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The Database of Demining Accidents: A Driving Force in HMA

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The Database of Demining Accidents: A Driving Force in HMA

This article evaluates the need for a centralized accident-report database within the field of humanitarian mine action. The author argues that the failure to report accidents by on-site personnel can inadvertently lead to otherwise avoidable accidents where similar events occur. The author highlights the benefits that the database has provided for the community and makes several recommendations on how to further reduce severe injury within the industry.

by Andy Smith | AVS Mine Action Consultants |

The Database of Demining Accidents (DDAS) was started in 1998 using public data gathered for the United States Army Communications-Electronics Command, Night Vision & Electronic Sensors Directorate. The database is an easy-to-use system containing the original demining accident reports with corresponding summaries.

Having a collection of field reports about demining accidents and the context surrounding them has influenced the evolution of the International Mine Action Standards. Raising IMAS content on empirical evidence rather than received wisdom has enhanced United Nations Mine Action Service’s field authority and contributed to its success.

During the drafting of IMAS 2001, the DDAS proved invaluable in settling disputes about basic demining safety considerations. In the absence of other data, the previous UN standards (1997) had been dominated by caution and were not well received in the field. With the database as evidence, the following was established:

- The activities conducted when accidents occurred
- The explosive remnants of war most commonly involved in accidents
- The areas of the body most in need of protection
- The effectiveness of protection used
- The working methods most common around the world
- The limitations of commonly used metal-detectors
- The shortcomings of some mine-detection dog procedures and processes
- The minimum level of medical provision needed
- That mechanical demining was not the panacea it was claimed to be

At the time, received wisdom was that deminers lie down to excavate, should wear personal protective equipment with ballistic helmets and back-pans, and that the most common demining accident was stepping on a mine. Deminers’ protective visors had to be 13-millimeter thick, and casualty evacuation by helicopter was required at all sites.

With the database as evidence, it was possible to show the following:

- In almost all cases, deminers did not lie down to excavate: they knelt or squatted.
- Anti-personnel blast mines were the most common device involved in accidents.
- Severe eye and hand/arm injuries were more common than severe leg injuries.
- Heavy PPE was rarely worn correctly.
- No commonly used PPE could provide appropriate protection against the close-quarter detonation of a fragmentation device.
- There was no reason to believe that a ballistic helmet or armor back-panel were necessary during demining tasks.
- High-tech blast boots were of no proven advantage and could give false confidence, while common footwear (not specially designed to prevent injuries) was equally effective/ineffective when stepping on the smallest mines.
- Safer working procedures were more likely to prevent severe injury than the use of more PPE.
- Traumatic injury was increasingly rare and could usually be stabilized in the field by appropriately trained and equipped paramedics.
- Shortcomings in management, leadership and training could be identified as a primary or contributory cause in many accidents.

Not all of these findings were universally accepted, but the evidence meant that they could not be ignored and a process of compromise within the IMAS Board membership could begin with the aim of achieving a pragmatic and practical consensus.

Post-2001 IMAS Updates

The Database has provided evidence in support of several updates to the 2001 IMAS. These updates were all related to field safety in one way or another. Below are several of the updates:

- The distinction between “working-distances” and “safety-distances” in IMAS 10.20 was supported by accident data analysis that showed that the minimum safety distances imposed for an AP blast-mine risk were frequently ignored and that secondary injuries only occurred when a second person was very close to the detonation. The required IMAS distance was actually a “safe distance” for a deliberate detonation (with a large safety margin), and was both impractical and unnecessary during field operations. A distinction between working-distances (when no deliberate detonations will occur) and safety distances (when deliberate detonations will be made) was introduced. This allowed more people to work simultaneously in many areas, thereby increasing efficiency. It may also have increased field safety by making supervision easier.

- The database was used to support the contention that the largest ERW in a minefield should not be presumed to be the greatest threat when determining working distances. It was decided that the greatest threat should be the largest device that could be detonated when using the pre-determined procedures and tools. This meant that in mixed AP and anti-tank minefields, manual working distances could often be based on the AP threat. Evidence that visors were habitually not worn, or were worn incorrectly, led to the redrafting of IMAS 10.30 to allow other eye protection as a minimum. Five-millimeter polycarbonate goggles became the minimum requirement (subject to a risk assessment), although full-face visors remained the preferred option.

- The final wording of the new Land Release IMAS

The Database of Demining Accidents contains the original demining accident reports overlaid with a summary and easy-search facility. Always available on request, the database records were put online at http://ddasonline.com in 2006. This site receives an average of 400 discrete visits a day, with the most popular topic being “Deminer training” (http://ddasonline.com/suggested_training_usesDDAS.htm).
The EOD-accident record informed the IMAS accident report. An EOD accident is a type of accident that occurs when someone is working on or with explosives. The EOD accident report is a document that provides information about the accident, including the date, time, location, and description of the accident. The EOD accident report is used to understand the cause of the accident and to prevent similar accidents from occurring in the future.

The database cannot be used to prove much statistically. The database does not include all accident records, and it is not possible to determine if there is a significant difference in the number of accidents reported in the database compared to the number of accidents reported in the literature. However, the database can be used to identify trends and patterns in accident data. The database can also be used to identify areas where more research is needed.

The database has been in the public domain for 12 years. The database is maintained by the United Nations Mine Action Service (UNMAS) and is available online. The database contains data on accidents that occurred in the field of mine action from 1999 to 2016. The database includes information on the date, time, location, and description of the accident, as well as the number of people injured or killed.

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Among the records, frequent evidence shows that the appointment of international staff with inadequate knowledge of the IMAS or demining (despite high-level academic or military qualifications) can lead to increased risk for working deminers. In the field, experience and a commitment to learning from others are more valuable qualifications than academic or military achievement. This could be stressed in the IMAS and put into practice by the U.N. agencies and various demining organizations.

From the earliest records to the present day, there are a number of new commercial organizations having accidents that repeat the obvious errors of previous accidents. Some individuals at all levels have contributed to the point where it is open and transparent about their experience. An anonymous database, it protects the privacy of those who contribute in promoting practical change and the sharing of experiences in the IMAS and in the field. Despite some informal attempts to provide long-term support, there are no formal provisions for severely disabled deminers to receive a disability allowance or even long-term prosthetics and therapy assistance. Among the records, some evidence indicates that accident victims have been abandoned and have died in extreme poverty or committed suicide. Those in dire circumstances can only be inferred because no comprehensive follow-up has been conducted. Improved provision for demining accident victims should be addressed.

Summary and Recommendations

The DDAS has been of proven value to the humanitarian mine action industry. It has been “a driving force” in promoting practical change and the sharing of expertise, in creating and updating the IMAS and in the field. An anonymous database, it protects the privacy of those involved in accidents while allowing others to learn from their experience.

As an industry, international mine action has not moved to the point where it is open and transparent about its accidents. Some individuals and groups at all levels withhold or conceal information that could prevent future accidents. When organizations do not disclose accident data, the managers run the risk of appearing criminally negligent by ignoring their responsibility for the safety and occupational health of their staff.

Deminers are the agents of those who fund humanitarian mine action. They work to priorities that the donors have imposed, yet their treatment after an accident usually lacks any sign of the humanitarian concern that lay behind their employment. It is remarkable that a “humanitarian” industry has made no real effort to make long-term provision for them—despite interest shown in international forums by expatriate field practitioners who are concerned for their colleagues regardless of their nationality.

It is time for a U.N. agency to take the DDAS under its management, enforce the IMAS requirements for the sharing of accident records, and maintain the principles of anonymity and of keeping original accident reports on which the DDAS was founded. This would be a responsibility that the donors have imposed, yet their treatment after an accident usually lacks any sign of the humanitarian concern that lay behind their employment. It is remarkable that a “humanitarian” industry has made no real effort to make long-term provision for them—despite interest shown in international forums by expatriate field practitioners who are concerned for their colleagues regardless of their nationality.

It is time for a U.N. agency to take the DDAS under its management, enforce the IMAS requirements for the sharing of accident records, and maintain the principles of anonymity and of keeping original accident reports on which the DDAS was founded. This would be a requirement in any responsibly controlled industry and is a glaring omission in humanitarian mine action. A U.N. agency should accept responsibility for gathering accident records, creating an archive and conducting informed analysis of that archive.

Earlier this year UNMAS asked the Geneva International Centre for Humanitarian Demining to gather accident data in a new system extending the “tick-box” accident records recorded in the Information Management System for Mine Action. Unfortunately, this would effectively mean creating a new database (instead of updating the existing DDAS), and would require ignoring the detailed reports that provide the core of the DDAS. Without the original accident report to which to refer, analysis will rely on a brief summary made by an office-based staff member. This initiative may succeed, but the result will be “shallow” because it will depend entirely on the many levels of interpretation between the accident event and the “tick” placed in an available box on a form. In the meantime, the DDAS is currently being updated. Demining accident records, questions and comments should be sent to the author at avs@nolandmines.com.

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Conveying Lebanon’s Cluster Bomb issue through Film

Death in the Fields is an animated documentary that focuses on the cluster bomb crisis in southern Lebanon. The mounds of unexploded handies scattered across the country’s south are the ill-dated reach of a 2006 Israel-Lebanon conflict. These weapons continue to contaminate lands where children once played and make agricultural land unavailable to farmers.

Throughout the film’s concise run time of just over 11 minutes, editorial cartoonist Patrick Chappatte manages to convey the dread of these horrific weapons in a unique fashion. His black-and-white illustrations are surprisingly lively while alluding to the starkness of the issue. When these illustrated scenes mix with real-life photographs, statistic and stories, the film packs a serious punch. The film premières at the Visions du Réel Film festival in Nyon, Switzerland on 8 April 2011 and is currently available on the International Committee for the Red Cross’s website: http://bit.ly/1ePQo.

-Dan Baker, CERB Staff

A two-handled excavator designed at MIT to replace the pick-axe. The author believes that if the Afghans alone wish to adopt this tool, it would save at least a dozen hands a year.