

The disaster search dog; the ultimate tool to locate the scent of live buried victims

By Neels de Klerk, station commander: fire safety, Breede Valley Fire, Rescue and Disaster Management Services

Search and rescue (SAR) dogs date back to as far as the 1660s in the St Bernard Pass in the Alps



Being Spiderman or Batman and doing the almost impossible is actually not so far reaching if you and your disaster search dog (DSD) are well trained when responding to a collapse structure or any disaster scenario.

History of search dogs

The use of search and rescue (SAR) dogs date back to as far as the 1660s in the St Bernard Pass in the Alps between Switzerland and Italy. Dogs were used to accompany guides through the pass to help with trapped persons in the snow. SAR dogs were then later used by the British, German and Americans to locate wounded soldiers during the First and Second World Wars. The American Rescue Dog Organisation was only founded in 1972 and the use of search dogs has since spread all over the world.

The first disaster search dogs in South Africa for the use by fire departments, was only trained in 2009.

Specific qualities of a good disaster search dog:

- High play drive (loves to play with some sort of toy)
- Non-aggressive towards people
- Non-aggressive towards other dogs
- Must not be bothered by loud

sudden sounds

- Must not be easily distracted
- Willing to listen
- Must be able to trust and use its excellent nose
- Must be agile, bold, energetic, determined and have the strength to work in the most difficult conditions.

Understanding their unique noses

A dog's nose does not only dominate their faces but also their brains as well. They rely more on their smell to interpret their world as much as you depend on sight. Much like humans the inside of their noses are bony scroll shaped plates, over which air passes. A microscopic view of this organ reveals a thick, spongy membrane that contains most of the scent-detecting cells, as well as the nerves that transport information to the brain. In humans, the area containing these odour analysers is about the size of a postage stamp. If you could unfold this area in a dog, on the other hand, it may be as large as 60 stamps or just under the size of an A4 paper.

Though the size of this surface varies with the size and length of the dog's nose, even flat-nosed breeds can detect smells far better than people. See table below indication the number of receptor cells in a dog's nose comparing to humans.

Species	Number of scent receptors
Human	5 million
Dachshund	125 million
Fox terrier	147 million
German Shepherd	225 million

A dog's brain is also specialised for identifying scents. The percentage of the dog's brain that is devoted to analysing smells is actually 40 times larger than that of a human! It's been estimated that dogs can identify smells somewhere between 1 000 to 10 000 times better than nasally challenged humans can.

The human body sheds approximately 40 000 rafts, cornflake shaped cells, each minute. A combination of sweat and bacteria on these skin rafts gives a distinct scent. The scent of each human is also different as the particular scent may depend on the person's diet, blood type, emotional process, hormone balance etc.

Disaster search dogs are trained to detect these rafts when they are working on rubble piles. They are there for scent detectors and not victim locators. These dogs will indicate the spot where the live human scent is present.

The handler

A dog's nose is irreplaceable but they still need a handler that would be able to direct them over the rubble to make sure all search areas are covered. This search team, when working well, could save SORTeams an enormous amount of time when time is limited during disaster scenarios.

A search and rescue dog handler should have several attributes including: honesty, courteous, respectful, dependable, professional, safe driving habits and record and in decent physical shape.

If you can tick the following positively you might be considered as a candidate dog handler:

- Candidate should exhibit ability to work independently and unsupervised
- Candidate should be expected to have facilities to properly and safely house a departmental canine
- Candidate should have a proper aptitude toward animals
- Candidate should be of high calibre from within the department
- Candidate should have a keen ability to communicate professionally with the public
- Candidate should have proficient

report writing and record keeping skills

- Candidate should also exhibit a calm professional manner in dealing with stressful situations
- Candidate is in good physical health
- Is the candidate's family open to having a working canine in the house and are they supportive?
- Does the family understand that the handler and canine maybe called out at any time of day, interrupting family events, holiday celebrations, etc?
- Will the neighbours be a problem, such as complaining about barking or not liking canines in the area?

Communication between dog and handler

If handlers do not understand how dogs think, communication will probably break down totally. Dogs do learn the meaning of some words but are very quick to learn sounds, routines and body language. During training it is of utmost importance that handler adhere to giving the same commands, follow the same routines when the dog is directed to search and trust that their dog will do what it is trained to do. During searches the handler only gives commands when required to make

sure the search area is covered or if he spots safety concerns. The dog is left to use its best device, its nose, to detect live human scent. By barking when the find is made, the dog communicates to the handler.

Communication between dog and handler is crucial as access to rubble piles is usually extremely limited for the handler and dogs often work without the handler in sight.

Current status

The Breede Valley Fire Department, as part of its SORT capability and the Western Cape SORT strategic plan, has recently qualified two disaster search dog teams. These teams attended part time training sessions over an 18-month period and were evaluated on a similar standard to the FEMA Type 2 Disaster Search Dog evaluation process. "We, Breede Valley Fire Department in partnership with the Detection Dog Training Institute, have also developed a standard suited for South African environment," said Neels de Klerk. Some parts of wilderness search programme were included because these dogs would also be used to search along riverbanks during flood scenarios as these are quite prominent types of incidents locally. 🐾



Briefing of handler before the evaluation



Muriel



Communication between Daisey and handler