To better integrate volunteer canine search capabilities with emergency services for search response
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Signed: Sue Pritchard

Dated: 22nd August, 2016
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Introduction

Every day in Australia, volunteer search teams are undertaking search operations for missing people. These operations are predominantly life critical races against time that rely almost entirely on volunteer human resources to deliver an outcome.

The high stakes of a human life make them physically and emotionally challenging and their far reaching impacts extend beyond the missing person and their families, often reverberating through communities and emergency service agencies.

Since my first missing person search as an emergency service volunteer over 10 years ago, I have long held a desire to improve the way we approach search in Australia.

Ironically, it was another Churchill Fellow that first introduced me to Bob Koester’s Lost Person Behaviour search methodology book and told me about the use of water search dogs to find people that had drowned. The first seeds of this research were planted.

It was however, when I saw the amazing work of volunteer search dog teams undertaking urban search and rescue (USAR) training here in Australia that my direction of research really took shape. I was disappointed to see the tremendous efforts of these volunteer search dog organisations largely unrecognised and under-utilised by the Emergency Services.

When I compared the number of USAR canine search resources to those of other countries, it was staggering to see how behind Australia was in supporting and developing this capability. This revelation was the final impetus needed to undertake this research in earnest.

The Churchill Fellowship afforded the most unique of opportunities, to pursue international research with an open mind and with the means to open doors.

From New Zealand, United States, England, Ireland, Northern Ireland and Switzerland I interviewed, trained and responded to searches with volunteer search dog organisations, Police and Emergency Service personnel. In these countries I was rewarded with knowledge, resources and experience from an international cohort of passionate, like-minded individuals, who had been practicing land, water and USAR search utilising volunteer search dog capabilities for decades.

The insights gained from this research are not difficult or costly, but could make a wealth of difference to search delivery and outcomes nationally. This could include a bank of volunteer search dog resources that could be drawn upon in the darkest of disasters when a dog’s nose is unrivalled in a pile of rubble or on a daily basis complimenting the efforts of volunteer ground search teams.

Through improved delivery of search methodology and training, development of standards to unify and strengthen volunteer search dog capabilities, clear protocols to register, activate, and deploy resources, the enhancement of search can bring us in line with the rest of the world.

It will take education, a shift in attitudes, goodwill and trust, but with better integration of volunteer search dog capabilities with Emergency Services, everybody in the community stands to benefit.
Acknowledgements

I would like to acknowledge the support of the Churchill Fellowship Trust in awarding me the Fellowship and sincerely thank them for providing me with the opportunity and support to undertake this research.

There are so many generous people that have shared this journey. I thank you so much for your interest in the research, your generosity in sharing your knowledge and your warmth in welcoming me so readily.

Particular thanks must go to the following people....

Firstly, all the members of the volunteer search dog community in Australia for their tireless efforts in building this capability and who have inspired and motivated this research.

Referees Jim Smith and Matthew Harper for their kind words, belief and encouragement.

Fellows Phil Campbell, Ian Krimmer and Anthony Hatch for their guidance.

Within the NSW State Emergency Service, former Commissioner Adam Dent, Acting Commissioner Greg Newton, Acting Deputy Commissioner Mark Morrow and my work family in the Media and Communications team.

Brenda Woolley, Sally Dickinson, Billy Chrimes, Bob Koester, John Ball, Dave Marsh, Mike Dermody, Neil Powell and Andrea Pintar, who are truly special people.

My family Tim, Laura, Tess and Genni Pritchard, brother Matt Carty and dear friends Fiona Johnson and Dinah Wilson for their support.

Finally, the four legged heroes - the search dogs, whose love of the hunt has been harnessed to provide hope and peace for those missing and their families.

This research is dedicated to my parents, Jan and Tip Carty, who provided me with a strong and loving foundation and a moral compass to steer my course.
Executive Summary

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Address: 6-8 Regent Street, Wollongong, NSW 2500 - Telephone: 0458 737 100  
Project Description: To better integrate volunteer canine search capabilities with emergency services for search response  
Countries visited: New Zealand, United States, England, Ireland, Northern Ireland, Switzerland

Internationally, volunteer search dog capabilities have been an integral tool used in missing person and urban search and rescue (USAR) response for decades. Australia however, is lagging behind in the recognition, utilisation and development of this critical resource for search operations.

The growing threat of terrorist attacks, plus large scale natural disasters, has only recently brought USAR canine development into focus in Australia. Our USAR canine resources are still at a critically low level with less than a dozen qualified teams across the country. In New Zealand, through bitter experience, their USAR canine capability development has grown immeasurably and highlighted the importance of proactive resourcing for in-country USAR response. In other countries, the value of dual trained area search and USAR volunteer search dog resources has also been recognised.

The national increase in dementia and despondent missing person searches, plus ever increasing demands upon Police and other Emergency Service resources, has increased multi-agency collaboration. Internal reviews on search response of Police services in the United States and Northern Ireland have acknowledged the skills and experience in volunteer search teams, including search dog teams, and led to their inclusion in memorandums of understanding and asset registers. This has improved rapid activation and deployment of these teams, increasing the effectiveness of searches particularly those involving vulnerable people.

Volunteer search dog organisations across Australia need to work together through the formation of a national body to establish clear direction, develop national standards, and provide training and assessment support to ensure quality, consistency, and accountability of the capability. The development of the National Search and Rescue Dog Association in the UK is but one example where the evolution to a national body has increased confidence in utilisation by Emergency Services.

Search training, is a key area where Police and Emergency Service personnel can be educated on air scent, scent specific trailing, water search and other volunteer search dog capabilities. Training in search methodology, such as Lost Person Behaviour, provides planning and utilisation strategies for the use of volunteer search dog teams. Sound processes derived from this training enhances search success, as observed during a real search in the Shenandoah National Park, Virginia, US.

Capability development is valuable to a range of stakeholders. Police services in the US, UK and Ireland, actively use volunteer water search dogs, to assist Police dive teams by pinpointing the position of people or human remains in rivers, lakes, dams and the ocean. In addition to Police, the development of such a capability in Australia would benefit organisations such as the State Emergency Service and Marine Rescue who regularly provide assistance with water searches.

The full report is available at www.churchilltrust.com.au with research findings to be disseminated through national conferences and publications. Resources will be provided to the Australian Disaster Resilience Knowledge Hub and presentations are planned for emergency service organisations and volunteer search dog groups. The author sincerely thanks the Churchill Trust for the opportunity to undertake this research and looks forward to working with agencies across Australia into the future.
The program of study was structured initially to fit around key training activities and conferences. It was flexible to fit availability of interviewees and new opportunities for research that arose from these connections. In some cases pre-organised visits were not always possible, such as to the Fairfax County USAR Taskforce due to their upcoming re-certification. However the upside of this was attendance at a real missing person search in Virginia which yielded a wealth of unexpected information. I am indebted to the following people who were rich in knowledge, experience and generosity.

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The following training activities, conferences and searches were attended:

- NZ USAR Taskforce Operational Handlers Weekend, Christchurch NZ
- NZ USAR Taskforce Progress Training and Assessment, Hamilton, NZ
- 2016 Virginia Search and Rescue Conference, Appomattox, Virginia, US
- Virginia Search and Rescue Dog Association Water Search Training, Virginia, US
- Nicole Mittendorf missing person search in Shenandoah National Park, Virginia, US
- Peak District Mountain Rescue Search dogs training,
- SARDA Ireland National Training weekend, County Wicklow,
- Missing person search, County Wicklow
- Irish Search Dogs Team Training
- SARDA Ireland North Drowned Victim Search Dog Training Weekend, Newcastle, Northern Ireland
- REDOG International Training Week (held every 5 years), Epesses, Switzerland

Thanks also to the folk who have provided insights, co-ordinated meetings and opportunities, chauffeured me, and provided assistance and kindness including...

Background

In Australia, the use of volunteer search dog teams for missing person search and Urban Search and Rescue (USAR) is in its relative infancy in comparison to other parts of the world.

There are many dedicated people within Australia who have been working for decades to gain recognition and acceptance of volunteer search dog teams as a valuable search tool. Despite their considerable efforts to promote their capability and engage with emergency services, volunteer search dog teams remain a resource which is poorly understood and under-utilised in this country.

Within Australia, volunteer search dog capabilities currently fall into the following categories:

- Volunteer search dog capabilities that have been developed within Government based emergency service organisations;
- Private, self-funded or sponsored volunteer search dog groups that provide trained members to USAR taskforces;
- Private, self-funded or sponsored volunteer search dog groups that have no current affiliations with emergency services

Through the efforts of some committed volunteer search dog handlers, the Australian government recognised the value of volunteer search dog groups and made a commitment to the “creation of an Australian Search Dog Framework.” The Attorney General’s Department through Emergency Management Australia (EMA) was tasked with developing the framework in consultation with search and rescue dog associations across Australia and jurisdictional agencies.

In 2014, the report ‘A Strategic Framework for Volunteer Search Dogs in Australia – A guide for future action’ was produced with principles and actions to provide direction aimed at increasing recognition and utilisation of volunteer search dog capabilities.

The two principles that underpin the ability for the volunteer search dog capabilities to be utilised by emergency services are Capability Recognition and Resource Co-ordination.

The actions outlined to provide pathways to better integrate volunteer search dog capabilities with emergency service organisations were:

1. Formation of a National Volunteer Search Dogs Organisation;
2. Nationally agreed terms of reference need to be developed;
3. Creation of an online capability forum for volunteer search dog organisations;
4. Harmonisation of standards;
5. Capacity building;
6. Volunteer recognition;
7. Stakeholder co-operation;
8. Jurisdictional arrangements;
9. Exercise and training access;
10. Deployment arrangements;
11. Strategic communications
The research undertaken as part of this fellowship is very much directed at providing information and insights to help inform some of these actions and is focused on:

- Current canine search utilisation methods and procedures
- Barriers to capability recognition and engagement
- Integration and co-ordination strategies for rapid deployment
- Training and fit-for-task standards and requirements

This findings of this research will provide a platform for ideas and discussion to continue.
Search Dog Capabilities

Understanding the variety of ways trained canines can be employed for search situations is essential...

Air Scent Search Dogs use airborne rafts of skin and other sources of scent to detect people. They are particularly valuable in large outdoor environments and are the most commonly trained and utilised search dogs for missing person searches.

Drowned Victim Search Dogs or Water Search Dogs detect scent from deceased people and human remains in lakes, rivers, dams, the ocean or other bodies of water.

Scent Specific Trailing Dogs use an uncontaminated scent article from the missing individual to follow the scent left by that person. The dogs usually work on a long lead and can sometimes follow a trail which is up to 3 days old.

Scent Specific Area Search Trailing Dogs are currently being developed in the United Kingdom and use the similar principle to Scent Specific Trailing Dogs, but work off lead.

Tracking Dogs work with their nose close to the ground and focus on ground disturbance as well as human scent. They stay close to where the person has actually walked.

USAR or Disaster Dogs work with Urban Search and Rescue (USAR) teams to search collapsed buildings and structures to detect live persons that may be trapped. They are trained to work on unstable surfaces, in confined spaces and be hoisted and lowered using harnesses.

Human Remains Detection or Cadaver dogs are trained to find deceased persons and human remains.

Avalanche dogs are trained to detect people that have been trapped under the snow due to avalanches.
Search Organisation Structure

In most of the countries visited area search (search for missing persons on land and in water) is carried out by specialist volunteer search and rescue groups, who have a focus entirely on search and rescue. Within these teams, dogs are another specialist tool that have been developed which compliment other specialist teams such as vertical rescue (rope), cave rescue, swiftwater rescue etc.

In New Zealand, the predominant search and rescue organisation is New Zealand LandSAR. Within this organisation there are New Zealand LandSAR Search Dogs, who comprise of operational dogs and handlers qualified for air scenting and tracking area search and avalanche search operations.

In the United States, the state of Virginia has over 25 volunteer search and rescue groups. Of these groups, 7 groups are dedicated volunteer search dog teams, including the Virginia Search and Rescue Dog Association. The teams have dogs trained for trailing, air scenting, human remains detection and water search.

In England, Wales, Scotland, Ireland and Northern Ireland, the volunteer groups that specialise in search and rescue are the Mountain Rescue and Lowland Rescue groups. Within the individual groups they may have anywhere from one to several dog handlers who are members of the umbrella organisation for volunteer search dogs in the UK, the National Search and Rescue Dog Association (NSARDA).

In Switzerland, the REDOG (Swiss Disaster Dog Association) organisation has both USAR trained dogs and air scent area search dogs. There are currently about 40 mission ready dog teams in REDOG. And the REDOG organisation has approximately 650 members in Switzerland.

In Australia, land and water search is co-ordinated by National, State and Territory Police Services and are primarily supported operationally by volunteer organisations including the State Emergency Service, Rural Fire Service, County Fire Authority, Volunteer Rescue Association, and Marine Rescue. Unlike the search organisations visited in other countries, search response for these agencies is a supporting role and not the primary agency response focus. The Western Australian and South Australian State Emergency Service both have developed area search dog teams within some of their volunteer units.

Urban Search and Rescue (USAR)

With regards to the Urban Search and Rescue teams interviewed, the provision of dog handlers varied.

The New Zealand USAR Taskforce comprises totally of volunteers that are sourced through the NZ USAR Search Dog Association.

In England, there are no longer volunteer search dog teams utilised in their UK USAR response capabilities. Instead the dogs and handlers come from within the ranks of the Fire Service.

In the United States, the USAR taskforce members are volunteers, although many also come from the ranks of Emergency Services.

In Switzerland, REDOG- Swiss Disaster Dog Association, develops teams for USAR response. These teams are all volunteers and can also be utilised by other countries for USAR deployments.
Barriers to recognition, utilisation and capability development

The focus of this research is to improve the integration of volunteer search dog teams with Police and Emergency Services for search operations.

A broad question was asked to the people interviewed – “what do you perceive to have been the barriers to the use of volunteer search dog teams by the Police and Emergency Services for search response and how have you overcome them?”

The responses I received from interviewees largely fell into the following reasons or perceptions:

- Lack of understanding or training on what volunteer search dog teams can offer as a search resource and how they can be utilised effectively
- Preference for using Police dogs to undertake the search
- Breakdown of relationship between local Police and volunteer search dog teams
- Lack of faith in the ability of volunteer search dogs teams
- Historical issues of unprofessional behaviour by dog handlers on a search
- Concerns over the physical and psychological fitness of dog handlers

From these responses, plus input from the work undertaken as part of the Strategic Framework for Volunteer Search Dogs in Australia, I have endeavoured to categorise my research under the following topics:

- Search Training and Methodology
- Search Arrangements – MOUs and Registration
- Activation
- Deployment
- Training and Assessment
- Standards
- Fit for Task – Physical and Psychological
- A National Agenda
Search Training and Methodology

One of the key findings of this research was that search training, including rigorous application of search methodology, has a fundamental influence on the usage of volunteer search dog groups.

Having key personnel trained as specialist search managers and planners that are trained and experienced in search methodology, tactics and co-ordination, both within the Emergency Service and volunteer search agencies, greatly enhanced the way searches were conducted and ultimately their level of success.

This training includes identification and utilisation of a range of search resources including volunteer search dog teams.

**Search training**

As mentioned previously, in many overseas countries dedicated search and rescue teams and agencies exist where search and rescue response is their core role.

In countries like the US and UK, the searchers often have more specific training than the Police. The Police recognise this and utilise these knowledge and skills effectively by often giving the volunteer search teams carriage of the field search component, allowing the Police to use their time and resources to focus on the investigation and still remain in control of the overall operation.

The high quality of volunteer search training, such as for Mountain Rescue teams, has been recognised particularly in the UK, Ireland, and Northern Ireland, where although there may be a Police presence at the search command centre, the search planning, co-ordination and reporting is carried out by the volunteer search teams. Police concede that particularly in mountain rescue scenarios, they do not have the skills or training to undertake the search and rely on the expertise of the specialist Mountain Rescue teams to undertake the searching.

In Virginia, the Virginia Department of Emergency Management (VDEM) ensure that within their Search Management training courses they provide a component on the various types of search dogs, what they do and how they can be utilised in search scenarios. Rich Theal (Fairfax County Police Service) confirmed the basic Police search course he had undertaken didn’t cover the same level of detail as the VDEM search management courses.
In Canada, a particularly high profile search for a young child (Andy Warburton) was the catalyst for an overhaul of search management and training in that country. It lead to the development of the ‘Managing the Lost Person Incident Course’ and a national review of search standards. National standards and core competencies have now been developed for Search Managers, Ground Search personnel and Search Team Leaders, with training being developed for these roles.

In Australia, the main agencies that contribute the bulk of on ground search resources are the State Emergency Service (SES), volunteer fire service agencies like the Rural Fire Service (RFS) or County Fire Authority (CFA) and other agencies such as the Volunteer Rescue Association.

Providing volunteers to missing person searches is a very large component of their daily business, with the NSW State Emergency Service (NW SES) providing volunteer resources for 350 - 450 missing person responses per year, in excess of 20,000 volunteer hours. (NSW SES Canine Unit Review 2014)

For the NSW SES, as with other search team providers, this response is classified as a support role to the NSW Police. As such the investment into search training and capability development in these support agencies is secondary to the training for the combat/core roles of providing a response to storms, floods, fires etc.

**Search in Australia – the role of the National Search and Rescue Council**

In Australia, the National Search and Rescue Council is a cooperative body that is responsible for the national search and rescue response arrangements in Australia. The Council members are from the Australian Maritime Safety Authority, the Australian Defence Force and State, Territory and Federal Police.

The two main publications, the Australian National Search and Rescue Manual (2016) and the Land Search Operations Manual (V8.2 2014) are the primary reference publications relating to search in Australia.

The Land Search Operations Manual (V8.2 2014) does mention the use of search dogs, however, the reference is only to tracking and cadaver dogs. Whilst the checklist of Land SAR resources it mentions the ‘Dog Squad’ which is presumably referencing a Police asset. The document makes no reference to volunteer search dog resources, nor other search dog capabilities such as air scent, trailing, water search etc.

Throughout the manual there are numerous references based upon, Lost Person Behaviour methodology, where dogs are recommended as a search strategy for missing person categories:

- Child 1- 3 years – “Dogs may be helpful if used quickly”
- Child 4 - 6 years – “Dogs may be helpful if used quickly”
- Child 7 - 12 years – “Use dogs if available”
- Child 13 - 17 years – “Use dogs if available”
- Psychological illness – “Dogs may be of use”
- Developmental Problems – “Dogs may assist”
- Alzheimers/Dementia – “Use Dogs or Trackers”

The manual acknowledges and encourages the use of dogs as a search tool, however this is in relation to tracking and cadaver dogs only. The manual does not mention the use of dogs to clear areas.
Search Methodology – goodbye to line searching

Line searches are considered an archaic approach to missing person search in the countries visited. Instead, science is applied through a range of methodologies developed upon search statistics and behavioural information, which are combined with local knowledge and the right resources.

Lost Person Behaviour (LPB) search methodology

The ground-breaking work of Robert (Bob) Koester in his publication *Lost Person Behaviour* (2008) was to develop a search methodology that is informed by over 150,000 searches collected worldwide and analysed within the *International Search and Rescue Incident Database* (ISRID). Australia was one of the many countries that contributed to this project. From this book, Bob has gone on to develop *Lost Person Behaviour Training*, which I was fortunate enough to be trained in for 2 days at the *Virginia Search and Rescue Conference*.

The LPB methodology gives probabilities of where the lost person might be located and a general overview of the types of behaviours, and their likely actions and goals or intents.

The statistical information includes find distances and locations, missing person scenarios, survivability and gives individualised Initial Reflex Tasking for each of the 30 lost person categories discussed. Within the tasking information it includes search resources to be deployed. In addition to this, investigative questions are also provided for each category.

In all but one of the 30 missing person categories (missing aircraft), the use of search dogs is recommended as a primary resource to be activated and utilised in the early stages of the search.

Grampians Police Search Methodology

In the UK, the colloquially termed *Grampians Police Search Methodology* was developed as a result of a report entitled ‘*Missing Persons – Understanding Planning Responding*.’ The methodology is very similar to the *Lost Person Behaviour* methodology but customised for UK conditions and focuses on a smaller category set. It does not provide information on search tactics and resourcing for searches. The exception to this is where they mention the use of water search dogs to assist in searches for possible drowned victims.

iFIND search methodology

In the UK, the *Grampians Police Search* methodology is beginning to be superseded by the *iFIND* search methodology, which compliments and builds on the earlier Grampian research and can be used in real-time operating environment. *iFIND* provides data on a wider range of missing person categories and reports time located in an alternative format.

Without exception, in every country I visited, it was apparent that the use of *Lost Person Behaviour (LPB)* search methodology, or similar styles of this concept, were being utilised as standard search planning and tasking procedure by emergency services and volunteer search teams.

As Paul Olshefsky, (NASAR instructor and former Search Co-ordinator for *Parks Canada*) said in his presentation entitled *Canada Ground Search and Rescue Evolving* at the REDOG International Training week “*We apply science to search and rescue quickly*”.
INSIGHT: Search training, including search methodology, (such as Lost Person Behaviour training) search planning and search management is the foundation knowledge provided to Police, Emergency Services and volunteer searchers, including search dog handlers to ensure professional search response operations are carried out.

ACTION: Work with National Search and Rescue Council to update reference manuals and search training. Review search training across the Police, Emergency Services and volunteer search dog groups in Australia. Benchmark with international search agencies and groups to inform training gaps.

CASE STUDY: The search for missing 9 year old Andy Warburton in Nova Scotia https://www.youtube.com/watch?v=q1xyP2CopHY was presented by Paul Olshefsky at the REDOG International Training Week. This missing person case forms the basis of Managing the Lost Person Incident training conducted in the US and other countries.
Search Arrangements – MOUs and Registration

Critical to this international research was understanding the arrangements in place between volunteer search dogs groups and the emergency services that utilise them.

Urban Search and Rescue (USAR)

For volunteer search dog teams that are within a USAR Taskforce the protocol for activation of the search dog teams is straightforward as they are embedded in a Taskforce.

In the United Kingdom, the UK USAR teams are used within the UK predominantly. However, these teams can be used in Europe if requested through the EU mechanism. They have 21 teams in the country, 4 of which are based in London. They currently have 17 operational dogs, which is still not considered the desired quantity for the capability in the UK. The French Fire Service and Germany have hundreds of USAR dogs trained.

International Search and Rescue (ISAR) are overseas qualifications in urban search and rescue that the UK USAR qualified handlers can also attain. This means that they are assessed to ISAR standards and funded by their fire brigades to be deployed overseas if requested.

In some cases USAR dog teams can be resourced from other organisations to supplement search efforts. REDOG (Swiss Disaster Dog Association) have mission ready USAR dog teams that can assist in USAR response when required. They maintain a register of these mission ready teams.

Area Search

All missing person searches are conducted with the Police as the over-arching search command. In most cases, Police will begin the initial search and then, if required, will engage the use of volunteer search dog teams to participate in the search. The arrangements in place to do this vary greatly in different localities.

The development of memorandums of understanding (MOUs) between volunteer search dog groups and the Police or Emergency Management agencies has been a means to both ensure the quality of the resources, provide both parties with a fundamental understanding of requirements and accountabilities, and provide some assurance to volunteer search dog organisations that they will be utilised on a regular basis.

In New Zealand, the LandSAR teams have an MOU with New Zealand Police which includes the NZ LandSAR Search Dogs volunteer search dog teams. Ross Gordon from the New Zealand Search and Rescue Institute mentioned that the avalanche search dog teams have a specific MOU in place that ensures their rapid activation due to the particularly narrow survival window when an avalanche occurs.

In Virginia, volunteer search dogs teams are used in 95% of the searches undertaken. They are often the first resources deployed on a search and will be activated prior to the arrival of the ground search teams.

The Virginia Department of Emergency Management (VDEM) has developed MOUs with numerous search dog teams. They have set standards for these teams to be accredited to and keep a register of them which they use when requested by Police for canine search resources. The Police know that
the teams are not only trained and qualified to an appropriate standard, but are also covered by insurance from the State of Virginia.

In Northern Ireland, the Police Service Northern Ireland (PSNI) have developed an Assets Register, which is the first of its kind in the UK. This has been a new approach by the PSNI to assist them in ensuring that the search groups they use are appropriately trained and qualified.

Kieran O’Hara has been a member of the Northern Ireland Mountain, Cave and Cliff Rescue Co-ordinating Committee and has been involved in mountaineering and rescue for over 20 years. He said that in Northern Ireland, MOUs exist between all the emergency services both the voluntary and statutory. They started putting MOUs together over 10 years ago and found that there was a lot of overlap between agencies and teams and this sometime led to concerns over who was working in what ‘patch.’ The MOUs clarified this situation considerably.

Kieran also mentioned that training for searchers in the MOU arrangements is also undertaken so that they know where their responsibility starts and finishes and who they answer to. For the various organisations the MOUs provide clarity about when they are called out, what area they operate in, what the skill sets are and how the whole process works. In England and Ireland, the Police have an MOU with volunteer based Mountain Rescue teams to undertake search. This MOU encompasses the volunteer search dogs within these teams.

In some localities, the activation of a volunteer search dog team is based on local relationships between Police and volunteer search dog teams. If the relationship is a good one and there is mutual trust and understanding between the Police and the volunteer search dog teams, they will be regularly utilised. Where there has been a falling out between the two, the Police may not use the volunteer search dog team or source a team from another area.

Search dog teams embedded within a recognised rescue service through an MOU or as part of an assets register are the most frequently utilised.

<table>
<thead>
<tr>
<th>Police Service Northern Ireland (PSNI) Search and Rescue function review</th>
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<tr>
<td>The PSNI commissioned a review of their Search and Rescue functions only recently. The aim of the review was to:</td>
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<tr>
<td>1. Provide a better understanding of search and rescue demand and thereby inform the model for delivery;</td>
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<tr>
<td>2. Enhance governance structures, aiming to create increased accountability and value for money;</td>
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<tr>
<td>3. Improve formal engagement and relationships with voluntary partners to embed our core ethos of collaborative decision making</td>
</tr>
<tr>
<td>The review made 20 recommendations that are currently in the process of being implemented. One of the key concepts was the increased role and utilisation of volunteer search and rescue teams...</td>
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“Whilst the Service will maintain a minimum operational search and rescue capability, under new arrangements the operational delivery of search and rescue will increasingly be performed by a network of voluntary teams. The Department of Justice will provide oversight to these teams and a system is in place to assure their standards of practice. Volunteer teams are now central to the delivery of search and rescue and play a valuable role in keeping people safe by giving their time and expertise freely, often for protracted periods of time. They can be tasked to work alongside the Search and Rescue Team or can be utilise as standalone teams, co-ordinated by Police and other statutory agencies”
Australian Registration of Search Assets

In Australia, each State or Territory Police Service/Force is responsible for developing and maintaining a facility register. This register contains the details of all resources that may be able to assist in the prosecution of a land SAR incident. These details may include:

- 24 hour contact details
- Type of personnel/asset
- Capabilities of asset (e.g., Dogs)
- Availability of asset (24/7, after hours etc)
- Any costs involved
- Any lead time required
- Any restrictions

**INSIGHT:** Volunteer search dog teams that hold an MOU agreement or are part of an Assets Register with a Police or Emergency Service organisation are more frequently utilised and in many cases the only search dog teams utilised by Police and Emergency Services.

**ACTION:** Volunteer search dog groups and Police and Emergency Services in Australia need to work together to develop jurisdictional arrangements, such as MOUs or placement on facility registers, that will be mutually beneficial and provide clarity to utilisation and service provision during search operations.
Activation

For area search response in all the countries visited, it is the Police or Sheriff who are the authority that request and in many cases activate search resources, including volunteer search dog teams. This activation process varies according to local arrangements and may be done directly to the dog handlers, through the search and rescue team they belong to or through another response agency.

Volunteer search dog teams are relatively quick and easy to activate and deploy and can begin searching prior to the rest of the search teams being mobilised. This rapid activation and deployment is beneficial to search dog teams, with less scent distribution within the search area.

In New Zealand, dog handlers may be called directly by the Police and are not always activated as part of a LandSAR team. This is also the case in England, Ireland, and Wales, where search dog teams can be activated separately to Mountain Rescue teams to which they belong.

In Virginia, it may be the Police or Local Sheriff that activate a team for search. More frequently though the Police/Sheriff contact the Virginia Department of Emergency Management (VDEM) who have Memorandum’s of Understanding with the various search dog teams. It has been noted that in Virginia the protocol for missing person searches includes the rapid activation of search dog teams at both Emergency Response and Measured Response levels.

In Northern Ireland, the Police Service Northern Ireland (PSNI) have developed an Assets Register which provides them with a list of groups and individuals that have been endorsed by the National Search and Rescue Dog Association (NSARDA) to be suitable and accredited for callouts.

Activation timing

Often Police will undertake an initial search, where they may use their own assets first, including their own search dogs teams. This period may be anywhere from a few hours to several days.

Volunteer search dog teams may then be contacted after this initial searching has yielded no results. This can be a cause of frustration for volunteer search dog teams with delays in time and adverse environmental conditions sometimes affecting the team’s ability to search effectively. Educating Police and Emergency Services on the benefits of rapid activation of volunteer search dog teams is an ongoing challenge internationally.

Those teams that have close arrangements such as MOUs or are on an Asset Register can be rapidly activated by Police or Emergency Services.

The case study below is one of several I have heard of both overseas and in Australia where search co-ordinators have been reluctant at first to deploy volunteer search dog teams without the larger search contingent on site. In each case the timing of the team’s activation and deployment was critical to the survival of the individuals who were all elderly and suffering from dementia.
Night search activation

Night searching is often favoured by volunteer search dog teams and is commonplace in the countries visited. Conditions are generally more favourable with temperatures being cooler, winds dropping and less human activity. Education of search managers on the benefits of activating and rapidly deploying volunteer search dog resources at night is needed in Australia.

**INSIGHT:** Educating Police and Emergency Services on activation and key timing of volunteer search dog teams can be life-saving for the missing person and speed up the successful outcome of a search.

**ACTION:** Volunteer search dog teams in Australia need to develop activation protocols through collaboration with Police and Emergency Services, then continue to educate search managers and responders on the benefits of utilising these protocols to increase search effectiveness.

**CASE STUDY:** Billy Chrimes, search co-ordinator with VDEM, gave the example of a missing elderly lady with dementia and mental health issues. The Sheriff notified Billy at 11pm and suggested a planning meeting the next day with the intent to deploy search resources by mid-morning.

Due to the cold conditions expected overnight, Billy encouraged the Sheriff that they activate and send out resources that evening to start searching immediately.

They deployed trackers to determine direction of travel in the snow, who then working closely with the area search dog team, directed the tasking area for the dog. This resulted in the dog finding the missing person within 16 minutes of being deployed. The person was found alive but with hypothermia. If the search had been delayed until the next day, the outcome may not have been as good.
Deployment

In the countries visited as part of my research, all dogs used for area search, whether they be air scent, trailing, cadaver or water search dogs lived with and were owned by their handlers.

When activated for a search the handlers in most cases would deploy using their own vehicles to transport the dogs and themselves to the search response. They provide their own equipment in the way of uniforms, equipment, harnesses, camping gear, dog food etc.

The dog handlers carried backpacks with a range of supplies to make them self-sufficient anywhere from a few hours to a couple of days, depending on the deployment. Their vehicles are also suitably equipped to accommodate search operations ensuring operational readiness at all times.

USAR deployments occur through structured mobilisation arrangements. The operational USAR dog teams have resources in place within the caches and their equipment ready to deploy. Most have arrangements that ensure the USAR search dog teams are located within a certain radius of response time for optimal deployment.

Deployment of water search dog teams

Searching in dynamic aquatic environments such as lakes, rivers, dams and the ocean, requires co-ordinated deployment of search resources to be most efficient and effective.

Deployment of drowned victim volunteer search dog teams should always be co-ordinated with Police dive teams, who can be in place at the same time searching is being undertaken. This is so when the dog alerts at the area it scents the drowned victim to be located, a GPS reading is taken and the dive teams can quickly move in to search the area before the body moves.

CASE STUDY: Ellis Downes Search, United Kingdom

The search response to the drowning of teenager Ellis Downes in the Thames River at Oxfordshire in England, highlighted poor deployment co-ordination of search resources. It resulted in considerable negative media directed at the Police which resulted in a public apology to the Downes family:

http://www.dailymail.co.uk/news/article-3585093/Police-searching-teenager-drowned-Thames-intending-wait-body-float-didn-t-resources-dive-it.html

Search deployments attended

I was very fortunate to be able to attend two missing person searches whilst on my Fellowship and both provided me with invaluable insights into search management, planning and tasking, use of Lost Person Behaviour methodology and how volunteer search dog teams are utilised.

Nicole Mittendorf search - Shenandoah National Park, Virginia US

In the United States, I attended a search for a despondent (Nicole Mittendorf) in the Shenandoah National Park. The first four days of the search were conducted by Police. On the fourth day, VDEM was contacted to provide volunteer search resources including volunteer search dog teams. The missing person was found deceased by search teams on the fourth day of the second search operation.

Due to the nature of the search, with a suicide note having been left, the agency managing the search, requested that only human remains detection/cadaver dogs be provided. Some of the searchers believed that live find air scent search dogs should have also possibly been utilised.

I spent two days in the field acting as a ‘walker’ with one of the cadaver dog teams which was part of the Virginia Search and Rescue Dog Association. The handler carried all the gear required for herself and her dog. This allowed her to search for up to 10 hours one day. She received a briefing on the overall search areas for the day and then the tasking areas she was designated. This was in the form of a tasking sheet which included a map and specific information to be completed. The dog handler was also provided with a GPS to track the area that was searched and a radio to communicate with base.

The deployment and tasking procedure was as follows:

1. Sign in to both a personnel in the field and a vehicle log information sheet. The vehicle log sheet is another check so they know everyone comes back to base at the end of each day. This is because in the US they are taking their own vehicles to the search and using them to get to the various search points throughout the search.

2. Given tasking based on Lost Person Behaviour which has been developed by the Search Planning team. Canine handlers work with search planners to determine areas that the dogs are most useful to cover. Handlers will also look at wind direction, time of day, temperature, terrain etc to determine how best to search their given area.

3. Canine and SAR teams collect their GPS for the day from the search co-ordinator (In-Reach satellite tracker)

4. Collect radio from the communications cache who log each radio taken out. Normally the teams would use their own radios, but when they have a difficulty with communications they can use the radios from the specialist Virginia Communications Cache. (See Other Resources section)
5. Canine teams are assigned a ‘walker’. This can be a fellow team member or can be a Police Officer, Parks Ranger etc. This to assist with navigation and act as a safety officer.

6. At the end of each day’s searching the handler provides the GPS to the search planning team for downloading. This allows the planning team to produce a map with all the GPS search coverage for the day which then informs their next day’s search planning and tasking. The tracks of the different teams were colour coded to denote whether they were ground search or canine teams and any clues found or alerts by the dogs were also noted on the master map.

7. The search planning team works into the night with the data collected during the day and writes up tasking for search teams for the next day.

Media associated with the search can be found here:


**County Wicklow Search, Ireland for missing male**

In Ireland, I attended a callout of two *SARDA Ireland* air scent area search dog teams to do a hasty search on an area of interest nominated by the local Police. In this case, the search dog teams met at the location and were provided with the briefing from a search co-ordinator within their own team who had been briefed by the Police and provided with a search area to cover.

The search was carried out by the volunteer search dog teams and the results fed back through the search co-ordinator and provided to the Police. This independent utilisation of the search dog teams to assist the Police showcased the strong relationship and trust built by the teams in this area. Although the dog teams were part of *Mountain Rescue* teams, in this case, they were the only teams requested to search the area at the time.

**INSIGHT:** Volunteer search dog teams are highly trained and well equipped to operate independently in the field. They are constantly prepared for a range of deployment circumstances and have undergone extensive field training to ensure operational readiness.

**ACTION:** Volunteer search dog teams in Australia need to incorporate a range of operational readiness scenarios as part of their training and resourcing to increase their viability for a range of search scenarios.
Training and Assessment

Training and assessment were highlighted as areas where great progress can be made in building relationships and confidence between volunteer search dog groups and the Police and Emergency Services. It is an opportunity to increase capability recognition and ensure professionalism and delivery of quality search resources.

Including Police and Emergency Service personnel in volunteer search dog team assessments that are undertaken with transparency using clear standards and assessment tools and undertaken by independent assessors provide an incredibly valuable opportunity to showcase volunteer search dog teams and build trust and understanding.

The discussion below concentrates on training that is related to building mutual awareness, understanding and competency so that Police and Emergency Services and volunteer search dog groups can effectively work together for an optimal search response partnership. Search management training which has previously been discussed will not be re-visited here.

Building awareness of volunteer search dog teams as a search resource

During interviews with Police and ex-Police Officers, it was commented that Police understanding of the use of dogs during search operations was often limited to the exposure to Police dogs in their own agency. This may be limited to general purpose dogs that work close to the handler using ground disturbance tracking techniques or cadaver dogs. Many Police have not been educated about using air scent, trailing, or water search dogs, nor been exposed to them during their training or normal Police work.

**CASE STUDY: Educating Police in Ireland**

Helen McNamara, a dog handler, trainer and assessor from SARDA Ireland spoke of her role in being invited to speak as part of the training for the newly appointed Superintendents at the Police National Training College in Ireland. As part of the training the Police would do an exercise in the morning where they were given a search area and asked to work out the resources they would need, people required and estimate how long the search was going to take them.

Helen, or another SARDA Ireland operational dog handler, would then come in and give a talk on air scent search dogs and how they work. After the talk they would then go out to look at the search area and again the Superintendents would be asked how long it would take to search it. Most would estimate two hours or more. The handler would then take the air scent search dog and set out to search the area. It would normally take the dog only 15 minutes to make the find.

Helen said this result was a complete eye opener for the Police, because until they saw the demonstration by the search dog they had held little interest. It was the most valuable way to showcase the dog’s capability.

The benefit of this training was that it targeted Superintendents from all over the country during these sessions. Helen said they also found that the Police who observed the presentation often shared the information with their colleagues in other areas and this resulted in SARDA dog teams being called up to assist on searches from this type of referral. As Superintendents were the ones that would be calling in resources, the targeting of this rank to educate was very important. Helen did this presentation with the Police 3 -4 times per year, over a period of 10 years.
Assessments

The challenge with getting an understanding of volunteer search dog capability by Police and Emergency Services is that it often has to be seen to be believed.

Many volunteer search dog groups both for area search and USAR, use Police or Emergency Service personnel to assess or co-assess their teams or invite them to observe their assessments or participate in an exercise.

In New Zealand, the NZ LandSAR Search Dog teams have numerous training and assessment camps each year for their wilderness and avalanche search dog teams. Police Dog Section members are present at these camps to oversee their assessment process.

Paul George, a former NZ Police dog handler and assessor for the NZ USAR Taskforce search dogs, reinforced the importance of volunteer search dog teams engaging and educating the Police so they can increase awareness and build relationships. Paul said that having a certification and advisory role with the volunteer search dog teams allows the Police to observe behaviours of the dog and reflect on training.

This approach was echoed by both volunteer search dog teams and Police in the UK and US.

Multi-agency exercises and scenarios were also utilised to build relationships and mutual understanding and were undertaken in most countries. In New Zealand, they have a couple of regional SAREX operations and competitions a year. These SAREX include multiple LandSAR groups from the local area and Police SAR Squad members.

It’s not always about the find...

Another part of the education process is for Police and Emergency Service personnel to understand that searching using dogs is not always about whether or not someone was found.

Gerry Tobin (SARDA Ireland) and Sally Dickinson (Virginia SARDA) both expressed the important use of search dogs to clear areas where the missing person is not present. So often it becomes about the find and not about the important work the dogs can do in eliminating areas for the search operation. Education on this aspect of search dog response needs to include emergency services personnel, whilst training of volunteer search dog teams must always include ‘blank search’ scenarios.

USAR volunteer search dog capability recognition

Similar to this is the understanding of the work of Urban Search and Rescue (USAR) dogs and the critical role they play in detecting live people in disaster situations where buildings have collapsed or natural disasters such as landslides, tornadoes, tsunamis etc have impacted.

The 2011 Christchurch earthquake and the critical role USAR dogs teams played in the response was an illuminating period for urban search and rescue in New Zealand and raised the profile of the work of the NZ USAR Search Dog Association.
The resulting investment in capability development for USAR dog teams in that country over the past 5 years has resulted in a robust recruitment, training and assessment system developed through the New Zealand USAR Search Dog Association and endorsed by the New Zealand Fire Service.

Paul Burns, New Zealand Fire Service USAR Team Leader, during our interview remarked that “Sound structure, a firm dog and handler selection process and strong management at the top” was a key component to the successful relationship that both agencies shared.

**INSIGHT:** Volunteer search dog groups in other countries have used a variety of means to raise their profile and showcase their capabilities with Police and Emergency Services, ranging from targeted presentations, through joint training and exercising, to inclusion in their assessments of dogs and handlers.

**ACTION:** Volunteer search dog teams in Australia should create opportunities to increase awareness and understanding and build stronger relationships with Police and Emergency Services. This can be done by utilising a variety of methods, including targeted engagement and education campaigns, and inclusion in training, exercising and assessments. This approach can include forward planning and scheduling these activities into volunteer search dog group’s business plans and strategic calendars.

At a national level, training and education of the wider emergency services community should be developed and initiated through the National Search and Rescue Council.

What training do Volunteer Search Dog handlers need?

Volunteer search dog groups, especially those not integrated into an Emergency Service organisation, can become focussed more on the training of the dog and less on what is also required of the handler. The important thing to remember is that the safety and well-being of the search teams is as important as that of the people they are searching for...

Inspector Mark Roberts from Police Service Northern Ireland, said that what provides comfort to the Police when using the volunteers is competence in their search levels and how they operate in the search environment. The questions Mark asks are:

1. Is the person competent to operate in the complex environment in which your working - which includes down a cave, up a mountain, in a fast flowing river, collapsed structure etc?
2. Is the person search trained?
3. What training has your dog got and which standards does it meet?

The volunteer search dog groups I encountered during my research were as focussed on their handler training, as that of their dogs. Their training was comprehensive and was undertaken to ensure they were prepared for a range of conditions and circumstances. Most groups had minimum requirements that involved training and search experience prior to being trained as a dog handler.

For example, volunteer search dog handlers in Mountain Rescue teams in the UK and Ireland are required to undertake several courses and participate as a Mountain Rescue volunteer for a year prior to them be considered to taking the role of a dog handler. They then have to be recommended by their Mountain Rescue team to train a dog and they also have to have to do a set number of days at the National Search and Rescue Dog Association (NSARDA) national courses ‘bodying’ for the dogs, so they get to understand the training processes. A letter of recommendation from the
Mountain Rescue team is then sent to the committee of NSARDA and upon approval they can begin training a dog. NSARDA are the training, assessment and accreditation body and will take the new handler on board and put them in touch with other dog handlers nearby to assist with the training and act as mentors.

NSARDA have monthly national training courses available to their members where they get intensive training which is recommended for new handlers. The local Mountain Rescue search dog teams often gather in training groups to provide the regular support. They also have log books that they fill in as part of their training records.

New Zealand LandSAR Search Dogs have developed a comprehensive information sheet on their website that details what they require from their search dog handlers, which includes the requirement for them to be a trained and experienced NZ LandSAR searcher. It’s a ‘no holds barred’ account and worth a read! [http://searchdogs.co.nz/training/so-you-want-to-train-a-search-dog](http://searchdogs.co.nz/training/so-you-want-to-train-a-search-dog)

In Virginia, the Virginia Department of Emergency Management (VDEM) has a wide range of courses that are available to their SAR responders including dog handlers. VDEM provides training as individual or as part of a volunteer SAR team, or an emergency service. For the individuals they try and refer to a team asap. All the SAR teams in Virginia have access to this free training. A list of the VDEM SAR courses is available here: [http://www.vaemergency.gov/em-community/training/course-catalogue#sar](http://www.vaemergency.gov/em-community/training/course-catalogue#sar)

There are also some professional development opportunities that VDEM can also provide for the dog handlers/searchers to attend in other states, plus multi-agency exercising occurs between groups.

Attending the Virginia Search and Rescue Conference (See Appendix 2), I was amazed to see how many courses were available and the high standard the various search and rescue groups were trained to. At the conference they had overnight wilderness survival training, first aid courses, even a course on self-defence for SAR responders, this was in addition to tracking and signcutting courses, canine and equine SAR and more!

From this research I have collated a list of skills and courses that volunteer search dog groups train in:

- First aid for humans (primary to advanced)
- Canine first aid
- Search management
- Lost Person Behaviour
- Map reading, navigation and use of GPS
- Radio communication
- Mountaineering
- Swiftwater awareness
- Tracking and clue awareness
- Crime scene preservation
- Leadership training
- Media spokesperson and management
- Survival skills
- Physical fitness
- Training in speaking to vulnerable people
- Self defence
Canine Training

Although my research on training and assessment has largely focussed on handler training requirements, I did undertake training sessions with a number of the volunteer search dog organisations I met with.

I have summarised this training in Appendix 4 and will provide more information including video footage to the Australia Disaster Resilience Knowledge Hub.

Dual purpose training

Dual purpose trained dogs for USAR and area search are common in many countries including the US, UK, Germany and Thailand.

The commonality of using air scent dogs for both search dog capabilities combined with the practicality of a resource that can be utilised frequently and the time and cost effectiveness of training the teams makes it a very viable means of developing a multi-function search dog capability.

Generally the re-find that is trained with air scenting area search dogs is replaced with the bark and hold for both area search and USAR.

**INSIGHT:**

1. Comprehensive training is focussed as heavily on the handler as it is on the dog to ensure both meet the needs of their search requirements and the Police and Emergency Services that utilise them.

2. Dual purpose USAR and area search trained volunteer search dog teams are developed and utilised in many countries.

**ACTION:**

1. Benchmarking of training standards for both handlers and dogs is recommended to inform national progress on volunteer search dog capability development.

2. Emergency Services should consider the time and cost effectiveness of developing dual purpose USAR and area search volunteer search dog teams.
Fit for Task – Physical and Psychological Requirements

Throughout my research I asked interviewees whether they had any specific physical or psychological ‘fit for task’ requirements that volunteer search dog handlers had to maintain.

The answer was most often that they did not have any written down but there was the expectation that the dog handlers would have a level of physical fitness for them to be able to undertake their roles. The exception to this was the USAR taskforce personnel where physical assessments were required.

Mountain Rescue teams have log books where members are required to keep track of the walks and callouts they have undertaken. This provides them with a broad understanding that those members were fit enough to withstand the rigours of search scenarios, prior to them becoming a dog handler.

The Irish Search Dogs team mentioned that team members had undertaken a safeTalk training course, which is run by the health services sector. The course provides them with training and information to communicate with people with mental health issues, including people threatening suicide. They considered it a really valuable course. There are further courses including safeASSIST, which gives more detailed information on how to manage the situation further.

In Colombia, there is an expectation that their USAR volunteer search dog handlers are fit and physically ready to do their job. They undertake fitness conditioning as part of their overall training. In addition to this they also have psychological training for the handlers to help them handle the pressure of the situation they are in. There have the ethos that if the handler is in good physical shape they will be more able to withstand the pressure of the emergency. This is for the instructors, the trainees etc.

The Colombians deliberately put pressure on their handlers to stress them as part of their training process and scenarios. They also teach them techniques to relax and calm down and to concentrate on the dog.

In Virginia US, physical and psychological requirements are not mandated by the Police, but they do take note of any volunteers that are either not physically or mentally up to the task. This information is provided back to Virginia Department of Emergency Management (VDEM) and the volunteer search dog groups to address.

USAR

The operational dog handlers in the NZ USAR Taskforce are required to undertake a physical assessment based on the career firefighter fitness test. This test is undertaken every 2 years. An exercise day where confined space work, working as a team and other challenging situations are provided to build relationships and encourage teamwork. Post operations a psychological debrief is provided by a Police psychologist. Psychological testing is still relatively new and has not been used in relation to the dog handlers yet.
The UK USAR Fire Service dog handlers (who are paid firefighters) have a medical every 3 years and a fitness test every year. Part of the USAR selection process in the Fire Service includes how individuals get on with each other in a close environment. They don’t have psychological assessments, but they are exposed to emergency situations, death etc on a day to day basis in their work environment.

**Behavioural issues and team harmony**

It was commonly remarked that dog handlers are passionate individuals and often ‘A type’ personalities. Although this can be beneficial to the work they do on searches, it can also cause problems. Behavioural issues amongst dog handlers was expressed as a universal theme that was a concern to both volunteer search dog groups and Police and Emergency Services personnel.

Kieran O’Hara, (Northern Ireland Mountain, Cave and Cliff Rescue Co-ordinating Committee), talked about the harmony within teams and how this impacts on the perception of the team’s capability. He has observed teams that were in friction amongst themselves or that have individuals that have been outspoken. This behaviour reflects badly on the team and means others are reluctant to work with them when they are not organised or settled. He said the teams need to be cohesive and have the same message for them to be accepted. Having the right people at co-ordination level representing the team is very important.

Former NZ Police Officer Ryan O’Rourke, expressed that dog handlers needed to be honest about the capability of their dog and its strengths and weaknesses. He believed there was lack of faith in some volunteer search dog teams due to historic bad experiences where the handler over-talked the capability of the dog. In addition to this professional respect for the Police was not always maintained with instances of dog handlers behaving badly and disagreeing with the Police Search Advisors.

There have been other instances shared with me where dog handlers have not conducted themselves professionally on a search. This information has been fed back to the volunteer search dog group leadership, which resulted in that team member having their behaviour addressed.

Volunteer search dog groups value their relationship with the Police and Emergency Services and work hard to build trust and prove their professionalism. When they have a situation that jeopardises this relationship, the volunteer search dog groups will respond rapidly and proactively within their own ranks to ensure that the behaviour is addressed so that it doesn’t impact on the future use of their group.

Some groups, like NZ LandSAR Search Dogs have developed a Code of Conduct, while other groups use probation periods for new team members to ascertain their behaviour and team compatibility.

**INSIGHT:** Fit for task criteria for volunteer search dog teams is more structured in USAR Taskforces with physical testing and interviewing of personnel mandatory. Search teams that undertake missing person search have an expectation of physical fitness which largely self regulates. Behavioural issues from individual search dog handlers can threaten team credibility and utilisation by Police and Emergency Services. Probation periods and code of conduct measures are useful behavioural management tools.

**ACTION:** Physical and psychological standards should be developed for volunteer search dog handlers to ensure their personal safety and ability to undertake search missions is not compromised. A national code of conduct should be developed as part of a broader set of national standards for volunteer search dog teams in Australia.
Standards

With the growing development of a variety of canine search capabilities across Australia including air scent, trailing, tracking, and water search, comes an imperative to determine the standards to which these capabilities will be trained and assessed.

The need for standards across Australia has been highlighted by the way the *Australian Urban Search and Rescue Canine Capability Best Practice Guideline Version 1.1 November 2009*, are currently being used. Despite the co-operative development of these guidelines, USAR canine teams around the country are still assessing to a range of different standards. In addition to this, the assessors criteria outlined in the guidelines is problematic, as few if any individuals currently in Australia can meet the criteria.

In NZ and the UK, the progress to having a national standard to accredit volunteer search dog teams was a pivotal moment in the relationship between those teams and the Police and Emergency Services. It provided the Police with a means to have some assurance in the quality of the volunteer search dog resource being utilised.

In Canada, a major project undertaken to develop national standards for search and rescue was undertaken. The next step is the development of national standards for canine search capabilities.

National Standards provide consistency of quality of both dog handlers and their canines. They also provide the stakeholders that use these resources, Police, Emergency Services, and the community with quality assurance, accountability and a means to benchmark resources across the country.

A range of standards have been sourced and provided in Appendix 5 as an indicator of requirements that other organisations have developed to ensure their dogs and handlers meet a minimum requirement for endorsement either by the parent body or for the utilising emergency service to provide them with confidence in quality.

It is envisaged that some of these standards could be used to assist in developing Australian volunteer search dog and USAR canine national standards.

<table>
<thead>
<tr>
<th>INSIGHT:</th>
<th>National standards adopted by volunteer search dog organisation for their training and accreditation have ensured that the Police and Emergency Services can confidently utilise their teams, knowing they are quality assured and accountable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTION:</td>
<td>National Standards need to be developed for the ongoing growth and development of volunteer search dog capabilities in Australia.</td>
</tr>
<tr>
<td>Review of the <em>Australian Urban Search and Rescue Canine Capability Best Practice Guideline Version 1.1 November 2009</em>, and development of a national standard for USAR search dog accreditation also needs to be undertaken.</td>
<td></td>
</tr>
</tbody>
</table>
A National Agenda

The journey of volunteer search dog groups in other countries has been similar to that in Australia. Groups have been established in isolation, having local adhoc response arrangements with Police and Emergency Services, lacking co-ordination and with varying qualifications and standards.

Organisations such as the National Search and Rescue Dog Association (NSARDA) in the United Kingdom, New Zealand LandSAR Search Dogs, and New Zealand USAR Search Dog Association were established in recognition that they had to collaborate and unify to grow their capability nationally.

In Australia, volunteer search dog organisations have been in existence since the 1990’s. Currently there are groups in Victoria, Queensland, Western Australia, Tasmania and New South Wales, training in a variety of search disciplines including USAR, air scent/wilderness, trailing, tracking and water search. Some are embedded in emergency service organisations, whilst others are acting as feeder organisations training up teams for USAR taskforces. Some groups remain completely independent with no affiliations.

For the groups focussed on USAR canines, this situation has improved in recent years with USAR training activities being held in Victoria, South Australia and Western Australia which have included teams from within Australia and New Zealand. This collaboration has also recently been given another boost with the development of the first USAR canine training package mapped to national competencies, developed by the Western Australian Department of Fire and Emergency Services. This now provides the USAR search dog community in Australia with a consistent training resource to begin a long overdue standardisation process.

Bringing highly experienced dog handlers and trainers that have attended major international USAR emergencies like earthquakes and landslides, is also incredibly beneficial to challenge our search teams and how they train and deploy their dogs. Although we have theoretical knowledge in Australia, the field experience in real scenarios is missing.

For progress to continue to the next level, a national approach is now required. The formation of an over-arching organisation to represent the volunteer search dog sector in Australia must evolve. The terms of reference for a national volunteer search dog association would include but not limited to:

- Develop National Standards
- Develop Code of Conduct and Ethics
- Development a Communication and Engagement Strategy
- Develop handler, trainer and assessor and other capability development pathways
- Develop a national training and assessment calendar
- Development protocols and guidelines
- Research and establish ongoing funding streams

INSIGHT: The development of a national umbrella organisation has been the natural evolution of volunteer search dog associations in other countries. This has led to a focus of effort on capability development through a clear agenda underpinned by national standards.

ACTION: Volunteer search dog organisations across Australia must collaborate and work together to form a national search and rescue dog organisation in Australia to represent all volunteer search dog disciplines. This would lead to holistic and stronger capability development.
Other Resources

Other search resources were also observed that are worth being mentioned including search apps and in the field the use of an impressive mobile communications cache.

GIS support - Jenny McKee at Virginia Department of Emergency Management (VDEM)

Jenny was at VDEM developing the maps for the searchers to utilise in the field for the Shenandoah National Park search I participated in. They use the Lost Person Behaviour methodology to produce the large planning maps for the search planners and teams to use. The GIS officer is given the category profile according to the LPB methodology and uses the target distances outlined to draw the search rings on the topo map.

They used Terrain Navigator Pro which is a desktop and mobile mapping software that contains high resolution scans of topographic maps as well as current aerial photographs overlaid with a current street layer. These maps and photos can be customized with labels, marks, symbols, lines, routes, tracks, area fills, GIS data sets, and notes.

Lost Person Behaviour app

The Lost Person Behaviour mobile app is available to download (for a fee) from Apple iTunes, Google Play and Amazon.com.

Drawn from the Lost Person Behaviour methodology developed by Bob Koester and using data from over 150,000 missing person cases across the country, the app provides guidance, tactical briefings, investigative questions, and statistics for over 40 different scenarios. These include lost hikers, hunters, children, missing vehicles, despondent individuals, dementia patients, and climbers. It also provides guidance for snow and water incidents.

SARLOC Search App

One of the things that have greatly reduced the amount of big searches SARDA Ireland undertake is through the use of the SARLOC app, which was devised by an ex Mountain Rescue person.

Now that there is better phone coverage in some areas, if someone gets lost and calls the emergency services, they are then put in contact with the Mountain Rescue teams. The Mountain Rescue teams can then send the app to their phone. When the lost person accepts the app, it automatically pings up with a map giving the Mountain Rescue teams a grid reference and a location which makes their job a lot easier. However, this only works when they have a phone signal, battery power etc. For more info: https://www.facebook.com/SarlocRescue/
I observed the Virginia Communications Cache responding to communications needs during the Nicole Mittendorf search in the Shenandoah National Park and spoke with Lieutenant Wes Rogers, from Fairfax County Fire Department who is the Virginia and North Carolina Communications Cache Program Manager.

Due to limited network availability in the National Park and the large scale search response, the cache was deployed to boost the capacity of the network in the area and provide additional communication resources such as satellite phones and mobile repeater stations. The team were setting up when we arrived to begin the search and had an array of equipment that was being deployed as seen by the photos below.

The Virginia Communications Cache was developed as a State asset from a Federal funded grant through the Homeland Security Grant Program and was borne out of lessons learned from 9/11.

The cache is managed by a multi-agency trained group of people who exercise and respond together and is available to support public safety communications needs within the Commonwealth of Virginia for emergency incidents or scheduled events. A request for activation of one or more radio cache units is initiated with the Virginia Department of Emergency Management (VDEM). Emergency radio cache deployment requests will be received by VDEM at any time. Within two hours of receiving an emergency deployment notification through the VDEM, the cache team will be en-route to the requesting agency with support staff that includes a Communications Unit Leader (COML), Communication Technicians (COMT), and equipment. When activated through VDEM on an emergency deployment, the team will have the ability to be completely self-sustaining for forty-eight (48) hours.

Each of the Commonwealth's radio cache teams provide VHF(H), UHF, and 7/800 MHz portable P25 trunking capable radios, mobile and portable repeaters, elevated antenna systems, tactical interoperability switches, commercial wireless voice and data subscribers, backup electrical power, and satellite phone capability.

http://www.vacache.org/

The information provided will be shared with the NSW State Emergency Service as they continue to develop their field communications capability.
Conclusions

From the deployment of 50 search dogs to the Lockerbie disaster in Scotland in 1988, to the 9/11 terrorist attacks in the United States in 2001 where 350 search dog teams were deployed, volunteers search dogs have been a search tool heavily relied upon by emergency services internationally.

On a daily basis, air scent, trailing, water search, and cadaver trained search dogs are utilised as search resources in New Zealand, England, Switzerland, Ireland, Northern Ireland and the United States, amongst many other countries.

Currently in Australia, there are less than a dozen qualified USAR dogs to respond in the event of a mass casualty structural collapse such as a terrorist attack or earthquake. The irony of this situation is that emergency services around the country are investing heavily in developing resource banks of Category 1 USAR operators, yet it is the canine search teams that will drive the search efforts of these personnel through detection of live victims in disaster zones.

USAR responses may be infrequent events in Australia, but missing person searches for people with dementia, threatening self-harm or a myriad of other circumstances are a daily occurrence that paid and volunteer emergency service personnel spend significant amounts of time responding to.

In NSW, volunteers from the NSW State Emergency Service alone spend over 20,000 hours per year undertaking between 350 to 450 land and water search tasks in support of the NSW Police. Agencies, like the NSW Rural Fire Service, Volunteer Rescue Association, Marine Rescue NSW and other groups are also significant contributors to this support.

It is time that we looked beyond our shoreline to what the rest of the world has recognised decades ago. This will involve a significant shift in thinking, attitude, and commitment to multi-agency collaboration between Police, Emergency Services and volunteer search dog organisations.

Volunteer search dog organisations around Australia must make a commitment to working together to establish a strong and supportive foundation to grow from. National standards for dogs and handlers need to be developed to provide confidence, consistency and accountability to pave the way for integration with Emergency Services and their jurisdictional arrangements.

Police and Emergency Services need to broaden their outlook on how search is trained, resourced and undertaken. Search management, planning, tasking and resourcing needs to be based on best practice training and methodologies that are actively embedded and proven worldwide.

Emergency services, whose volunteer resources are the backbone of every search effort, owe it to their people and the significant time they spend in supporting search activations, to develop them through best practice search training and provision of search tools that are effective and efficient.

USAR canine development is at a critical point where emergency services need to support the volunteer search dog organisations that are training and developing the resources for each state’s USAR capability. Given the time and commitment to develop a search dog, consideration should be given to developing dual purpose capabilities for USAR and area search.

Missing person searches, are nearly always life critical. Responding search teams, no matter what their organisation, whether paid or volunteer, should be trained as effectively as possible and have the best available resources to them. We owe this to the families of those we are searching for and to the searchers who carry the burden and responsibility of delivering an outcome to them.
Recommendations

The following recommendations have been developed and have been categorised by the primary stakeholder groups that I believe should take responsibility and drive the recommendation.

Volunteer Search Dog Organisations

- Participate in a national audit of existing volunteer search dog organisations to provide a transparent and current baseline understanding of the capability in Australia

- Form a national working group sourced from existing volunteer search dog organisations with the goal to establish a national search and rescue dog organisation in Australia to represent all volunteer search dog disciplines, with terms of reference including but not be limited to:
  
  a. Develop National Standards
  b. Develop Code of Conduct and Ethics
  c. Development a communication and engagement strategy
  d. Develop handler, trainer and assessor professional capability development pathways
  e. Develop a national training and assessment calendar
  f. Development protocols and guidelines
  g. Research and establish ongoing funding streams

- Source funding/sponsorship, through this national body, to engage the expertise of trainers and mentors from other countries with established volunteer search dog capabilities to provide training and development assistance

- Working closely with emergency services in individual states and territories, the national search and rescue dog association will develop and establish memorandums of understanding between volunteer search dog teams and emergency services

USAR Canine Search Capabilities

- Develop a National USAR Canine Working Group with representation from each of the state and international taskforce USAR canine capabilities, emergency services and feeder volunteer search dog associations

- Write a USAR Canine Capability Future Development white paper for NSW Government

- From the National USAR Canine Working Group, have representation on the National USAR Working Group and the National USAR Working Group Canine Technical Sub-Committee

- Review, the Australian Urban Search and Rescue Canine Capability Best Practice Guideline Version 1.1 November 2009 to develop an agreed Australian standard for USAR dog and handler accreditation across the country

- Establish a national training and assessment calendar for USAR canines and handlers

- Seek emergency service agency funding and support to engage the expertise of operationally experienced trainers and mentors from other countries within USAR
taskforces or through organisations such as IRO to provide national training and development assistance

- Establish and maintain a national register of accredited USAR canine and handlers for provision to the emergency services

**Police and Emergency Services (Area and Water search)**

- Working with the Police and Emergency Service agencies through the State Rescue Boards or similar authorities in each State/Territory, develop requirements for volunteer search dog teams to be integrated into land and water search response, either as a standalone group or as part of an emergency service, including:
  - Dog and handler accreditation
  - Fit for task requirements
  - Activation and deployment protocols
  - Registration protocols
- Develop and establish memorandums of understanding between volunteer search dog teams, emergency services and the State Rescue Boards in each state/territory
- Provide opportunities for capability integration with volunteer search dog teams/groups through training and exercising

**Australian National Search and Rescue Council**

- Working with the *Australian National Search and Rescue Council*, provide input to revisions of the *Australian National Search and Rescue Manual* and the *Land Search Operations Manual*
- Conduct a national review of search training content for Police and Emergency Services personnel including search methodology benchmarking with international standards
- Review of national training standards for search and rescue personnel (including emergency service and volunteer)

**Churchill research dissemination and knowledge sharing**

- Poster presentation at AFAC 2016
- Submit research article for *Australian Journal of Emergency Management*
- Submit paper to the *Australian and New Zealand Search and Rescue Conference 2017*
- Presentation to the *Policy Advisory Committee (PAC)*
• Presentation to NSW State Rescue Board and/or presentations to Commissioner NSW State Emergency Service, NSW Police Force, Fire and Rescue NSW, NSW Rural Fire Service, NSW Volunteer Rescue Association and Marine Rescue

• Presentation to NSW State Emergency Service Strategic Leadership Team, members and other interested stakeholders

• Presentation to the Australian National Search and Rescue Council

• Work with the Australian Disaster Resilience Knowledge Hub as a knowledge sharing platform for Churchill Fellowship resources and volunteer search dog capability information to be shared
APPENDICES

Appendix 1 – Interviews
Appendix 2 – Virginia Search and Rescue Conference
Appendix 3 – REDOG International Training Week
Appendix 4 – Training Sessions
Appendix 5 – Standards
Appendix 6 – References
Appendix 7 – Reading Recommendations
APPENDIX 1 - Interviews

NEW ZEALAND

Brenda Woolley
National Trainer and Assessor
New Zealand USAR Taskforce

Paul Burns
New Zealand USAR Taskforce Team Leader
New Zealand Fire Service

My time with Brenda Woolley was inspirational. The great teamwork that I saw and the professionalism of all the handlers in the teams I met was really impressive. The relationship between the NZ USAR Search Dog Association with the NZ Fire Service was respectful and solid.

The New Zealand USAR Search Dog Association have 3 teams training that provide dog teams to feed into the NZ USAR Taskforce. They are Palmerston North and Auckland in the North Island and Christchurch in the South Island.

Recruitment

The process for joining the Taskforce is as follows:

Join and train with the NZ USAR Search Dog Association → Be assessed by the National Trainer from NZ Fire Service → Interview with NZ USAR Taskforce Leader → Accepted into NZ Fire Service USAR Taskforce

NZ USAR Search Dog Association have 1-2 intakes per year. They target NZ Civil Defence, some dog clubs and the general public.

Handler Selection

All Taskforce members must live within 2 hours of the base.

Handlers must also pass a dog handling skills test

Canine Selection

Dogs are taken no earlier than 8 months of age. They undertake preliminary training prior to 18 months, then begin the serious training, with on average 18 months for the dog to be of an operational standard.

They have a 3 strike approach to ‘maybe’ dogs.
After the Christchurch earthquake the team have received support from the Police to develop a cadaver dog to support the work of the live search dogs in the USAR taskforce.

**Team structure**

They have a Canine Liaison Officer who is the important link between the team members and the NZ Fire Service.

**Training**

Training is split between beginners and advanced.

Training with the Taskforce occurs every year where the team trains together, in particular with the technical search operators that use acoustic equipment etc.

Operational trainers from across the country meet once a year for a 3 day training weekend.

Teams train at least once and often twice per week, with each area having 2 Regional training weekends attended by the National Trainer and Assessor.

Foundation Weekends are held for the new handlers and dogs where all the foundation steps are provided to start training.

A National Training Weekend also brings together the whole national training squad from beginners through to advanced.

The system used for training requires the teams to undertake 6 progress checks which covers the training requirements. The team then undertakes a mock assessment prior to going for the final assessment.

Each year the operational handler must pass directional, agility, heelwork etc in addition to the search work to remain proficient.

**Training facilities**

The Christchurch team has both a static rubble pile and a ‘live’ rubble pile. The static pile is good for training the young dogs, whilst the ‘live’ pile ensures that the dogs don’t become familiar with the hides. In addition to this the team trains in buildings, with a wide variety of sites in Christchurch that were impacted by the earthquake which are available once deemed safe by the authorities.

In addition to the USAR type training sites, the teams also undertake open area searches in the woods and on the other sites and regularly train at night.

**Accreditation**

The USAR Orange Card is a multi-agency certification with 5 unit standards:

- First Aid (2 Units)
- USAR Awareness
- General Rescue (light)
- Incident Management System (AIMS – Level 1)

Dog team assessments and re-assessments are undertaken in May and October.
Fit for Task

A physical assessment is undertaken for all operational dog handlers. This is based on the career firefighter fitness test. This test is undertaken every 2 years.

An exercise day is also undertaken where confined space work, working as a team and other challenging situations are provided to build relationships and encourage teamwork.

Post operations a psychological debrief is provided by a Police psychologist.

Psychological testing is still relatively new and has not been used in relation to the dog handlers yet.

Budget

Each operationally qualified handler receives $5000 (NZ dollars) per year to assist with expenses including travel.

Cost relating to the USAR Taskforce, such as PPE, boots etc is funded by the Taskforce.

Comments on Christchurch earthquake deployment

Dogs from other countries weren’t fit for task, and dehydrated rapidly. Other dogs struggled with the colder temperatures (Singapore team)

NZ – all live finds were made in the first 24 hours

Conclusion

When I asked the NZ Fire Service Taskforce leader Paul Burns what his thoughts were on the relationship with the NZ USAR Search Dog Association, he cited the following as being positives

- A sound structure in place,
- Are firm on their selection process
- Have strong management at the top

He mentioned that accountability is critical. After all disaster where loss of life has occurred there will be a Coronial Inquest where decisions made will have to outlined and even defended. Accountability for the Coroner is a good reason to have strong standards, assessment etc

He also noted that due to the interest in the use of dogs in such circumstances as a mass disaster situation that the dog handlers would benefit from media training due to the interest in the dogs.

Resources

The following resources were kindly provided:

- National Training Programme Progress Checks (Version 3.0 August 2014)
• NZ USAR Best Practice Guideline – USAR Search Dog Operational Assessment – (Version 4.0 December 2013)
• NZ USAR Best Practice Guideline – USAR Search Dog Operational Assessment – Advanced (Version 4.0 December 2013)
• Foundation Training Weekend Course Outline with intro evening, day 1 and day 2 activities
• National Training Programme – Dog Handler Recruitment Exercises Completion Sheet
• USAR Search Dog Initial Assessment
• USAR Dog Handler Recruitment – Dog Handling Exercise Skills
• USAR Dog Handlers – Physical Competency Assessment (PCA)
• NZ USAR Search Dog Association Handler Application Pack
• Chapter 1 – Foundation Training Participant Notes
Don Geddes,
Emergency Management Officer,
Ashburton District Council
New Zealand LANDSAR member

NZ LANDSAR formed 8-10 years ago prior to which it was a sub group of the alpine and mountain rescue clubs. They have around 3500 members who specialise in search and rescue response.

They receive some funding from the Government and are required to do statistical reporting on operations, exercises etc.

Arrangements

NZ LANDSAR has an MOU with NZ Police to assist with rescues.

Activation

Police call the LandSAR contact person, with the team available to respond in 30 minutes. They can also bring in dogs separately from ground search teams. Sometimes Police dogs are used.

Police are the Incident Controllers and also organise the logistics. The operations manager is a volunteer. They have a say in the planning of the response due to their local knowledge.

They use to activate with a Police Officer but now they tend to go out without Police support.

Training

Most of the LANDSAR courses are delivered through the Tai Poutini Polytech. A list of competencies are still being rolled out by Land Search and Rescue. They are getting their assessors registered and will assess members against competencies.

Core courses include:

- Basic tracking
- Search methods
- First aid
- Team leaders
- Work health and safety
- Leadership
- Hazard Management

Regional training courses that all members can attend on top of the group courses. Once a year they have a weekend exercise.

Fit for Task

No physical tests or assessments are required for members.

Debrief

Teams debrief with their task sheet to determine search effectiveness.
I was unable to make contact with Dave and Fritz prior to or during my visit to New Zealand, however the following information was provided to me subsequently through a survey.

Utilisation of Search Dogs

All New Zealand LandSAR Search Dogs (http://searchdogs.co.nz/) members are volunteers with LandSAR NZ.

They have been in existence for around 25 years. Their use by Police as been based upon building relationships and creating trust.

There are MOU’s between LandSAR and NZSAR, plus LandSAR and NZ Police for the provision volunteer support to SAR operations, this includes the provision of NZ Land SAR Search Dogs.

They are utilised operationally predominantly by the Police, but also assist the Rescue Co-ordination Centre (RCC) for beacon initiated search responses.

Search dogs are trained for wilderness search (air scent/ tracking/trailing) and avalanche search.

Different regions in the past have run things their own way. As of recently, things are changing due to leadership and good communication and trust within the Police. The annual assessment process is overseen by the Police dog section. Their standards are high and they only have one wilderness and avalanche search dog organisation in NZ.

LandSAR Search Dogs have developed an organisational structure. LandSAR itself has people in paid employment who do some liaison work, i.e area reps.

Registration, Activation and Deployment

Handlers and dogs are part of a local and national register that can be utilised by Police. They can be called out as part of a LandSAR team or separately.

To be on the register the dog team has to have attained Operational status. This is a qualification that is assessed and renewed annually.

Fit for Task

LandSAR have a competences test for field members. LandSAR Search Dogs have a pathway process from entry/trainee/novice/operational.

When on training camps dogs must be wormed if on farming land. Handlers have to be signed off by their LandSAR region group as a perquisite for the entry pathway.
Training, Exercising and Professional Development

The standards are high compared to what they have seen come into the country from the US and UK. The standards are contained within the Training Pathway and Assessment Criteria.

We have 6 training camps per year, which include 2 per Island for wilderness dogs and 1 per island for avalanche dogs.

There are 2 Wilderness Assessment training camps per year (1 in each island) and 1 avalanche Assessment camp.

They run an operational dog training camp per island and run an assessor training workshop per year for avalanche and wilderness search.

All camps above are run by LandSAR Search Dogs, Police Dog section members are present to oversee assessment process. Recently a workshop was run by Police for trainers and assessors on the pathway and was partially funded by them. LandSAR Search Dogs carryout and fund all search dog specific formal training and assessment for their members.

They have regional SAREX operations and competitions at least a couple of times a year. These SAREX include multiple LandSAR groups from the local area and Police SAR Squad members.

They do not have their own training facilities.

Assessments

Police and the most experienced LandSAR dog members act as assessors including Police dog handlers, drug and detection dog trainers who have a vast amount of experience.

There is a pathway process to become a trainer and or assessor. To apply to start this pathway this person is to have had at least 3 years operational experience.

Funding

LandSAR Search Dogs receive funding through sponsorship, grants and the Emergency Services.

Vaccinations and medical assessments for handlers/and or dogs is paid for operational dogs only. Equipment is partly paid for by handlers. Uniforms are paid for by LandSAR. Assessors are unpaid volunteers and Police. Assessment venues are paid for by LandSAR Search Dogs organisation.

Funding comes mostly from LandSAR who apply to lotteries for a grant annually which is distributed to groups around NZ. LandSAR Search Dogs apply for a budget each year for training equipment and travel mainly.

Annual budget is NZ$100 000
Ross Gordon
Director - New Zealand Search and Rescue Institute (SARINZ)
Former Police Officer and LandSAR group member

Tony Wells
Acting General Manager - New Zealand Search and Rescue Institute (SARINZ)

The Search and Rescue Institute New Zealand (SARINZ) [http://www.sarinz.com/] are a registered charity that provide onsite search and rescue and recovery skills based training and support services to many groups including government agencies, corporate’s, schools and individuals committed to SAR and Emergency Response. They do a lot of work in the UK, and for the Australian Antarctic Division, plus Canada, Iceland etc. They also work with Bob Koester and his Lost Person Behaviour methodology.

Search management training

Ross talked about the use of Police dogs for tracking and ground disturbance work. He said this search method using canines was useful for half to one hour.

He said the NZ Police had some air scent dogs but no scent specific trailing dogs.

One of the key points he felt had an impact on how volunteer search dog teams were integrated into area searches was understand the training the Police have in search management.

Search management training for both Police and Emergency Service responders is a fundamental skill set that should be provided including courses such as Managing Land Search Operations course.

He believed that area search dogs were complimentary to search efforts and that it wasn’t about replacement of Police dogs but of bringing a suite of search tools to compliment the search effort.

Ross believed the key to success in integrating search dogs teams into search operations was through having a position in the search IMT of Canine Search Manager. This person would provide information relating to the dogs using AIIIMs, search management, search methods, LPB, Tracking, trailing etc.

We discussed the benefits of a having a range of canine assets to utilise with the Police canine team providing cadaver and ground disturbance trained dogs and the volunteer canine teams providing air scent, trailing and scent specific tracking dogs.

Training

Integration of dog handlers within search response teams can be enhanced by the handlers undertaking courses. Ross believes dog handlers need to understand these to integrate in a search and compliment the other methods available. Courses recommended include:

- Track and clue awareness
- Sign cutting and ageing
• Clue processing and campsites etc
• Search methods – purposeful wandering, sound/light sweeps and the integration of dogs with things like stopping and listening after calling. Dogs will hear things humans can’t.

Some of the courses they do are:
• Introductory man tracking
• Wilderness search skills course – upskilling competencies, particularly night search (worked with Vic SES on this)

Course are normally 2 days taken over a weekend.

Deployment arrangements

Search dogs are considered a national resource in New Zealand.

Deployment of LandSAR canine teams by police. Some handlers contacted directly by Police for their area and adjoining area. Often dependent on personal relationships with Police. NZ LandSAR have an MOU with the NZ Police.

In Mount Hutt, New Zealand, with avalanches being such a life critical response there is an agreement (pre-determined MOU) in place that the helicopter, ski patroller and avalanche dogs are deployed immediately due to the 20 minute survival window.

Post search analysis

SARINZ have been involved in some post search analysis for the families, where they know they don’t want to cast blame, but improve the search process for others. Example is the woman that disappeared on her property in NZ: http://www.stuff.co.nz/dominion-post/news/78199078/Family-of-missing-Alzheimers-sufferer-Fiona-Wills-turn-to-coroner-for-answers

They sometimes do reviews during an operation and this can also mean that they redirect the operation. They can do cold reviews of a search operation and get 5-6 contacts a year from families. Mostly they don’t take them as they already know the search situation and what had been done.
James Thompson  
Team Leader,  
Canterbury Regional Emergency Management Office

Most of the discussion with James centred on emergency management arrangements relating to earthquake and tsunamis response. This information is very valuable to my organisation, the NSW State Emergency Service, and will be shared with my agency.

With respect to volunteer search dogs, James mentioned that dogs started in the Red Cross initially to support NZ LandSAR. Civil Defence also had dog teams which started to support NZ LandSAR but those teams later moved on to USAR.

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Ryan O’Rourke  
Emergency Management Officer,  
Selwyn District Council  
Former Police Officer

When interviewed Ryan drew from his previous NZ Police experience on the utilisation of volunteer search dog teams for area search operations in New Zealand.

Ryan said that dog handlers needed to be honest about the capability of their dog and its strengths and weaknesses. He believed there was lack of faith in some volunteer search dog teams due to historic bad experiences where the handler over-talked the capability of the dog. In addition to this professional respect for the Police was not always maintained with instances of dog handlers behaving badly and disagreeing with the Police.

Ryan believed that building relationships with the Police through engaging Police dog handlers to participate in the assessment of volunteer search dog teams and to also understand the training undertaken. He said that it takes a while to have an understanding of the dog and handlers that you could trust. He also mentioned that understanding the assessment systems and the currency of dog teams was important. Another aspect of this relationship building is the undertaking joint exercises between the Police co-ordinators and the search dog teams.

Having dog teams that are suitably LANDSAR skilled and qualified to work on a search as an independent resource. In addition to this the dog teams should have an overarching co-ordinator to manage the team. Therefore not only field capability, but also management capability should be included. The fitness of the dog and handler is another facet that must be considered here.

Search management training also need to include the use of volunteer search dog teams and how they can be best deployed. This is so that search tasking for the dogs are appropriate. Essentially it could be another position in the Incident Management Team for a technical expert to fill that understands the effective utilisation and deployment of dog teams. Police understanding of the use of search dogs may be more related to their own Police dog utilisation.
Paul George
Former Police dog handler
NZ USAR Taskforce canine assessor

Paul spoke of the previous situation in NZ where multiple groups with various standards were operating. Police got together with the groups through a Working Group to set standards. This included what they needed the groups to be doing and minimum standards they needed to attain. This led to a National set of NZ LANDSAR standards to be developed.

With respect to the assessment of volunteer search dog teams one of the assessors had to be from the group and another from the Police to ensure fairness.

With respect to area search dogs, the dogs are all trained to the same set of LANDSAR standards. NZ LANDSAR do their certifications at a camp where they bring in a Police certifier.

Police have a land search and rescue co-ordinators course. They take their Police dogs to show their capability. The course provides an understanding the suite of search tools available to them.

Education of the Police is very important for the volunteers search dog teams so they can increase awareness and build relationships. Having a certification and advisory role with the volunteer search dog teams allows the Police to observe behaviours of the dog and reflect on training.

The position of a search dog manager is a valuable in not only providing liaison to the incident controller, but also assisting in providing search continuity in understanding where the teams have been deployed.

Relationships are key and establishing credibility is essential.

With respect to USAR, Paul was involved with the USAR canine team from the beginning. He saw the progress check system applied where various components (including agility, obedience, commands etc) were checked off prior to the search assessments on the rubble pile. He said there was a lot of self-initiated progress on standards including realistic fitness requirements. He mentioned the NZ USAR canine team were good at self-policing people coming in. Police play a certification and advisory role.
UNITED STATES

Billy Chrimes
Deputy Search and Rescue Coordinator/
Search and Rescue Training Specialist
Virginia Department of Emergency Management (VDEM)

The Virginia Department of Emergency Management (VDEM) have worked hard to enhance their arrangements with search and rescue groups including volunteer search dog groups.

Billy Chrimes is one of two fulltime staff in VDEM that manage search and rescue operations and is passionate about continuing to develop the SAR capability within Virginia. He went above and beyond to share information and provide me with opportunities to extend my knowledge including my participation in a search in the Shenandoah National Park which was one of the highlights of my fellowship.

Whilst in Virginia, Billy introduced me to the State Co-ordinator Dr Jeff Stern and also showed me around the Virginia Emergency Operations Centre and Fusion Centre.

The state of Virginia is one seventh the size of NSW. NSW has a population of 7.64 million whilst Virginia has a population of 8.36 million.

The terrain in Virginia includes tidal and coastal areas, swamp areas, piedmont area with woods and open fields, wilderness areas including the Appalachian Mountains with very rugged terrain.

They have been using volunteer search dog teams in Virginia since the early 80’s.

Training of volunteers

VDEM provides training as individual or as part of a volunteer SAR team, or an emergency service. For the individuals they try and refer to a team asap. All the SAR teams in Virginia have access to this free training.

Start with Foundation Training which is Search Team Member level which teaches how the program is set up, how the state system runs, how they will be deployed on a mission, plus land navigation, communications, paperwork etc.

So people can switch teams but all have the same training across the State.

The State pays for the cost of the training activity and in most cases also the lodging and meals. Good opportunity for people to network between other teams.

Training is provided generally 3 times per year. The class is 40 hours with a format of two full weekends 2 weeks apart. They do a simulated exercise at the end of the course.

They also have the Search and Rescue First Responder program which concentrates on the first 6 hours of a search incident. From the arrival on the scene to collecting information to deciding to undertake a ground search, it provides them with the guidance to get things started the right way, to use the correct procedures and methods, including the Reflex Tasking Model from Lost Person
Behaviour on how to deploy researches and what’s available to use, so that when the SAR teams arrive they can carry forward with the search. This is a 16 hour course.

It is not mandatory for the Police and agencies to undertake this course. Any of the emergency services Police, Fire, EMS (Ambulance) SAR responders etc can do this course which has become very popular. It is taught from the perspective of low knowledge levels of search principles but provides basic knowledge to get the search happening quickly.

With respect to understanding the use of canines in search they also include some scent theory, conditioning of the dog, tasking of dogs etc integrated in to some of the broader training classes starting with the Search and Rescue First Responder course. They explain the types of dogs and how they interact with ground searchers, trackers etc.

A list of the VDEM SAR courses is available here:

http://www.vaemergency.gov/em-community/training/course-catalogue#sar

There are also some Professional Development opportunities that VDEM can also provide for the dog handlers/searchers to attend in other states.

Multi-agency exercising occurs between groups.

Physical and psychological requirements

Currently there are no physical standards set for searchers. They are looking at the Wildland Firefighter Arduous Pack test but have not implemented any standard as yet and are unsure if they will do so in the future.

They do not provide vaccinations for search personnel.

They do a lot of education on Critical Incident Stress Management.

Search debriefing

Debriefs are done after every single task with a filling in of the tasking sheet, downloading of the GPS tracker and an interview with one of the search planners, where the searcher is questioned about their search, probability of detection etc. See an example of tasking sheet
There is a significant challenge to bring together all the resources utilised as part of after action report with sometimes up to 24 different resources being utilised and drawn from around the state. As such a holistic post search debrief is not commonly undertaken.

**SAR team resourcing**

The volunteer SAR teams purchase all their gear and equipment, use their own vehicles etc. They are all not for profit organisations and can take in donations or obtain sponsorship. Often the members pay membership fees on top of all the other expenses.

The teams don’t tend to have their own building. Training of the teams is at varied venues where they meet and train as a team, or with other teams.

The training is provided free of charge.

The individual SAR team members keep all their gear in their own car ready for a deployment. They can get reimbursed for their mileage when out on searches.

**Activation**

*VDEM* have a statewide alert network system that is internet based, that will go out via cell phone, email and smart phone apps. Each SAR team has a nominated person who is contacted by *VDEM* in the event of a search activation. This person then contacts the team members for availability and then provides the available resources.

The process for activating the volunteer SAR teams through *VDEM* is as follows:

1. Police contact VDEM to request SAR teams
2. VDEM contact closest response teams through teams nominated dispatcher
3. Dispatcher contacts team members for availability
4. Dispatcher contacts VDEM with SAR team availability list

As the searchers arrive on the search ground using their own vehicles, they are activated quickly often resulting in mixed teams. They do not like to hold up the search waiting for all the resources to arrive and will start tasking asap.

**Volunteer SAR team affiliation with the State**

Virginia have 24 SAR teams throughout the State which they have an MOU with, of which there are 7 specific canine teams. The teams vary in the range of services they can provide to the search effort, for example one of the canine teams is part of a larger team that includes rope rescue, cave rescue,
ground searchers, management etc. Other teams may just specialise in ground searchers or search management, or mantrackers etc. They also vary in size from 10-20 people in the smaller teams such as the trackers and canine teams, others have 70-80 people or more.

There are around 6 other teams that have not become part of the MOU. These teams are locality based and also utilised. These teams may not always be available to respond state wide.

The teams with MOUs, as part of their agreement must be able to respond state wide. This means that individuals may regularly travel up to 3 hours just to take part in a search.

If a new volunteer SAR team forms they must have a certain number of certified individuals on there, plus additional requirements the group have to meet for them to form an official relationship with VDEM through a Memorandum of Understanding (MOU) which they must maintain.

There are also SAR groups that form up that are not part of the State system and don’t undertake the State training or are part of an MOU with the State.

The benefits of the agencies utilising the State SAR groups is that once VDEM have the formal agreement (MOU) with the volunteer SAR teams, the State takes on the liability for any lawsuits that would come up for anything other than gross negligence. They also have workers compensation for any injuries they may incur whilst engaged in their response activities.

**Search setup**

VDEM have two fulltime search and rescue staff, Billy and his boss Mark.

**Search response**

In Virginia they have 134 “localities” (authorities) around 100 of which are Counties. The Counties typically have a Sheriff as the law enforcement agency. Some Counties also have a Police department, such as Fairfax County. The authority which has jurisdiction, which could be the
Sheriff’s department Police department etc will designate their Incident Commander (IC) for the search. VDEM will have someone that will report to them, in most cases it is one of the two VDEM fulltime SAR staff Billy or his boss Mark) (or they can use experienced volunteer co-ordinators who will liaise with the IC during the search. They ensure the resource needs are met for the search operation.

They also ensure that the search is steered and managed the right way with those resources. Gone are the days that when people are lined for a search and that is considered appropriate. They use search theory and understanding of search concepts. The VDEM search co-ordinators have an input into the search theory and methods, and this begins from the initial phone call for resources from the Police. Typically the Police will call and notify of the missing person and the situation to arrange the search.

Billy gave the example of a missing person situation (older lady with dementia and mental health issues) which he was notified of one evening at 11pm. The Sheriff called suggested a planning meeting the next day and to deploy search resources mid-morning. Due to the cold conditions expected overnight, Billy encouraged the Sheriff that they send out resources that evening to start searching immediately. They deployed trackers to work out the direction of travel in the snow, who then working closely with the area search dog team, directed the tasking area for the dog. This resulted in the dog finding the missing person within 16 minutes of being deployed. The person was still alive but with hypothermia. If the search had been delayed until the next day, the outcome may not have been as good.

Billy’s job is to provide a ‘check and balance’ to ensure the appropriate resource is utilised. He sees his role as educating and advocating to the authorities the suite of resources that are available to them so they can understand why they are being suggested. Where needed he will use the opportunity to also explain the Lost Person Behaviour methodology and this often is the catalyst for a shift in attitude. An example of this is when they get a request for cadaver dogs when the situation is that the missing person could still be alive.

So essentially VDEM will provide resources and search tactics to be able to conduct the search most effectively. The systemic process they use, including using Lost Person Behaviour methodology which lays the groundwork for the search and guides the process of working through the problem has impressed the authorities and given them confidence in the utilisation of the resources. As the authorities see that their training ensures that they meticulously document as they go and they track where they search, this lends credibility to them and this often leads to them being called in much earlier next time they are needed for a search.

Search statistics and success rate

VDEM have a really good success rate and have worked really hard to improve the whole system. It is very rare for them to have a search that goes beyond 24 hours and Billy attributes this to the use of the Lost Person Behaviour methodology. They have less than 10 searches a year that go beyond 24 hours and for a search to go 3-4 days is very rare. Average 80 to 90 missions per year. Only 2 -3 searches a year they would have no outcome whatsoever.

They also have around 20 -30 potential searches a year where they provide initial advice to the Sheriff/Police based on utilising the Lost Person Behaviour methodology and their experiences to advise the agency where to search which results in a quick find before the SAR resources are activated.
Billy attributes their high success rate to several things:

- The use of the *Lost Person Behaviour* methodology is huge because it utilises the patterns of behaviour. It also works on the fundamental principal of “putting the right resource in the right area, and the resource being able to see them”. The deployment of the right resources is the responsibility of the SAR management (*VDEM*) combined with the training of the SAR response teams to be able to effectively search.

- The methodical systematic process they go through and documentation;

- When they get on the scene there is not time and effort lost on egos or dynamics between the teams. The biggest compliment Billy gets from the Incident Managers is that the different teams all work well together because they all speak the same language, they use the same procedures and they know what needs to be done.

Dementia, followed by autism and despondents are the most common search categories responded to in Virginia. They are also being called upon more for using human remains detection dogs commonly related to murders or evidence searches. The credibility of working with the law enforcement agencies has continued to grow through the hard work of their teams going out being professional and providing good accurate work and a good success rate.

**Canine search**

Canines are used in 95% of the searches undertaken in Virginia. They are often the first resources deployed on a search and will be activated prior to the arrival of the ground search teams.

The canine search teams consist of several different capabilities. They have scent specific trailing dogs (mostly bloodhounds) where they have two volunteer groups that specialise in this. They have other groups that have area search live find dogs which are not scent specific, (although in North Carolina they have scent specific air scent dogs), there are also the human remains detection dogs as well as water search dogs.

Training and certification of the dogs happens on the group level and the State does not dictate what methodology they train to beyond the basic core requirements for the State certification program. However, the teams are all assessed from the State standards and demonstrate their capability ensuring consistency across the state. The standards were developed through the *Search and Rescue Council* in Virginia which brings together reps from all the teams to approve and review, then it is reviewed by VDEM and then reviewed by the Attorney General before it’s is given the final approval.

There are two evaluators who are subject matter experts from within the teams that have been accredited to do this work. The general practice is to use evaluators from other teams to make the assessment. They do not have independent evaluators.

The standards they have developed, the documentation and procedures the teams are trained in and utilise are all sound measures to ensure procedural quality and consistency should there be any subsequent law suit filed around the search.

When asked about the negatives of using dogs, Billy said it was the strong personalities that come along with the dog handlers that sometimes made things difficult. He acknowledged that many search folk are ‘Type A’ personalities which is both a hindrance and a help. Commonly the problems aren’t during the search operation, but more around the decision making when it comes to
standards and procedures. They endeavour to include dog handlers in the tasking during the operation.

**Pre-incident search planning for Retirement Villages**

There has been done some pre-planning for missing person for a retirement village. This includes training with the facility staff if someone goes missing. Tasks are already written and ready to go, they know where the staging area will be and everything is already planned before the search resources arrive. This plan has been shared with others to use. Such facilities are considered a high target hazard for missing people.

**Police canine and other resources**

Police will be the Incident Commander and may sometimes bring a mobile command centre with them. State Police have helicopters, some Counties have their own helicopter. They may have canines but they are typically tracking canines or ‘hot trail’ canines, quite often they are also apprehension and/or multi-use dogs used for other work such as drug, arson or bomb detection.

The *Virginia State Police* has a policy that any dog that is bite trained for apprehension is not to be used for search and rescue. Other agencies with bite trained canines have other arrangements and take the risk that the dog may bite the missing person or the searchers.

The Police will typically throw their own resources at the search initially and when not successful *VDEM* get the call.
Sally Dickinson
Firefighter and Paramedic,
Fairfax County Fire Service
Virginia 1 USAR Taskforce Dog Handler
Instructor, Assessor and Dog Handler Virginia Search and Rescue Dog Association (VSARDA)

Sally was an absolute wealth of knowledge and experience and I am incredibly grateful that she is such a generous person to share that so freely with me.

Not only did she spend hours answering my questions but she drove me all over Virginia, dragged me around the Appalachian Trail and managed to teach me more than I ever care to know about preparing source for water search training!

Wilderness Search Training
Smoke bombs
A great training tool is to use smoke bombs to understand how scent can move in different conditions. They will often ask their team first where they think the scent will move and then light the smoke bomb and watch where the smoke goes. They will sometimes revisit that same area with the dogs another day and see where the dog hits the scent. The handlers can observe the dog’s behaviour in the circumstance and then see how they could direct the dogs in such conditions to search more effectively.

Cross training wilderness air scent and USAR

Doesn’t reward, or cue indication on articles of clothing etc, during wilderness training. However, does expect to see a change in body language and some type of telling feature.

For a cross trained dog for USAR and wilderness, she would not correct her for showing interest around clothing but would not allow her to go into a full blown indication. Would do a praise off, where she would say ok good job, go find.

Blank searches

Sally believes the component of canine training that is hugely missed is the blank search. Most commonly the training focusses on having a find. But both the dog and handler have to be comfortable in a real life task of not finding anything.

Probability of detection

Understanding the probability of detection component when searching. This may be about re-tasking this area for another resource. Eg if the ground search teams can’t get through the dense undergrowth, then it may be a job for the dog to clear the area.

Disaster/USAR training

Not training on clothing or other articles
Foundation Skills Assessment (FSA) including functional obedience and directionals. Then do Canine Evaluation (CE) within 6 months of the FSA. The Canine Evaluation lasts for 3 years, after 2 years and 6 months the next evaluation is scheduled, both FSA and then the CE.

**Water search**

I attended water search training in Virginia with the *Virginia SARDA* group. Sally spoke of her approach to determining position of drowned victims using a layering method. Layering using acetate sheets, first for current direction, then another layer for wind direction both at the time of the person’s disappearance into the water at the time you are searching and all of the points in between (overnight), then another layer with the water temperatures and the potential thermoclines and the depth of the water and where the thermoclines are eg in springtime when the the first few feet of the water is warm and the underneath is cool, or if you are in the inversion time when the lake flips over. On top of this you are putting on the search tracks where the dogs have alerted or shown interest and then you have to look down through all those layers and where the dogs have alerted to gauge a potential are for the divers to search in looking at the bigger picture.

Paper out on the way bodies decompose in deep cold water, the study that says the anaerobic bacteria inside the body decomposes much quicker.

**Setting up for water search training with the source material**

Try to avoid putting source in material where it will ferment such as plastics. They use a piece of pvc tube with a blind end cap and a male fitting on the end with a screw cap. Holes are drilled along the length to let the scent out. They are cheap and easy to make. It’s important to let all the materials sit out in the sun for a month or more to let them off gas so that the odour doesn’t become part of the chemical picture for the dog.

When Sally is training she always ensures that every scent she trains the dog on is presented in a variety of containers, so the dog doesn’t become imprinted on the container. For example the source that is being used for training at the time will be presented in pvc, in concrete, in a metal box, glass jar etc, so then it’s the odour that is the constant.

Glass is great, but metal can rust so you have to be careful with the lids. Spice jars are another option, so they have a fliptop plastic lid (which will need to offgas). Also use socks to hide the source containers.

Teeth from an orthodontic surgeon, and dirt from under a decomposing body have been used.

Whole decomposing bodies are overwhelming for the dogs. So when searching it’s often the case that the bigger the source the dog reaches the threshold farther away. So if the threshold is parts per million (for example) so the dog in training may be used to say 5 -20 parts per million. For a whole body this will be much greater. So what can happen with the young inexperienced dogs is that they will begin to indicate a great distance away when they hit the source at the level they are used to training at. The dogs have to be encouraged to work down to follow the source to the body.
Making scent blocks from concrete where the source is placed in the middle of a dry mix of concrete then sealed. Also make some blank ones so the dog doesn’t become conditioned to the block. They are good for shoreline work as it looks similar to rocks and can blend in.

Source for human remains detection canines

With human remains detection/cadaver groups the source used for training is contentious. In many countries, the use for human remains is not available or legal for dog trainers to use. The use of pig remains is often used as a training material or the collection of blood, teeth, hair, fingernails etc is used as source for training.

In the US, the teams can access placenta for training purposes. Placenta is relatively easy for them to come by as people having babies are allowed to keep their placenta.

Other teams have used scent that has been chemically derived to mimic the odour of human decomposition. In some cases source material has been obtained from contacts through hospitals and dental surgeries, or even dirt taken from the scene. Although using dirt is not a great source.

Needless to say it is an area of frustration for the dog handlers who ultimately want to be able to train their dogs as effectively as possible.

Observations and discussion during the Shenandoah Search

Layers on acetate

- Vegetation layers that hold scent
- Wind direction
- Search area
- Trails

Use sheets acetate to layer the search response. Understanding the wind direction for each day to work out where the alerts have been directed from.

Training

Smoke bombs can be used in training to show air movement.

Smoke machines heat the smoke which isn’t good, which makes it rise. Smoke bombs are better because of ambient temperature.

Used in paintball, called ‘smoke grenades’ can be ordered from Amazon or purchased from EBay. Using two different colours to see where the currents interact.

Different weights of carpenters chalk from a chalk box is lighter than baby powder to use. Goo tubes are better for aerosolising the powder to give a better plume (glue 2 pieces together).
Matt Danneman
Police Specialist Search and Rescue Co-ordinator
Fairfax County Police, Virginia, USA.

I had the unique opportunity to do a ‘ride along’ with Matt whilst he was on-duty one evening. It certainly provided me with an insight into his role as a Police Officer and I so appreciate him going to the time and effort of organising this for me.

Matt is also a dog handler with the Virginia Search and Rescue Dog Association (VSARDA).

The Fairfax County Police have 40 specialised search and rescue trained officers and a full time canine unit with 15 dogs, including 3 scent specific tracking bloodhounds.

The activation process for a missing person in Fairfax County is as follows:

| 911 call to emergency services for missing person | Police supervisors on duty managing the response call in the Police SAR team | FFC Police SAR team will begin search investigation and operation | FFC Police SAR team may engage additional resources such as ground crews and canine search teams |

The Police SAR team utilise the Lost Person Behaviour methodology as they undertake their response. They also use this methodology when they do tabletop exercises.

Use of canines

The Police scent specific dogs are used to indicate direction of travel. The dogs are a resource they also use to clear lower priority areas of interest faster.

The Police SAR teams require education on the use of air scent dogs. Defining the search area and how and where to use the dogs should be included in the Search Manager training. This includes educating the approving supervisors who use the SAR team.

Search response was discussed including the use of alerts. They have a Silver Alert which goes out for Alzheimers and Dementia cases which is sent out by the Police region. This includes vehicle ID and goes out to the media, they also have an Amber Alert which goes out telling people to look out for this person.

They also use Reverse 911. This is where the Police will ask the Virginia Department of Emergency Management to call individual homes (on their landline) within a certain radius of the area to request information on the missing person and whether they have been seen etc. they use this frequently for Alzheimers, Dementia, and children that are missing.

Training
A culture of training needs to be established to enhance the skills of the Police SAR team, as many of the Police have less training than the volunteer searchers. Courses such as man-trailing have been undertaken. Exercises are also undertaken with Virginia Search and Rescue Dog Association (VSARDA) which also provide a good networking opportunity.

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**Rick Theal**  
**Police Specialist Search and Rescue Co-ordinator**  
**Fairfax County Police, Virginia, USA.**

**Search response**

Initial call comes out, Police will survey the information they have and start the investigation. If they can’t find the person in the first few hours the Supervisor will then call upon the specialist Police SAR resources (these specialist trained personnel can be activated whilst on or off shift) to then boost the search response. They will develop a base of operations where briefing will occur and the resources available to them. They will create a missing persons flyer which gets distributed asap to the media and local businesses. Their Public Information Officer will get the information out and this approach allows the public to also be their eyes and ears. Not all missing people will have their information broadcast, depends on the case.

*Reverse 911* is used when the Police send out an automated call to people living in a 1-2 mile radius of where the person went missing to see if they have any other information. They also ask them to check their backyards, sheds etc to see if they are there. For the Police it’s an invaluable tool that allows an expansion of their search response through community assistance. This is only used for missing people that are non-combative, suffering from dementia etc. At other times they will use the reverse 911 to tell people to stay inside their house if there is an emergency outside.

Essentially they start pulling the resources together, the flyer, develop an information status board with all the information etc which acts as a briefing for everyone that attends the search. They don’t wait for one main briefing, they get people out as quickly as possible.

Once they get the briefing information together they get a map of the area and using Bob Koester’s *Lost Person Behaviour (LPB) methodology*, put the rings on the map they then start sectoring out locations and assigning individual tasks for where to start searching. Maps and tasks are coded so they can keep track of the sectors and area covered. In the early stage of the search they will use the Police on foot patrols and air scent and cadaver dog patrols, they may also use helicopters etc.

The Police will use a scent specific trailing bloodhound, which they will try and track with initially as one of the first response, especially if they have a last known location

Backtracking is something that the Police will do after they have found the missing person. They will try to work backwards from the find to determine and get intelligence on the individual to see if they were consistent with Koester’s LPB theory. It also allows them to check back against their tasking to understand how the search was undertaken and what they can learn from their response.

There is a mathematical equation to look back at the Probability of Detection (POD). If the POD response on the tasking sheet is low the area may be rechecked several times to scrutinise it better. They may vary the response and send a dog in after ground searchers to raise the POD.
Their search involves setting up base camp, then having all the other functions of planning, operations, logistics, public information etc. They track everything so they can have total accountability for everyone that is coming in and out. They have a safety officer that checks people are physically able to go out and search, and checks again when they want to go back out again to make sure they are looking after themselves. They may pull in additional Police resources that they will pair with SAR personnel.

They will call VDEM to put in a request for trained resources and will make a request like, we need 5 planning personnel, 30 ground searchers, 4 dogs by tomorrow. VDEM will then send the text out to the volunteers and organise the resources. Rick was impressed by how well trained the volunteer resources provided are and how they understand the system and know what the Police have to do. He has learned a lot from the volunteers about various aspects, such as search planning. He appreciates the input the volunteer dog handlers can provide to him relating to their planning and tasking. He considers this best practice to listen to their perspective as they have knowledge and expertise in their particular areas. He does not tell them how to search the area, he allows the volunteers to work out their search method from their experience. Tracking is incredibly useful if you can develop a direction of travel to send the teams towards that area.

After the search, as the Search Manager, Rick will then write up a summary on the search event. This report covers what they did, how they did it, why they did it which basically summarises their actions.

Rick also mentioned the Wagon Wheel Method to sector out direction of travel and higher probability areas. It’s particularly useful in cases that are time sensitive with weather or the lost person is particularly vulnerable and resources limited. He also stressed the need to constantly refresh your skills, like using a compass, GPS etc.

When I asked Rick about his experience with the volunteer search dog groups he said he “loved” the search dog groups they use because he knows they are certified. He knows that they are on a higher plane of skills and that VDEM acknowledge and endorse these skills through certification. The VDEM MOU also covers the volunteers for any injuries sustained on a search through State Workers Compensation. Rick will not allow a dog team to go out typically without a Police Officer if they have the resources to do so. The volunteers are not allowed to be armed whilst on the search. On other searches where other Counties have less resources, the dog handler could be working autonomously.

Physical and psychological requirements are not mandated by the Police, but they do take note of any volunteers that are either not physically or mentally up to the task. This information is provided back to VDEM and the search dog groups and they do keep a note of their name. There have been instances where dog handlers have not conducted themselves professionally within the search and this has resulted in that team member being interviewed by the group leadership, after being notified by VDEM. It was expressed to me that the volunteer search dog groups value their relationship with the Police and VDEM, and have worked hard to build that trust and prove their professionalism. When they have a situation that jeopardises this relationship, the VSD groups will respond rapidly and proactively within their own ranks to ensure that the behaviour is addressed so that it doesn’t impact on the future use of their group by Police or VDEM.
UNITED KINGDOM

Search and Rescue Dogs have been utilised in the United Kingdom since 1965 when what is now the National Search and Rescue Dog Association (NSARDA) was first formed. NSARDA hold the national standards by which search dogs and handlers are trained and qualified.

NSARDA is an umbrella organisation that represents search and rescue dog associations in the UK, Isle of Man and Ireland. There are ten groups that belong to NSARDA - SARDA England, Wales, South Wales, Ireland North, Ireland, Isle of Man, Kent, Staffordshire, Anglia, and Southern Scotland. There are also two other groups Lake District Mountain Rescue Searchdogs and SARDA Scotland, that do not come under NSARDA.

NSARDA trains and qualifies dogs to find people that may be missing, have drowned, be in a collapsed building, or who may be deceased. All these groups are volunteer based and rely on fundraising and donations for the ppe, equipment, training courses and boats, trailers etc.

SARDA Wales are developing trailing dogs with Iain Nicholson and Tom Middlemas getting involved. They want to see that dogs are assessed to the standards.

John Ball

Essex Fire and Rescue Service
Member United Kingdom Urban Search and Rescue (UK USAR) and International Search and Rescue (ISAR)
Former International Rescue Dog Organisation (IRO) Deputy Spokesperson for Deployment

John was recently awarded an MBE as part of the Queen’s Birthday Honours for his contribution to search work internationally and has travelled to Indonesia and Nepal for USAR deployments with his dog Darcy, a Border Collie.

I spent many hours talking with John and he has been a great ongoing support to me providing encouragement and information.

Background

USAR dog teams in the UK are not volunteer based. The canine handlers are all paid employees of the Fire Service. They are qualified firefighters who apply through their own brigades to become a USAR technician, and can then further specialise as a USAR dog handler.

Dogs are owned USAR dogs that are funded by the government with grants to the Fire Service with this capability.

ISAR dogs are owned by the handler as it is voluntary, but expenses are covered by Department for International Development (DFID) through the Fire Service.
United Kingdom Urban Search and Rescue (UK USAR) and International Search and Rescue (ISAR)

USAR canine teams may be deployed nationally through the United Kingdom Urban Search and Rescue (UK USAR) Taskforce or internationally through the International Search and Rescue (ISAR) Taskforce.

UK USAR are USAR teams used within the UK predominantly. However, these teams can be used in Europe if requested through the EU mechanism. They have 21 teams in the country, 4 of which are based in London. They currently have 17 operational dogs, which is still not considered a good number for the capability in the UK. According to John, the French Fire Service and Germany have hundreds of dogs trained.

International Search and Rescue (ISAR) is overseas qualifications in urban search and rescue that the UK USAR qualified handlers can also attain. This means that they are assessed to ISAR standards and funded by their fire brigades to be deployed overseas if requested.

Not all Fire Services are funded to go overseas. There are 15 Fire Services in the UK that make up the UK ISAR team.

Training

Depending on how old you get determines the length of training. For instance John, got Darcy at 12 weeks and she was qualified by 18 months of age. If they get dogs that are 12 months old they can get into the agility side of things and qualification time may be quicker. Average training time is 18 months to 2 years.

UK USAR teams have regular monthly national training sessions. They may be local or national. As an operational canine team, there are a certain amount of sessions that must be attended.

UK ISAR have a few training sessions a year. They run exercises and they may include overseas teams that join them and have a reciprocal arrangement.

Novice dog teams are each assigned an experienced handler as a mentor, who will sign off on their training requirements.
They also have a system to review a search and then they can check and review to see if there are consistent problems occurring.

They don’t have a training package as such, but use the assessments and have develop a large range of procedures. They do training on working with aerial appliances, line access, scent theory, canine ppe such as getting the dog used to wearing boots to protect their paws.

As a member of ISAR John has provided training to other dog teams in other countries such as Croatia. He has also joined in training sessions in Norway and California.

**Canine PPE**

John mentioned how they use canine ppe such a boots to protect the dog’s paws whilst working in the rubble. He thought it was important to get the dogs used to these and to utilise them. During a deployment if one of the dogs is injured the team is affected quite dramatically.

**Quarantine**

In 2000 the pet passport scheme came in to being, this allowed pets to travel freely to listed countries, but strict quarantine rules still applied and restrictions on returning to the UK had to be followed. Dogs still had 6 months quarantine if returning from an unlisted country.

In 2012 the quarantine rules were relaxed, so pets could visit and return from all countries.

John mentioned that even though they were close to Europe, due to the earlier quarantine restrictions, everything was done in the UK. When he started being involved with IRO and started to visit other teams in Europe, he realised they had been doing things for years and were so much more experienced and have so many more dogs.

**Standards and the relationship between INSARAG and IRO**

The *International Search and Rescue Advisory Group (INSARAG)* is a global network of more than 80 countries and organisations under the United Nations umbrella. INSARAG deals with urban search and rescue (USAR) related issues, aiming to establish minimum international standards for USAR teams and methodology for international coordination in earthquake response based on the INSARAG Guidelines endorsed by the United Nations General Assembly in 2002.

The *International Rescue Dog Organisation (IRO)* is an Austrian organisation. It is an umbrella organisation of affiliated National Rescue Dog Organisations (NRO) in other countries around the world. In Australia, the only IRO affiliated organisation is the NSW USAR Taskforce.

IRO are working closely with INSARAG to try and bring up the standard for USAR dogs. It is a charity to bring on the development of search dog teams internationally.

Chris Pritchard, who is the former spokesperson for IRO Deployments, and John have put together a modular system to try and standardise the training for rubble search through to area search. There are modules to pass to work up to the Mission Readiness Test (MRT) testing requirements on the way, which include an A level test and a B level test

They developed the modules because a lot of the USAR dog teams were doing their own thing and when the teams came to do the IRO Mission Readiness test they were failing, sometimes only 25% of dog teams being assessed got through.
The incentive for the search dog teams to contest the IRO Mission Readiness Test (MRT) is that they can then receive financial support from IRO. It also means that they have achieved a very high standard, and for some of the organisations that are NGO’s, it gives them a standard that they can provide to the Police and one which the Police recognise. Currently there are only 36 dog teams assessed for MRT (rubble) each year, this is in Europe, plans are to extend this to other territories.

Also, after a successful pilot last year an MRT for area search is available for handlers to attend.

IRO MRT qualified dog teams could be attached to USAR teams by a mutual agreement. The IRO MRT qualification would also mean that MRT qualified dogs teams in Europe could be attached to the Australian taskforce when deployed to overseas countries where our quarantine laws preclude the dogs from attending. This is yet to happen, but is an option.

In the MRT the focus is on both the dog’s ability to search independently as well as the handler and dog working as a team, to make sure all areas are covered.

John, as an IRO assessor will attend as assessor for canine during the INSARAG classification and re-classification of USAR teams internationally.

Fit for task

The handlers have a medical every 3 years and a fitness test every year. There are also standard INSARAG recommended vaccinations required

From the perspective of an emergency service providing in-house dog handlers to volunteer dog handlers being utilised in USAR operations, the following considerations were expressed:

- Welfare concerns relating to a hostile environment
- Volunteers not necessarily being part of a disciplined service
- Age and fitness
- Weather related physical stress
- Age considerations eg. Fire Service retire at a certain age.

Part of the ISAR selection process includes how individuals get on with each other in a close environment.

They don’t have psychological assessments, but they are exposed to emergency situations, death etc on a day to day basis in their work environment. The impact on people such as volunteers that have had no exposure to an emergency environment and their ability to respond and cope also needs to be considered.

Another INSARAG requirement is for them to undertake an online assessment for safety in the field.

Register

National Co-ordinating Centre (NCC) co-ordinate nationally the UK USAR team.

For ISAR, their management team is in contact with the Department for International Development (DFID) which lets them know if they are going to be deployed.

For ISAR there is a rostered system.
In the UK they have a watch roster as well as having to tell the NCC whether they are available. The system is that they book on and off duty with their phone to the NCC, as well as with the local Fire Control. The onus is on the individual dog handler to inform the NCC of this status. This is a national database of information that is held.

**Activation and deployment**

John and Darcy are on call from home at night on a pager and text alert as part of their normal Essex Fire Service response. They have to live within 35 minutes from the Fire station.

For USAR there is a national standard that says they have to mobilise and attend an incident 70 miles from its base in 2 hours.

As John has a vehicle dedicated for his usage that he takes home, he can respond directly to the incident or can come into the station. There is kennelling at the station. There are two dog handlers, one on each watch. They have a 4 day on and 4 day off watch. Both dog handlers have a vehicle.

John and Darcy are on call for both USAR and area search. Essex Fire Service is a USAR base. John can be called from off duty if he has listed himself as available.

**Utilisation**

John and Darcy are also used for area search work and can be called upon by the Police. He said that he has presented to the Police about the specialist capabilities of the dog, but they tend to forget and just use their own dogs that aren’t trained specially for search.

Police have general purpose dogs that can search but because of their other roles, they tend to search on leash unless it is a criminal when they are released to apprehend.

The dogs alert for area search are standover bark alert because they are not covering the huge distances and so they don’t do the re-find.

Since our meeting, the Fire Service has now come under the home office and they are headed up by the Police and Crime Commissioner. As such, John and Darcy have been used a lot more recently for area search by the Police.

For the last 5 years there has been more inter-service co-operation including training.

**Insurance**

The dogs are covered by third party liability insurance in case the dog causes an accident, bites someone etc.

**Training**

Importance of doing the building blocks of steps before doing free searches, eg the dogs might be good at searching, but may not be good at indicating properly. Starting with bark barrels, runaways etc. He says bark barrels are good to use and move into different areas and in different positions and angles. This allows them to see if the dog can alert under a variety of conditions.

Providing a variety of surfaces to train on, particularly as building materials in different countries.

For area search, the dogs have to be stock tested.
Assessments

For UK USAR Level assessment the qualifying teams have to undertake 2 searches that are graded, in addition to this they have assessments based on a log book where there are certain amounts of training that needs to have been undertaken such as aerial appliance training, roping, confined space work etc. When it comes to the qualification both the 2 searches and the log book are used to determine whether the team is competent.

For ISAR Level assessment there are 8 searches, this is a combination buildings, rubble pile and open area searches.

They use experienced handlers to assess, and also use an independent assessor from another organisation or Fire Service.

Training facilities

The USAR teams use the Fire Service College at Lincoln.

They have a training centre at Fire Service College at Moreton in Marsh Gloucestershire. Hampshire Fire and Rescue have a great training area which is an old Napoleonic Fort with underground tunnels etc.

They also use demolition sites, and do exercises in old power station where they did an EU funded multi-national exercise.

Funding

Funding is provided by Government, with each dog team provided with 21,000 pound set up cost and then another 6,500 pounds annually for ongoing costs.

The funding includes a vehicle, kennelling at the station, veterinary care and food, plus a budget to attend courses and training.

Documentation Provided

An extensive amount of documents including Canine Capability Standards were kindly provided by John to share and will be made available in the future through the Australian Disaster Resilience Knowledge Hub. Some of the documents include:

- Pre Requisites & Identification of Dogs
- Selection of Canine Handlers
- Training Phases
- Phase One – Selection and Acceptance
- Phase Two - Development
- Phase Three – Grading & Certification
- Assessment Information
- Elements of Assessment
- Phase Four – Maintenance
- Core Learning Outcomes for Canine Teams
- Handler Protocols
- Mobilising
Ian Bunting
Regional Operations Support Manager
Peak District Mountain Rescue and Edale Mountain Rescue

Ian is an ex-team leader of the Edale Mountain Rescue and is now the Regional Operations Support Manager. He spends a lot of time linking in with emergency services and Police on behalf of the 7 Mountain Rescue teams and is also one of the local Incident Controllers.

Different relationship in different areas with the Police. They have PoLSA which are Police Search Advisors, that are officers that have done additional training for search. It’s not just missing person search, they also do property search, VIP visits, crime scene etc.

They use the Grampian Police Missing Person Behaviour methodology and are now using the iFIND methodology. All use the rings on the map

Missing walkers and mountaineers the Police will generally leave to the Mountain Rescue groups to manage the search itself. The Mountain Rescue teams will base a lot of the search on their local knowledge and of previous experiences with hikers going missing etc. For missing vulnerable people such as despondents or with dementia, they will apply the Grampians methodology more.

In a built up environment the Police will generally do the door to door searching and leave the wooded environments to the Mountain Rescue teams.

They have standards they use and before the dog and handler can go on callouts they have to do a 3 day assessment.

Mountain Rescue in England and Wales is not a governing body, it’s more an umbrella organisation and have guidelines.

There are separate search dog organisations SARDA England, Wales, South Wales, Lake District, Scotland. The Lowland dogs have different SARDA. Mountain Rescue groups are fairly similar.

Police use the Mountain Rescue and dog teams a lot in the Peak District where they around 300 search and rescue missions annually. There are 7 MR teams in the Peak District, Edale MR would do around 100 of these. It’s based on the geography and the tourist influx. The Lake District are probably the busiest region and could do up to 700 jobs a year and they have around 12 teams. North Wales would do 500 – 600 callouts a year.
Dave Mason
Trainer and Dog Handler
Buxton Mountain Rescue
Police Officer

Peak District Mountain Rescue
Search Dogs Training

Dave kindly organised for me to attend their training session and provided me with an opportunity to talk with the team afterwards.

Area Search Training

SARDA England has 4 distinct stages of training:

1st stage – Pre-registration Stage where they take the puppies and do basic obedience, recalls and heelwork and see that the handler has control of the dog. They do an obedience test at the end for around 30-40 minutes which shows the handler has control of the dog at all times. This is part of the test that allows them to go onto search training. Prior to this they must do a stock test.

A Stock Test where the dog is tested to see it is ‘stock – sure’ and will not chase livestock when they do searches across farmland etc. This is also to assure the farmers it is safe for them to conduct searches on their land. For the handler, this is one of the more worrying tests for them to do, as it all out of their control as the dog is put through scenarios to see if they will chase sheep etc. This test is done at the start, but is also continued throughout the training. If the dog does chases stock it’s removed from the training program and is not allowed on callouts.

2nd Stage – Basic Search Work, then begins where they get the dog to play with toys and doing basic searches. After 12 months they will have built in the return indication for an area dog. This is fundamental to their search work as the dog is often working up to 500m away, can be in conditions of poor light and visibility and sometime completely out of sight of the handler. The training is done such that the dog barks at the body then returns to the handler and barks, and this continues until the handler reaches the missing person. The dog then goes through a 30 minute blind indication test and this a test that will be setup to ensure that the dog can make reliable finds and indications on bodies.

They also cover the principles of area search, best use of wind and dog behaviour and body language.

3rd Stage – Pre-assessment is where the dog teams begin to work on larger areas up to the point to where they are ready for assessment.

4th Stage – Assessment which consists of 5 blind areas with at least 90 minutes of working which are undertaken over 3 consecutive days. These are pass/fail tests. If the dog fails on more than one area it will not be put on the callout list.
These are following to SARDA standards with some minor variations. They externally verify all their assessments by bringing in external assessors from other SARDA regions. The assessors themselves need to have qualified at least two search dogs and have to be qualified assessors. They have assessors meetings throughout the course of the assessments to review the dogs on a day by day basis and talk openly and frankly about whether the dogs and handlers are meeting the standards. They also invite external observers from the Police, including Police dog handlers, Police search advisors and even high ranking Police personnel to attend their assessments. This gives them buy-in with the Police as they get to see the dogs and handlers in action and the standards they are working to, plus the operational uses of the dogs both capabilities and limitations.

The dog handlers must be trained Mountain Rescue responders for at least a year prior to them taking on a dog. They then have to be recommended by their Mountain Rescue team to train a dog and they also have to have to do a set number of days at their national courses ‘bodying’ for the dogs, so they get to understand the training processes. A letter of recommendation from the Mountain Rescue team is then sent to the committee of SARDA England and upon approval they can begin training a dog. SARDA England are the training, assessment and accreditation body and will take the new handler on board and put them in touch with other dog handlers nearby to assist with the training and act as mentors.

They have monthly national training courses available to them. They get intensive input during these courses and they are recommended for new handlers. The local training groups provide the regular support. They also have log books that they fill in as part of their training records.

Activation process with Police

Police get a call for that someone is missing. They will begin all the relevant enquiries and start putting Police officers on the ground and going to the home address, place last seen etc and begin the initial investigation strategy around the missing person. If it is perceived that the missing person is outside and within an area that can be searched for, the Police will use a Police Search Advisor or Land Search Manager, a person that has been trained by their force to lead Police search strategies. If they need further support from other agencies such as Lowland or Mountain Rescue teams to assist the search, they will call the Region Mountain Rescue Incident Controller that is available 24/7. They will then determine whether it is suitable for the MR teams to attend and then pass on to these local MR teams. The Incident Controller will continue to have a role as a link between the Police and the teams ensuring the MR resources are maintained.

Search dog teams can be activated without a whole Mountain Rescue team. This situation is fairly rare as the dog teams require admin support to provide the plan for the search area, they also need people with them as navigators etc.

They use the Grampian Police search methodology and data and have recently been using the iFIND methodology. They use the programs to build the plan for a search. The dog handler can give advice on where they can best be used but generally the Mountain Rescue search managers have a lot of expertise in deploying the dogs.

They take GPS tracking devices and use a secondary device called ViewRanger on their smartphones to plot as they go. They can then download the information at the control point. They can mark on alerts or indications on this map. They don’t routinely use a tracking device on a dogs.

When they get back to the search control point and they get debriefed and asked where they have and haven’t been, how good their coverage was (probability of detection %), if there are any areas
they need to further investigate and if the dog has shown any interest. This is done verbally, not on a
form. With regards to record keeping, most teams have got their own process for recording what
happens on searches as a paper trail. If they have to go to the Coroner’s Court they have information
of the search to refer back to.

They do train their dogs in avalanche search, although they are not assessed on this. They do go
away and train for this in Scotland over a long weekend. They do undertake searches for burial in
snow in their local area. They also find it’s good for training and increasing the drive in the dogs with
this type of burial work.

They are used frequently and consistently by the Police. The Police have a basic understanding about
what is available from the volunteer sector in the way of resources including dogs. The teams have
developed a special relationship with the Police dog handlers and they feel they have a good
appreciation, plus they also train together occasionally. The Police know they can count on the dogs
and handlers and realise that the dogs are trained specially for the tasks required.

Discussion on what live search dogs will find in the way of people who have died. They do train the
dogs on property although they do not assess this. They have had a lot of success on finding
deceased people, sometime up to 10 days deceased. They said that 95-98% of their searches get
resolved.

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**Constable Paul Davies**

*North Wales Police, Mountain Rescue Liaison Officer*  
*Volunteer Mountain Warden at Snowdonia National Park*

The Police utilise only accredited personnel from Mountain Rescue teams that are signed up with
the North Wales Mountain Rescue Team Association (NWMRTA).

On a search callout the Police will generally contact the closest team, but will also draw upon other
nearby teams if required. Tasking is based on geographical boundaries. Police run the search but the
MR teams are the undisputed experts in the field.

Police have an MOU with the Mountain Rescue teams and an Information Sharing Agreement. This is
so information regarding any search can remain confidential.

Greater Manchester Police have a specialist trained dog team that search for buried bodies.

Before mobile phones most people would self-rescue. Mobile phones have had a massive impact on
the number of searches they now attend. If the Police did not have the Mountain Rescue teams the
cost to undertake searches would be prohibitive.

The NWMRTA gets together to discuss searches and share best practice. They review past searches
and look at what they could have done smarter and better.

The North Wales Police request that each Mountain Rescue team allocate two members to do a
media course with their media team. They have to do mock interviews to the camera and are the
faces for their team. Paul said this was a very important part of providing a professional image. 
Roly Leyland
Chair of the Search Manager’s Association
Dog Handler SARDA Wales

Dog handlers in Mountain and Lowland Rescue Units record their training in log books. They have to be trained in a range of different environments including woodland, open terrain, urban areas and night searches.

SARDA Wales have scent specific trailing dogs as well as area search dogs. They are also looking at developing scent specific free-ranging area search dogs that work off lead. Most of their missing person work is in farm and park area. They are currently developing a training schedule and a specific assessment for the scent specific area search dogs.

Roly believes one of the most important aspects about having assessments and standards was accountability.

As the Chair of the Search Managers Association, thy hold a quarterly meeting to discuss all the searches they have undertaken and see what they can learn from them. They also review the searches for people that have not been found and are constantly collecting information. They have a work ethic of ‘never leave a search unfinished’. They try to be proactive and keep informed on mapping, new innovations such as drones, triangulation of mobile phones and also how they record information relating to the search.

There are a group pf six of them that provide advice to the PolSA (Police Search Advisor). This includes providing them with local knowledge and advice on the most appropriate resources to use. The North Wales Police have built a strong relationship with the SARDA dog handlers and the Mountain Rescue Teams and this mutual trust and confidence in their ability allows the searchers to manage the search operation in the field.
Mick McCarthy
Dog handler and trainer
Founding member Search and Rescue Dog Association, Ireland

Author: *In Search of the Missing: Working with Search and Rescue Dogs* by Mick McCarthy, Patricia Ahern

Mick was kind enough to meet with me at short notice, to which I was very grateful. His lovely partner Aine Dorgan assisted in co-ordinating this and I was sorry I didn’t get to meet her too.

Mick started in the Kerry Mountain Rescue team when he started training dogs.

He had experience with obedience, shutzhund, working trial competitions etc.

He started using tracking dogs in search and rescue, but believes they are a waste of time in searches for missing people, as after 2-3 hours they are not viable.

Big problem is there are conflicting views on how dogs are worked and how they should be trained.

Mick came from hunting background and he says he now just hunts people as opposed to animals.

He says many search dog organisations require a very high level of obedience from their dogs, which Mick believes is the greatest drawback to having a good search dog.

Directional work and recall are necessary, but doesn’t focus as much on the other parts of obedience. Mick himself has trained dogs for obedience and successfully competed in this area. He does train obedience for other dogs but not for search work.

Mick said the people that use search dogs for hunting are great to talk with about their dogs, including diet, training etc.

The ‘body’ that is hiding for the dog has to act like the prey. Their actions in hiding and then running give the dog a reason to hunt.

Mick say he doesn’t train the dogs, he guides their natural ability to hunt onto humans. He does teach the dog the indication so he knows the dog has found them.

**Dog selection**

He said that he believes human’s “pigeon hole” dog breeds. In the classes Mick runs no one is allowed to label their dog. He has people come to him with dogs that are dog aggressive or food aggressive. He said it’s the natural instinct of a dog to protect its food and as such he doesn’t feed his dogs together, nor does he train them to eat together as he says it stresses them.

Mick focusses on the dog’s natural instinct to hunt and starts his pups after 5 weeks of age. He would never take a dog over 12 weeks to start working with. For Mick, 5-7 weeks is the ideal age to begin working with the pup. The pup goes everywhere with him, but he doesn’t talk to it. When he gives the pup time, he lies on the ground with it and puts food around him.
Mick believes training a search dog has been over-complicated by some individuals. He says that 3 sessions of 30 minutes with the handler will give him a good idea as whether that person will be suitable.

“Give me a reason to hunt and make it enjoyable for me and I’ll do it” is the dog’s perspective.

Picking the right type of dog is important. He has had a range of different breeds and is not focussed on the breed, but on the individual dog. More recently he has started working with bloodhounds and is very impressed as how well they work both for trailing and air scenting and they are not easily distracted.

Mick worked with the Police a lot as for 10-12 years he had the only search dog in the country. At other times the Police used their own dogs for searches and he wasn’t called out as often when protocols changed. Sometimes the family of the missing person have contacted him directly and he would contact the Police to clear it through them to have permission to search.

**Testing and proofing dogs**

Testing of air scenting dogs is different as the body walks off and hides leaving a fresh scent trail that is everywhere. This gives an indication that the dog is capable of finding someone, but doesn’t mean it is always reliable.

This can be very different to a real life scenario where the person has been missing for several days, and possibly deceased and their scent may has dissipated.

The trailing test is different as they will leave a 2 – 3 day old trail for the dog to be tested on. The trail will be exposed to weather conditions, lots of other traffic. They are easier to make more realistic.

A dog that passes an air scenting test initially will have to be tested constantly under a variety of environments, areas and using different people.

One of the best ways Mick has found of proofing the dog is not even use a human in the area at all. He does tests with air scenting where he places articles of clothing, backpacks etc and leave for 3-4 days. Sometimes he uses human dummies (mannequins) dress them in clothing and even places teeth, hair, blood, cloth that has been wrapped around placenta etc in the pockets of the clothing on the mannequin. He will then leave it for a few days before the dog is released into the area search

People donate placenta, but on its own it isn’t good enough as it’s only one part of the body. They use a combination of things, placenta, hair, teeth, fingernails etc. It doesn’t matter if they are from different people, he mixes them all up. He doesn’t want his air scenting dogs to be scent specific. He wants his dogs to find people, including articles such as car keys etc and anything in that area that he wants them to search.

Mick used to use pigs as source for cadaver work, but since visiting the United States he has seen that dogs have to be proofed off animal remains. Mick said dogs will find human remains trained on pigs, but they will also find animal remains.

**Search techniques**

Mick will use his trailing bloodhound to follow the trail. He may also use air scenting dogs behind him to also clear off to the sides, including derelict buildings and forestry. This is much more efficient
way to search, as sometimes people can double back and hide. A bloodhound can also be up to 400 yards off the trail and still be following it. The air scenting dogs can cover off a larger area of ground as the trailing dog moves through.

Mick believes air scenting dogs not used for USAR live search should be trained for live and deceased persons, plus articles. He says dogs can be trained to scent on a range of different things, with different indications. When Police are asking dog teams to search an area they need to know the search has covered both alive and dead, and clues such as articles of clothing, equipment etc.

Skin rafts start decomposing after they have left your body. If the body is there for several hours by the time the dog picks up the scent cone it will be picking up on both the dead and fresh skin rafts. Dogs are scavengers and he says dogs have a natural instinct and attraction to decomposing material. He said if you are training the dog mainly for live search, focus on that for the first 12 months only. But the after that expose the dog to cadaver scent. He sees no point in taking a dog out searching the area, telling the Police the area is clear and there is the possibility that the missing person is in fact deceased and still in the area. Air scent area search dogs that are proofed off dead bodies mean that the area will then need to be researched with cadaver dogs. Many of the searches they do largely and up with the person being deceased.

Mick says dogs can be taught multiple indications on a range of search scenarios and this can still be done to the highest level. He believes humans have a limited concept of the dog’s capability and impose that ‘jack of all trades, and not an expert on any of them’ thinking when considering the dog’s ability to be a multi-purpose search tool.

Line searchers should be rotated hourly as their concentration wanders. They should also change the angle of the line search. Normal civilians don’t follow orders and don’t understand what to do properly.

**National Standard**

There should be one governing body and one governing standard. Mick said that’s what he’s been wanting to see all his life. He says that this should apply to both dog teams and land searcher and asks the question how can you know what level the search responders are at without it. When he was in the *Mountain Rescue* team they had rules and regulations which were very strict for insurance purposes including undertaking first aid, navigation courses etc. Yet, when there was a callout the authorities often used everyone with a backpack that turned up and this caused a lot of confusion.

The problem is that all teams need to adhere to one national standard but the challenge is on getting agreement amongst the dog handlers and various groups to achieve this.
Brendan Beirne
Glen of Imaal Mountain Rescue
SARDA Ireland

I was fortunate to join Brendan on a search for a missing person in County Wicklow and apart from getting the practical knowledge gained a lot of information about how Mountain Rescue teams operate.

Search callout procedure (Brendan Beirne and Gerry Tobin)

As the local Mountain Rescue team they do around 65 callouts per year. They come from people calling the emergency services and then getting directed to Mountain Rescue. Types of callouts vary greatly to people being lost on hills and in forests, especially as the weather can change very quickly.

Their close proximity to Dublin means they people who are suicidal that come out to remote areas. Mountain biking is becoming a bigger sport in Ireland and they are dealing with more callouts for this. In recent years they have more snow on high ground and they have had callouts to people getting stuck and risking hypothermia if not found quickly.

The Police or Gardai direct the Mountain Rescue teams for search and have an MOU in place. The Police may be present at the base station and give the Mountain Rescue team direct control to search. The Police do not tell them where to search as they do have the expertise or the resources to do mountain search management. They rely on the Mountain Rescue teams to upskill as volunteers to have that search management capability. The Mountain Rescue search manager will use the Lost Person Behaviour methodology.

All of their Mountain Rescue team members are qualified up to the level of Emergency First Responder which means they can administer oxygen and certain pain relief drugs, splint etc. Each team trains weekly for several hours. They also do Swiftwater Training (Rescue 3 standard), but this is more about protecting themselves. They also have Technical Rescue (Rescue 3).

Civil Defence is another volunteer based organisation that does the lowland searches. They do have a dog, but are not assessed to the NSARDA standards.

They have a team member who is also a Police officer, so he often acts as the liaison person between the Police and Mountain Rescue teams during a search.

SARLOC Search App

One of the things that have greatly reduced the amount of big searches they do use is SARLOC: https://www.facebook.com/SarlocRescue/

SARLOC is an app that was devised by an ex Mountain Rescue person.

Now that there is better phone coverage in some areas, if someone gets lost and calls the emergency services, they are then put in contact with the Mountain Rescue teams. The Mountain Rescue teams can then send an app to their phone. When the lost person accepts the app, it automatically pings up with a map giving the MR teams a grid reference and a location which makes their job a lot easier. However, this only works when they have a phone signal, battery power etc.
Stock testing and assessments

The areas they search using dogs include private farmland and game reserves, plus national parks and forests. Part of their training process is that they must ensure that the dog is stock tested before they will be allowed to search or before they can even go for an assessment.

This gives the landholders and National Parks confidence in having the dogs working in their area, that they won’t chase sheep, deer, etc. When they have their national training weekends they will organise with an independent sheep farmers to have the dog and handler come and undertake a stock test on their property. The sheep farmer provides sheep in a paddock and then joins the dog (who is off lead and off heel) and handler as they walk around within the paddock for about 15 minutes. The farmer will observe the dog and if satisfied the dog is not likely to chase the sheep, will then sign off on the dog being stock tested.

NSARDA Standards

With regards to assessments, they are part of SARDA Ireland. They independently assess their dogs and bring over assessors to do this. They also travel to the UK to independently assess their dogs. This means there is no ambiguity as to whether the dog is or isn’t qualified.

This is one standard that that belongs to the National Search and Rescue Dog Association (NSARDA) and that covers Ireland, Northern Ireland, England, Scotland, Wales and the Isle of Man.

They have such high standards that they will take qualified dogs off callout lists if they are seen to drop below standards, such as on a training weekend and they fail to indicate. They will continue to monitor and re-assess to see if the issue is going to continue until they are comfortable that the dog and handler are working to the standard require 100% of the time.

They are deliberately harsh on themselves as they take their responsibility very seriously and understand that the information they provide to the Police in regards to their search area has implications on the way resources are deployed and other search decision making.

Membership requirements

SARDA members must be Mountain Rescue team members, members of the Coastguard or part of a rescue organisation. They need to have a rescue background. Minimum requirements are that they need to ‘body’ for 6 months to give them an understanding of what’s required and to see if they have the commitment to undertake the training. To also understand that it’s a long term effort, with 2 years to certification considered common.

GPS tracking

Handlers and sometimes also the dogs have GPS tracking devices with them when they search. They will provide this information to the search co-ordinators to put onto a master copy of the search map which is established on the initial day of searching. All the information is overlapped with all the other teams and includes their probability of detection of the percentage of the area. Depending on any further information they get, they may go back and search more intensively.

Training

SARDA evolved from mountain rescue. NSARDA have brought things forward bringing in lowland search dogs, trailing dogs, drowned victim dogs the training needs to ensure the people that join for these other facets of search dogs have suitable skills such as map reading, compass use, first aid,
terrain awareness, route planning etc to be able to handle themselves in different environments. They need to be sure that the searchers going in to assist do not end up being injured and become a priority that overrules the search effort.

Mountain Rescue training courses are provided by professional people to the volunteers. Generally this is a professional provider that runs the courses, so people can do it with the team or individually as it’s a National Standard. They start with a Mountain Skills course and often continue to upskill themselves and go on to do the Mountain Leader course. This is a longer course, with a training week and then an assessment week.

Prior to doing the training week you are required to log personal hours in a book for walks, night hikes, night navigation etc. You will also have some experience training through being part of the MR team.

Mountain Rescue aren’t an RTO, but they do often have qualified instructors within their ranks who they can use to train them. People that are qualified I medical or technical training.

Some Mountain Rescue team personnel get trained to Emergency Medical Technician (EMT) standard. This allows them to provide a higher level of medical response in the field. This is specialist training that means they have the skills to treat the casualty when they find them. Irish EMTs have a more limited response range than English EMTs who can give opiates, are allowed to give injections and put intravenous drips in.

Budget

Mountain Rescue area a voluntary organisation get a small grant through the coastguard, around 12,500 euros. However the running cost of the team is in excess of 80,000 euros. They do a number of fundraising activities. Training is their biggest cost, as the professionalism has increased as has the expectation to provide pre-hospital care to hand over to the ambulance. Most courses are 2-3 years validation. Most people are medically, technically and swiftwater trained and so there is a constant need for these courses to be re-assessed on top of their ongoing training.

A cost analysis indicated that Mountain Rescue members spend in the order of 2000 euros per year out of their own pocket. They do get a food allowance and their jackets are provided. They do have a few team vehicles (Jeeps and 4WD transporter including an Incident Command vehicle. They have to fund the vehicles, plus the base they have for training etc. Most money comes from fundraising, bequests, and people that have been rescued. They did get some grants for their purpose built headquarters building etc.

SARDA gets some funding which is distributed to teams according to their workload. Equipment replacement, training and re-certification are the biggest costs.

The highest callouts the Glen of Imaal Mountain Rescue team has had is 113 in one year. They sometimes do get requested to searches in urban areas with the dogs. If they get notified early and get in quick with the dogs their chance of success is increased.

They set up base and may use a repeater on a vehicle if needed. For their communications they use mobile phones, VHF and Tetra.
Shane Barker
Police Officer and
Mountain Rescue Liaison Officer

Local Gardai (Police) have a good relationship and the SARDA dogs are used upon recommendation to the Police from the Mountain Rescue teams. The dogs may go out with the Mountain Rescue teams or separately.

Mountain rescue scenario: Emergency 999 rescue call goes through to Police call centre, who then task Mountain Rescue and inform the local Police. If the Police have an officer that is available they will come to the scene but don’t have an active involvement in the search, but generally Mountain Rescue will co-ordinate the response.

If they are in contact with the missing person they use SARLOCH app.

For the scenario where someone is alerted as missing, the Police will conduct an investigation and do a forensic search around the vehicle and surrounding area. The Police will then contact Mountain Rescue and they will come in and do a wider search. The Mountain Rescue search manager will draw up the search area using the Lost Person Behaviour search methodology.

Shane and Brendan can act as the liaison between the Police and the Mountain Rescue teams to provide assistance to both teams. In suspicious circumstances the Police have a more dominant role including the tasking of the Mountain Rescue teams.

The Police have multi-purpose dogs for drugs, explosives etc. Civil Defence also have dogs that can be used by the Police. The Police have called in cadaver dogs from the UK for searches.
Gerry Tobin  
Trainer and Dog handler  
SARDA Ireland

Had a great chat with Gerry whist undertaking the County Wicklow search and whilst doing the SARDA Ireland training.

Training

Gerry talked about training his dog to be aware of a range of possibilities of a find. He trains his dog to think that everyone is a potential reward. This can be annoying when there are lots of people around, and he will then put the dog on a lead. His concern has been that dogs should be able to find people, walking, sitting and doing a range of things other than hiding or being hidden.

They spoke of a night search where two ground search parties had done a hasty search for a missing walker that they suspected would be close to a track. They had come up with no result. They then arrived at 1300 and planned to go back over the same area that the search parties had done with the dog. Within 30 minutes, as they were heading up the track, the dog took a right angle turn off the track, the returned and clearly indicated to the handler. They followed the dog back in to where the walker was found around 90 metres off the track. Her condition was such that she would probably not have survived the night if she had not been found.

Search technique using Lost Person Behaviour methodology

Use the Lost Person Behaviour methodology and have an understanding of this behaviour as searchers. When they arrive on scene they will have a person who is acting as the Search Manager. This is usually someone from Mountain Rescue as the Police lack these skills. The person is specifically trained in the Lost Person Behaviour skills and based on the information they have about the missing person from the Police, they will draw up a probability of detection circle. Usually they will search out the half km area, then search the 1 km area, unless it is a fit person that they know is heading for a particular point- then they will do a hasty search along the trail. After they have completed their search tasking area, they will come back and provide a probability of find percentage for that area. If they are 90% sure that they would have found someone in that have searched area, then they will leave that area and continue searching other areas. They may then come back to that area at a later time if they have more resources etc.

This methodology gives them an idea of where to prioritise their search effort. In the past when people turned up for a search they would search based on what their ‘feeling’ was of where the person could be. Now the LPB methodology is very much employed by a lot of the Mountain Rescue teams and Police forces. They can be then quite content that for that period of time the area has been searched to the best of their ability and they can start concentrating on going further out. In many searches there is a tendency to go out further too quickly. Most finds are within 500 – 750 metres of the last known point of where the person was.

Gerry said that anytime he goes on a search where team is not using the LPB methodology, he said you end up being sent in a direction that is purely based on assumptions made by the search manager. It can mean that resources are not used properly.
Estimates of probability of detection need to be realistic. They provide all the search information back to the Police. When the person is located, the Police will give them the feedback with the exact GPS location of the find and feedback to the team.

Helen McNamara
Dog handler and trainer
SARDA Ireland

Educating Police

Helen McNamara from SARDA Ireland spoke of her role in being invited to speak as part of the training for the newly appointed Superintendents at the National Training College in Ireland. As part of the training the Police would do an exercise in the morning where they were given a search area and asked to work out the resources they would need, people required and how long it was going to take them.

Helen or another handler would then come in and give a talk on the air scent dogs and how they work. After the talk they would then go out to the search area and again the Superintendents would be asked how long it would take to search it. Most would estimate two hours or more. The handler would then take the dog and set out and search the area. This would normally take the dog only 15 minutes to make the find. It was a complete eye opener for the Police, because until they saw the demonstration they had little interest. It was the most valuable way to showcase the dog’s capability. Helen did this presentation with the Police 3 -4 times per year, over a period of 10 years.

The benefit of this was that Superintendents from all over the country were exposed to the capability of the dog during these sessions. Helen said they also found that the Police who observed shared that information with Police in other areas and they would get called up to assist on searches from this type of referral. As Superintendents were the ones that would be calling in resources, the targeting of this rank to educate was very important.
Irish Search Dogs, Cork, Ireland
Sue Flynn and Glen Barton
Dog Handlers and Trainers

I was fortunate to meet with the Irish Search Dog group, who are based in Cork joined them for an evening training session. They did a range of different searches in a field area. The environment included scenarios that used both people and objects, on the ground, in a tree and in structures including a building and a tower.

Building Relationships

The team have built a strong relationship with the Emergency Management Committee for Cork and Kerry and have a member that sits on this committee which meet 4 times per year. The team undertake multi-agency training through this relationship, and also have opportunities to train with members of the local Police, plus Coastguard and Civil Defence.

To fit into their emergency cycle they have trained several of the team to become Search Co-ordinators, so that they can use the Tetra radio system and feed through information to the team. They will also be trained in the use of the system of using the emergency laptops with record keeping.

Misunderstanding of how the air scent dogs work in the field by both Police and other agencies. Perceived as arrogance of dog handlers because they wanted to go out first, rather than the understanding that it’s optimal.

They have worked with Police during an exercise and was tested on their search capacity, how they adhered to emergency procedures, respond to media etc.

The dogs are a tool in the search kit.
Training

Water search training, they use placenta for training and have also trained on pig. They also use a combination of blood, hair etc in a mix. They also get wisdom teeth. They also train with live bodies in the water to get the dogs focussed and search in fresh and salt water.

They undertake training in a range of conditions and circumstances, including night searches. They have access to certain structures around the city including the old airport terminal. They train in USAR as well as area and water search.

They work with co-operative farmers to undertake stock testing to prepare them for working amongst stock.

They also undertook a man-tracking course in England which provided them with additional search tools. In the scenario they did as part of the training they had to handle a missing person that was combative.

Training Courses

They self-fund themselves to do various training courses including Swiftwater Flood First Responders course (Rescue 3), plus several are Emergency First Responder (EFR) qualified courses. Some members of the team have also done REC 4 Remote Emergency Care standard. They have also done radio communications courses, plus have level 2 power boat qualifications.

Assessments

They are assessed to Irish Search Dog Standards which has 5 components:

- Lowland
- Forestry
- River
- Urban
- Stock proofing

Budget

They do all their own fundraising, they did get a grant for half of their secondhand vehicle. They pay for all the veterinary bills, equipment etc.

They have their own public liability insurance which they pay for themselves.

Activation

They have built relationships with the Emergency Management Committee for Cork and Kerry. Activation by Police is more adhoc and seems to be dependent on local arrangements. The Coastguard will co-ordinate a search on water.

Utilisation is very much influenced by who is overseeing the search operation, whether they have local knowledge and whether the local Police have knowledge about the dogs and how to use them.
effectively. If the Superintendent is knowledgeable about the resources available to them and a good search co-ordinator onsite, they can get contacted.

Their team Search Co-ordinator acts as the liaison between the Police and the volunteer canine search team. She guides them on the decision making around the dog teams and their capability.

Typically the team’s Search Co-ordinator will be contacted by the Police for the callout and she will contact fellow team members for availability and then respond back to the Police. The Search Co-ordinator will attend the search with the teams. Sometimes the teams will search with the Police, whilst other times they will be given a search area and will respond autonomously.

The also mentioned that with some of the psychiatric hospitals they are contacted quickly through the Police if a patient goes missing.

Most of the callouts are for people suffering mental health issues and their team are getting more callouts to undertake water searches. Last year they had no callouts from February to November, but then had 8 during December.

**Fit for Task**

The team expressed the need to support and supervise newly qualified members, especially on searches where they might find someone deceased. They are also offered assistance through the Emergency Management Committee.

As part of their training they did a *safeTalk* course, which is run by the health services sector. The course provides them with training and information to communicate with people with mental health issues, including people threatening suicide. They considered it a really valuable course. There are further courses including *safeASSIST*, which gives more detailed information on how to manage the situation further.
Inspector Mark Roberts and Constable Colin Ferguson
Police Service Northern Ireland

Visiting the Police Service Northern Ireland in Belfast, I had the pleasure of talking with Inspector Mark Roberts who is in charge of Emergency Planning and Constable Colin Ferguson who is in charge of Search and Rescue, including underwater search.

In Northern Ireland, Police co-ordinate search and rescue and use voluntary groups to provide the boots on the ground.

Review into Search and Rescue in Northern Ireland

In terms of the provisions and structures, they have had two reviews, one external review that looked at the provision of SAR in Northern Ireland. Previously they had a group set up called NIMRIC which included Mountain Rescue, Cave Rescue groups. This was set up by the Sports Council and was primarily set up for people carrying out sport in rural areas.

There were also other groups that didn’t sit under NIMRIC that looked after water rescue and search for missing people. This included the group called Community Rescue Service that focussed on Lowlands Search.

The review, which was undertaken on behalf of the Department of Justice, looked at bringing all the groups together because of their common areas of interest in large scale search and rescue responses and ability to support each other.

The second review was an internal review and looked at how the Police (PSNI) delivered search and rescue. The delivery function for search and rescue now is primarily based on voluntary groups providing the trained service and Police providing the co-ordination.

In terms of the provision of dogs, the Police have a capability of tracking dogs trough their General Purpose dogs. They also have specialist scent specific dogs that are trained for very specific scent targets. Also have victim recovery dogs (Cadaver Dogs) that are trained against national standards. They however are not allowed in the UK to train dogs against use human remains. They have limited use of the pseudo scent and use bio-specific training aids like pig and chicken. They have also worked with several other organisations in relation to the training of cadaver dogs.

Mark, who is a doctor of biochemistry, has personal views on the use of other sources for training dogs and acknowledges there are issues with this. There is no specific trained scent for cadaver dogs but there is a transfer across of decomposition from pigs and chickens which are biologically similar to decomposing human remains. If the dog is trained to recognise the difference in the environment and a handler that understands the dog well, plus all the other skills they need to possess about understanding the environment such as recognising shallow graves, land profile change etc.

The National Police Chief’s Council (NPCC), formerly Association of Chief Police Officers (ACPO), have standards in relation to cadaver dogs and there is further work going on in the science community to
find more specific training aids. This includes the work of Lorna Irish, a scientist who is specialising her research on decomposition of human remains.

**Assets Register**

The *Department of Justice* have recently developed an Assets Register, the first of its kind to be developed in the UK. This register provides the PSNI with a database of individuals and teams that can be used for searches. It is quality assured by the parent authority of the individual organisations on the register. The NPCC must recognise the organisations and in doing so also recognise the standards they are assessed to. The Police dogs are trained to a standard set by NPCC/ACPO and the other dogs on the register are trained to the SARDA standards. They will only use dogs recognised under the Assets Register.

The use of standards and the Assets Register give the Police confidence to deploy teams independently during a search operation.

**Deployment**

In Northern Ireland, SARDA used to be within the *Mountain Rescue* teams but have moved outside them now. The dogs and handlers can be activated as individual teams from the register through the Fire and Rescue Service.

Missing person call comes in to the Police, and is tasked to the Police Search Advisor who deploys resources either from within the Police or from the Assets Register.

The Police Search Advisor develops the tasking and briefs the teams. The volunteer teams have Team Leader and Search Planner roles which liaise with the Police Search Advisor during the search. The teams may or may not be accompanied by a Police Officer depending on threat to searchers from missing person or relating to communications due to differing radio networks used.

**Fit for task**

When asked about having any standards for the dogs and handlers to adhere to, it is up to the parent body that those individuals have met and maintained the requirement for them to be on the Assets Register. There is a declaration that is part of the register that provides this assurance to the Police and covers the training standards of both dogs and handlers and their experience. They also want to be assured that the volunteers can look after themselves in a range of environments.

Mark says he has seen through his work that there can be a significant difference in experience in dog handlers. SARDA will also involve the Police in their training and assessment.

What provides comfort to the Police when using the volunteers is competence in their search levels and how they operate in the search environment. They consider:

4. Is the person competent to operate in the complex environment in which your working, which includes in a down a cave, up a mountain, in a fast flowing river, collapsed structure etc?
5. Is the person search trained?
6. What training has your dog got and which standards does it meet?

Skills for Justice set parameters for Search Training. They have worked with the Community Rescue Service and the Lowlands Rescue Association and have written national occupational standards. The
Police know that people that have attained these standards have been trained to a level in search which gives the Police higher confidence in their search capability. The Police are encouraging all the SAR groups to train to this standard.

Search methodology

Grampians Police Search methodology is used, which is similar to the Lost Person Behaviour methodology but more customised for UK conditions. This is currently under review at the moment and the PSNI are also looking at the ifIND search methodology, which compliments and builds on the earlier Grampian research and can be used in real-time operating environment. ifIND provides data on a wider range of missing person categories and reports time located in an alternative format.

ifIND was developed by the National Crime Agency (NCA) UK Missing Persons Bureau as an operational tool designed to improve the speed and effectiveness of searches for missing persons. It was developed through consultation with the College of Policing Police National Search Centre (PNSC) and Police Search Advisors (PolSAs).

Also mentioned research being undertaken by Lorna Dennison in Sussex who is doing research on how bodies behave in water, where the person’s body may end up.

Exercising

They have done exercises with SARDA in the past where the Police have acted as casualties for them. Some teams undertake joint exercises including water search training.
Kieran O’Hara
Head of Mountaineering,
Tollymore National Outdoor Centre

I fortuitously met Keiran whilst staying at the Tollymore Outdoor Education Centre during the Drowned Victim Search Dog training with SARDA Ireland North.

Keiran has been a member of the Northern Ireland Mountain, Cave and Cliff Rescue Co-ordinating Committee and has been involved in mountaineering and rescue for over 20 years.

Training

SARDA Ireland North (SARDA IN), originally began as part of Mountain Rescue. This is where they signed off on their navigation and technical skills so they were competent to work in mountain and rescue environments.

SARDA IN then became more independent and wanted to reach the standards themselves within the organisation and so have worked through the Tollymore Education Centre to do a search dog mountain skills course. They have to have pre-requisite experience of a certain amount of time on the hills and other terrain before they do a 3 day training course at Tollymore. They then come back in six months time and do a 3 day assessment. Keiran said they are assessed to a high standard equivalent to the Mountain Leader training. They compact down the leadership component as its more about their personal skills. Once qualified as a search dog handler they can be tasked to work in remote and technically difficult terrain, often in small teams.

They are getting signed off at National Standard to ensure they can comply with requirements from the Police Service Northern Ireland (PSNI) and Department of Justice. SARDA also have members that are not dog handlers that assist on the hills as bodies etc. These people are going through some of the other awards

People don’t have to be part of a Mountain Rescue team to do the courses, however, they are required to keep a log book. This is the system that is used to recognise their currency in the field.

UK Search and Rescue have a national standard on for Managing a Search and it’s important for teams to have an understanding of this. This is particularly important for the dog handlers so they can explain to search managers how they can best utilise the dogs.

Memorandums of Understanding (MOUs) between Emergency Services

Keiran commented that it was good to see teams like SARDA have a broader base of people involved in their organisation such as administrative and logistical with a variety of skill sets that helps support the team. He also said they do training in understanding the MOUs between the organisations, which he thought was very important for the teams.

The MOUs exist between all the emergency services both the voluntary and statutory, and the people on the ground need to know where their responsibility starts and finishes and who they answer to. All the organisations have MOUs between them so it’s very clear about when they are called out, what area they operate in, what the skill sets are and how the whole process works.
They started putting MOUs together over 10 years ago and found that there was a lot of overlap between agencies and teams and this sometime led to concerns over who was working in what ‘patch.’ The MOUs clarified this situation considerably.

**Working Groups and Best Practice**

There were two working groups that were formed, one an operators group and the other a strategy group. These groups allowed people to discuss issues. Both groups meet around 4 times per year.

Keiran was part of a Best Practice Group which was started to discuss search and rescue operations and feed back into the other groups. This group was open to all the agencies and resources, so instead of waiting for the quarterly meeting to sort out issues, anyone could call a meeting to discuss things. It was relatively informal and often solved a lot of things before they came to the quarterly meeting. It was a good system that saved a lot of problems festering and escalating and having a range of agencies involved meant that there was greater perspective and understanding.

**Building relationships**

They try and undertake training and exercising together so that people can work together and get to know each other and what each team can bring to the search, particularly at the co-ordinating level.

Getting teams to train with other organisations has been essential. The example of this has been bringing paramedics onto search teams to be able to treat the casualty out in the field. This has required the paramedics to undertake specialist training to be fit for task in the field, when they join the responding search and rescue teams.

They also liked to broaden the awareness and have got the Police and even the Minister along to see what they do.

He talked about the harmony within teams and how this impacts on the perception of the team’s capability. He has observed teams that are in friction amongst themselves or that have individuals that have been outspoken. This behaviour reflects badly on the team and means others are reluctant to work with them when they are not organised or settled. He said the teams need to be cohesive and have the same message for them to be accepted.

Having the right people at co-ordination level representing the team is very important.

He said the reporting on teams is very important so that there is an understanding of the value of the resources. Annual reporting should be undertaken so that the number of callouts undertaken, volunteer hours provided etc are all available to the decision makers when looking at search and rescue assets.

Building trust in the use of dogs and showcasing the value of them as a search asset.
APPENDIX 2 - Virginia Search and Rescue Conference

Lost Person Behaviour Training
Bob Koester
dBS Productions


I first saw the *Lost Person Behaviour* book some years ago and vowed that I would attend this course one day.

I have now vowed to attend the *Train the Trainer Course* and be able to share this methodology with as many of SAR colleagues in Australia as possible.

Bob Koester is both an academic and a practitioner. He is a neurobiologist and has attended 100 of searches and written numerous books including the international search bible - *Lost Person Behaviour – A Search and Rescue Guide on Where to Look for Land, Air and Water* (2008)

Bob still gets called for his advice and direction on the higher profile searches or the complex search situations where the outcomes are not forthcoming. He consults and trains all over the world.

The course itself is based on the *International Search and Rescue Incident Database International Database* (ISRID) that Bob developed from over 150,000 searches worldwide. Australia was one of the many countries that contributed to this project.

The methodology is based on statistics that give probabilities of where the lost person might be located and a general overview of the types of behaviours, and their likely actions and goals or intents.

It provides statistical information on find distances and locations, missing person scenarios, survivability and gives individualised Initial Reflex Tasking for each of the 30 lost person categories discussed. Within the tasking information it includes search resources to be deployed. In addition to this, investigative questions are also provided for each category.

The course provides information on using the LPB book as a reference guide to determine the most appropriate subject categories for the lost person, develop search strategies and techniques such as the Reflex Tasking using the Bike Wheel Method, resources utilisation all while using practical examples of past searches conducted.

This course has not been comprehensively summarised here as it would not do the content justice. It is a course that should be attended in person.
Presentation: *Trackers and K9’s Working Together*

Rob Speiden
Instructor Virginia Department of Emergency Management
Natural Awareness Tracking School

Rob is a tracking specialist and author of *Foundations for Awareness, Signcutting and Tracking*

Combining tools in the toolbox to find the missing person

Two critical elements to finding the missing person:

- Having the resource in the right place, which is a search management task;
- That resource has to be able to detect the subject

Capabilities and limitations of tracking and canines

- Trackers look for one clue
- Canines there are a variety of dogs, air scent, trailing dogs, cadaver dogs etc

When someone moves from point A to point B they leave two things behind – scent and tracks.

There are 3 ways tracks are made:

1. Deforming the surface eg snow, mud etc
2. Transferring material eg mud stuck to shoe
3. Electrostatic re-configuration (won’t be discussed in this forum)

Having specialty resources to pick up the direction of travel from the last known point are the visual trackers and the trailing canines. They get the specific track line or scent of a person to move on. The rest of the search resources are out looking for clues.

Material clues are more obvious, but scent and tracks are also plentiful. However, physical evidence is not as common to find eg backpacks, clothing etc

Visual tracking and scent trailing canines are the most similar in nature.

Trailing canine will be working on the scent the person leaves behind and the Tracking canines work on the ground disturbance.

As the scent comes off the wind may move the scent and the trailing canine may be working off the trail but basically it will be following the line from point A to point B.

Visual trackers can give direction of travel and trailing canines can be used to follow up and vice versa.

Track trap – any surface that gives good impression eg mud

**Human Remains Detection Dogs**
They have training with the trackers and the canine handlers. They look at bones and at clandestine graves.

Search and Rescue Tracking Institute (SARTI) get called out to a lot of cold cases.

Tracker is looking for physical disturbances to natural conditions, signs from human, vehicle, mechanical, animals.

Dogs are looking for scent and it’s their change in behaviour which is the physical indication that alerts the handler.

Tactics that are used by both trackers and dog handlers are often beyond the understanding of the search management when it comes to search taskings. Both groups take note of the surrounding environment, wind, slope, drainage lines etc and arrange their search strategy based on the consideration of these factors.

Case examples were provided to explain the search tactics employed.

Limitations

There are numerous things that can impact on the ability of trackers and dog handlers -

Each resource has their limitations. Things that reduce their potential or ability to detect the clue they are looking for be it the track or the scent. Factors like temperature, sun exposure, wind movement, precipitation, age of the trail or the tracks all can impact.
Presentation: *Snake Avoidance*

**Jen Pennington**  
Virginia Search and Rescue Dog Association

Website: [http://www.leadwithfun.com/](http://www.leadwithfun.com/)

Three brain modes  
- Reptile brain which is the go brain  
- Fight or flight  
- Freeze mode

**Training dog**

You want the dog to avoid the snake and leave it off

If you give a dog a correction they can misinterpret or they can choose to be disobedient when you are not around.

Put something on the ground that the dog wants whilst on a lead. You are holding on but not responding.

The training began using a plastic snake. The dog was walked past the snake on lead. When the dog looked at the owner and not the snake it was rewarded. To teach the leave it, off, ahh ahh. Wait for the behaviour you want, eg. they turn back to you and then mark with a treat.

The dog was then exposed to a live snake. As the snake moved it gained the dog’s interest and it moved towards the snake despite the earlier conditioning on the plastic snake. The response training to this is to make a big fuss as if you are scared by the snake with screaming and dragging the dog away in fear. The aim of this is to instil fear in the dog.

**Snake behaviour**

Snakes are found in the shade when it’s really hot. Snakes go out early in the morning when they conduct heat. They then will go back into hiding or look for prey.

Wind cools snakes, so they go up into trees. At night time the snakes go on roads or other places that retain the heat and where the rodents are.

Most snakes are sit and wait predators. They find the route of travel of their prey and most snakes eat every couple of weeks. You don’t want dog investigating too much under logs.

**Snake venom**  
- Two types of venom  
  - Neuro-toxin – affects nervous system  
  - Haemo-toxin- breaks down tissues

Keep dog calm and happy, put a muzzle on them

Dogs can have Benadryl and Zyrtec and Pepcid (hits both antihistamines)

Check regarding dog’s reaction to various snake types. Watch the dog’s body language
Presentation: *A to Z of Trailing Dogs*

Rebecca Mizzer  
Tri-Star Trailing Dogs

Website for Trailing Resources Inc  [http://www.trisark9s.org/](http://www.trisark9s.org/)

Being a Trailing Dog handler requires physical conditioning and fitness, strength and endurance. Can you run? How far, how long?

Assisting the handler is a flanker, who has the role of looking out for the handler and dog to ensure they are safe. They should be proficient in using a GPS, amps and navigation and should be able to keep a mental map of the area the dog has covered.

Dogs are trained to be operational within 18 months. They train every weekend and 3 times per week. The State standard requires them to be able to operate for a minimum of 12 hours, but they do 24 hour trails.

They do not use the police for their assessments. Every 2 years the dog gets re-tested.

Alert can either be trained to jump up or sit at their feet. They try to encourage physical contact with the subject. The dogs are not trained to identify objects.

A clean scent article is essential and the handlers prefer to secure the scent article themselves so they know it hasn’t been contaminated. They often use a pillow case, comb, personal articles such as pyjamas. Socks and shoes are bad scent articles.

Sometimes they can use footprints to scent from. They can also use gauze pads to wipe down the seat of a vehicle, as long as processes to ensure contamination doesn’t occur.

The missing person’s place last seen is critical. They can also use a scent article to backtrack on a missing person that has been found to see what their movements were.

The dogs are trained for live scent. Scent markers change dramatically after death.

Sometimes the dogs have GPS trackers on the collar.
Good idea to have a list of emergency vets located close to training grounds plus also in area where you may commonly be searching. Check too whether the vet will accept emergencies, not all will.

Need to know the baselines of your dog and keep a record of them in your pack. Also good to know what they are under stress. Heart rates can be irregular.

Train in low visibility, cold, wet weather. Maintain 10 minute nuggets of base training to keep up to date.

Scene size up – what is the threat? Can we move away or eliminate it? Is it safe for me? Eg. gun shot, cliff edge etc

Make a call early for help and cancel if not needed.

Part of rescue training they had to carry their dog for the last mile.

Consider muzzling dog before you start with the exception of airway compromise. Get the dog acclimatized to being muzzled. Mesh muzzles are lightweight and compact, but you can also use vet wrap or a lead if needed. If it’s hot and the dog needs to pant, don’t muzzle.

Get dog used to being checked over, including by different people.

MARCHÉ – systematic approach to any injury or illness

**Primary Survey and Treatment**

- Quick 45 second assessment
- Accomplish things quickly
- Do not be distracted by a gross wound

Massive haemorrhage - pulses? Distal to injuries, bleeding out? (pressure and tourniquet)
Airway management - is it patent/open (blocking, is air getting in or out, choking?

Respiratory Support – K9 breathing rate appropriate? (bee, snake etc)

These are the things that will kill the dog first.

Three main types of haemorrhage

- Limbs and extremities
- Pocket wounds – massive internal
- Non-compressible (abdomen and chest)
For limbs and extremities
1. Israeli Bandage – first line of defence
2. Tourniquet – bleeding stops (no distal pulse). Do not remove a tourniquet once it is in place.
   - Try to get as high above the wound (at least 2 inches). For a blast injury go as high as possible, try not to get on the bone but in the muscle
   - SWAT – T tourniquet – like an exercise stretch bandage

Airway management
- Reposition head to make sure tongue isn’t blocking the airway, or any other obstruction
- Head in neutral position, dog on side
- Reposition airway to see if it helps
- Attempt to dislodge with abdominal chest thrusts
- Hold dog and point down and put pressure from under abdomen-push forward
- Emergency tracheotomy for dogs with obstructions through things like balls

Breathing too slow and lethargic – if the dog will allow, perform mouth to muzzle
Breathing too fast
- heat related – cool and calm
- allergy related – cool, remove allergen and threat (Benadryl)

Wheezes-possible allergy threat
Gurgling- trauma? Supportive care
Bloat
- dog trying to vomit
- Has back arched and up on 4 legs (tripoding)
- When you palpate the stomach and feel the extension
- No fix other than surgery
- Have to needle the stomach to release the pressure

Tension pneumothorax – needle decompression required may have to do several

Secondary Survey
Circulation – shock
Blood loss – check again
Dehydration – fluids (sub cutaneous)
Ineffective blood flow - Gastric Dilation Volvulous

We don’t remove the tourniquet, we apply another over the top

Shock – two types: compensating and decompensating
- Compensating – can keep up with the body
- Decompensating – unable to control thigs

Heat and Hypothermia
- Elevate head above heart
- Protect if seizing
- Maintain body heat
Heat stroke – get the dogs to get wet and lay down
Fracture - Splint if broken in neutral position
Impaled objects – do not remove unless in the airway – stabilise and bandage
Eyes – cover both eyes. Immobilise the dog – can attach to your pack
Water intoxication – swallows air and water from swimming
Gastric Dilatation Volvulus
- The stomach flips internally that closes off the airways
- Feels hard like a basketball

Poisons and Toxins
When to induce vomiting?

<table>
<thead>
<tr>
<th>Yes/Possibly</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explosives</td>
<td>Dog has AMS</td>
</tr>
<tr>
<td>Drugs</td>
<td>Petroleum products</td>
</tr>
<tr>
<td>Rodenticides</td>
<td>Caustic or corrosives</td>
</tr>
<tr>
<td>Anti-freeze (ethyl glycol)</td>
<td></td>
</tr>
</tbody>
</table>

Making a dog vomit
- can use activated charcoal
- monitor for 12 hours
- can also use hydrogen peroxide- needs to be fresh
- give them some kibble then get the dog to play and run around
- if dog has reduced mental status don’t give anything as dog may aspirate
- bag up dog’s vomit and take to vet

Hydrogen Peroxide
- 1 teaspoon per part of 3% medical grade (use a pre-packed syringe)
- agitate and move around
- repeat in 15 minutes

Anti-freeze
- administer 5.5ml per kg or 3 small bottles for a 70lb dog of unflavoured vodka. This replaces the anti-freeze in the bloodstream

Decontamination
- Prevent transdermal and oral absorption
- Carry extra water in vehicle
- Use baby wipes to clean- otherwise will lick off them

Snakebites
- Stay calm and keep dog calm
- Photograph and ID the snake
- Resist the urge to do anything
- Transport to vet with anti-venom- call ahead

Canine Medical Pack contents
- Post op tourniquet
- Israeli bandage
- Decompression needle
- Scalpel
- Scissors
- Benadryl in blister packs
- Vodka
- Vet wrap
- Booties
- 4x4 dressing
- Paw protection booties (commercial)
- SWAT – T tourniquet
APPENDIX 3 - REDOG International Training Week

Andrea Pintar
Instructor and Dog Handler
Specialist in Human Remains Detection, Forensic and Archaeological Canine Search

I met Andrea at the REDOG International Training Week in Switzerland and immediately liked her candid and mischievous nature. The fact she was also incredibly knowledgeable and very generous with this knowledge was a bonus!

Andrea has been working with dogs since the 1990’s. She was Chief search and rescue dog instructor in the Croatian Mountain Rescue Service. She has focussed her work mainly on deceased person and human remains investigations and has participated in more than 100 different search missions for missing persons in the last ten years.

She has worked extensively in Croatia and Balkan area searching the graves from war in Croatia and mass graves from the 2nd World War. She has also assisted Police in other countries to assist in missing person searches, cold cases and murder investigations. More recently Andrea has begun undertaking archaeological work using her specially trained dogs.

**Deployments**
In the field the dog and handler don’t work alone, they generally have another person with them such as a local, or hunter – someone that knows the area.
Callout depends on the urgency and scale of the search, will get called in when they need extra help. For example if a child is missing this is the highest emergency and all dog handlers from across the country will attend to allow rotation of teams, so that others can rest.

They have air scent, man-trailing and cadaver dogs, plus some dual trained air scent and cadaver.

**Search management**

Police activate local Mountain Rescue teams and will continue to interview and provide the Search Manager with any additional information that they get. The Search Manager will work out the profile and category based on the Lost Person Behaviour and then determine the tasking for the search. The Search Manager conducts the search and briefs the Police, plus provides the search data to the Police including GPS tracks and other information gathered from the search teams.

Police will determine from liaising with the Search Manager and after being provided with the search data as to when the search will conclude the search. Mountain Rescue is in charge of open area search and rescue, whereas the Police will search the house.

**Cross training and dual purpose dogs**

Due to the shortage of dogs in some areas, live find air scenting dogs were frequently dual trainer for USAR and wilderness search. The training largely focussed on the hold and bark.
Presentation: *Taphonomy Facility*

Body farms are important training grounds for cadaver dogs.

Useful for training dogs for grave, open area, forensics, archaeology.

9 bodies in different stages of decomposition

Body farms in Texas and West Carolina have the opportunity for dogs to train. One in Australia.

Dogs can come in once they have been trained for at least six months. Dogs must be well trained and handlers able to control them.

Dogs needed time from handler to approach bodies and take them in

All dogs that are searching for deceased persons including for area and mass destruction search. USAR dogs should be trained for large numbers of dead persons or large amounts of human remains.

They need a very high scent threshold as the scent is contained in a room.

Important experience for cadaver dogs. Good to expose the dogs to a large amount of scent.

Provides an opportunity to view the dog’s reaction for this large pool of scent.

Dogs need to be trained on both small and large amounts of scent. It maybe that you need different dogs for the different degrees of scent.

Dogs react two ways either fight or flight modes.

Many dogs did not have the final response on the bodies. They get overwhelmed by the scent pool and find it difficult to pinpoint exactly.
Presentation: *Some thoughts about SAR work*

Linda Hornisberger
Veterinarian
REDOG Trainer and USAR dog handler
Linda’s philosophy is “Think Mission”

When on a mission the victims are often buried very far down. This is very different to what you will have in exercises and training.

When you are training and when you are doing exams always keep your vision focussed on a mission. So ask yourself when you develop your training ‘is this something I will need on a mission?’

A search on a mission will nearly always be far beyond anything you have done or trained for. Quite often instead of a nice indication a dog will just show some interest

Where is the most scent? Sometimes there can be multiple bits areas of scent coming from different places. It is unrealistic sometimes to

Every dog has an individual way of working, with strong points and weak points. What you may think is a weak point could turn out to be a strong and valuable point in different situations.

Being relaxed with your dog and understanding how they work is critical. Not forcing the dog to indicate when they are finding scent in a wide area and indicating to reflect that.

Mr Cool dogs- “I just got a wiff – I will indicate” Some dogs get a sniff and will alert giving a general indication. They will be the dogs that will get on the rubble and tell you there is someone in there – don’t go in with the big machines.

Then you have other dogs (the Swiss watchmaker;) that want to be absolutely sure and will sniff around for ages before. “I’ve got something I have to check, and re-check”. This dog is also very valuable, BUT he will find it harder to pass exams.

So what they do in their teams, they take a couple of dogs working together and they try and get a picture of the situation. Some are quick dogs and they are slower and careful to make a decision.

Rubble may be too dense, especially on landslides. Wind direction plays a huge role in whether the dog can detect the victim. Sometimes you cannot get at the rubble from the right side. The reality is that people stay in the rubble because of this. We don’t train enough to go back and search again when the wind changes and to understand when we should do this.

Get used to dogs searching next to all kinds of smells in the rubble, such as food, blood, clothes, smoke, faeces and urine. Put food in the search area but don’t let them eat it. Training on demolition areas and recycling areas. There is so much scent in these areas, but if you go step by step they will start to really focus on the job.

Get the information you need about the mission. When the people were last seen in the building etc. Getting the locals to draw pictures and get accurate information. It is your job to ask specific questions and to listen! People like firefighters and civil defence are not always used to asking these
questions. You are, it’s in your training and it’s your job. Linda went to Japan and asked lots of structured questions. Do your job and people will listen to you.

We must all improve our ability of observing dogs at work. They do a double blind study where someone prepares an exercise and then hands the exercise over to another trainer. That trainer then goes into the exercise with the plan. They then do the search and come back and tell them what they have found.

Dogs are able to see what you are looking at. So be mindful of this because you can tip off the dog. Relax, don’t stare at where the victim is.

Know and trust your dog and be assertive enough to tell people. You know your dog better than anyone.

Working close to your dog to ensure the dog’s safety and to observe effectively a dog’s reaction. You have to see the close up reactions of the dog. You have to be able to search small areas closely and systematically. Some people say that can’t work close to their dog because it stresses them. What are you going to do on a mission? The dog has to be trained to accept these conditions.

Your first dog may be the ‘Mr Cool’ dog that indicates as a general indication, and then they bring in the ‘minutia’ dog to do the fine search work.

Let the dog work, and make sure you’re not standing there putting pressure on the dog. Let new dogs work freely first and then get them to search small areas carefully and systematically.

Give the team time to work.

Think in 3 dimensions – look at the structure of the building. You may have to get holes put into the rubble. Come back later and check again. Rubble may have to be removed. Dogs remember holes, so do it 2-3 times. Use technical search, it’s there to assist.

Water your dog frequently. Make breaks, change dogs. If they don’t have enough water they will drink from puddles and this could kill your dog or give them severe liver problems. Leptospirosis is particularly bad. If the dog doesn’t want to drink, train the dog to drink before they work. Put something good in the water so they like it. Dog handler must have water on the person. Not in the rucksack.

Heat kills – cool dogs down, before (if need be during) and after a search.

Protection for dog’s feet in the rubble – use boots.
Presentation: *Stress and Problems*

Silvia Peter and Linda Hornisberger

Positive stress – dogs can cope and enables them to adapt. Stimulation is perceived as something positive. Negative stress - dog can’t cope with the stress, perceives it as a danger, dog is overwhelmed.

Displacement activity is behaviour that is rewarding for the dog but is out of context eg. eating wood but gives them a good feeling from chewing and they get a release of morphine for the reaction, feeding, body care, licking, scratching, sexual behaviour etc.

We often punish dogs for this behaviour. If you punish the dog this is just treating the symptom and not the cause. Dogs may then start to show other displacement activities, refuse to work and become ill. Need to find the solution for the conflict and the displacement activity.

Eating grass can be stress, or it can be signs of a stomach problem.

Retriever type dogs when stressed will tend to go a distance from the owner to relax, whereas sheepdog types tend to stick closer to the handler.

Passive stress reaction is very calm and slow, up to not moving at all. Often is mistaken as resting or being stubborn, cool or dominant. Remember a dog that seems to be resting is not necessarily relaxing.

**The Four Fs (ppt handout)**

**Flight** – running away, pulling back, leaning backward. Body may remain on the field but mentally they shutdown and go into their own world. Owners and trainers may perceive this to be less of a problem because the dog is quiet and lying down, rather than running away or showing aggression etc.

**Freeze** – is not always easy to recognise. The main sign is the body tension. Such a dog may be extremely quiet, breath softly, but will still have extreme body tension. The tail may be tucked in between the legs or held up stiff. The dog may lift up a paw. The dog seems stuck between flight and fight. Lying like a sphinx

**Fiddle** – activity is over-exaggerated. Dog seems happy but often lacks body feeling and activity is exaggerated which may annoy other dogs and lead to fights. Tries to be nice with everyone.

**Fight** – may show aggression by warning or may attack. This can be the last resource for dogs on a leash that can’t escape the situation. This is a successful response for the dog because it gets a quick result and this reward can then become a problem because it can become the number one choice. Try and avoid letting the dog get to this point.

Handlers should work out what their own F type is. Realise this so you can work out your own strategy for yourself and your dog!

**Problems** – a structured approach helps
What is the problem?  – Accept your problem! Recognising the undesirable behaviour in the dog. Describe it without interpretation or valuation

What is/could be the reason or trigger? – Reason/trigger/stressor. Did something happen? How was the dog trained? When did you first notice the problem?

What is the aim? - Define your aim.

What could be the solution?

Avoid trigger/stressor

Give confidence back to dog and handlers – give them the YES I CAN!

Don’t do too much, less is often more

Positive rewarding, rethink training and positive reinforcement

Problem examples

Problem Rubble search eg. dog barks in a cut off fashion, bites at wood and tears away pieces of wood (fight). Example of positive stress and excitement. The problem is that the dog is over-stimulated. Will try and go into the hole. Don’t encourage the dog to dig. Ignore the behaviour.

Solution - Best to wind down the excitement down. Don’t do excited runaways etc. But don’t let the dog get into the hole. Let the door to creep in and get the toy, Springers and Collies like that. But this is to stop them digging to get in. Malinois type rewards – give the toy and take it, without shaking or fighting.

Problem: Roping dog down - The dog doesn’t move at all (freeze) when it gets back down on the ground. Instead of beginning to search the dog just walks about and sniffs about.

Solution- Get the dog to do something to can do and likes to do it. Give the dog a little time to resume normality, throw a ball etc. Long term solution get the dog used to being in a harness.

Problem: Dog moves away from victim without alerting in rubble

Dog doesn’t like the find because it has to indicate. A bit like a child that stutters in the front of class. For example Labradors bred not to bark when they are focussed.

Different dogs like different rewards. Some alerts or rewards are not consistent with the breed or training. Springer spaniels prefer searching to finding as the reward. Field type Labrador don’t like barking. Barking is stress.

Presentation: Training step by step

The chance of survival of a person lying far below in rubble often depends upon whether wel trained SAR teams are put to work soon enough.

Small steps, let it set, move on slowly without letting the dog get bored. This isn’t always easy as you are weighing up between demanding too much and boring the dog. The danger is demanding too much.

Avoid letting a dog make mistakes. Do not search in an area with food too early/without being prepared.
Avoid occurrence of undesirable behaviour – avoid that dogs who love to dig and pull to get to the victim are rewarded by being able to get to the victim.

Avoid bad experiences – for example avoid that the dog is unable to cope, especially physically unable to cope

Next step – define, take one step at a time, work on one theme at a time. If you take one step forward in one area, you may want to go back in some other aspect

Make sure that your training area is safe and free from things that may cause damage to or distress the dog.

Be mindful of wind direction constantly when training, not just with regards to locating the victim but also in regard to safety of dogs, especially inexperienced young dogs that may follow scent out of a window or off a ledge etc
Presentation: *Canada Ground Search and Rescue Evolving*

Paul Olshefsky  
SAR Volunteer Association of Canada  
NASAR Instructor  
Former Search Co-ordinator for Parks Canada

**Background**

Ground Search and Rescue Council of Canada (11 Provinces and 2 Territories)  
1200 SAR volunteers within Provincial and Territory GSAR Associations who manage themselves. Also have Search Volunteer Association of Canada  
Group of volunteers had generally organised themselves with little support, little financial support and the training was different in every province and every territory  
Main control at Provincial level, Federal Govt has little do with them.  
Search urban and wilderness environments

**Case study – Andy Warburton (9 year old boy) - July 1986**

This is the case study used for training in all of Canada  
8 days of searching, found deceased on 8th day  
GSAR teams trained but not co-ordinated  
5000 civilian search and rescue volunteers who showed up to help  
National publicity drew attention to ground search and rescue  
A lot of media attention

The volunteers that responded noted that the search was being handled poorly  
Inquiry and study of the search identified 9 areas where problems were evident

**Lessons identified – compendium of 9 errors**

1. **Agency responsible for the search was unprepared for the problems encountered during the incident**  
   - No shared communications  
   - No logistical support  
   - No ability to track resources
- Untrained volunteers
Province responsible was not prepared to handle such an enormous amount of people

2. There was ambiguity of authority during the incident
People did not know who they were working for or who was in charge.

3. There was no system for relieving fatigued search managers
Studies completed have given an insight to the amount of time that an Incident Commander can function effectively before they need rest. 4 hours is the maximum time.

Search manager went for 24 hours in his first operational period. How clearly are you thinking managing resources, planning etc after 24 hours?

4. The investigation concerning the missing person was incomplete or terminated too early
There was no continuous investigation for the incident. The Police interviewed only 2 people, one an Aunt and the other was a small child that he said he saw Andy in a particular place by a creek at a certain time. The child’s information focussed the search on this area. Had the Police spoken with the parents or older brother, they would have given them vital information his fear of water and leeches

The efforts of the police dog was concentrated on this area.
They did not have all the information or continue to ask questions or investigate other people.

5. There was a lack of a coherent search plan or strategy to find the missing subject
They had no plan and weren’t prepared for the number of people who came to assist.

No strategy or plan prepared. No discussion on their best resources to use, how far Andy could have travelled from the time he went missing. No calculation of his travel as a child over time was made.

6. Ineffective search tactics were employed
Dogs not used efficiently
One subject lost but many clues. Focus on the clues to find the person.

People are now trained in tactics. Searchers are trained how to search. Dog handlers are better trained. Spotters in helicopters are now also better train.

They would never line search. The first thing they want to do is reduce the search area and they want trained searchers/trackers to determine direction of travel. They look at physical barriers that may contain people which requires scrutiny of maps and strategically they look at Lost Person Behaviour data to profile and work out statistical travel times for a child of this age.

“We apply science to search and rescue very quickly”

7. Search coverage was not accurately recorded
They did not record the areas that were searched.

Important to understand where we have been, how that area was searched and with what resources eg. dog, helicopter etc. They have to at any time go back and understand exactly where they have searched. The investigation should be ongoing and not end until they find the subject. If they get new information they can go back and refer to their searched area.

They use real-time tracking with their radios. They can see where their teams are in the field in real time and this information is recorded.

8. **There was no effective system for dealing with clues**

They search for clues, not so much the subject. On the second or third day of the search a footprint was found which was reported to the incident command post, however they had no understanding what to do with the clue, how to protect or how to work away from it using a dog or trackers.

They are always trying to determine the direction of travel form the clue, they then want to use the resources to follow up. The clue can give an indication of how the person is behaving. If someone is cold and hypothermic in the woods for a long time and suffering from severe hypothermia they tend to disrobe and take their clothes off. So if you mind clothes that can give a clue to the physical and mental condition of the person.

They are also trying to determine if their victim is responsive or unresponsive and that will determine the search strategy they will use.

9. **Search managers lost control of external influences**

If you cannot control an incident this large, other elements will come in and control the search for you.

Media response was huge and trying to control the media became where they spent more effort, due to the national coverage, than controlling the actual search.

When Paul worked for National Parks in Canada, they had an avalanche that killed 7 children. The avalanche occurred at lunchtime and by 1700 they had had 70 international media inquiries as far away as Australia and New Zealand. This was the same day of the failed space shuttle launch!

When there are children involved it draws significant media attention.

The media is not the enemy. They treat the media as partners.

During Andy’s search there was a clairvoyant that showed up that said she had a dream about him being by some water and by some trees. Everywhere within the 20km square search area was wooded and water and lakes! The search managers at the time thought they would put the lady in the helicopter so she could get a better sense of where Andy may be. Not a good use of the helicopter resource.

Political involvement – towards the end of the search their work questions being asked by politicians. Not a big impact at the time.

Untrained search dog handlers also showed up. They played on the emotions of the family. Anyone that showed up that offered to help in some way, caused the family to put pressure on to use that resource – whatever it was.

“People managing the search had lost control”
In the final days of the search, they decided to call in the military to search. However, they are not trained to collect clues. Military are good for base camps, logistics etc. They can be used to search for unresponsive person where very detailed searching is required.

On the final day the search manager realised that he had lost control of the search. They believe that he tasked the military in an area where they would not remotely have any chance of finding Andy. The military had no search planning, Lost Person Behaviour etc they went further than anyone else went during the search.

The military did find Andy who had died from hypothermia (they believe he had survived 4-5 days). He had taken his shoes and jacket off and laid down and went to sleep. They had searched close to the area and he was 5 km away in a straight line from the last known point. However they believed he covered more ground than this.

Because they didn’t have the search profile information (Lost Person Behaviour) they didn’t believe that he a 9 year old could travel that far. (He was found outside the 95% percentile ring)

Post Incident

This became a case study used for all of Canada’s search and rescue training.

The family did not want to put blame on anyone, but requested SAR look at advancing the program better.

Post-Traumatic Stress Disorder (PTSD) Impacts

This search had a huge impact on the people who were responsible for the search. Many people left search and rescue after this, including search managers. They believe one suicide was a result due to the critical stress. After every search they have a post incident debriefing and critical stress is offered to everyone involved through the Government.

They had also have new people that had observed what went on and became very involved in SAR.

In the United States they had already started a program of systematic searching for lost persons. The new people who had joined the SAR program needed some direction and went into partnership with the National Association of Search and Rescue (NASAR). Together search techniques, training and courses were developed. Managing the Lost Person course has Andy Warburton as the case study for that course.

Moving forward

- Search Management System required (Incident Command System)
- Standard Shared Communications (National SAR Radio Frequency)
- Training required for search teams (ie. Search Management Courses)
- Development of National Ground Search and Rescue Core Competency Standards (Searchers, Team Leaders, Search Managers)
Incident Command System adopted

They had no organised structured system to allow them to manage such incidents. They looked at the Incident Command System (ICM) utilised by the Fire Services to control fire incidents. They applied this ICM structure to their SAR in Canada.

Common Communications System

They move teams around a lot to respond in remote areas, so they needed some consistency and programs. They needed one common communications system for SAR teams to use across the country and they use the National SAR Radio Frequency which is the standard shared communications.

Ground Search and Rescue (GSAR) Training

The Police are the authority for GSAR and now that GSAR is organised and structured, they always choose to use the GSAR trained volunteers. When they run the search training, the Police undertake the same training as the volunteers. Half of the course participants are Police and half are volunteers. This is because “if everyone doesn’t understand the system it will not work”

National Standards for Ground Search and Rescue

The final component was that they developed national standards for GSAR for all of Canada. This took them 3 years to complete.

They hired the Canadian Standards Association (CSA) to be the facilitators. They got clear direction from the National Search and Rescue in the government, they gathered all the standards from the Provinces, National Parks, etc. They went through all the standards and pulled out all the common information. They then put together a technical committee form SAR experts from across Canada and they have been in place in place for the whole process and still remain in place. The CSA kept the committee together and mediated the whole thing and kept them focussed on the standards. Everything in the standards was agreed to by consensus. It went out for a 60 day public review which had to be addressed by the technical committee. They used the ISO process. They needed to start with the authority and blessing for the government for this whole process to proceed.

Now that the standards and core competencies have been developed for Search Managers, Ground Search and Search Team Leaders, they are not looking at developing the training.

There GSAR teams, due to the variety of terrains they work in they have also evolved technical speciality teams eg. dog teams, helicopter rescue, avalanche, vertical teams etc who still work within the ground search and rescue program.

Conclusions

This system is a work in progress and only works because they have 2 things:

- Dedicated volunteers who are working to make it happen
- Support from the Government and authorities who help make this happen (they pay for lodging, mileage, insurance, food etc)

The training has to continue and develop.

Development of Canine Standards
Their next big step is to develop canine standards for dogs. There are trained dogs but Police don’t want to use them because they don’t know the standards or level they are trained to.

The model in Canada for dog handlers will be that you will be a ground search and rescue team member first. If you are a dog handler that wants to work their dog, they will have to join a GSAR team and have all the training first before you can become a dog handler as part of the team.

**Search Manager’s understanding of search dogs**

Paul identified two problems with regards to use of dogs for search.

The first is that Search Managers don’t know anything about search dogs and what they can do. A search dog is another tool and Search Managers have to know what resources are best applied where. This includes about how to use the dogs, where to use them etc.

Search Managers when they are in the planning team and working out their tactics and strategies they have to know and have an understanding of what that tool can do for you. They talk about probability of detection and they have to work out the best results they are going to get for the tools that they apply. For example they may use a helicopter, then a dog.

The other problem is that dog handlers don’t know anything about search management, so they don’t know where they fit in and don’t always understand why their dog may not be used.

In Denmark, they use two resources to search the same area. They look at the probability of detection for each of these resources.

Search Manager may assign a probably of detection that they want the dog handler to cover. But the dog handler has to be honest about how well they have been able to search the area and give an honest account of how they were able to search.

Having a Canine Search Manager to work with the search planning team as the subject matter expert to advise on the best utilisation of the dogs. This takes the pressure off the dog handler, so they can concentrate on their searching. The Canine Search Manager helps them determine which type of dog, and even which particular dog in the team.
Presentation: *Search and Rescue with Dogs in Landslides*

Carlos Andres Gomez  
Engels German Cortes  
Martha Gutierrez  
Cuerpo De Bomberos Voluntarios  
De Sabaneta, Columbia

**Background**

Undertake area searches – mountains, steep and rainforests, jungles

Tracking searches and rubble searches

Respond to earthquakes, tsunamis, mud avalanches, non-intentional explosions, collapsed buildings and terrorist attacks.

Always work with Engineers and Geologists

Deploy not only in Columbia, have had missions in Mexico, Haiti, Venezuela, Ecuador, Peru and other countries of the region.

Have trained, evaluated and certified handlers and dogs from Mexico to Argentina. They guide Latin American search dog groups to follow international standards to certify their dogs, handlers and Units and work under the INSARAG guidelines.

70% of Columbian population live in steep mountainous areas up to 5000m high. In rainy season they have a lot of landslides. They have good construction codes but not everyone adheres to them.

**Using the dogs**

Dogs reduce time, risks and costs of search operations. Dogs are the fastest way to help find people.

They deploy as part of the local, regional and national emergency response systems. They almost always deploy with a geologist who are provided to them. The geologists tells them if and where they can work. They anticipate escape routes.

The geologists sometimes train with them and teach them about the different landslides. They approve whether it is safe for them to enter the affected area. Knowing about the type of landslides allows them to understand how quick and unstable they are.

**Emergency operations**

Emergencies attract a lot of people and make it difficult to work. Landslides often occur over roads because the foot of the slope has been cut making them inherently unstable.

They ask two basic questions:

1. Are there human victims? They investigate beforehand to check likelihood of people

2. Where exactly are they?
They always confirm a find with a second or even a third dog. The first handler does not see the second handler working. They do this deliberately so that they don’t subconsciously impact/influence on the dog working and provoke a false alert.

Behind the handlers are co-ordinator who sees all the work and knows the sectors that have been covered. They direct the handler where to send the dog and provides safety for the handler and the dog whilst working by watching for hazards. They try to keep handler outside of the landslide area.

It’s equally as important to clear an area and say no one is there.

Technology is good but slow. The dog can pinpoint the spot for the technology. They complement each other. Dogs are faster and more stable in these conditions, and it’s less dangerous for humans. They have never lost a dog in a mission.

They always work with at least 3 dogs, which are rotated constantly. Moving in landslides is very difficult. Hot and humid conditions make working very hard for handlers and dogs. They work in shifts no longer than 20 minutes, then they change the dog.

When they started 27 years ago they started working with huge dogs, - German Shepherds, Rottweilers, etc. These dogs were not good for the hot conditions. Now they work with medium sized dogs or little dogs. Engels has a Jack Russell Terrier which is 8 kilos, they don’t suffer from heart conditions and they have logistical advantages.

Training

Obedience work is very important for them. Dogs must work far away from the handler.

The handlers are part of the SAR chain and are all search and rescue workers. This is their primary training, and the dogs are specialised resources that they use when required. They have to be able to provide first aid etc

One of their biggest issues is having to deal with the families who are grief stricken and want to help. They try to organise them to keep them safe. They always keep the dogs out of sight somewhere safe and cool as they attract a lot of attention and they don’t want the dogs too be affected by this, so they isolate them.

Scent theory is part of their training and they learn about human smell in different terrains and conditions.

Dogs are trained in rubble first before they commence their landslide training. They start with hiding people in shallow places first to build the dog’s confidence, then they build up to deeper hides.

Dogs must give a clear, fast, focussed and sustained alert. They want dogs to bark and scratch, and encourage scratching as a natural behaviour.

They use techniques similar to avalanches. They get people to may dig holes in the landslide to release scent. Chance of survival is very low in these circumstances.

Moving in landslides is very difficult. Hot and humid conditions make working very hard for handlers and dogs. They work in shifts no
They train in day, night and different terrains. Dogs work better during the night and this is an advantage for the scent. They will illuminate the areas for them to work. Handlers need at least 2 lamps, a headlight and a powerful torch. Better for dogs in countries with high temperatures too. Dog see better at night than humans.

Compliment training with obedience and dexterity. Not strict about this, but need to be sure that the dog will follow commands, especially as they are working far from the handler. They also get them used to travelling in all forms of transport.

**Recently deceased training**

Most victims are already dead, so they decided to train the dogs to detect dead people. They taught detection and alert of human tissues, not older than 72 hours. This is approximately the timeframe to intervene. They do not do cadaver or forensic work.

They want dogs to find and alert on living victims and recently deceased up to 3 days. They use technological resources to support the dog’s alerts to make the confirmation. They don’t ask for a different alert from living or deceased. They also train and test using multiple victims, with animals, with deceased source, food etc.

It is illegal for them to have human tissues, but they are trying to change the rules to legally allow them to get access to this material.

**IRO standards**

They follow the IRO standards and have recently had 16 recent certifications. They also have their own standards.

**Water search**

They don’t find dogs as a good resource for rapid flowing turbulent waters and do not have any water search dogs.

**Mud avalanches**

The wet mud avalanches are difficult to find people. The conditions are difficult, particularly during ongoing wet conditions. Takes week for the area to dry out, which means it is then a job for cadaver dogs.

**Fit for Task**

As rescue workers, they have to be in good physical condition. This will also help them tolerate the pressure of the emergency. All of them, the instructors and trainees have to be fit.

They have to do a lot of physical exercise, on top of his they have training in first aid, navigation, incident command etc.

They also do psychological training for the handler. “Most of the mistakes you see
with search and rescue with dogs are the responsibility of the handler” even with trained handlers, the pressure of the situation can impact.

At the beginning the training they learn the techniques, then they begin to put pressure on them. They do scenario based training to stress them and they also teach them how to breathe and relax and concentrate. During an operation they have a lot of people pressuring them so they have to be able to be calm and handle the situation.
APPENDIX 4 - Training Sessions

A range of training activities were observed during the study tour. I have endeavoured to provide some information here and hope to include further information to the Australian Disaster Resilience Knowledge Hub including video footage.

NZ USAR Operational Handlers Training Weekend

Attending the USAR operational handler’s weekend was a great opportunity to see the range of conditions that the top NZ USAR volunteer search dog teams were challenged to.

Lead trainer and assessor Brenda Woolley ensured that the teams had a variety of scenarios that tested them physically and tested the in USAR and area search environs. The training included:

Night training session in a pine forest where the dogs were tested in pitch black conditions to find numerous bodies hidden within the forest setting. This proved to be a challenging situation, as it was unfamiliar territory, night time and with victims that were not always covered or hidden beneath something where the dog couldn’t get to them. In some cases, this combination of different circumstances frightened some of the dogs.
Rubble pile training was undertaken in a large area where multiple ‘bodies’ were put in hides as well as scattered in amongst concrete slabs and building materials. The pile itself was very unstable and difficult for the handler’s to easily move around. It was also very consistent in appearance which made reference points difficult. Handlers were encouraged to work in teams with one handler and dog and another acting as navigator and safety support.

A timber yard area was also used where victims were hidden in amongst machinery, buildings and stands of logs.

Another search involved a huge junk yard with numerous structures, cars and machinery and buildings. The dogs were required to search the length of the very large block and locate two bodies.

A building search was also undertaken in one of the abandoned buildings in the centre of Christchurch that had been impacted by the 2011 earthquake. Hide scenarios were challenging with one ‘body’ in an elevated location in an air-conditioning vent.

A team building and fitness and agility training session held at a children’s playground in a local school where the dogs and handlers had a circuit to undertake in small teams which included harness and manual handling work.
I spent an afternoon training session with the volunteer search dog handlers from various teams in the Peak District. All of them are trained Mountain Rescue members.

The air scent area search training was conducted on some large hills where the trainers could easily observe the dogs and handlers at work. This sort of training required the dog to range far away from the handler.

The fitness of both dogs and handlers in this sort of steep terrain was something that was readily apparent.

All the teams worked really well and the handlers being from different Mountain Rescue teams were very supportive of each other.

Thank you to Dave Mason for organising and to all the guys for the information they provided to my research.
SARDA Ireland – National Training Weekend, County Wicklow, Ireland

SARDA teams from around Ireland came together for a National Training weekend.

I missed the first day of the weekend due to the Wicklow search that I attended with two of the dog handlers. The search area included dense pine forest, open farmland and hills and a boulder field and was undertaken over several hours.

When we had completed that search we were called out to possibly assist with another search, but were called off as search teams were in contact with the lost people and found them easily.

The second day of the weekend saw us move location due to heavy fog.

Searching was undertaken in an area that was located near a river. There was an elevated road that provided a good viewpoint for trainers to watch the teams operate. Two victims were hidden and the teams were requested to do a hasty search of the area. The terrain was lowland and comprised grass and trees along a river.

Each team approached the search differently and afterwards were debriefed on their search decision making.

I also attended a ‘stock test’ where they test the ‘proofing’ of a dog from responding to stock in a paddock. They organised with a local sheep farmer to have the dog and handler come and undertake the test to see if the dog will behave on their property. The sheep farmer provided a paddock with lambs and ewes and then got the dog (who is off lead and off heel) and handler to walk around the paddock for about 15 minutes. The farmer observes the dog and if satisfied the dog is not likely to chase the sheep, will then sign off on the dog being stock tested.
Virginia Search and Rescue Dog Association (VSARDA)

The Virginia Search and Rescue Dog Association (VSARDA) is a non-profit organisation that is comprised of volunteers. Website: [http://www.vsrda.org/](http://www.vsrda.org/)

As part of their non for profit status they must provide educational presentations to the community. They do this with groups such as Scouts, specific dog breed clubs, community events etc. They are also able to obtain sponsorship and apply for grants which this helps them fund their equipment.

New members are nominated by the VSARDA board and voted on by current members.

Qualifications are to national SAR qualifications provided by the National Association for Search and Rescue (NASAR) and North American Police Working Dog Association (NAPWDA)

**Water search training**

The water search training was held on a lake and was undertaken as basic training for some of the dogs that were less experienced.

The source that was used was human placenta which was placed in slotted pvc tubes as a shallow source in the water around the lake edge. It was tied with fishing line and weighted down. There was also source put down slightly deeper away from the lake edge.
SARDA Northern Ireland - Drowned Victim Search Dog Training
Newcastle, Northern Ireland

Neil Powell
Trainer and Dog handler
SARDA Ireland North

Mike Dermody
Trainer and Dog handler
SARDA Ireland North

Dave Marsh
Dog handler Bolton Mountain Rescue and SARDA Ireland North
Secretary NSARDA

Sincere thanks to all the team from SARDA Ireland North - Neil Powell, Dave Marsh, Mike Dermody, Keely Dermody, David Carlisle, Georgina Armstrong and Phil Eichmann for allowing me to share in your weekend of DVSD training.

Source

Use un-medicated squares of gauze and put it in with the scent source and then you can use the gauze, known as cloning. Imprint the odour

To use piglets in Northern Ireland you have to have a licence from the Department of Agriculture. There are proper disposal requirements of the piglet once you have finished using it. You can’t put them into drinking water course, can’t bury them in fields used for grazing and there are clear disposal specifications that must be followed. The licence gets renewed every 2 years.

Training – Neil Powell

Once the dog is imprinted, you always make it so they can find the scent. Don’t make it too difficult for the dog. It takes about 2 years to train dogs for this. The training needs to be regular and consistent, broken down into small steps at a time with a reward.

The dog has to be motivated to work, so use whatever works for your dog for a reward, like a tennis ball etc

Training can be done in parallel with teaching the dog to find the scent, and also teaching the dogs to tell you they have found the scent.

Teach the dog an indication, eg sitting. Once the indication is mastered then Neil combines the two steps so that when the dog finds the scent it sits, and then is rewarded.
Use 4 inch waste pipe with stop ends with holes drilled or saw cuts in the side, and a piece of lead flashing is put in the bottom. This is then connected to shore with a strong line. Can't use ordinary rope because it floats so they use lead shot on fine line to help it sink.

You have to hide the line away from the shore. The wind has to be onshore.

Some dogs go into the water and bite at it, some will bark and keep out.

Need to eliminate all the other things that the dog could be imprinting on.

Then go on to shallow burials.

Need to practice getting the dog used to the boat, without any searching. Take the dog out and make it fun so that dog gets used to the boat.

Mike first started using food when imprinting Quincy, then changed over to the ball.

No absolutes. Find what works for the dog in the way of rewards and indication.

When the scent source is put in the water for training, it needs to be there for least half an hour.

**Imprinting – Mike Dermody**

Teaching the dog all the individual parts such as teeth, blood, bone etc. With using a piglet as the source the sum of all the parts is presented. If the dog finds one of the individual parts like blood, it gets the reward.

For water based work, stick with what they are going to find. So using large sources such as piglets. Despite the concern that pig is not the same as human, both Neil and Mike have had numerous human finds in the water training only on pig. (38)

Dave Marsh – sometimes the dogs will taste the water when they are getting a whiff of something that they aren’t sure of. He likened it to the dog doing a jigsaw in their head with all the pieces of scent.

First step is to train on the land with the boxes to imprint. Next the article is put out of the water with the wind blowing onshore for the dogs to pick it up. Then the article is placed under the water near shore and this takes around 6 months to consolidate and then when you start working on the water you have built a solid foundation it could take 6-9 months. They start off if freshwater and go on to saltwater. When working in area where the river meets the sea, you need to be aware that the saltwater is lighter than the freshwater. If the tide is coming in and the river is flowing out you have two different directions. From what they have seen the scent appears to move more easily through the saltwater. The sea can have the effect on the scent by taking from the deeper freshwater and it moving with the flow of the saltwater, which can be confusing in the search.

**Neil Powell**

Insisting that a dog barks, particularly if they are frustrated, can mean that the dog may bark just to get the reward. Observing the natural body language of the dog and its natural alert tendency.
Mike and Dave – re assessments

Assessed on Lough Neagh (biggest freshwater lake in Norther Ireland) a couple of years ago.

The assessments included working with the Lough Neagh Royal National Lifeboat Crew.

Search area was a kilometre square. They found a marking point and worked the boat back and forth using the wind conditions accordingly.

Part of the assessment requires them once given the search scenario to work out the areas to be searched and how they are going to do this. It also involves them briefing the lifeboat crew while they are searching and what they require of them. They started in the harbour area and Mike was required to steer the boat while Quincy searched, this demonstrated both Mike’s boat handling skills and Quincy’s ability to work independently.

Had one area to search in the morning, then a search 1km square in the Lough, then another area later in the afternoon.

A lot of what they are taught is to be confident enough in the dog’s indication to be able to go back to the search/dive team and tell them where the dog has indicated and the route they should take with sonar or divers to search. So the ability for them to be able to brief other people in what they need, plus also being able to tell them confidently this is where you should start and this is the direction you need to work. Interpersonal skills are critical, not just with the Police, divers and other services involved, but also with the family members and how to speak with them. (Mike)

Once you are deemed competent, can handle the boat, can recognise that the dog has found, can narrowed the search area down etc. Once they got more experience they extended their search scenarios to include work in the sea. According to the NSARDA standards they are re-licenced every 2 years. Dave and Mike frequently go to Northern Ireland to train with Neil to keep their skills up, in addition to the search work they also undertake. They are quite critical of their own training and maintaining their skill levels as high as possible. The weekend training gives them an opportunity to assess themselves. The recently did a search down in Guildford, where both dogs indicated successfully https://www.boltonmrt.org.uk/2016/04/17/incident-402016-water-dog-search-near-guildford/

The national standards from Drowned Victim Search Dog (DVSD) training were developed by John Sjoberg and Neil Powell have put together which is the end product they work to: Drowned Victim Assessment Criteria and Guidance for Assessors.

Neil is the only person in the country that has enough experience to assess them, so he brought in John Sjoberg who was the founder of DVSD, who was the independent assessor as they don’t internally assess. (42)

The first initial search in the harbour is only one source and it’s also about boat handling skills and working within the harbour area. The second area and third areas are 1km square with one scent source. They do multiple find and blank searches in training. They don’t know how many sources are in.
According to Mike, the dogs have found the sea searches in salt water easier than in the freshwater lakes. The dogs have worked in 40-50 metres of water, but the difficulty is for them to work out how fast the water is moving, how deep it is, any thermoclines within the water and how far back the scent will move. They have to try and work this out, but they use the help of local fishermen who know the area and give them an idea of the environment. Mike recommends that when you get to the search area, go and find the local fishermen and boaters as they know the area and provide you with information, how the currents and eddies move. The coastguard also have charts and information that can be referred to.
REDOG International Training Week – Epesses, Switzerland

The training setup at the Epesses base for the Swiss Army in Switzerland as nothing short of amazing and was the backdrop for the REDOG International Training Week, which is held every 5 years.

Handlers and dogs from 17 different countries attended a week of practical training in air scent, trailing, USAR and human remains detection. In addition to this there were lectures from leading scientists, researchers and experienced instructors and dog handlers.

I was put into the USAR team, but did manage to see some of the training for human remains detection and also a morning of air scent training. Unfortunately, due to offsite logistics I was not able to observe the trailing training.

A lot of the information I have is video footage, which will be provided in due course to be held in the Australian Disaster Resilience Knowledge Hub.
APPENDIX 5 – Standards

The following standards have been provided as reference material...

New Zealand LANDSAR

New Zealand LANDSAR Search Dogs have developed standards for Tracking, Area search and Avalanche: [http://searchdogs.co.nz/assets/files/LSAR%20Dog%20Standards%20Rev%203.2%20%20Approved%203%20Sep%202014.pdf](http://searchdogs.co.nz/assets/files/LSAR%20Dog%20Standards%20Rev%203.2%20%20Approved%203%20Sep%202014.pdf)

Scientific Working Group on Dog and Orthogonal Detector Guidelines

Scientific Working Group on Dog and Orthogonal Detector Guidelines (SWGDOG) is a partnership of US local, state, federal and international agencies including private vendors, law enforcement and first responders. The standards can be found here [www.swgdog.fiu.edu](http://www.swgdog.fiu.edu) and currently pertain to the following:

- Unified terminology
- Minimum Standards
- Selection of dogs
- Selection of handlers
- Kennelling
- Health care
- Presenting evidence in court
- Research and Technology
- Training and certification of Substance dogs: Explosives, Arson, Drugs, Scent dogs: Tracking, Trailing
- Scent ID
- SAR and Knowledge Management

National Association for Search and Rescue (NASAR) Guidelines, United States

The National Association for Search and Rescue (NASAR) has been in existence since 1972. Originally started to represent the State Search and Rescue Coordinators, NASAR grew to represent all SAR volunteers and continues to support the State Search and Rescue Coordinators Committee (SSARCC).

NASAR uses standards developed by numerous respected bodies to build education courseware, publications, and certifications. Government agencies and non-profit Search and Rescue Teams use NASAR’s material and certifications to build credentialing programs for their organizations and produce highly skilled searchers that work within their communities and are available for mutual aid regionally and nationally.

[http://www.nasar.org/sartech_i](http://www.nasar.org/sartech_i)

A range of courses relating to volunteer search dog teams are available to be undertaken which encompass trailing, area search, human remains detection, avalanche, tracking and canine search specialist.
International Rescue Dog Organisation (IRO)

The International Rescue Dog Organisation (IRO) is the worldwide representation for 116 national rescue dog organisations from 41 countries on all continents providing the frame by setting up events, activities and trainings within which its members can achieve their personal goals: from the easy going dog owner wanting to train with his best friend to the highly specialized deployment task team wanting to practice for the case of emergency.

John Ball kindly provided me with a copy of the IRO standards which will be made available in the Australian Disaster Resilience Knowledge Hub in the future. The standards provided include the following:

- International Testing Standards for Rescue Dog Tests
- Guideline for the organisation and evaluation Int. IRO Mission Readiness Test Rubble (Module 4) and Reclassification (Module 5)
- Guideline for the organisation and evaluation IRO Mission Readiness Test Area

Canadian Ground Search and Rescue Competency Standard

CSA Group, a leading standards development organization and a global provider of testing and certification, and Search and Rescue Volunteer Association of Canada (SARVAC) have released Canada’s first standard on ground search and rescue operations.

Core competency standards were developed in response to a call from across the spectrum of stakeholders in the Ground Search and Rescue (GSAR) community in Canada. The standards have been developed through the rigorous framework of CSA Group, and through collaborative work of a panel of SAR experts from federal, provincial/territorial, local, and volunteer search and/or rescue agencies and organizations representing all GSAR stakeholders in Canada, and CSA Group.

This document took 3 years to be developed through gathering standards from around the world. The standards can be found here:


It is envisaged that this same process will be continued as they develop their search dog standards.

National Search and Rescue Dog Association (NSARDA) United Kingdom

The National Search and Rescue Dog Association (NSARDA) provided me with a copy of their standards which will be made available in the Australian Disaster Resilience Knowledge Hub in the future. The standards provided include the following:

- Acceptance and Control Test
- Appointment of Assessors
- Code of Conduct
- Drowned Victim Search Dog Standards and Guidance
- Grievance Procedure (draft)
- Lowland Assessment Criteria Standard
American Rescue Dog Association Standards

The following standards and guideline documents are utilised by the Virginia Search and Rescue Dog Association http://www.ardainc.org/about_standard.html

Standards and Certification Procedures

Section I - Evaluation Ground Rules and MinimumRequirements (PDF, May 2015)

Section II - Area Search Certification Standard (PDF, November 2014)

Section III - Human Remains Detection Evaluation (PDF, June 2008)

Section V - ARDA Water Search Evaluation (PDF, June 2008)

Appendix A - Definitions (Coming Soon)

- Appendix B - Approved Course List: Basic Field Skills and Search & Rescue Knowledge (PDF, September 2014)
- Appendix C - Required Minimum Equipment (PDF, May 2011)
- Appendix D - Radio Protocol (PDF, January 2007)

ARDA Evaluation Forms

Area Search Evaluation Form

1. Area Search Evaluation Form (PDF, November 2014)

Human Remains Detection Evaluation Forms

1. Indication Station Evaluation Form (PDF, September 2012)
2. Above Ground Search Evaluation Form (PDF, September 2012)
3. Buried Search Evaluation Form (PDF, September 2012)
4. Urban Search Evaluation Form (PDF, September 2012)

Area Search Assessment Forms and Criteria

The preliminary assessments are strongly suggested, but not required, before taking the ARDA Area Search Evaluations.

1. Open Field Assessment Form (PDF, November 2014)
2. Trail Assessment Form (PDF, November 2014)
3. Light Brush Assessment Form (PDF, November 2014)
4. Dense Brush Assessment Form (PDF, November 2014)
Obedience and Agility Assessment Forms and Criteria

1. Agility Assessment Form (PDF, April 2014)
2. Obedience Assessment Form (PDF, July 2014)

Disaster Dog

This website was designed to be an informal source of information related to the training, certification, maintenance, and deployment of disaster dog teams. On it can be found a range of resources that could

http://www.disasterdog.org/csscp.html

FEMA Canine Search Team Evaluation Handbook:


Other evaluation tools and resources can be found here:

http://www.disasterdog.org/evaluations.html
APPENDIX 6 – References

In addition to the interviews undertaken, the following references were utilised


* Search and Rescue Dogs – Fifty Years and Counting by Bob Sharp and Bill Jennison (NSARDA 2015)

* NSW SES Canine Unit Review (internal document – Sue Pritchard - NSW State Emergency Service 2015)


* Land Search Operations Manual (V8.2 2014) - National Search and Rescue Council (V8.2 2014)

APPENDIX 7 – Reading Recommendations


* Search and Rescue Dogs – Fifty Years and Counting by Bob Sharp and Bill Jennison (NSARDA 2015)


