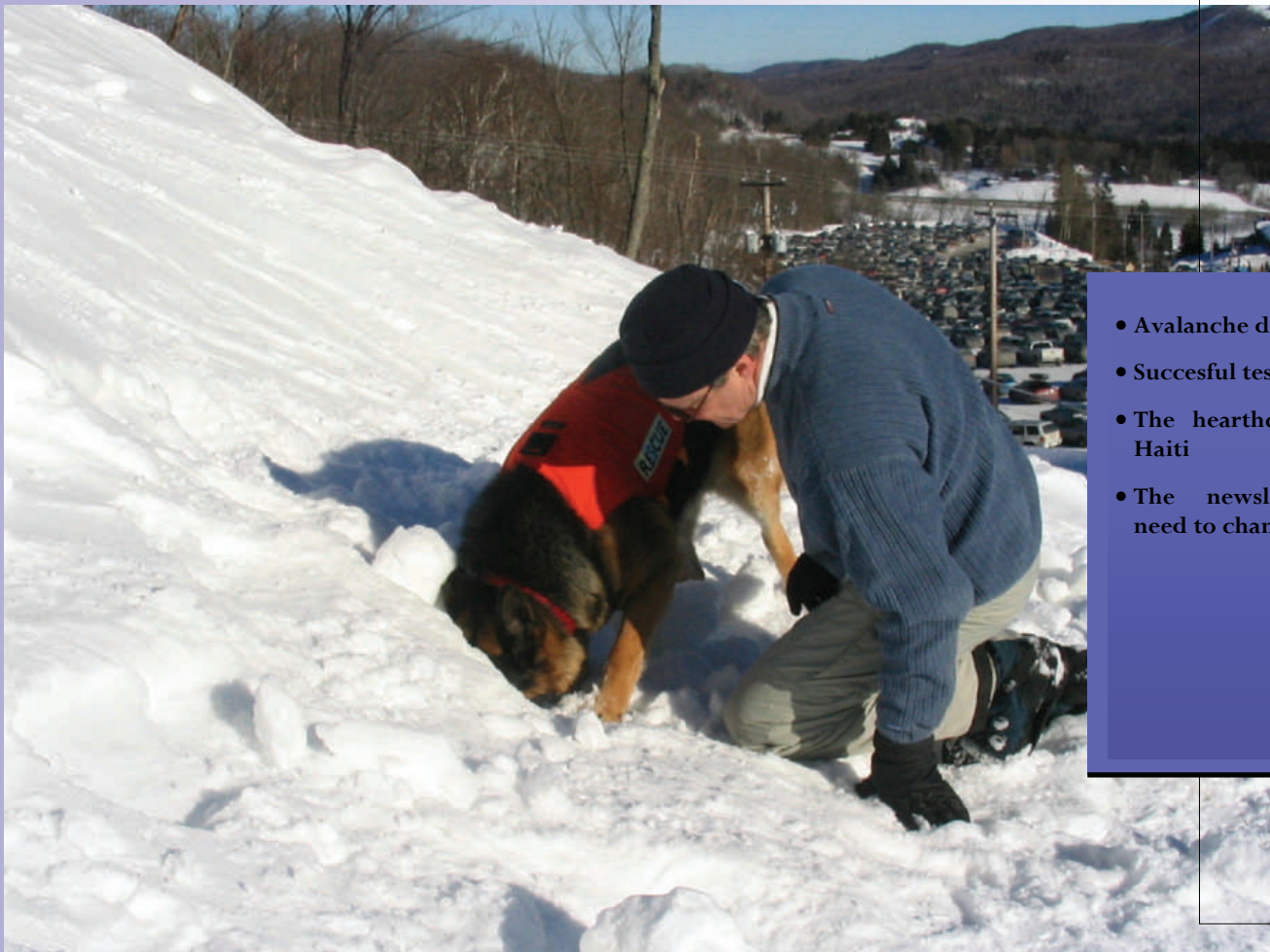


4 LEGGED RESCUERS

Year 3, Volume 1
February 2010

AVALANCHE DOGS—TIME IS CRITICAL



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- Successful tests
- The hearthquake in Haiti
- The newsletter, a need to change

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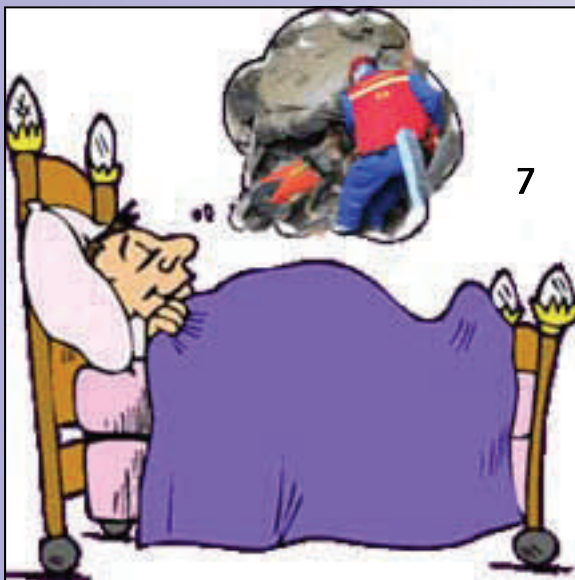
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Translator: Robert Savage

Version française également disponible

In the next issue:

Disaster search dogs

Deadline for next issue: April 15th 2010

AVALANCHE DOGS—TIME IS CRITICAL

In most regions of Quebec, the word avalanche is not part of our regular vocabulary. In Europe however, as well as many areas in North America, especially in the west of Canada and upper Gaspé, it is impossible to ignore the phenomenon of the avalanche which have been the cause of 40 deaths between 1992 and 1997.

In particular, we will remember the death of Michel Trudeau, the son of the former Canadian prime minister who was taken by an avalanche and also the avalanche that caused the death of several persons who had gotten together in northern Quebec to celebrate the New Year a few years ago.

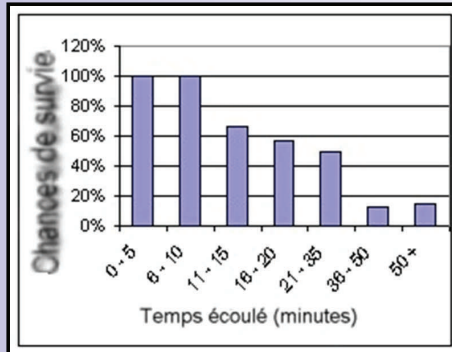
This type of event has played a role in making the authorities aware of the dangers of an avalanche. The end of the month of February and the month of March are the high-risk time for avalanches.

In the 1990's and at the start of the 21st century, winter sports are becoming more and more popular. Thrill seekers don't hesitate to explore new terrains in their search for wilder winter exploits. The daring of some of these individuals has proven to be a headache for the authorities in Provincial and National parks where every year there are more accidents on the mountains. Due to the vast extent of these areas, perfect control is a utopian idea.

This search for new adventures brings with it a series of reflections on the state of safety in the mountains. Every year, we are seeing more avalanches that unfortunately are claiming more victims.

The chances of survival for someone that is buried under tons of snow diminish very rapidly.

This table indicates very clearly that after 10 minutes, the chances of survival have greatly diminished. Therefore, it is very important to intervene very quickly in any attempt to rescue the victims. The majority of avalanche victims are between the ages of 20 to 29.



Faced with the magnitude of the problem caused by avalanches, provincial and national park directors had no choice but to look into the causes of avalanches. The greenhouse effect is an important factor.

The study of the layers of snow:

A daily verification of the density of the snow is conducted to determine the degree of the risk of an avalanche. The layers that are made by each snowfall or freezing rain are evident when the cut is made. A snow bulletin broadcast is done every day to inform the public of the degree of risk for an avalanche. In some areas, we go as far as provoking an avalanche to ensure public safety. They use mechanical means and dynamite in high-risk areas. Near villages and roads, barriers are installed to prevent avalanches from injuring the public.

Thanks to studies of the snow mantel at the Canadian Avalanche Center and the Centre D'Avalanche de la Haute-Gaspésie, we have developed an expertise that contributes greatly to the prevention of mountain accidents.

This expertise is very much appreciated by the police who are called upon in the event of the disappearance of a victim in an avalanche.

There are 2 types of avalanches:

The Loose Snow avalanche:

The first is caused by small masses of snow no larger than a baseball. They gather more snow, increasing in size as they roll down a slope. This type of ava-

lanche is often inoffensive but still carries certain risks.

The Slab avalanche:

When a mass of snow detaches itself as a block, it is called a slab avalanche, which is characterized by a linear break at the area where the avalanche began. This type of avalanche occurs when there is a fragile layer of snow under the layer that detaches itself. Slab avalanches are generally larger and more destructive. Despite all the studies, they are often difficult to predict. It is this type of avalanche that claims the most victims.

They are often started by man. The human factor is probably the most important trigger. Skiers and snowmobilers looking for off-trail locations often provoke the avalanche of which they become a victim. The vibrations from the motors of vehicle and snowmobiles are enough to start an avalanche.

Some high-risk areas are readily identifiable. The absence of trees or simply trees that are bent and stripped of branches are strong indicators. The summits of these zones are often steeper than the mountain in general. Park administrators are usually aware of these high-risk areas.

Strong winds favor the creation of overhangs at the top of the mountain. On the southern slopes of mountains, the March sun has the effect of heating the first layer of snow that may then have a tendency to detach itself.

An avalanche zone is divided into 3 parts:

The Start zone:

The start zone is the place where there was a cut of the snow mantel. It is often identifiable by a linear fracture.

The fall line zone:

The fall line zone is the corridor the snow follows down the slope. It is often narrower than the start zone. It is often characterized by a lack of trees or by trees with broken branches.

The deposit zone:

The deposit zone is the area where the snow accumulates at the foot of the slope. The snow here is often very dense. It is in this area that the victims are usually found.

What to do in the case of an avalanche?

We can't imagine the horror of seeing an enormous mass of snow that slams into us. Avalanche survivors generally recall the infernal noise of the wave of snow that engulfs them. In some parks, adventurers receive training on the precautions to take to avoid an avalanche and what to do if despite all this they become victims.

The outdoorsman can purchase or rent a device called a BEACON. We will get back to this later on.

Get rid of poles, skis, snowshoes, and snowboards or distance yourself from your snowmobile in order to avoid injury.

- Get rid of your backpack;
- Do your best to stay on the surface;
- Try to distance yourself from the center of the avalanche zone;
- Attempt to grab onto a tree;
- Keep your mouth closed;
- Keep your hands as close as possible to your face.
- As the avalanche loses its intensity:
- Push towards the surface with all your strength;
- Push an arm up towards the surface;
- Open up a space in front of your face.

A quarter of the people carried away by an avalanche die from the impact of the moving snow. They can also die by hitting a tree or a rock. In the 30 minutes after an avalanche, another 25% of the victims die from being asphyxiated. Thus, it is important to react rapidly. The first half hour is crucial.

The principal factors that cause death are:

- Impact with the snow mass; (fractures loss of blood)
- Asphyxiation
- Hypothermia

Other members of a group should begin searching for avalanche victims immediately in order to increase the chances of their survival. Only after the first half hour should we send someone to find organized resources. During the avalanche, other members of the group should try to keep sight of the victim and note the spot where they last saw them. Prior to starting a search, they should:

Assure their personal safety by evaluating the risk of a second avalanche;

If using beacons, put them in receiving mode.

When they begin the search, they should:

Identify the spot where the victim was last seen as precisely as possible;

Look for articles that belong to the victim;

Orient the search towards the collection zone.

The first searches are often disorganized. It is important to stay calm and establish a chain of command.

Beacons

The beacon is an electronic transmitter/receiver that allows the searcher to determine the exact location of an avalanche victim. This system is without a doubt the fastest and allows us to save lives.



Usually, when we must resort to probes or search dog teams, the victims that are found are already dead, unless these specialized resources are able to intervene very quickly. Unfortunately, in Quebec, search dog teams are located far away from the high-risk areas.

**Probes**

Compared to searches using beacons or search dog teams, probe searches are much slower. An evaluation of the avalanche must be done to identify the approximate position of the victims. We begin by doing a rapid probe of the deposit zone, in the most likely area of the zone where a victim could be located. In the beginning, we don't use the "line" method, which is much slower.

If the results are inconclusive, we would begin a "line" probe taking into consideration the spot where the victim was last seen.

Search Dogs

Contrary to what one may think, avalanche dog training does not start in the winter. I've noticed that dogs trained to find victims in the ruins of a building quickly develop the ability to find avalanche victims. The reverse is also true. For that matter, the basis of the training is identical. The dog learns that he can locate people that have been buried below the surface. Among the types of possible alerts, the simplest is to teach the dog to dig in the snow but we could also have them bark. We should not wait till we are on a mountain to teach him these techniques.

Transport to the search area

As in a collapsed building, access to the search area is often difficult. The dog must be familiarized with the different modes of transportation such as sleds, snowmobiles and helicopters. Exhausting the dog before it even gets to the search zone must be avoided at all costs. The construction of a bivouac area where the dogs can recuperate between periods of searching should be planned for.

The stages of training

Training dogs to search for avalanche victims is very demanding. We must be able to count on the help of qualified instructors and assistants. First of all, the handler and the helpers must be comfortable with being buried in the snow for extended periods of time. I assure you that for most of us it is the most difficult task to face. It happened that I once stayed for 8 hours in a hole. What an adventure... With a candle and a good book, we manage.

The dog must have grown a coat that will allow him to work in extreme climatic conditions. The preparation of the dog begins in September, allowing him to become acclimated to the colder temperatures. For the benefit of the victim, trim the dog's claws. Safety remains the most important element. The person who is buried must remain in constant contact with the outside. Identify a member who will be responsible for the safety of the victims. Diggers must be ready to intervene in the case of asphyxia.

The breathing rhythm of a panicked person rapidly increases which has the effect of reducing the available oxygen in the hole. For this reason, it is critical to bury the feet and body first. The head is then covered last.

It is also critical to make the holes as large as possible so as to contain as much oxygen as possible. On the other hand, the entrance must be quite small so that it can be hidden rapidly.

Then, it's the handler who is hidden first. The shovel crew buries him while the dog watches him disappear. All the while, the handler calls to the dog whose excitement continues to increase.

The dog should be encouraged to dig until he gets to his master. At that point, he has earned his favorite reward.

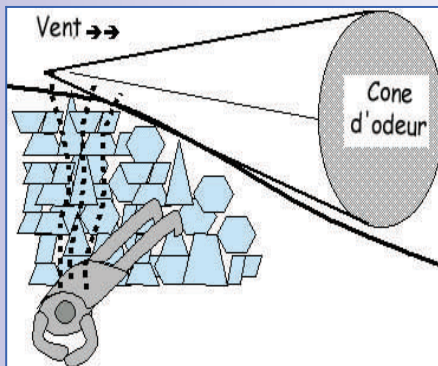
The same as in the woods, it's now the assistants turn to hide. The dog watches him being buried along with the dog's toy. The assistant calls to the dog all along to keep his excitement at the maximum. Increase the difficulty by covering the hole with more and more snow. Snowshoes are placed over the entrance and then covered with snow.

Note that the dog won't necessarily give an alert right at the entrance. As shown on the following drawing, the scent may escape through a kind of chimney where the snow is less dense, following the path of least resistance.

The longer that the victim remains buried, the more his scent will impregnate the mantle of snow and rise to the surface. On the other hand, his body heat can cause a layer of ice to form that will block the scent from rising to the surface.

That is why it is a good idea to have the dogs search before and after the passage of the probes. The probes have the effect of forming a sort of scent cone that allows the dog to detect odors at some depth.

Alternate the holes to give the dog a larger diversity of work. Change the starting point to avoid footprints in the snow.



Once the lesson is well learned, bring the dog to the area after the victim has been buried. Let the dog check the area. They often "find" this way. If not, then proceed more systematically by quartering the most likely area. Don't forget that time counts.

Train the dogs by burying an item under less than 30 centimeters of snow. It's said that this is the equivalent of a victim buried under a meter of snow. The lost and found at a ski center is an excellent source of items to bury. On the other hand, you should work first of all at finding persons. While objects



serve to augment the precision of the work, it is important to train with human victims. Time is critical in a search operation. We must avoid having the dog lose precious seconds to find a piece of clothing.

The dog that is trained to find humans will still give an alert on these objects but he won't lose time over it.

Build at least 3 holes for each exercise so as to avoid having the dog always going to the same location.

A buried victim may hear the searchers but the contrary is not necessarily true. On the other hand, the dog has excellent hearing may hear the victim.

On an operation

Don't forget that the roll of the K9 team is to search, not to dig. As soon as the handler is satisfied with an alert from his dog, he should move on and leave the digging to those whose job it is.

It is wrong to believe that a search zone must be "sterile" when a K9 team is to be used. The dog can be used even after probes have been used and digging has been done. The dog can work simultaneously with searchers providing they are downwind. Searchers should be ready to intervene immediately following an alert by the dog.

Each dog develops his own alert. First of all, the handler will recognize a change in the dog's behavior and he will push his nose into the snow. He may do this in several spots in order to determine the best location to start to dig.

The handler should recognize the maximum alert and withdraw, asking the searchers to begin digging. They will be quicker than the dog.

Sometimes, the dog's behavior will change but he is unable to indicate a precise location. The area should be marked and checked by the searchers.

It may even happen that the dog indicates up to five or six locations. This is particularly true in the case of a slab avalanche where a large slab of snow may cover the victim.

Prior to starting his work, the handler must plan an escape route in the case of a second avalanche. The search must be conducted rapidly. The handler must identify probable locations and leave the digging to the searchers.

What is the dog searching for?

It is a known fact that we are constantly losing dead skin cells at a rate of 40,000 per second. These dead cells have a tendency to be carried on air currents to the surface of the snow. In winter, these cells are trapped inside our heavy winter clothing. Generally however, a warm body in cold snow has the effect of diffusing the human scent more rapidly.

The temperature of the snow that favors an avalanche is usually just below the freezing point, which allows the dog to perform effectively even in extreme cold providing that he has been prepared. The wind will carry the scent, thus accentuating the speed of the dog's work. On the other hand, swirling winds will disperse the scent, thus interfering with the dog's work.

From my experience, when it is extremely cold, (- 15° C and below), the scent has a tendency to "crystallize", which makes the odor less perceptible if it has been in place for a long time. In this case, the alert is usually less precise. Training in various temperature conditions allow us to recognize these phenomena.

The smell of death

As I mentioned previously, the chances for survival of an avalanche victim diminish rapidly. It is therefore important that we are able to recognize the dog's alert in the case of a cadaver. The handler should prepare his dog in anticipation of coming across this scent.

In Quebec, avalanches are concentrated in the Haute-Gaspésie region in the north of the province. There are very few victims at the moment but the number is increasing due to the daring of the sport enthusiasts. There are very few specially trained K9 teams and they are located far from the high-risk areas. Thus, avalanche dogs are seldom used compared to the usage in the west of the country.

We never know...

Guy Lapointe

Sauvetage canin des Laurentides



SUCCESSFUL TESTS

Last November 22nd, Gerald Marcil of **Sauvetage Canin des Laurentides** and his dog Boomer were tested for the 400-meter hasty. I was also tested in the 400 meter hasty with my young dog Watson who is now 10 months old.

Both tests were successful.



Gérald Marcil, Guy Lapointe and their dogs Boomer et Watson

On December 6th, the team of Alexandre Neault and his dog Gala who were members of the group **Recherche et Sauvetage Equinoxe** were tested.



Alexandre Neault and Gaia

The same day, the team of Caroline Charette and her dog Mika, members of the group **Sauvetage Mauricie K-9** were also tested.

Both teams were successful.

What a great example of cooperation between teams.

The two teams were lucky enough to benefit from the experience of Julie St-Jean of the group **Equinoxe** who helped with their training.



Caroline Charette et Mika

Bravo to our four teams and thank you to everyone who contributed to their success.

EARTHQUAKE IN HAITI

The recent earthquake in Haiti is without doubt one of the largest natural catastrophes in modern times. This situation cries out to everyone, we all participate in saving lives.

Like me, you probably felt powerless in front of this situation. I was saddened to know that people were dying a slow death with no one to help. At the sight of K9 teams that came from around the world, I almost tore the arms off of my armchair.

For the past several years, **Sauvetage Canin des Laurentides** K9 teams have trained to search in the debris of collapsed structures. We have redoubled our originality for finding sites for training and I am presently working to develop standards.

A Quebec company called on our services to help to save hundreds of their employees buried under the rubble of their factory in Haiti and having seen no sign of rescue in five days. Few among them survived. Our anxiety was high as we hoped to be able to offer some help.

Unfortunately, it did not come to pass. We learned that no K9 team was going to be sent to Haiti. What a letdown! Did the label of "volunteer" cost the lives of hundreds if not thousands of people. For the moment, I am unaware of where this decision originated.

As a consolation, we assisted the minister for public safety with the arrival of Haitians at Dorval airport. An enriching experience I must say.

We had the opportunity to meet some K9 teams who were returning from Port-au-Prince. They had been deployed

with the agreement of the government of Canada.

Still, I keep up my hopes. This experience leads me to conclude that we must keep working hard because there will be a time it will be for real and you can't "improvise" a K9 disaster search team.

We continue to train hard.

Guy Lapointe

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Share this newsletter with all the search and rescue dog handlers who you know.

Should you wish to have your name added or deleted from our mailing list, please send us an email.

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Thank you

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THE NEWSLETTER NEEDS TO CHANGE

The first issue of **Four Legged Rescuers** was published in August of 2008. The goal that I had given myself was to encourage the volunteer dog handlers of Quebec to share their experiences and adventures as some of you did.

Unfortunately, the objective was not obtained. After seven issues, I find that you have shown very little interest in the publication.

Despite the fact that many of you expressed an appreciation of the importance of this type of communication, only a few people took the time to submit articles.

I would like to thank them.

On the other hand, your numerous comments lead me to believe that it was not a total loss.

The editing and translation of a newsletter like this requires a lot of work and I find that it did not incite the level of interest that I had hoped for.

Next May, I will publish a last article on K9 disaster search teams.

At the moment, I am in discussions with AOBRS to adopt a formula that would address all of the volunteer rescuers in Quebec.

To be continued...

Guy Lapointe

