hasty team
- The operator must be electronically "clean." (A transceiver should be worn but can be carried on one's back. A handheld radio can be worn the same way.)
- The detector search can be done simultaneously with the transceiver, dog, spot probe, and clue searches.
- The operator should carry and place flags along the search route or have an assistant take responsibility for this task. This helps the team keep track of searched areas and allows for areas to be re-searched accurately.
- As with the transceiver search, once the slide has been searched with RECCO and no victim or victims are found, the task can

be marked as completed and the operator can assist in other aspects of the search effort.

-Searchers can use two-inch-wide belts equipped with RECCO reflectors on days with significant hazard and when a sufficient number of transceivers are not available. A belt can also be used to mark a victim who could be immediately recovered due to worsening danger and subsequent reburial.

Final Analysis

RECCO is not an alternative to a transceiver, the companion rescue system used by ski patrollers and backcountry enthusiasts to rescue an avalanche-buried coworker or friend. RECCO is a system for organized rescue teams and supplements other rescue methods such as avalanche dogs, transceivers, and probe lines. Basically, RECCO is just another tool in the rescuers' toolbox. RECCO can make rescues easier, which makes rescues faster, and if rescues can be done faster, rescues will save lives. In essence, it gives the buried victim one more chance to be found alive.

TRANSWORLD BUSINESS MAGAZINE

Selling Points and Saving Lives

As avalanche rescue system gains industry acceptance, more manufacturers partner with RECCO

Since the avalanche transceiver's invention in the mid '60s, the essential gear for backcountry riders has been three items: a transceiver/beacon, a shovel and a probe. However, in the 20 years since its invention, the RECCO avalanche rescue system has been gaining steam. Now, through increased product partnerships with manufacturers around the snow industry, the system is poised to become the fourth essential item in the backcountry lineup.

More than 20 years ago, a personal avalanche tragedy provoked Magnus Granhed to develop the RECCO avalanche rescue system and, with the cooperation of Stockholm's Royal Institute of Technology, RECCO was first introduced to the public in 1983. The system had its fair share of hype over the years, but only during the last three has it gained respect as a legitimate rescue tool.

Composed of two parts, the RECCO system incorporates a reflector worn by the snowboarder or skier and a detector that's often positioned at summit rescue stations within ski areas. Utilizing improved and smaller cell phone and computer components, RECCO has been able to design a much smaller reflector product with an increased range. At only 3.5 pounds, the detector can be quickly brought to the avalanche site and the reflectors (which are virtually weightless at four grams) are no longer a burden to riders. Because of these advances in technology and reduction in the reflector's size, numerous snowboard and ski companies have begun partnering with RECCO to permanently integrate the brand's reflectors into their garments and products.

According to RECCO's Marketing Director Sven Sandahl, "By no means is RECCO competing with traditional transceivers. RECCO is an additional tool to work with them." A traditional transceiver emits a radio signal through a series of beeps and works on an elliptical field. The RECCO system works through a directional signal. The detector sends a signal out and, when it hits the RECCO reflector, the signal is doubled and sent directly back to the scanning antenna on the detector.

The unique design allows the system to pinpoint a burial location from a range of 200 meters, and that difference can shave precious seconds off of a frantic search mission. "I've been working with the RECCO avalanche system since 1985," says Snowbird, Utah-based Director of Snow Safety and Ski Patrol Peter Schory. "The latest technology improvements in the system give our rescue groups confidence that if avalanche victims are equipped with reflectors, we'll be able to find them."

Including Snowbird, nearly 440 organizations worldwide are equipped with RECCO detectors—from destination resorts such as Whistler/Blackcomb, Jackson Hole, and Squaw Valley to search-and-rescue teams like Wasatch Backcountry Rescue and Air Zermatt. Also for 2005/06, Vans, Pro-Tec, Sessions, The North Face, Quiksilver, and Billabong are all using the RECCO reflector in snowboard jackets, pants and even boots. It's likely that more of the reflectors will be appearing products as the company is in talks with more brands for 2006/07. At a manufacturer cost of five to 10 dollars, however, the RECCO system is often reserved for a brand's higher-end products. "It's technical feature that we can add to make our garments stand out that much more on the sales floor," says Quiksilver Team and Marketing Manager Brian Craighill. "It also says something about Quiksilver and the other companies who use it as brands that are serious about the mountains and outerwear."

Craighill also notes that because RECCO is not an avalanche transceiver, it may open the door for conversations about backcountry safety: "Conceptually, it's a conversation piece that helps customers' awareness in terms of avalanches, transceivers and mountain safety. If that inspires them to become aware of backcountry safety and getting snow conditions training, then that's great."

—Aaron E. Lowe