

Introduction

This book is mostly about mine detection dogs, although it includes a first report on mine detection rats. Many of the issues discussed, particularly in Chapters 1 and 5, are about detection or training issues, and are not specific to dogs. The book has been written in part to fill a gap in the available information on the use of dogs in mine action, and in part to present the results of research that has taken place at the GICHD and its partner organisations since the start of the GICHD Mine Dog Detection Study in September 1999. This introduction provides some background to both the study and this book.

Using dogs to detect mines and other explosive devices is a technique that has been in both military and civil use for many years, but only began to come into prominence with the introduction of humanitarian mine action following the end of the Cold War. The earliest mine action programmes were inefficient and unsafe, partly because the clearance organisations were learning their trade, and partly because they had very few tools with which to work. Increasing numbers of mine action programmes began to use dogs, but with very mixed results. Some organisations swore by them; others swore at them. In some, there were claims of excellent performance, whereas with others, even in the same theatre of operations, dogs were deemed a failure. While there was good knowledge of how to breed and give basic training to dogs for explosive detection, there was less knowledge of how to achieve the right interaction between dog handler and dog, or of the optimum method of search. Variation in results compromised confidence, and lower confidence in the dog teams produced distrustful programme managers. Once the managers lost confidence in what was, after all, an expensive component of their clearance operation, the dog detection element spiralled downwards in utility.

This, then, was the situation in 1999 when the GICHD started its operations. Fortunately, there was an important mine conference in Ljubljana in September of that year, including a seminar on the use of mine detection dogs. The conference was attended by Håvard Bach, who had recently joined the GICHD. He was deeply interested in the use of dogs for mine detection, having employed them in Mozambique and Angola while managing Norwegian People's Aid (NPA) programmes. Having returned from the Ljubljana meeting with a determination to assist the mine detection

dog community to set up a study into the production, training, accreditation and use of mine detection dogs, he convinced the Norwegian Government to provide start-up funds. Thus, the GICHD study was born.

At the same time, the rest of mine action development was not standing still. The so-called “honeymoon” period of public and donor interest in humanitarian demining that began in 1994 showed signs of cooling down, with donors becoming more critical and expecting safer and more cost-effective mine action programmes. Mine action techniques were themselves coming under scrutiny — by 1996, for example, questions were being asked about why the whole of a suspected mined area had to be put through a full clearance process. In low-density areas containing widely distributed mines and unexploded ordnance (UXO), such as were being cleared at the time in Cambodia, Mozambique, Rwanda, and Somalia, this question had not seemed relevant. However, in Bosnia in 1996 it became obvious that unless the 16,000 declared suspected areas could be reduced in numbers and area by what became “Level 2 Survey” or “area reduction”, the clearance costs would be impossible to meet. Dogs and mechanical equipment became two obvious candidates for use as area reduction tools, a fact later reflected in the GICHD studies into both these techniques. There were also calls for more stringent quality control measures, and dogs, again, were seen as possible candidates for this role.

Mechanical equipment, too, was undergoing a radical change. The first clumsy adaptations of military minefield breaching machines were being replaced by a new generation of smaller, more flexible and versatile, products designed to be used by local teams for humanitarian clearance in difficult terrain. It was still generally agreed that machines alone were unlikely to be able to clear mines to the United Nations (UN) desired clearance standards, so the machine became part of a “system”, or toolbox. Also in the box were manual clearance teams and dog detection teams. Again, the role of the detection dog was expanding in scope.

In May 1999, the UN tasked the GICHD to completely rewrite and overhaul the International Standards for Mine Action (IMAS). First drafted after the Copenhagen Conference in 1996, the early IMAS made little reference to dogs, and provided no guidance as to their use. It was evident that IMAS on the use of dogs would be needed, so this requirement was added to the aims of the study. It was against the tapestry of all these developments in mine action that the GICHD Mine Dog Detection Study began.

To provide staffing for the study, the Swedish Rescue Services Agency kindly seconded Conny Åkerblom to the GICHD. With his wide experience setting up dog training schools and evaluating dog programmes, he has added, and continues to add, greatly to the credibility of the GICHD dog programme. The team was also joined by Dr. Ian McLean from the University of Western Australia, who has added a rigorous research approach and a broad background in animal behaviour and psychology to the more operational thinking of most mine action practitioners. For a period, he was ably assisted by Ann Göth, another researcher in the field of animal behaviour, who contributed part of this book before taking a university research post in Australia.

The Mine Dog Detection Study, like all GICHD studies, was guided by a working group of invited practitioners and specialists. The first meeting of this working group revealed the existence of many different perspectives in the detection dog world — indeed the first meeting was likened to a dog-fight. The atmosphere of mutual

suspicion and distrust, and the unwillingness to accept any form of standards or regulations were symptomatic of the lack of cohesion within the mine dog community as a whole. It is noteworthy that a completely new atmosphere had been created by the time of the end of the second working group meeting, and since that time the levels of mutual trust and cooperation have been remarkable.

This book represents the results of some of the research undertaken as part of the Mine Dog Detection Study. It is by no means comprehensive, and it represents in some instances a “flashlight photo” of the situation as at the time of printing. The Mine Dog Study is a living organism, with new research areas being continuously developed and explored, and new ideas emerging from completed studies. Most developments are at the request of the mine dog community, made either through the Advisory Group or, more directly, as a result of the work of GICHD personnel in the field. Some of the results presented in the book have been circulated elsewhere as papers or unpublished reports, but nowhere have they been gathered together in this way.

Structure of the book

Chapter 1 provides an introduction to the theory of animal psychology from a dog trainer’s perspective. Two different perspectives are given, with an introductory commentary that draws out the differences between them.

Chapter 2 provides three case studies on various issues underlying the training of mine detection dogs. Socialisation is a central issue if the dogs are to be used in environments containing members of the public (as is commonly the case in Cambodia, for example). An effective socialisation programme also ensures that the dog is accustomed to the complexity of the environments in which it will be working, so that it is not distracted by (e.g.) loud noises, animals, other dogs or difficult terrain. Filter search dogs are becoming increasingly important as detection tools, and the experimental training programme described here is the first published attempt to document such a programme. Training for detection of tripwires is a controversial and difficult problem, but this analysis shows that it is possible to achieve such detection consistently.

Chapter 3 provides a wide-ranging analysis of the cultures underlying operational mine dog detection programmes. The original requirements of this study proved to be too ambitious, and some of the issues in the original terms of reference now form part of other ongoing projects. However, this report is a valuable first step towards improving the understanding and quality of administration of operational programmes.

Chapter 4 provides hands-on analyses written by the people who did the ground work on two exciting recent developments in detection technology using animals. Originally called MEDDS, Remote Explosives Scent Tracing (REST) was first developed in South Africa and the early history of its development and use is described in Part 1. African Pouched rats are still under development for both field and REST search applications, and their potential for use in field search is described in Part 2. These two developments are certainly the most innovative advances in demining technology using animals in the last decade, although their utility requires further exploration.

Lastly, the two parts in Chapter 5 explore issues underlying environmental effects on the odour signals presented to dogs by buried mines. The first part is a shorter and less technical overview of many of the issues addressed in greater detail in the second part.

Much of the literature reviewed in this book, particularly in Chapter 5, is accessible to the reader on a CD-ROM obtainable on request from GICHD (the MDD bibliography). The bibliography provides a comprehensive review of the literature on dogs relevant to training, evolution, breeding and genetics, behaviour and odour detection. It is a valuable companion to this volume.

The principle concepts described in technical detail in the book are also described visually in a companion series of videos that should be completed soon after the book is published. As with the book and the MDD bibliography, the videos are available to the demining community at no cost on request from the GICHD.

In conclusion, this volume represents a written synopsis of the current state of knowledge for the GICHD dog programme. The authors' aims for this first book were to provide an interesting, informative and challenging overview of a series of poorly understood issues. The book provides some answers, but also raises many questions. Its target audience is all people involved with mine detection animals, including handlers, trainers, users, managers, sponsors, administrators and researchers. We encourage you to embrace the challenges that it raises, and to support ongoing exploration of issues that beg further investigation.