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Safe and Efficient Use of Mine Dogs in the Republic of Croatia

In this article, the authors discuss the use of mine-detecting dogs in the mine-action community as a whole, using the Republic of Croatia as an example. Specifically, they describe guidelines that must be followed to ensure MDDs are employed properly and maintain a high level of effectiveness.

by Mirko Ivanušić, Davor Laura and M. St. Zeljko Sarić | Croatian Mine Action Centre

In the Republic of Croatia, a large mine-suspected area covers forests, pastures, agricultural areas and lakes.1 The fact that only one-third of the 1,044 square kilometres (1,249 square yards) of mine-suspected area in Croatia is actually mine-contaminated speaks in favour of using dog-handler teams in mine-search operations for the purpose of simpler, faster and more cost-effective work. However, the matters of safety, efficiency and creating the preconditions for their use need to be considered. For these reasons, special attention must be paid to all technical requirements in the process of testing approaches, methods of monitoring, conditioning and training procedures, quality-assurance activities, test-site preparations, daily tests prior to the commencement of works, daily inspections, status of dog-handler teams, and prescribed forms of verifying efficiency.

Brief Historical Overview

Humanitarian demining as well as wider usage of MDDs have had a relatively short development period. MDDs have been used for 35 years globally and 10 years in Croatia, and their usage and training is a maturing process. In 1998 RONCO Consulting Corporation began training and using mine-detecting dogs. Croatia was the first country where the company used dogs to find mines on a consistent basis. Soon the Croatian Mine Action Centre legally undertook the commitment of using dogs to perform quality control over mine-clearance operations. Development of demining companies from 1999 to 2006 and especially in the period that followed resulted in the procurement of several dogs and creation of teams for area inspection as a second method after mechanical mine clearance. The level of training for the dogs, treated mostly in foreign countries, depended upon which centre trained them. During this time, CROMAC was active in a number of important international workshops and assemblies, learning about MDD usage. Leading authorities were visiting CROMAC and setting the guidelines for team usage and competence verification modes. When CROMAC took over the commitment of accreditation and testing of demining teams, it started the process of developing the methodology of testing the teams, monitoring their work in the field and constructing test sites.

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During that period, demining companies in Croatia were also trying to upgrade their own methodology by creating standard operating procedures mandatory for the testing and accreditation process. With the assistance of the representatives of the United Nations Scientific Council and members of the Committee for the Establishment of MDD Information, the first test site was built in Stucik on the area called Zdunci. MDD testing at Pridraga test site, May, 2002. Graph courtesy of Maic/CROMAC which is no longer in use. There have been four more sites established since then, but only two are currently in use: Cerovac (continental part of Croatia) and Škabrnja (southern coastal part of Croatia).

Sphere and Forms of Dog-handler Usage

Countries today use dogs for mine-clearance operations in a variety of ways. MDDs are used:

- To reduce mine-suspected areas by defining mine-field boundaries primarily in the low-risk areas.
- As the first method during mine detection combined with other manual-detection methods.
- During the MSX search from the safe access lanes on the area of differently marked and defined minefields—safe access lanes are areas of low risk and a good location for beginner dogs and dog trainers.
- As the second method in mine-clearance projects, mostly on mechanically treated areas after some period of soil stabilisation.
- During mine detection in devastated buildings with significant quantities of metal, along with removal of rubble in layers.
- For mine clearance of railway infrastructure as well as other firm surfaces along asphalt, stone and concrete systems, and areas with significant quantities of metal (water-supply systems, gas pipelines, etc.).

Rules and Regulations on Methods of Demining. Several key guidelines regulate dogs and handlers in the mine-detection and mine-clearance process from the Rules and Regulations on Methods of Demining.

When search operations are conducted using MDDs, the demining team leader must carry out certain tasks prior to the beginning of work. First the leader must hold a meeting with handlers and define individual tasks. The leader then temporarily sends handlers who are incapable of performing their daily task off the site. After these handlers leave, the leader then directly assigns the remaining handlers to the worksite. Continuous monitoring of handlers during worksite search and the conditions for the work of MDDs is required. A dog handler, who must be accredited by the relevant ministry, directs the dog towards terrain search and gives orders during mine search. Finally the leader must enter the meteorological characteristics such as surface soil temperature, air temperature at the height of one metre (1.1 yard), and speed and direction of the wind into the record.

In addition to the number of the worksite leader, records are kept of dog conditioning. Prior to the commencement of mine clearance, the authorised legal entity is obliged to carry out test-site markings to prepare for the work of mine-detection dogs. While MDDs conduct a worksite search, deminers mark off a section of the worksite with red-topped stakes. This is done by the company conducting the operations. Only CROMAC-approved dogs and handlers may be used.

The handler who gives the dog certain instructions must be a deminer or a supporting worker. The deminer must also do a second search of the area where the dog detected mines and unexploded ordnance to be positive nothing was missed. When the worksite is searched by MDDs, two different dogs must conduct the same procedure in the same part of the worksite to ensure the same UXO is discovered and that none is missed.

The Law on Humanitarian Demining and the Rules and Regulations on Methods of Demining, passed in 2005, enabled the use of dogs and handlers as an independent method in mine-search projects. The ultimate goal, after testing and accreditation for dog and handler, is that all other factors in monitoring and com-

PHOTO COURTESY OF MIRKO IVANUŠIĆ (CROMAC)

MDD testing at Pridraga test site, May, 2002. Photo courtesy of Mirko Ivanušić (CROMAC)

PHOTO COURTESY OF IVAN STEKER (CROMAC-CTDT LTD.)

Acclimatization to test site conditions (resting).

Figure 1: The growth of demining companies and MDD teams. Table courtesy of Maic/CROMAC

By Baptiste van der Bruggen

(MDC data, Deminerweb.com)
train meets the standards of legal regulations. Accreditation includes issuance of the assessment for dog-handler team usage for the period of six months, nine months or a year and depends on the number of points reached during testing.

**Trainability Verification and Dog-Handler Team Evaluation**

Though there is a widespread necessity for dog-handler teams, these teams must exercise care and take their time with each task. In every situation, four points must be taken into consideration before using dogs: the size and structure of a mine-suspected area, developed and sufficient capacities, legal and normative regulations, and quality of dog accreditation. The development of dog-training companies in Croatia during 1999–2000 resulted in not only the strong expansion of the programme from four companies to 10 but also the procurement of machines and dogs. In 2000, 10 companies existed with a total of 15 dogs.

By 2005, 18 companies with over 130 dogs existed. In the early period of development, demining companies in the Republic of Croatia were achieving varying results from the use of MDD teams. The results of CROMAC’s Quality Assurance and Quality Control Department from 2005 also undoubtedly confirm the value of certain methods.

**Assessment of Searches and Demining**

This SOP defines the efficiency estimates of MDD search and clearance operations in different mine, soil, vegetation and climatic conditions with different work methods. This SOP also clearly defines the situation and limiting factors when dog-handler team usage is not allowed, such as when the air temperature is below freezing. The SOP prescribes other important conditions for working with dogs. For instance, marked boxes can be 50 metres x 10 metres (54 yards by 11 yards), 4 x 25 (4.5 x 27) and/or 10 x 10 (11 x 11). Also, if there has been a fire on the area previously demined, MDD inspection cannot go forward until two days after the fire so fumes do not disrupt the dog’s sense of smell.

It is extremely important to maintain cooperation between the Team Leader, QA Officer and QC Monitor with the purpose of achieving good results and accurate mine detection in the field. If these parties do not work together properly, items may not be found, which could lead to a “worksite fail” rating. In this event, the whole demining process would have to be repeated.

Work in humanitarian-demining operations is assessed for a period of six, nine or 12 months according to a point system. One important precondition is that the dogs detect all buried mines in the boxes assigned. The maximum number of points is 100.

The average number of points in CROMAC’s collective practice is 62, indicating an inadequate quality of work and a need for improvement. CROMAC’s Quality Assurance and Quality Control procedures have to provide the conditions for the work in the field. QA Officers and QC Monitors.

**Other Factors**

Besides the large number of limiting factors, experience from abroad is necessary as well. There have been instances when dog-handler teams in humanitarian demining in the near future. High quality and equitable testing must exist along with field survey to gain an insight into the status of companies’ test sites and prescribed forms of daily, weekly and monthly conditioning and verification.

Permanent monitoring and quality control, as well as education of QA Officers and QC Monitors, is necessary.

**Conclusion**

The training and assessment of the MDDs is not easy, and daily and weekly conditioning conducted by the handler is needed to guarantee quality MDDs. Several factors are responsible for the overall quality rating and should be closely connected: The first two involve accreditation and rules and regulations. For accreditation, the handler needs to have a certificate or other type of proof that he passed the test in schools involved in training and dog breeding, which should be compliant with conditions prescribed by the established rules and regulations. The company also should submit breeding, training and performance records for each dog as per the standard operating procedures.

The final factors concern testing and monitoring/quality control. These basic measures should result in wider and safer usage of dog-handling methods.