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DDAS Accident Report

Accident details

Report date:	17/05/2006	**Accident number:**	161
Accident time:	08:30	**Accident Date:**	05/10/1998
Where it occurred:	Trapeing Phlong Commune, Ponhea Krek, Kampong Chan Province	**Country:**	Cambodia
Primary cause:	Unavoidable (?)	**Secondary cause:**	Inadequate equipment (?)
Class:	Excavation accident	**Date of main report:**	12/10/1998
ID original source:	none	**Name of source:**	CMAC
Organisation:	Name removed		
Mine/device:	M14 AP blast	**Ground condition:**	bushes/scrub dry/dusty electromagnetic hidden root mat
Date record created:	14/02/2004	**Date last modified:**	29/02/2004
No of victims:	1	**No of documents:**	2

Map details

Longitude:		**Latitude:**	
Alt. coord. system:		**Coordinates fixed by:**	
Map east:		**Map north:**	
Map scale:	not recorded	**Map series:**	
Map edition:		**Map sheet:**	
Map name:			

Accident Notes

inadequate equipment (?)

inadequate metal-detector (?)

handtool may have increased injury (?)

no independent investigation available (?)

squatting/kneeling to excavate (?)

Accident report

At the time of the accident the demining group operated in a two-man drill whereby one deminer used the detector and marked any signals while the other looked for tripwires, cut undergrowth and excavated any detector readings.

This accident was recorded as having occurred on 5th September 1998 in the country MAC Accident summary sheet. Some information in the following summary is derived from an interview with the senior Technical Advisor to the demining group. This accident is referenced in the reports for the accident occurring in Cambodia on 24th November 1998, which was similar in several ways and occurred in the same mined area to another member of the same demining team.

The demining platoon had been working in the area since July 1998. All the mines found had been M16 and M14s. The mined area was characterised by having a "heavy laterite" soil that had been "hardened by dry weather". The Technical Advisor reported that the laterite soil was "on occasions" more than the MineLab F1A4 detector could "deal with". The vegetation included "young trees, bushes and some vines" with a dense root structure at a depth of 5-15cm.

The policy was to look for both M16 and M14s together, and that when one was found to leave it exposed while the others were located.

The picture below shows two M14 mines as they were found - one of them at an angle. The picture was taken in the same area as this accident occurred.

Statements were taken on 7th October 1998.

The Section Commander stated that he heard an explosion at 08:30. He felt sure that the victim had been following SOPs and that the mine may have been tilted in its side.

The victim's partner stated that they had cleared 2m of the lane without accident and then his detector signalled in four places. He only had two markers so he divided the signals into two areas and told the victim that one area was giving a stronger signal than the other and that he suspected that a mine was there. The victim excavated the weaker signal first and then started to investigate the stronger signal. The victim asked him to double check the second marker before continuing the investigation. Then there was an explosion. He stated that the victim was wearing his safety spectacles and that the eye injuries were because of the victim's posture at the time.

The victim said that he did not find anything at the first marker, and then failed to find anything at the second marker with his prodder. He called his partner to check with the detector again and the reading was confirmed. He then started excavating with his "trowel" when the mine exploded. He estimated that the mine was buried to a depth of 4cm, but did not see it prior to the explosion.

Conclusion

The investigators concluded that the victim was excavating an M14 mine when it detonated and he was struck in the face by fragmentation, damaging both eyes.

Recommendation

The country MAC investigation recommended that the policy of leaving mines exposed while looking for other members of the same group be reconsidered. In one of the demining organisation's reports (translated from Khmer) it was suggested that deminers should operate lying on a plastic sheet.

Victim Report

Victim number:	206	**Name:**	**Name removed**
Age:	32	**Gender:**	Male
Status:	deminer	**Fit for work:**	no
Compensation:	US$4,000	**Time to hospital:**	not recorded
Protection issued:	Safety spectacles	**Protection used:**	Safety spectacles

Summary of injuries:

INJURIES

minor Arms

minor Face

minor Hearing

minor Leg

severe Eye

AMPUTATION/LOSS

Eye

COMMENT

See medical report.

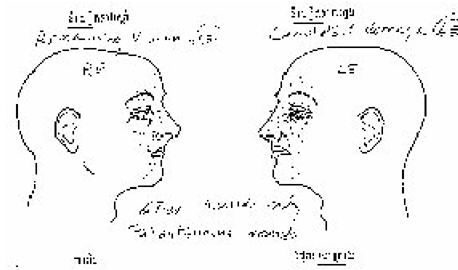
Medical report

A letter in English, dated 8th October 1998 from the group's Medical Officer was on file. It gave brief details of three eye examinations:

On 6th October a surgeon from a "Ophthalmologic Section" (hospital not stated) said that he had found "numerous very small holes on the eyeball".

On 7th October the Medical Officer was told by International Resources for the Improvement of Sight (IRIS) that the victim had microscopic holes on both eyeballs which could not be repaired.

On 8th October the DU4 Medical Officer himself tested the sight of the victim and found that he still had some vision and was able to identify colours, numbers and objects.



IRIS case notes

(Case notes from an examination of the eyes by IRIS on 5th October 1998 at 15:00.)

A general introduction noted injuries to the face, eyes and forearms.

The victim had: -

> "Visual acuity RE: PL+ LE: NPL.
>
> Diffuse swelling of face with multiple
>
> lacerated injury & burnt spots stained
>
> with mud & blood.
>
> (Facial burn: superficial to deep).
>
> Diffuse swelling of all lids (++)."

The victim's eyes were examined under general anaesthetic and it was found that:-

Rt. upper lid: Full thickness lacerated injury (repairing done at OT)

Conjunctival sacs of both eyes contained blood (clots), mud and ? metal [sic] particles.

Wound debridement done.

Conjunctival chemosis (+), s/c haemorrhage (++)

Multiple foreign body particles and burnt spots on cornea of both eyes *(removed)*

Perforating corneo-scleral injury at 9 o' clock (2mm to cornea and 5mm posteriorly to sclera).
repairing done.

Rt. Eye Anterior chamber - Hyphaema (++), pupil moised.

Lt. Anterior Chamber - Total Hypaema.

Posterior segment of the both eyes could not be evaluated due to the hazy media.

Intra-ocular pressure: Rt eye 24mm of Hg. Lt eye - soft"

A follow up note dated 8th October read: -

"<u>On Examination</u>

V/A Rt. Eye - 1/60

Lt. Eye - no perception of light

<u>Evaluation of Rt Eye:</u>

IOP: 17.3 mm of Hg

Lid wound - healthy, minimal swelling

Cornea – clear

A.C. hyphaema trace (Resolving)

Pupil – Atropinised

Lens – Transparent

Vitreous – Clear

Retina - Flat

Evaluation of Lt. Eye:

Endophthalmitis.

Treatment:

1. Continue the treatment.
2. Left eye may need evisceration."

An accident summary by an ex-pat TA who reported that the victim eventually "had one eyeball removed and has approximately 20% vision remaining in the second". The final compensation paid to the Victim was US$4000, and the Victim "is now out of work".

Analysis

The primary cause of this accident is listed as *"Unavoidable"* because it is probable that the victim was working appropriately [in accordance with approved SOPs] at the time of the accident.

The investigator did not comment on the victim's position, despite lower leg fragments indicating that he was squatting at the time. This demonstrates a tacit acceptance of field reality by management, but there were senior management failings in their failure to formally accept the real working position and in supplying inadequate safety spectacles. The secondary cause is listed as *"Inadequate equipment"*.

Related papers

Also in the file was a copy of the country MAC's "physical fitness observation sheet", filled in 10 days after the accident. It was a checklist for a comprehensive medical examination, and noted that the victim's legs, arms, eyes, internal canal and eardrums, and teeth were damaged.

The file included good photographs of the accident site (showing the M14 & M16 pairing) and of the damaged "trowel" [one large piece of corner of blade was missing but the rest of the tool was intact] and the victim's safety spectacles with the right lens missing.

A summary of this accident was supplied by a Technical Advisor in country in 1998. It reads:

Summary of accident on demining site 4, Demining Unit 4, CMAC, at Ponhea Krek District, Kampong Cham Province on 5th October 1998.

The first 2 paragraphs below are direct quotes from the monthly report (internal to SGS/HI) that I put together at the end of October.

"Unfortunately the other major event of the month was an accident which occurred at Ponhea Krek district in Kampong Cham Province. The accident occurred when a deminer initiated a M14 AP mine on his demining site. The immediate action that occurred immediately after the accident was satisfactory and the deminer was evacuated to Kampong Cham hospital. What followed was unsatisfactory and the investigation was not carried out to a satisfactory level. Curiously this was a point raised in my last months internal monthly report. It does not appear however, that the Headquarters level at CMAC has the slightest concern for this and I was personally appalled at the attitude within the Headquarters as to the accident.

An immediate investigation was carried out by the Ops Officer from Headquarters CMAC together with the DU manager, but the main problem is that neither of them - in fact, none of the Khmer staff - have been trained in investigation. The official report is still waiting (1 month on now) for the Investigations Officer from CMAC Headquarters to visit the accident site and make his report. This is astounding because there is nothing to be gained from doing this so

late, besides which, the investigating officer is again untrained and knows nothing of demining operations. We shall not hold our breath."

Basically this appears to have been an accident where the deminer initiated the mine whilst prodding. His partner had located the item and marked it and both of them were sure that there was a mine present in this location. There was less evidence of roots etc present in the location, although there were some, it does not appear that they were a major contributory factor. It is pure speculation, but it may have been the case that the mine was in the same attitude as the picture I gave you a copy of (from the same site).

The deminer was badly injured around the face. He also suffered lacerations on his arm. As a result of the accident, he had one eyeball removed and has approximately 20% vision remaining in the second. He has received $4,000 from CMAC as compensation and is now out of work.