DDAS Accident Report

Accident details

Report date:	22/01/2004	**Accident number:**	17
Accident time:	11:57	**Accident Date:**	14/09/1998
Where it occurred:	Moamba village, Moamba District, Maputo Province	**Country:**	Mozambique
Primary cause:	Management/control inadequacy (?)	**Secondary cause:**	Field control inadequacy (?)
Class:	Detection accident	**Date of main report:**	07/10/1998
ID original source:	Doc 186/CND/DED/98	**Name of source:**	CND/IND
Organisation:	[Name removed]		
Mine/device:	PMN AP blast	**Ground condition:**	sandy
Date record created:	12/01/2004	**Date last modified:**	12/01/2004
No of victims:	1	**No of documents:**	2

Map details

Longitude:	32° 19' 14" E	**Latitude:**	25° 43' 78" S
Alt. coord. system:		**Coordinates fixed by:**	
Map east:		**Map north:**	
Map scale:		**Map series:**	
Map edition:		**Map sheet:**	
Map name:			

Accident Notes

inadequate metal-detector (?)

inadequate area marking (?)

protective equipment not worn (?)

mechanical follow-up (?)

Accident report

A report of the accident was supplied by the National Authority in November 2000. It was translated and the following summarises its content.

The demining group involved used a one man-drill in two man teams, with the team members changing role every 25 minutes.

The victim had been trained by the demining group in Moamba. He was born on 12th November 1959.

The accident occurred by a pylon on a power line 9.8 Km East of the EN2 main road at Pylon number 127. “Mechanical demining” had been carried out on the pylon. A fallen pylon restricted movement of the machine. The area was sandy with tall grass and short shrubs. The undergrowth was cut by the deminer using cutting tools.

At the time of the accident the victim had just changed roles with his partner so it is not sure which of them failed to locate the mine. He was about 15 metres from the pylon when at 11:57 there was a detonation. The victim's leg was torn off at "boot level". After the accident and a positive identification of the victim, the medic gave first aid. At 12:11 the victim was taken to Maputo Central Hospital, arriving at 13:30.

First medical assistance was given in 12 minutes and the victim reached a hospital by ambulance approximately 90 minutes after the accident. He lost his right leg below the knee. His detector (worth $2,500) was destroyed.

The supervisor reported that the victim was working properly, using his stick to look for tripwires, cutting grass and using his detector [the bulky end-of-lane marker appears to have been used as a tripwire feeler].

The Group Leader reported that the victim was a good deminer and popular with everyone and concentrated well in his work, then blamed him and his partner for missing the mine.

Another supervisor reported that the victim had "social problems" and may have gone into the lane "bad tempered".

Conclusion

The investigator decided that the mine was missed for one of the following reasons.

- Lack of concentration;
- making too fast movements with the detector;
- over confidence because of previous mines "deactivated" without accident;
- technical deficiency of the detector;
- bad marking of the area already cleared and lack of confirmation of the area cleared when the victim and his partner changed roles.

A much shorter version of the same report in English stated that the victim "while checking a lane with his detector failed to detect a mine which was dug in at 30/35 centimetres and detonated it". His right foot was blown off. [No indication of how mine-depth was determined was included.]

This version stated that first medical assistance was given in one minute

See “Related papers” for a photograph of the site.

Victim Report

Victim number:	29	**Name:**	**[Name removed]**
Age:	39	**Gender:**	Male
Status:	deminer	**Fit for work:**	not known
Compensation:	not made available	**Time to hospital:**	1 hour 30 minutes
Protection issued:	Safety spectacles Various	**Protection used:**	not recorded

Summary of injuries:

AMPUTATION/LOSS

Leg Below knee

COMMENT

See medical report.

Medical report

A brief medical report (in French) was attached to the file. It stated that the victim received;

500ml de plasmion

1000ml de Ringer Lactate

An antibiotic with:

Peri G [illegible] x 2 on I.V.D. Cent.

500 mg plagyl (mithanidazole) en perfusion de 30'

Analysis

The primary cause of this accident is listed as a "Management/control inadequacy" because the lane marking system shown in the photographs was inadequate (tapes moved) but clearly approved by the group's management (who added an unsecured tape as a left hand marker for one photograph). The mine may have been missed because of inadequate markings or a careless changeover - both of which could have been avoided had appropriate control measures been in place.

The secondary cause is listed as a “Field control inadequacy” because the field supervisors did not ensure that the deminers worked appropriately. However, with senior management failing to recognize the need for adequate marking it is quite possible that Field Supervisors were controlling work in the manner required of them.

The mechanical method used may have been a pressure method using heavy steel wheels on a large mine-protected vehicle, or a large improvised flail (both were used in the area).

No mention of the victim's PPE was made and it seems that none was issued.

Related papers

A letter from the National Authority to all demining operatives in the country telling them of the accident and asking them to learn from it was on file.

A "memorandum" reporting the accident was included in the file. This revealed that communication with Maputo was by cellular telephone, while communications on site were by HF radio. The supervisors (not medics) stayed at the site to destroy the mines found during the day after the accident.

A map of the evacuation route by road to Maputo was in the file.

A sketch map of the accident site was in the file.

Photographs in the file (one reproduced alongside) show lane marking tape on the right side that was not secured with posts and had apparently blown sideways. No marking on the left side was made. Marking tape was unwound from the front of lane post without interim posts being placed to hold it. Another picture showed the same area with a second trailing tape meandering towards the accident site. The lane appeared to be about 1.5 metres wide. The vegetation was sparse and spindly bush and low, dry grass.

The damaged Ebinger detector was shown in the picture (420 with long handle) and appeared intact.

The crater was shown, relatively shallow in sandy soil - which implies that the mine was not deeply buried.

A rubber boot with the heel missing features in the photograph along with garden shears and a cotton peaked cap. The mine crater was shown behind the red painted end-of lane marking stick.

Internal investigators featured in some of the photographs and were wearing no PPE.

A letter informing the National Authority of the accident was on file in Portuguese and dated 15th September 1998.

The Director of the demining group was in Maputo at the time of the accident and made the necessary arrangements for the victim to be received at Maputo Central Clinic. He was present when the victim arrived and reported that the victim was conscious and very brave. The surgeon took control of the patient at 13:37 and congratulated the medics on the speed and quality of their care.

The demining group director visited the accident site to verify the account of the accident on 15th September. He made the following "operational recommendations":

1) Measures had to be in place to prevent over-confidence which result in carelessness.

2) The deminers should have continuous training in the use of detectors and excavation methods. The SOPs should be revised for different situations.

3) Supervisors should always check on deminers and take corrective measures.

4) The changeover between deminers should always be supervised and the lane rechecked for security.

The letter ended with an invitation to the National Authority to visit the site.