

# DDAS Accident Report

## Accident details

|   |  |
|---|--|
| <b>Report date:</b> 19/04/2006                          | <b>Accident number:</b> 66   |
| <b>Accident time:</b> not recorded                      | <b>Accident Date:</b> 17/06/1996   |
| <b>Where it occurred:</b> Quessua, Malange              | <b>Country:</b> Angola   |
| <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> 18/06/1996   |
| <b>ID original source:</b> EB/IG/PC                     | <b>Name of source:</b> CMAO  |
| <b>Organisation:</b> [Name removed]                     |  |
| <b>Mine/device:</b> PMN AP blast                        | <b>Ground condition:</b> agricultural (abandoned)<br>bushes/scrub<br>grass/grazing area<br>trees |
| <b>Date record created:</b> 23/01/2004                  | <b>Date last modified:</b> 23/01/2004  |
| <b>No of victims:</b> 3                                 | <b>No of documents:</b> 2  |

## Map details

|                                      |                              |
|--------------------------------------|------------------------------|
| <b>Longitude:</b>                    | <b>Latitude:</b>             |
| <b>Alt. coord. system:</b> GR 415538 | <b>Coordinates fixed by:</b> |
| <b>Map east:</b>                     | <b>Map north:</b>            |
| <b>Map scale:</b> Lombe              | <b>Map series:</b>           |
| <b>Map edition:</b>                  | <b>Map sheet:</b> 113        |
| <b>Map name:</b>                     |                              |

## Accident Notes

inadequate metal-detector (?)  
inadequate communications (?)  
inadequate investigation (?)  
inadequate equipment (?)  
inadequate medical provision (?)  
protective equipment not worn (?)  
safety distances ignored (?)

visor not worn or worn raised (?)

inadequate training (?)

## Accident report

The demining group were using a two-man drill at the site. In this, one deminer uses the detector to locate and mark metallic readings while the other checks for tripwires, cuts undergrowth and excavates any detector readings. It is not known whether the group ran three-man teams with the two-man drill.

No Board of Inquiry report was available at the Angola MAC in December 1998. A report of the UN investigation made on the day following the accident was made available by one of its authors in July 1999. The following summarises its content.

The accident site was described as a "wide undulating grassy area" that was part of an agricultural complex. Grass was about 2m (6') high with small bush and trees scattered irregularly. The mines were used as part of a defensive position facing a wide open area. The survey had revealed a "horseshoe" deployment of POMZ, OZM-72, PMN and MAI-75 mines. The mines found prior to the accident were OZM-72s and PMNs. The demining team was the second to have been trained under the UN backed training initiative. It had completed school training on 29<sup>th</sup> March 1996 and moved to continue training under field conditions. They were first deployed on 25<sup>th</sup> April 1996 and started work at the accident area on 29<sup>th</sup> May 1996.

Prior to the accident a two-man team including Victim No.3 were clearing a one metre wide lane. They were wearing frag-jackets, helmets and visors. The Team supervisor (a Uruguayan National) was not wearing protective clothing. He became Victim No.1. Another ex-pat supervisor (Pakistani National) on site was wearing a helmet and visor. He became Victim No.2. The deminers could see a partly exposed PMN about two metres in front of the end-of-lane marker stick.

The detector man used his detector and got a continuous reading over a wide area. Victim No.1 came to his assistance and tried the detector with similar results [the detector type was not recorded but is believed to have been the Schiebel AN/19 because the group used that model later].

In his role as Team Supervisor, Victim No.1 sent the detector man back down the lane about ten metres to tune the detector. Victim No.2 walked past the detector man and went to join Victim No.1 at the end of the lane. The two Supervisors knelt at the end of the lane and prodded around the partly exposed mine [if it was two metres ahead of the end-of-lane marker they must have moved into the uncleared area to do this].

Victim No.3 moved forward to join them and stood directly behind them. At that time Victim No.1 had the PMN in his hand and was standing in front of the end-of-lane marker stick. He was "attempting to carry out the disarming drill". The three victims were within "three to four metres of each other" with Victim No.3 behind and apart. Victim No.3 was looking down at the time, with his visor down.

At that time Victim No.1 initiated a second PMN by standing on it. He suffered a below knee amputation of his right leg. Victim No.2 alongside and on his left was also "severely" injured in one leg. Both were knocked over by the accident. Victim No.3 was standing [and apparently confused]. The mine that Victim No.1 was holding had fallen to the ground but did not detonate.

Several deminers came to assist and Victim No.1 told them not to move him until the stretchers arrived. Victims No.1 and 2 were taken to the ambulance on stretchers where the four medics on site treated them. They had no pain-killing drugs. A Ukrainian doctor arrived at the site some time later [not recorded how long] and administered morphine. Victim No.3's minor injuries were treated at the scene [it was not recorded when]. Victim's No. 1 and 2 were taken in one ambulance to Malange hospital and Victim No.3 followed later in the Ukrainian doctor's ambulance.

Victim No.1's right leg was amputated below the knee and he was given a transfusion of blood donated by a deminer and medic. Then Victims No 1 and 2 were flown to hospital in

South Africa [possibly via Luanda]. It was not recorded what treatment Victim No.3 received for his "fragmentation injuries".

The investigators found the site laid out "similar" to requirements. They found parts of a PMN "striker mechanism" in the crater at the site. Victim No.1's spectacles, a prodder and the mine he had dropped were also lying in front of the end-of-lane marker. They stated that "the initial reports received... were inaccurate" [no record of them were found].

### **Conclusion**

The investigators concluded that SOPs were not followed. [The retrieval of the mine for disarming was possibly excused by a shortage of demolition explosives requiring that TNT be recycled but the TNT in a PMN is cast into it and impossible to remove in one piece.] They stated that SOPs must be followed "unless there are strong grounds for any variation". Any change to SOPs that might become "normal practice" should become formal amendments to SOPs. They further concluded that all visitors and supervisors should wear safety spectacles, and that not more than one Supervisor should be in a lane at one time. They added [enigmatically] that vehicle keys should be left in the ignition, [which implies that some problems were encountered when the urgent need to move vehicles became apparent].

The investigators also found that the medical equipment provided was "inadequate" and that the absence of field to base communications had led to the most senior person at the site being absent (having travelled to Luanda to report).

### **Recommendations**

The investigators recommended that a communications system linking field operations with the base should be put into place "as soon as possible" and that team member(s) other than the Supervisor should be trained to use it. They also recommended that interpreters should be given "formal communications and driver training" and that international staff should be aware of their blood groups and arrange a donor "buddy" system when possible. They added that, within the constraints of their equipment, the paramedics performed well and should be commended.

Also, the supply of explosives to demining groups "must be expedited". Then "there will be no temptation to defuse mines in order to utilise the explosive in them for other purposes".

## **Victim Report**

|   |                                       |
|---|---------------------------------------|
| <b>Victim number:</b> 93                    | <b>Name:</b> [Name removed]           |
| <b>Age:</b>                                 | <b>Gender:</b> Male                   |
| <b>Status:</b> supervisory                  | <b>Fit for work:</b> presumed         |
| <b>Compensation:</b> not made available     | <b>Time to hospital:</b> not recorded |
| <b>Protection issued:</b> Safety spectacles | <b>Protection used:</b> none          |

### **Summary of injuries:**

AMPUTATION/LOSS

Leg Below knee

COMMENT

No medical report was made available

## Victim Report

|   |                                       |
|---|---------------------------------------|
| <b>Victim number:</b> 94                    | <b>Name:</b> [Name removed]           |
| <b>Age:</b>                                 | <b>Gender:</b> Male                   |
| <b>Status:</b> supervisory                  | <b>Fit for work:</b> not known        |
| <b>Compensation:</b> not made available     | <b>Time to hospital:</b> not recorded |
| <b>Protection issued:</b> Safety spectacles | <b>Protection used:</b> none          |

### Summary of injuries:

INJURIES

severe Leg

COMMENT

No medical report was made available.

## Victim Report

|   |   |
|---|---|
| <b>Victim number:</b> 95                    | <b>Name:</b> [Name removed]               |
| <b>Age:</b>                                 | <b>Gender:</b> Male                       |
| <b>Status:</b> deminer                      | <b>Fit for work:</b> yes                  |
| <b>Compensation:</b> not made available     | <b>Time to hospital:</b> not appropriate  |
| <b>Protection issued:</b> Safety spectacles | <b>Protection used:</b> Safety spectacles |

### Summary of injuries:

COMMENT

No medical report was made available. The victim suffered "minor fragmentation".

## Analysis

The primary cause of this accident is listed as a "*Management/control inadequacy*" because the victims were senior advisors to the national demining efforts and breached numerous safety and procedural SOPs without good reason.

The victims were, effectively, the "Field control" and they acted improperly by moving ahead of the end-of-lane marker to retrieve a visible mine, by ignoring safety distances and by not wearing safety equipment. This implies either ignorance or contempt for the SOPs. The secondary cause is listed as "*Inadequate training*".

## Related papers

No other documents were made available. Although photographs and video were referenced in the Accident report, only the written matter was available.

The 240g TNT High Explosive in a PMN is poured into the mine and adheres to the mouldings. This makes it impossible to remove in a useful form. As a result, the disarming of the mine for later use as a demolition charge would require the whole mine to be used as that

charge. It seems likely that the mine was being collected as a souvenir, a common practice among some ex-pat advisors in many theatres.



The picture shows a PMN with the top removed. The HE charge is coated with a black lacquer.