

# Search and rescue: K9 an essential function of fire services

By Morné Mommsen

There is a great deal of debates on the table of who oversees an emergency scene and where do dogs fit in. The opinion of the author is to go and read each available act in detail and the truth will be revealed. Because many claim they do search and rescue but actually their function is search and recovery and search and rescue is a municipal (fire department) mandate.

## Areas where dogs can be of great assistance

Dogs are invaluable assets in search and rescue (SAR) operations due to their exceptional olfactory capabilities, agility and trainability. Here are some areas where dogs play a crucial role in search and rescue environments:

- Urban search and rescue
- Wilderness search and rescue
- Water rescue (urban flooding, river flooding)
- Narcotic or explosive detection (hazardous material)
- Special K9 services (medical detection, humanitarian missions)

Dogs within the emergency services such as disaster risk reduction/management can benefit us ie how can dogs assist us, thus, K9 support is an integral component of emergency services regarding disaster risk reduction and management.



## Rapid response

K9 teams can quickly deploy to disaster-stricken areas, providing a rapid response that is essential for locating and rescuing survivors.

The speed of K9 teams can significantly reduce response time, increasing the chances of finding people alive in the critical initial hours following a disaster.

A trained dog can replace 30 rescuers on a single search and can search a 300 wide x 800-metre-long area in under 10 minutes if the area and condition allow for it.

Dogs just have amazing abilities and can be used in many different ways to benefit us.

## Search efficiency

Dogs have a highly developed sense of smell, allowing them to detect scents even in challenging environments.



K9s can cover large areas quickly and efficiently, locating survivors buried under debris or trapped in hard-to-reach places that may be inaccessible to human responders.

Fire safety can also benefit by making use of a professional trained accelerant detection dog, which can pinpoint traces of unburned fuel, by making use of 300 million olfactory receptors in their noses compared to our six million. Smell is a dog's primary sense and it is 10 000 to 100 000 times more acute than ours. If we can see what a dog can smell, we will be able see the past.

## Talking about arson detection

When fire investigators such as the fire department or the police and forensic engineers are called to the scene after an incident, it is their job to determine the origin and cause of the fire. Sometimes things just do not add up. Suspicious circumstances surrounding the physical evidence ▶



*Morné Mommsen and Missile*

- ▶ on site can lead investigators to suspect arson and foul play.

Fire investigators take a systematic approach to understanding the science behind an incident and one of the most powerful tools available to forensic experts analysing the scene of a fire is a professionally-trained accelerant detection dog.

### **Accuracy and efficient are the name of the game**

Accelerant detection dogs are trained to locate the residual scents of flammable substances such as petrol, diesel fuel, lamp oil, paint thinner and kerosene that are often used as accelerants in cases of arson. The dog will sniff out and lead fire investigators to traces of unburned fuel so that samples can be taken from precise locations and then sent to a lab for analysis. Dogs can detect extremely low volumes of fire accelerants. They can find fragments of accelerants at

fire scenes far more quickly and accurately than humans, at levels that are at and sometimes beyond the sensitivity of lab testing techniques and equipment.

A canine unit's involvement in a fire investigation brings incredible value to the file when it comes to cost and time efficiency. As experienced investigators and forensic engineers, we are certainly capable of analysing burn patterns: deep charring, low burning areas of consumption, shapes and sizes of burn areas and other factors for evaluating potential samples. We suspect there are accelerants in particular areas and then take samples for the lab to test. But a dog trained in accelerant detection brings a whole new level of accuracy and efficiency to a fire scene investigation.

### **Precise sampling plus lower lab testing cost**

Using an accelerant detection dog during a fire investigation is always the most efficient and cost-effective method of identifying potential samples for lab testing. Fire accelerant lab tests cost approximately R6 000 per sample and using an accelerant detection dog can help insurance companies improve accuracy and save money on the cost of a fire investigation.

Fewer samples mean reduced cost. Physical evidence can raise a 'red flag' for forensic experts but without a dog to zero in on precise locations, investigators must rely on burn patterns alone to identify areas for sampling. That can mean more samples are required for lab testing and more testing-related costs for the insurance company. An accelerant detection dog can identify precise locations for sampling,

which means fewer samples and a reduced overall cost.

Using an accelerant detection dog is like bringing the lab right into the fire investigation scene. A dog can sweep an entire building relatively quickly, and pinpoint exact locations that need to be sampled. There is very little room for error; the dog is never wrong. In fact, standard lab tests can sometimes come back negative but because the dog sensed something, deeper tests are conducted and accelerants can be revealed.

### **Humanitarian aid**

K9 teams contribute to the humanitarian aspect of disaster response by locating survivors and providing the necessary information for timely medical assistance and evacuation.

### **Special skills of dogs**

Some search and rescue dogs are trained for specific tasks, such as detecting live humans, locating cadavers or identifying specific scents related to disaster response eg gas leaks or hazardous materials.

### **Training and preparedness**

The presence of well-trained K9 teams enhances overall disaster preparedness and response capabilities.

Regular training exercises and drills involving K9 teams help maintain their skills and ensure effective coordination with other response units. Advance training is a strategic investment in preparedness.

### **Enhance safety for responders**

"My Dog gave me the signal – get back." K9 teams can help identify safe pathways for human responders by detecting potential hazards or unstable structures.





Their ability to locate victims can prevent unnecessary risks for human responders, allowing them to focus efforts where they are most needed.

**Community awareness**

The presence of K9 search and rescue teams can raise awareness about disaster preparedness within communities, encouraging proactive measures and education on safety protocols.

**Multi-agency collaboration**

K9 search and rescue teams often work in collaboration with other response agencies, fostering a coordinated and integrated approach to disaster management.

**Public confidence**

The use of K9 teams instils confidence in the public, as these animals are often seen as heroes in disaster situations. This confidence can be vital

for maintaining calm and order during and after a disaster.

**Post disaster recovery**

K9 teams continue to be valuable during the recovery phase by helping locate missing persons, identify hazards and ensure that affected areas are safe for rebuilding.

**Many claim they have a qualified search and rescue dog**

- If your dog is not certified by an accredited IRO or FEMA entity, you merely have a mantrailing (air scent) or tracking (ground disturbance) dog.
- To have a SAR-certified dog and to be able to utilize it for SAR the dog must be a minimum of 18 months old, either be certified for live or deceased but not both and be certified on an approved rubble pile; six victims under 20 minutes without any false indication (food or toys).
- Handler must be trained in DH1-5, tracking with a HPCSA

registration and NFPA 1006 rescue qualifications.

- Additionally, handlers need a Performing Animal Protection Act (PAPA Licence).

**In summary**

K9 search and rescue is an integral component of disaster risk reduction and management, providing rapid, efficient and specialised support to enhance overall response efforts.

The purpose of incorporating K9 units in the emergency services, which include disaster risk reduction activities, is to boost and optimise the overall effectiveness of emergency response efforts. K9 units, consisting of specially trained dogs and handlers, are vital assets in various phases of disaster management, including preparedness, response and recovery.

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