

# DDAS Accident Report

## Accident details

<b>Report date:</b> 31/07/2006	<b>Accident number:</b> 428
<b>Accident time:</b> 10:35	<b>Accident Date:</b> 01/08/2002
<b>Where it occurred:</b> M4176 MF, Phum O Lvie, Khum Boeung Being, Malai District, BMC, BANTEAY MEANCHAY	<b>Country:</b> Cambodia
<b>Primary cause:</b> Victim inattention (?)	<b>Secondary cause:</b> Inadequate equipment (?)
<b>Class:</b> Vegetation removal accident	<b>Date of main report:</b> 08/08/2002
<b>ID original source:</b> AS	<b>Name of source:</b> [Name removed]
<b>Organisation:</b> [Name removed]	
<b>Mine/device:</b> PMN AP blast	<b>Ground condition:</b> soft
<b>Date record created:</b> 31/07/2006	<b>Date last modified:</b> 31/07/2006
<b>No of victims:</b> 1	<b>No of documents:</b> 1

## Map details

<b>Longitude:</b>	<b>Latitude:</b>
<b>Alt. coord. system:</b> GR 135965	<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

inadequate equipment (?)  
inadequate medical provision (?)  
mechanical follow-up (?)  
no independent investigation available (?)  
protective equipment not worn (?)  
visor not worn or worn raised (?)

## **Accident report**

The internal accident report was made available during 2005. It is reproduced below, edited for anonymity.

### INVESTIGATION REPORT

INTO MINE ACCIDENT WHICH OCCURRED ON 01 AUGUST 2002 AT M4176 MINEFIELD, BANTEAY MEANCHAY.

REPORT PREPARED BY: DEPUTY DIRECTOR PLANNING AND OPERATIONS  
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1. Order for assembly of Investigation.
2. Report by the Investigation Team.
3. Statements By:
  - a. First Witness, Section Commander DU1
  - b. Second Witness, deminer DU1
  - c. Third Witness, [The Victim], [Demining group] deminer DU1
5. Report and attachments by [Demining group] Manager

### ORDER FOR ASSEMBLY OF FORMAL INVESTIGATION

Orders by: Deputy Director General, [Demining Group]

A formal investigation is to be conducted as soon as possible for the purpose of collecting and recording evidence into the Mine Accident that occurred on 01 August 2002 in the M4176 Minefield, BMC, in which one deminer was injured.

The investigation team is to prepare a report and provide comment based on its findings. The Team leader is to present the findings of the investigation to the [Demining group] executive council within five days of the conduct of the investigation.

Team Leader, Deputy Director Planning and Operations

The team leader may summons any witnesses to attend who are employees of [Demining group].

### TERMS OF REFERENCE

#### **Background**

1. What is the history of the minefield?
2. When, where and at what time did the accident occur?
3. Who were the persons involved?
4. What were the circumstances leading up to the accident?
5. Describe the nature of the accident in detail.
6. When did clearance operations commence in the minefield?
7. Have clearance operations concluded?
8. Has the minefield been formally handed over to the appropriate authority?

## **Analysis**

1. Did the accident occur in the [Demining group] minefield?
2. What caused the injuries?
3. What was the nature and extent of the injuries to the casualties?
4. What action was taken immediately after the accident was reported to [Demining group]?
5. What measures could have taken place to prevent the accident?
6. Were any [Demining group] SOP or written orders breached?
7. Is there any weakness in our current method of the control and monitor?
8. Were there any problems specific to this minefield or area that made demining difficult?
9. Are there any problems with our current mine detectors and their ability to detect mines or UXO buried up to 10 centimetres deep?

## **Post Accident**

1. Were all accident notifications completed according to internal order/SOP?
2. How can we prevent this from happening again in the future?
3. What if anything has been done to assist the accident victims?
4. Has the Minefield been re checked?
5. What actions has the DU taken to try and prevent a re occurrence of the same nature?

Signed at: Phnom Penh, 01 August 2002, Deputy Director General Demining Group

## **FORMAL INVESTIGATION**

### **SUMMARY FINDINGS**

#### **General**

1. The formal investigation into the accident was conducted over the period 01 – 02 August 2002. In addition to visiting the accident scene, two witnesses were interviewed and their evidence recorded. The following is a record of the investigation as well as the summary findings and recommendations.

#### **Terms of Reference**

2. The following answers are provided to questions directed by the Deputy Director General.

##### **a. Background**

Q) What is the history of the minefield?

A) The minefield was laid in the 1980s by the Khmer Rouge, VN, and Government Forces for defending along Khmer-Thai border. It was a hot base line battlefield in the former KR stronghold. Demining operations commenced on 08 July 2002 and still continue. About 96 AP Mines and at least 14 UXO have been found so far. Most types of mines found include the PMN. Patterns suggest that the mines were laid defensively. The purpose of clearing this area is for agriculture. Before [Demining group] arrived, a bulldozer had been used to clear up the field. It left piles of soil along the sides of the field with mines located within them.

Q) When, where and at what time did the accident occur?

A) The accident happened at approximately 10:35 hrs on 01 August 2002 at GR 135965, in Minefield M4176 at Phum O Lvie, Khum Boeung Being, Malai District, BMC.



The picture shows the accident site with the Victim's sunhat beside the crater.

Q) Who were the persons involved?

A) Mobile Platoon 103 of DU1 and three persons were directly involved. Mr. [The Victim] Mr [Deminer 1], Mr. [Section Commander] mobile platoon 103.

Q) What were the circumstances leading up to the accident?

A) During conducting Vegetation Removal Drills at minefield M4176, to pull a branch of deadwood which its end buried in a mound of excavated soil from the uncleared area at the head of lane and it was activated and detonated to a buried mine underneath.

Q) Describe the nature of the accident in detail.

A) Referring to demining sequence, deminer no. 1 conducted vegetation removal drill (skipped tripwire drill due to none of tripwire); upon completion of the vegetation removal drill, deminer no. 2 [the victim] conducted detector drill. These drills had been repeated two to three times already to the time of accident occurred. Mr. [name excised], the victim's peer, told that he found deminer no. 1 removed the cut salvages once then the second time and then he heard an explosion and found [the victim] falling backward into the cleared area. Then he called section commander for help, section commander called to mobile platoon commander and platoon commander called medic but he was absent then Mobile Platoon Commander 101 who treated and stabilized the victim before evacuating him to Battambang Emergency Hospital. The victim was evacuated at around 11:00 hrs from M4176 and arrived Battambang Emergency Hospital around 14:20 hrs.

Q) When did clearance operations commence in the minefield?

A) Clearance operations commenced on 08 July 2002.

Q) Have clearance operations concluded?

A) No. The area of the accident was in a process of being cleared.

Q) Has the minefield been handed over to the appropriate authority?

A) No, it has not been fully cleared as yet.

## **b. Analysis**

Q) Did the accident occur in [Demining group] Minefield?

A) Yes. The accident occurred in a perimeter MF boundary.

Q) What caused the injuries?

A) Based on the physical evidence, a Type PMN Anti Personnel Mine.

Q) What was the nature and extent of injuries to casualties?

A) Only one person, the victim, was injured. He suffered a blast injury to the face and gravely hurt to left eye, which might be lost sight or blind.

Q) What action was taken immediately after the accident was reported to [Demining group]?

A) After being informed shortly after the accident, Mobile Platoon Commander dispatched an ambulance and medic to treat, stabilize the victim and then transported to the Emergency Hospital in Battambang. The DU Manager later inspected the accident scene and conducted a preliminary scene examination to establish the facts.

Q) What measures could have taken place to prevent the accident?

A) It shall be adhered strictly to SOP and conduct demining drill accordingly.

Q) Were any [Demining group] SOP or written orders breached?

A) Yes.

Q) Are there any problems with our current Mine detectors and their ability to detect Mines or UXO buried up to 10 cm deep?

A) No. The Platoon Commander who cleared the area in the vicinity of the accident was confident in the mine detectors ability to locate all types of mines up to a depth of 10 cm. In saying this though, there is a lot of discussion on the age, battery usage and workloads placed on the detectors. But for this case it happened at the vegetation removal drill.

Q) Were there any problems specific to this minefield or area that made demining difficult?

A) Yes. A bulldozer was used to clear a field exploding mines as it progressed as well as making a range of mounds at the end of the field which buried deadwood and an unknown quantity of mines. [Demining group] deminers wherever possible, level by level, cleared and continue to clear as many of these mounds as possible. There were mounds of earth at the accident site.

Q) Is there any weakness in our current method of quality control?

A) In this accident, this question is not applicable. The accident caused by the negligence or not adhered to SOP, he thought that that rotten branch of deadwood could be pulled without disturbing to any buried mines, then he pulled it of which end buried in a mound, where there have been incorrectly placed mines.

### **c. Post Accident**

Q) Were all accident notifications completed according to internal orders/SOP?

A) In the process.

Q) How can we prevent this from happening again in the future?

A) All deminers, Section Commanders are to be refresher training on demining drills, basically on vegetation removal drill, Mine detector drill and Prodder and Excavation drill.

Q) What if anything has been done to assist the accident victims?

A) Not as yet. It shall be decided by Compensation Committee adhered to [Demining group] Policy.

Q) Has the area been re checked or cleared?

A) No. The area is yet to be cleared. It is hoped that BC will be deployed to complete the clearance of these mound areas.

Q) What action has the DU taken to prevent a re-occurrence of the same nature?

A) Reinforcing strictly control and directly coach on the safety manner of demining operations in the hazardous area.

## Conclusion

3. The accident occurred in a [Demining group] Minefield, M4176 caused by pulling a branch of deadwood from the head of clearance lane, of which it activated and detonated to a buried mine underneath the mound of soil. It is breached SOP, adherence to [Demining group] SOP – Vegetation Removal drill,...[ "All vegetation must be cut from the top down and cut into manageable sizes so that pieces not fall into the uncleared area..." ... "Vegetation is not to be pulled or forced from uncleared area"...] etc.
4. Based on physical evidence, it is a buried mine Type PMN underneath the mound of excavated earth awaiting any disturbing movement or pressure then detonated.
5. The accident is caused of breaching SOP. The accident is not an applicable of [Demining group] SOP or internal order but the negligence or forgettable mind of the deminer himself.

## Recommendations

6. The investigation team after consideration of all factors makes the following recommendations:
  - a. Strictly reinforce control and monitor by section commander and platoon commander on demining operations performance drills and coaching basic instruction specifically upon its nature.
  - b. All deminers and Section Commanders are to be refreshed training on demining operations drill.
  - c. Mobile Platoon Commanders shall be trained on 1st line and middle management.
  - d. Information from this and other accident/incident investigations should be forwarded to the appropriate CMAC departments for perusal and discussion.

Signed at: Battambang 08 August 2002, Investigation Team Leader

[The ground shown in the photographs is soft and friable with buried, rotting wood – buried by the bulldozer.]

## Victim Report

<b>Victim number:</b> 571	<b>Name:</b> [Name removed]
<b>Age:</b>	<b>Gender:</b> Male
<b>Status:</b> deminer	<b>Fit for work:</b> not known
<b>Compensation:</b> Not made available	<b>Time to hospital:</b> 3 Hours, 45 minutes
<b>Protection issued:</b> Not recorded	<b>Protection used:</b> None

### Summary of injuries:

#### INJURIES

severe Eye

severe Face

severe Head

#### COMMENT

See Medical report.

## Medical Report

No formal medical report was made available.

A photograph showed head, left eye and facial injury.



## Analysis

The primary cause of this accident is listed as "Victim inattention" because it seems that the victim was operating in breach of SOPs at the time and carelessly initiated a mine while trying to pull a cut branch from a pile of bulldozed earth. The secondary cause is listed as "Inadequate equipment" because the victim had to work through a bulldozed berm by hand. It seems that the group did not oblige deminers to wear PPE during vegetation removal.

The incident "Notes" mention an inadequate medical provision. This refers to the fact that it took close to four hours for a victim to reach a hospital.