

11-13-1997

## DDASaccident023

Humanitarian Demining Accident and Incident Database  
*AID*

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Database, Humanitarian Demining Accident and Incident, "DDASaccident023" (1997). *Global CWD Repository*. 223.  
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# DDAS Accident Report

## Accident details

<b>Report date:</b> 22/01/2004	<b>Accident number:</b> 23
<b>Accident time:</b> 09:05	<b>Accident Date:</b> 13/11/1997
<b>Where it occurred:</b> Magagra minefield, Manhica township, Maputo Province	<b>Country:</b> Mozambique
<b>Primary cause:</b> Management/control inadequacy (?)	<b>Secondary cause:</b> Inadequate training (?)
<b>Class:</b> Missed-mine accident	<b>Date of main report:</b> 12/02/1998
<b>ID original source:</b> ADP-10	<b>Name of source:</b> CND/IND
<b>Organisation:</b> [Name removed]	
<b>Mine/device:</b> PMN AP blast	<b>Ground condition:</b> sandy
<b>Date record created:</b> 12/01/2004	<b>Date last modified:</b> 12/01/2004
<b>No of victims:</b> 1	<b>No of documents:</b> 3

## Map details

<b>Longitude:</b>	<b>Latitude:</b>
<b>Alt. coord. system:</b>	<b>Coordinates fixed by:</b>
<b>Map east:</b>	<b>Map north:</b>
<b>Map scale:</b> not recorded	<b>Map series:</b>
<b>Map edition:</b>	<b>Map sheet:</b>
<b>Map name:</b>	

## Accident Notes

dog missed mine (?)  
inadequate training (?)  
no independent investigation available (?)  
mine/device found in "cleared" area (?)  
inadequate investigation (?)  
inadequate equipment (?)

## Accident report

An internal demining group investigation was carried out and its report made available in 1998. The following summarises its content.

The Mine Dog Team (MDT) of three (one Team Leader and two dog handlers) had been in the area since 4<sup>th</sup> November 1997. The ground had been burnt off two weeks before and there was "some residual smell" from the burning. [Another group's standard practice was reported to be to stop using dogs for two to three days after burning, so the two-week time lapse was thought adequate.] There was a slight wind.

The team began work at 05:45. One dog was found unfit for work and returned to kennels (a tick bite in the eye was the cause). The other dog passed the routine 10 minute pre-work test and started work at around 06:30. Work continued (with two rests) until 09:00 when the dog was given another routine test. The victim entered the cleared area to complete his survey report and at 09:05 and stepped on a mine. He was evacuated to hospital in Maputo and arrived at 10:24. His injuries were severe trauma to left leg resulting in below knee amputation and the removal of one testicle. The mine was in sandy soil and the depth of the crater was used to infer the depth of the mine, which was judged to be at 40-45cm.

## Conclusion

The investigation concluded that residual smell from burning the undergrowth may have been "a factor"; that rest periods were adequate [copied from those used by others] but training of mine dogs and handlers in the group lacks "intensity and purity" and that staff lack understanding. The Team Leader's inexperience in "detecting variations to normal procedures" may have contributed to the accident. Further opinion was that "insufficient samples were made available for continuation search training" and that "obedience training was irregular and not sufficiently rigorous" so the "intensity and variability" of training for dogs and handlers should be increased. Also, they thought that the practice of using one dog to clear should be examined – "increasingly experts are of the opinion that this is not satisfactory and that another means or a second dog and handler would be required to search the area too"; and that "subsequent tests and evaluation revealed some deficiencies in the training routines of the team".

## Recommendations

A lengthy list of recommendations included that the demining group "should adopt the procedure of only entering the work area after either a second dog or a man with a metal detector has proven the area"; a "duty statement" for the Team Leader should be prepared; the dog Team Leader should have induction and familiarisation training; the MDT Assistant should be trained appropriately.

The investigators also said that the group "requires" its own SOPs on MDG operations as "a matter of priority" and "should seek to employ at least one (preferably two) expatriate Dog Handler/Trainers" so that it could establish a mine dog section with an ex-pat supervisor, two ex-pat "Dog Instructors/Mentors", four local mine dog Team Leaders and eight local dog handlers.

## Victim Report

**Victim number:** 37

**Name:** [Name removed]

**Age:** 32

**Gender:** Male

**Status:** supervisory

**Fit for work:** yes

**Compensation:** not made available

**Time to hospital:** 1 hour 19 minutes

**Protection issued:** Safety spectacles

**Protection used:** Safety spectacles

**Summary of injuries:**

INJURIES

minor Arms

minor Hand

minor Leg

severe Genitals

severe Leg

AMPUTATION/LOSS

Leg Below knee

Genital

COMMENT

See medical report.

**Medical report**

A medical report for the Health Ministry Legal Medicine service of Maputo was completed by Doctor [name removed] on 12<sup>th</sup> February 1998. Written in Portuguese, it was made available in November 2000. The following summarises its translated content.

**Findings of an expert examination of an accident at work**

The victim was 32 years old and married.

**General information**

According to information received, the victim was a victim of a work accident.

**Information from the victim**

It is noted that on 13<sup>th</sup> November 1997 while engaged in demining work in the area of Maragra in Manhica District, the victim activated an anti-personnel mine suffering injuries in the lower limbs. From there he was taken to the special clinic at Maputo Central Hospital where he was detained for 40 days. He did not lose consciousness at the time of the trauma.

He suffers from violent cephalalgia, occasional insomnia, pain and a longing to walk as before. He also has "Lombalgias" that run across his left thigh. He is able to maintain a sexual relationship. Before the accident he played football in his free time.

**Clinical information**

According to the clinical procedure at H.C.M Special Clinic the victim was detained in the hospital from 13<sup>th</sup> November 1997 until 22<sup>nd</sup> of December 1997 with the following diagnosis: traumatic amputation of the left leg, traumatic amputation of the left testicle and multiple injuries.

An emergency operation was carried out on the day of admission in which one third of the left leg was amputated, surgical cleaning of wounds took place and there was total amputation of the left testicle and a partial amputation of the right.

On 12<sup>th</sup> December 1997 he has a second operation to make skin grafts. Other treatment included a blood transfusion, serum, antibiotics, analgesic, vitamins and physiotherapy.

### **Objective examination**

The victim's general condition is good. Oriented in time and space. Anxious countenance and depressive.

There are small multiple "hipocromicas" scars and "hyperplasticas" on the front lateral left forearm, the palm of the left hand, and on the front lateral inside of the right forearm.

Right leg: at the back of the thigh there is a "hypocromica" plate 15x12cm (area of "Dadora" graft).

Behind the thigh multiple irregular scars "Hipocromicas" and "Hiperplasticas" sticking to the underlying points and others with weak, damaged tissues.

Left leg: there is an irregular scar 7x6cm Hipocromica and hiperplastica with weak and damaged tissues and sticking to the underlying plane on the backside of the lower third of the thigh.

Multiple irregular scars on the knee. Amputation at the lower two thirds of the leg. Good quality surgical stitching "coto" and well padded.

There is a "Hiperchromica" scar 5cm long on the scrotum, amputation of the left testicle and partial amputation of the right testicle.

### **Legal/Medical considerations**

Based on the expert examination, the victim's information, that of the hospital and others, we conclude that the patient was the victim of an accident at work which resulted in traumatic injuries from an anti-personnel mine.

### **Conclusions**

The victims injuries are stable.

Healing time for the wounds is 90 days.

The victim will be unable to work for 60 days.

His chance of returning to work is 50%.

His physiological incapacity is 75%.

It is completely ruled out that he will ever work as a deminer again.

The "Pretium Deloris" is serious.

The scars described above continue to cause aesthetic problems.

The victim has lost his hobby of playing football.

In 1998 the victim was interviewed. He was using crutches because his stump was still settling down and his prosthetic was uncomfortable. He was employed in the demining group's office as an administration assistant with various duties gathering and disseminating information.

### **Analysis**

The primary cause of this accident is listed as a "*Management/control inadequacy*" because the investigators acknowledged that the group's dog programme included failings of concept (single dog use) training and application, all of which are management responsibilities. The secondary cause is listed as "*Inadequate training*".

The "inadequate equipment (?)" noted refers to the issue of industrial safety spectacles as PPE.

The investigation report indicates that the mine was in sandy soil and the depth of the crater was used to infer the depth of the mine at 40-45cm.

A surface laid PMN will create a deep crater on sandy soil. The equation used to determine mine depth from the crater depth requires an instrumented assessment of soil hardness to be accurate. There is no evidence that this was done, and if not any calculation/deduction is pointless.

Photographs of a test using a surface laid PMN on sandy soil in Cambodia are reproduced here. Note the depth of the crater.



## Related papers

The victim was interviewed by the researcher on 12<sup>th</sup> November 1998. He was using crutches because his stump was still settling down and his prosthetic was uncomfortable. He was employed in the demining group's office as an administration assistant with various duties gathering and disseminating information.

He was in hospital for six weeks after the accident and started work again on 25<sup>th</sup> August 1998. In the interim he was paid a sick-leave salary. He said that his major injury was in his right thigh where parts of his foot lodged and he had to have two operations. He had fragment injuries on his hands and arms that had healed completely.

The victim was concerned about training for a future when the demining group leaves Mozambique. He felt he was valuable in the office because he had field experience and wanted training in accountancy and computers so that he had a guaranteed future. He also wanted a disabled pension to be paid by the UN when his job finished.

Not surprisingly, he had a great interest in personnel protection – especially of the genital area. He asked about mine-proof boots.