

# DDAS Accident Report

## Accident details

<b>Report date:</b> 19/05/2006	<b>Accident number:</b> 319
<b>Accident time:</b> 07:50	<b>Accident Date:</b> 27/05/1999
<b>Where it occurred:</b> Mameme minefield, Moatize district, Kambulatsistso	<b>Country:</b> Mozambique
<b>Primary cause:</b> Field control inadequacy (?)	<b>Secondary cause:</b> Inadequate training (?)
<b>Class:</b> Missed-mine accident	<b>Date of main report:</b> 08/08/1999
<b>ID original source:</b> Date of statements/SC	<b>Name of source:</b> NPA (field)
<b>Organisation:</b> Name removed	
<b>Mine/device:</b> AP blast (unrecorded)	<b>Ground condition:</b> dry/dusty grass/grazing area trees
<b>Date record created:</b> 20/02/2004	<b>Date last modified:</b> 20/02/2004
<b>No of victims:</b> 2	<b>No of documents:</b> 2

## Map details

<b>Longitude:</b> 34° 04' 37" E	<b>Latitude:</b> 15° 55' 01" S
<b>Alt. coord. system:</b>	<b>Coordinates fixed by:</b>
<b>Map east:</b>	<b>Map north:</b>
<b>Map scale:</b>	<b>Map series:</b>
<b>Map edition:</b>	<b>Map sheet:</b>
<b>Map name:</b>	

## Accident Notes

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

## Accident report

A report on the accident was made available by the demining group in November 2000. The report included all related documents in one binding. The photographs were poor photocopies and could not be reproduced. The following summarises its content:

The accident occurred in a mined area surrounding a former Frelimo/Zimbabwean soldier's camp. The team had worked there since January 6<sup>th</sup> 1999 at the request of the local government. Local people reported that the Zimbabwean soldiers laid the mines. The demining team was using a combination of manual and MDD techniques.

At 07:50, victim No.1, the Team Leader, stepped on the mine and his right foot was amputated. He also sustained a cut on his left thigh. Victim No.2 suffered "moderate injuries on his face and in his left eye".

There is no explanation of events leading up to the accident in the report. However, in a statement made by victim No.2 it becomes clear that (using his dog) he had just found another mine that had previously been missed. A deminer had exposed the mine and victim No.2 sat under a tree waiting for his supervisor to arrive and deal with it. Victim No.2 had cleared the area under the tree with his own dog two days before. As his supervisor approached, he stepped on another missed mine. See "Statements".

After six minutes a route had been cleared to the victims and they received first aid. A "Health Division" report noted that victim No.1 had lost the lower third of his right leg and suffered a deep wound on his left. Victim No.2 suffered frontal head injuries with a foreign body in his left eye. The victims were evacuated by ambulance at 08:15 and arrived at Tete Hospital at 09:05.

The victims were a MDD dog Team Leader and dog handler.

The accident occurred in an area that had been declared clear two days previously. The area had been checked by dogs. Neither metal detection nor excavation drills had been used at the site.

## Conclusion

A mine was missed during the clearance process due to a "human and mine detection dog error". The demining group's SOPs were not followed.

## Action

Action taken by the demining group following the accident included an intensification of internal quality controls at Level 1 and 2 and a "reclarification" of areas cleared. Nothing was found.

All demining dog teams were withdrawn to the training centre and "re-examined prior to redeployment".

Work "continues" in trying to identify the unknown blast mine involved in the accident.

## Victim Report

<b>Victim number:</b> 401	<b>Name:</b> Name removed
<b>Age:</b> 24	<b>Gender:</b> Male
<b>Status:</b> supervisory	<b>Fit for work:</b> yes
<b>Compensation:</b> not decided in 2002	<b>Time to hospital:</b> 1 hour 15 minutes
<b>Protection issued:</b> Not recorded	<b>Protection used:</b> none

### **Summary of injuries:**

#### **INJURIES**

minor Leg

#### **AMPUTATION/LOSS**

Leg Below knee

#### **COMMENT**

See Medical report.

### **Medical report**

An "Accident info sheet" compiled at the accident site recorded victim No.1's injuries as "amputation of foot". His leg was surgically amputated below the knee at Tete hospital.

A memo dated 29/05/99 from the Health Division of the demining group recorded that:

"On arrival at the hospital all the pre-surgical procedures were carried out including blood analysis, x-ray and cauterization.

### **Diagnosis**

Traumatic amputation of 1/3 of the right leg, deep and serious wound to the left thigh.

General condition – serious

Hydration – moderate

Mentally conscious, time and space awareness, slight agitation with a possibility of going into neurological shock.

Vital signs (08:22)

Temp: 36.5  
Respiration – 23  
Pulse – 65  
BP – 120/70

### **Treatment**

- Hydration – Ringers lactate – 2000ml
- Analgesic – Morphine – 1 ampule
- Disinfection – oxygenated water 250ml
- Haemostase

At 10:50 Victim no.1 was admitted to the operating room."

When the demining group bound its final report (undated) the victim was reported to be back on duty.

In a summary of the group's accidents made available in 2002, it was stated that the victim was working as a "kennel master" as the demining group's mine-dog centre. A legal dispute over the level of compensation between the insurance company and the victim was still awaiting a final decision.

## Victim Report

<b>Victim number:</b> 402	<b>Name:</b> Name removed
<b>Age:</b> 32	<b>Gender:</b> Male
<b>Status:</b> dog-handler	<b>Fit for work:</b> yes
<b>Compensation:</b> none	<b>Time to hospital:</b> 1 hour 15 minutes
<b>Protection issued:</b> Not recorded	<b>Protection used:</b> none

### Summary of injuries:

#### INJURIES

minor Face

severe Eye

#### COMMENT

See medical report.

### Medical report

An "Accident info sheet" compiled at the accident site recorded victim No.2's injuries as "slight injuries on face".

A memo dated 29/05/99 from the Health Division of the demining group recorded that:

"On arrival at the hospital all the pre-surgical procedures were carried out including blood analysis, x-ray and cauterization.

At 10:50 Victim no.2 was admitted to the operating room. X-ray showed that he was not in any danger except for a need to surgically clean the eye which was done at 14:30.

General condition – satisfactory

Hydration state – normal

Mentally conscious, time and space awareness, slight agitation.

#### Vital signs (08:22)

Temp – 36.5

Respiration – 23

Pulse – 60/76

BO – 126/60

#### Diagnosis

Injury to the frontal head and foreign object in the left eye.

#### Treatment

Disinfection and dressing."

When the demining group bound its final report (undated) the victim was reported to be back on duty.

In a summary of all the group's accidents made available in 2002 it was recorded that the victim made a full recovery and returned to work. He did not receive compensation because his injuries were too minor.

## **Analysis**

The primary cause of this accident is listed as a "*Field control inadequacy*" because it seems that the deminers and dog handlers checked dog readings in a manner that was not in their SOPs and this error went uncorrected. From the evidence given in "confessional" statements, it seems that the supervisor of the mobile demining/dog team had not been adequately trained for the task (See "Statements") so the secondary cause is listed as "*Inadequate training*".

If the statements are correct, the dog did signal on the mine but the procedures in place allowed the signal to be ignored. Because dog use is dependent on good communication between dog and handler, the failure was of an MDD team, not of a particular animal.

The demining group and its supervisors could not identify the mines they found and destroyed. This implies inadequate training.

The failure to identify mines that had been destroyed as well as the mine in this accident may be significant. If the mines were laid by forces from Zimbabwe, they may have included mines made in the former Rhodesia or the R2M2 mines made in South Africa and used widely during the Rhodesian war. These mines can be impossible to detect using the old Schiebel detectors in use by the group.

## **Statements**

The following pages show six statements from individuals involved in the accident. The translation from the original Portuguese was made by the demining group. The language used may raise the suspicion that parts were dictated.

### **Victim No.2**

I was working on the area where the mine accident happened on 27<sup>th</sup> May 1999. I remember that my MDD marked the place and that gave me the indication that there was something in the ground. When my MDD marked, instead of reporting to the Dog Team Leader, I reported to the deminer who later on clarified the area and found nothing from the ground. I sent in the same MDD who had marked the area for double check and this time the MDD did not mark anything. I continued working as usual for the rest of the day. For your information I would like to say that all what happened on 25<sup>th</sup> May, on the place where the accident happened, the Dog Team Leader was not informed.

On 27<sup>th</sup> May I worked very close to the area in question. My MDD marked again. This time, I called the deminer who clarified the area and discovered an AP mine. The deminer reported to my Dog Team Leader, who later reported to the Section Leader about the mine and reported to the Supervisor.

After this communication channel was followed, I pulled out and sat under the tree and leaning against it waiting for the Supervisor to take action. And this area under the tree was declared cleared on 25<sup>th</sup> May by my MDD (myself). On the other side of the tree [the Supervisor] was coming towards the same tree. When we were only one meter apart the blast was heard.

Thereafter I did not understand what might have happened but later on I realised that I was bleeding and evacuated to Tete Provincial Hospital where I was admitted for three days.

In response to disciplinary accusation No.9.D.R.H/99 that was opened against me on 19/07/99 I have the following to say:

I accept the accusation and I agree with my employer on all what was done on 25<sup>th</sup> May, that I did not follow the norms and regulations currently in place in Demining operations.

Signed: dated 08/08/99

### **Dog handler**

“...On 25<sup>th</sup> May my MDD marked two times around the area where the mine accident occurred. From the first marking [the deminer] discovered a bullet shell and a piece of metal. And from the second marking [he] discovered a tin.

When my MDD had marked, rarely I followed the line of command. Sometimes I could report to the deminer to clarify the marking and after clarification he reported back to me. And if the Dog Team Leader was close to me, I could report to him. And on this day, 25<sup>th</sup> May, demining activities stopped after doing the quality control.

On 26<sup>th</sup> May I worked normally.

On 27<sup>th</sup> May when I was working on another lane 60m from the accident spot, I heard a big bang and immediately pulled out of the minefield to the resting area where my colleagues were. To conclude, I agree that on some occasions I was not following the reporting procedures. And to be specific; I was reporting directly to the deminer had my MDD marked and the deminer was reporting directly to me after clarification of the marked area.”

Signed: 08/08/99

### **Deminer**

“I declare that on 25<sup>th</sup> May I worked with [the victim No.2]. [His partner] worked first and later came [the Supervisor] for quality control. Very close to the area where the accident occurred (2.5-3 meters) whenever the MDD marked either metals or nothing at all was discovered.

On reporting, whenever I received the information from the Section Leader to clarify the marked place, I was later reporting to him after doing my job as deminers do and when I receive my information from the Dog handler I was reporting to him afterwards.

After clarification the area in question, I do not remember how many times I followed this reporting procedure.....

On 27<sup>th</sup> I worked with MDD team [named]. I was told to clarify an area that had been marked by MDD. While in the process of clarification I discovered a mine and I reported to the Section Leader who also reported to the Supervisor.

While waiting for the Supervisor to come, I retreated 25 metres leaving only the Section Leader on the spot. This time the Dog Team Leader retreated as well and went towards a tree where [Victim No.2] was seated.

Suddenly I heard a big bang and upon confirmation I realised that the bang was from the direction where [Victim No.1] was. Following the orders from the supervisor this time, I went to open the evacuation lane to the victim and thereafter [he] was evacuated to a safe place where the paramedics gave him first aid.

To conclude, I agree that I was not correctly following the line of command when it came to reporting procedures in demining operations. To be specific, I have been receiving orders from the dog handlers since 25<sup>th</sup> May 1999.”

Signed: 08/05/99 [dated presumably in error]

### **Dog Team Leader**

I declare that it is hard to say of the demining operations were being done correctly on the previous days since there was nothing strange.

I confirm that the accident scene had two days before been clarified by two MDDs.

I refute that us not a regulation or a principle that when a MDD marks, the handler should report to the deminer.

On 27<sup>th</sup> May 99, when the MDD of [victim No.2] marked, [he] reported to me as his immediate leader in the field. And if the handlers were reporting to deminers may be out of my knowledge.

I also declare that I was working with [the victim] in Nhansana, Guru District I gave him the written warning order.

To conclude I have the following to say on the norms and regulations that were being followed in Mameme minefield:

When a MDD marks, the handler was informing Dog Team Leader and the DTL was informing the Section Leader. Both the Section Leader and DTL were informing the Supervisor and it is him who should take the last decision.

I disagree that when a MDD had marked, the dog handler should report to the deminer. If that was happening in Mameme, but only without my knowledge as Dog Team Leader of that group.

Signed: 05/08/99

### **Section Leader**

I declare that on 25<sup>th</sup> May when I was working in the mine field, I was sometimes delegating some of my duties to the Dog Team Leader to indicate a deminer to clarify the marked spot whenever I was temporarily away. And the Supervisor was not informed of this.

I remember that on 25<sup>th</sup> [the deminer] discovered a metal 10 metres from the accident spot. And I was not informed of other metal discovered on that day.

I agree that in some situations I was not following the line of command as it is written in my job description.

To be specific; I was delegating some tasks to the Dog Team Leader to choose a deminer to clarify the area marked by the MDD on my absence and the deminer was reporting to him after clarification.

Signed: 08/08/99

### **Supervisor**

After a thorough analysis of the situation in Mameme, it shows that there was in fact poor supervision of the activities in the field and this has been revealed by the mine accident. The poor supervision was for the fact that I was the only Supervisor and above all I had never worked with MDD before and for that I had no experience working with MDD.

Below are the faults committed in Mameme mine field:

Workers were not following the line command. Handlers were reporting to deminers and Section Leaders and vice versa without the knowledge of the Supervisor and the Dog Team Leader.

I agree that I touched and moved unknown mine without informing headquarters.

I did not anticipate in planning for the clarification of the minefield. Nothing was done to divide the field so as to facilitate the discovery of the mine density and what type of operation would be necessary.

I continued working with the MDDs even after marking mines in less than six metres between them.

To have entered the accident site and been personally involved in medical evacuation from the accident site to the safe area.

Signed