

# DDAS Accident Report

## Accident details

<b>Report date:</b> 18/05/2006	<b>Accident number:</b> 189
<b>Accident time:</b> 13:15	<b>Accident Date:</b> 06/02/1995
<b>Where it occurred:</b> Nimit Kon Trei Village, Sisophon Beanty Meanchy	<b>Country:</b> Cambodia
<b>Primary cause:</b> Management/control inadequacy (?)	<b>Secondary cause:</b> Inadequate training (?)
<b>Class:</b> Excavation accident	<b>Date of main report:</b> 14/02/1995
<b>ID original source:</b> ML/DK/NS	<b>Name of source:</b> CMAC
<b>Organisation:</b> Name removed	
<b>Mine/device:</b> Type 72 AP blast	<b>Ground condition:</b> grass/grazing area hard hidden root mat
<b>Date record created:</b> 14/02/2004	<b>Date last modified:</b> 14/02/2004
<b>No of victims:</b> 1	<b>No of documents:</b> 2

## 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

inadequate training (?)  
no independent investigation available (?)  
inadequate communications (?)  
disciplinary action against victim (?)  
inappropriate vegetation cutting tool (?)  
incomplete detonation (?)  
squatting/kneeling to excavate (?)

## Accident report

At the time of the accident the demining group operated in three-man teams with a two-man drill. In this one deminer used the detector and marked any signals while another looked for tripwires, cut undergrowth and excavated any detector readings. A third deminer was resting. The three rotated at fixed intervals.

An internal accident report was prepared by two expatriate Technical Advisors on 7<sup>th</sup> February 1995. It was located at the country MAC in January 1999 and the following summarises its content.

The weather at the time of the accident was "sunny, clear, windy". The working area was 129,136m<sup>2</sup> with 36,901 cleared at the time of the accident. 36 Type 72a mines had been found. The victim worked in a Section that had found 28 Type 72a, 1 Type 69 and 3 PMN-2 mines (and 1 piece of UXO).

On the day of the accident a breaching lane (107cm wide) was being cut and a "mine" was discovered at 11.00. It was not destroyed "but was marked in the cleared area" and the breach completed. The victim's section then began another "breach". A Type 72a was "completely uncovered" [presumably found on the surface] "practically next to" the marking tape. Two other Type 72 mines and a crater were also visible beyond the breach. Yellow sticks had been used to mark the location of the mines so "the pattern of the minefield was clearly visible".

[The investigators neglect to recorded the time of the accident or hospitalisation procedure, but other reports showed that the accident occurred at 13:15.]

The Section Commander was doing the prodding himself because he considered the work dangerous and wanted to be sure it was done properly. He was working in a kneeling position and not wearing safety spectacles. He did not use water to soften the ground despite the fact that it was very hard. "The explosion occurred when the Section Commander was prodding a mine 50cm outside the safe lane, his prodding tool slipped from the grassroots and landed on a Type 72 mine". He was said to have sustained temporary vision loss.

The victim's prodding tool was bent at 7cm from the handle with "burns visible" to 6cm from the tip.

The investigators found "a number" of pieces of "shrapnel" in the "cleared area" and safe lane. They found the burned "booster/detonator" holder of a Type 72a, and beside it were two safety pins from Type 72a mines. No evidence of the Type 72b was found. They decided that a Type 72a had deflagrated rather than detonated as designed.

**The Victim** said he was working because the Number 2 in the team was feeling unwell so he took over to expose the detector man's readings. He did not have his safety spectacles because he did not expect this to happen. The detector man had marked three places. The detector man should move the head 30cm beyond the edge of the lane. While doing this he found a T72a pin, so extended his search a little further and placed markers.

The victim uncovered a mine in the first two places inside the breach, then turned to the marker outside the breach. It was hard to remove the soil around this mine [perhaps because he was reaching forward a long way]. He prodded the ground to loosen it but there were roots in the way. While trying to tear the roots with his prodder, the prodder slipped and pressed onto the mine. The victim believed the fact that he had already taken the "sand" from the top of the mine reduced his injuries. He did not use water to soften the ground because they did not have any water on site "not even enough to drink".

**The Platoon Commander** said that he saw the victim working and went to correct him but the mine went off before he got there. He tried to get permission to destroy the mines already found but could not reach the Platoon Commander on the radio. He knew that the country MAC SOPs demanded that a lane be closed when a mine was found but ignored it because the mines were in a pattern and it made better sense to destroy those in the pattern at the same time.

**A deputy section commander** said that he saw what was happening and would have called for advice if he had a radio. As it was, he did not see the victim prodding.

**The detector operator** in the breach reported that the signal which subsequently detonated was stronger than the others [supposedly implying a T72b with a much higher metal content].

**The prodder man** in the breach said that the first two mines were 3-4 centimetres "deep". The ground was hard but they had no water. He said he was not sick but the Section Commander just wanted to do the prodding so he went to rest.

**The Technical Advisor** (seconded to the country MAC) reported that the victim had burning and fragmentation wounds on his left hand as well as his face. He did not remember the time that the victim was taken away to hospital but said that the Medevac procedure was "excellent".

## Conclusions

The investigators concluded that the Platoon Commander was aware of the presence of mines in the breach and did not order the closure of the breach (as in SOPs)." He also did not tell the Site Manager that there were mines in the breach. The Technical Advisor present was aware of events but did not enforce new country MAC SOPs. The failure to follow the UN controlled demining group's SOPs led to unsafe practice. Previous SOPs allowed them to work in a breach with mines present.

The following SOPs were ignored or violated: the victim was kneeling/squatting between two uncovered mines; he was not wearing safety spectacles; he did not soften the ground which led to him prodding with too much force and losing control of the tool; the victim was prodding "outside the breach" to a distance of around 50cm.

The presence of metal contamination in "safe"/ "cleared" areas implied that the deminers were working too quickly and that the managers were not checking those areas that they should have.

The Technical Advisor present failed to correct the victim and allowed other SOP breaches but was excused because the other managers should not have relied on him to enforce correct procedure.

## Recommendations

The investigators recommended that the Site Commander be given a "written warning", the Platoon Commander be demoted to Section Commander and the Section Commander be demoted to deminer. A two day refresher course for all deminers at the site was carried out between 8-11<sup>th</sup> February 1995.

They further recommended that the country MAC should ensure that Technical Advisors know their responsibilities by giving them an SOP training course when they arrive. Deminers who had been working on a site where SOP variations are allowed (clearing a UXO field or a dense mined area) should be given refresher training before moving back into normal demining.

## Victim Report

<b>Victim number:</b> 239	<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> US\$2,040	<b>Time to hospital:</b> 50 minutes
<b>Protection issued:</b> Safety spectacles	<b>Protection used:</b> none

**Summary of injuries:**

## INJURIES

minor Face

minor Hand

severe Eyes

## COMMENT

See medical report.

## Medical report

A "medical check" report made on 4<sup>th</sup> March 1995 stated that the mine was a T72b. The examination was of the victim's sight. It found that the right eye had lost 50% vision and the left eye had lost 10% vision, and concluded that this was a 60% vision loss, requiring US\$2,400 compensation.

Another document in Khmer calculated that only 85% of the \$2,400 was payable, being \$2,040.

A Medevac report stated that the victim was placed in an ambulance 13 minutes after the accident and that it took 50 minutes from the time of the accident to the victim's arrival in hospital.

## Analysis

The primary cause of the accident is listed as a "*Management/control inadequacy*" because the supervisor himself was in breach of many SOPs. The fact that a senior Technical Advisor was present and did nothing to correct the errors illustrates the fact that many of the advisors were provided without relevant experience or background knowledge. The fact that both supervisors and advisors were inadequately trained indicates a further failing of management. The secondary cause is listed as "*Inadequate training*".

The use of a two-man drill may be relevant. The detector operator finds a reading and marks it. He found three signals and marked them. Because of the clear ground, he was able to locate surface metal (such as T72a pins) and leave them aside. The shape of the pin used in a T72a and T72b is different but the pin found by the detector man was not seen by the investigators. He reported a stronger signal, implying a T72b. It is strange that the detector man was allowed to walk beyond his first reading, especially if the man investigating the readings was not supposed to go beyond the first signal if it turned out to be a mine. This may have been an attempt to cut down the time lost when the deminers changed position in the lane during a two-man drill.

The victim was "in the kneeling position with one knee touching the ground". The victim had to reach forward 50cm outside the breach to use his prodder, and then tried to use a prodder to cut roots. The use of an appropriate tool for cutting roots might have prevented the accident, breaches of SOP aside.

## Related papers

A sketch map of the site was on file along with photographs showing flat ground with very little undergrowth (small short clumps of grass) with visible mines and a clear pattern of sticks marking previous finds. Parts of the T72a case found in the crater were shown as small fragments and an "O" ring.

Another photograph showed relatively large metal fragments found during the investigation in "safe/cleared" areas and T72a pins.

