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Humanitarian Demining Accident and Incident Database

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DDAS Accident Report

Accident details

Report date: 17/05/2006	Accident number: 162
Accident time: 12:30	Accident Date: 29/09/1998
Where it occurred: Boskhnor, Banan District, Battambang Province	Country: Cambodia
Primary cause: Field control inadequacy (?)	Secondary cause: Field control inadequacy (?)
Class: Excavation accident	Date of main report: 14/10/1998
ID original source: TA/PS/PT	Name of source: CMAC
Organisation: Name removed	
Mine/device: Type 72 AP blast	Ground condition: electromagnetic wet
Date record created: 14/02/2004	Date last modified: 14/02/2004
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 metal-detector (?)
handtool may have increased injury (?)
squatting/kneeling to excavate (?)
visor not worn or worn raised (?)
no independent investigation available (?)

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. A third team member may have been resting [group representatives appeared confused about team size when asked in January 1999]. The demining group issued full body protection and their drills assumed the deminer would lie prone while excavating.

The demining group conducted an internal investigation led by an expatriate Technical Advisor on the day following the accident. A copy of the report was found at the country MAC. The following summarises its content.

The ground conditions were very soft and muddy (due to recent rainfall) and there was a high level of "natural soil contamination" [presumably laterite] at the accident site. The victim and his partner were part of a 12 man team. They clearing a 2m wide safety lane to gain access to a remote part of the mined area. The victim cleared the undergrowth from an area and his partner swept it with a detector, (the Schiebel AN/19) but it "signal every where". The victim was prodding over the entire area when the accident occurred.

The victim was working in an "unauthorised semi-prone" position. (He claimed to have been lying on a "blue sheet" provided to keep deminers from getting too wet or muddy but there was some doubt over this). A photograph illustrated the victim's supposed position – showing a deminer lying on his side with his torso raised as he leaned on one elbow.

He initiated a mine with his prodder at 12:30 and walked away from the blast area unaided. After first aid, he left the site by ambulance at 12:46.

He had been wearing a "ballistic jacket", a helmet and a visor. His prodder (with a flat blade like a knife) was found to have lost 1cm at the tip and was slightly bent. Visor, helmet and "vest" were splashed with mud. An inspection of the "vest" showed a "4cm long nick in the collar". The investigators speculated whether this was caused by the tip of the prodder. The visor was found to have been splattered with mud both inside and outside, and the victim stated that the helmet strap was loose so the visor had been "a little bit up" at the time of the accident [explaining how his face and eyes were injured].

When the crater was examined the investigators found a tangle of roots ranging from 1 to 4cm thick around the sides of the crater, and also "parts of a T-72 model unknown". They also noted that there was "a high water table in the lane and the area surrounding the crater".

The victim stated that he was prodding to a depth of about 8cm and did not feel the mine before it exploded. He said that normally when the ground was very wet they stopped operations because it was not comfortable to lie down. He maintained that he had been lying on his plastic sheet but was still getting wet and the ground conditions were not safe to work in.

The Supervisor felt that the victim had been following SOPs and speculated that the mine may have been on its side.

The Sub-Supervisor stated that "the victim had worn the safety equipment properly" and that the prodder was still in the victim's hand when he was found.

Conclusion

The investigators concluded that the network of roots that had grown around the mine had applied pressure to the mine and was a contributory factor. The deminer "complicated this situation by choosing to feel his way through with the tip of the prodder instead of excavating and visually inspecting the object in question".

The Supervisor had failed to realise that the ground conditions were too wet to conduct demining operations at the accident site. He should have moved his men to a drier area. He had been warned before about his inability to keep up with the location and progression of his teams in the field.

"The unorthodox prodding position used by [the victim] was a direct result of the poor working conditions he was placed in. Although it is not a direct contribution to the accident, it is clear that by using a semi-prone position it must have been difficult to properly investigate detector readings." [Note that the victim was not investigating detector readings if his detector signalled everywhere.]



The picture above (top) was included by the investigators to explain the victim's position. The picture beneath it was taken by the researcher in 1999 - a position observed being used by the group whenever press and observers are present. [Having tried it, it is not possible to lie flatter than this and still have a good view of what you are excavating.]

Recommendations

The internal investigators recommended that the Supervisor should be permanently relieved of his position [he was] and that the minefield manager should be given a written warning. Also that a small garden tool should be issued to aid excavation, and that all deminers should be made aware of their right to refuse to work in conditions that conflicted with SOPs.

Victim Report

Victim number: 207	Name: Name removed
Age:	Gender: Male
Status: deminer	Fit for work: yes
Compensation: none	Time to hospital: 56 minutes
Protection issued: Frag jacket	Protection used: Frag jacket, Helmet
Helmet	
Short visor	

Summary of injuries:

INJURIES

minor Eyes

minor Face

minor Hearing

minor Neck

COMMENT

See medical report.

Medical report

A medical report dated 1st October 1998 was made available. It stated that the victim arrived at the Emergency Hospital, Battambang at 13:26. His injuries were described as:

"bilateral conjunctival foreign bodies (mud, dust, sand), bilateral superficial corneal and conjunctival lesions, blood collection in the anterior chamber of right eye (probably due to penetrating injury), resulting in reduced vision on right eye:

bilateral tympanic membrane perforation (posterior lower area) resulting in hearing loss."

Analysis

The primary and secondary causes of this accident are listed as "*Field control inadequacy*" because according to the investigators the field management failed to take ground conditions into account when deciding that it was safe to work.

The victim's prodder may have been made using an unsuitably brittle grade of steel. The photograph was unclear, but the end of the prodder appeared to have broken away and may have been the cause of the cut in the cover of the frag-jacket. It seems that the fragment would not have hit the deminer as it passed over his shoulder if the collar of the vest had not been there.

The inclusion of a photograph of the accident-area being checked by an investigator wearing no protective equipment (see "Related papers") may be indicative of how the group operated when not observed. The person who included it in a report was certainly forgetting the group's public position over wearing protection.

Related papers

The file included photographs of the site and of the damaged prodder and "vest".

A site sketch showed that the victim was about as far distant from the Supervisor as was possible at the time of the accident. The "sub-supervisor" was close at hand.

A photograph in the report was headed "Area Verification" and showed the accident area being checked with a detector. The investigator carrying out the area-check was not wearing the demining group's protective vest, helmet or visor.

The demining group's country manager was interviewed in Phnom Penh on 4th March 1999. He said that the victim returned to work as a deminer during December 1998. His medical costs and salary during recovery had been paid but no compensation was given.

The expatriate Technical Advisor who had investigated the accident said that the fragment that had hit the collar had not damaged the Kevlar inside and had probably struck a grazing/glancing blow.

When asked about the demining group's continued use of the Schiebel, the country director said they had tried the MineLab but that their deminers found its background noise "like a swarm of mosquitoes" very irritating.