

DDAS Accident Report

Accident details

Report date: 17/05/2006	Accident number: 173
Accident time: 14:15	Accident Date: 30/01/1997
Where it occurred: Rattanak, Battambang Province	Country: Cambodia
Primary cause: Field control inadequacy (?)	Secondary cause: Field control inadequacy (?)
Class: Excavation accident	Date of main report: 04/02/1997
ID original source: PH/PF	Name of source: MAG/CMAC
Organisation: Name removed	
Mine/device: PMN-2 AP blast	Ground condition: electromagnetic
Date record created: 14/02/2004	Date last modified: 14/02/2004
No of victims: 1	No of documents: 1

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 communications (?)
handtool may have increased injury (?)
inadequate medical provision (?)
safety distances ignored (?)
squatting/kneeling to excavate (?)
visor not worn or worn raised (?)

Accident report

The demining group were operating in three-man teams with a two-man drill at the time of the accident. In this, one deminer is resting, one is using the detector and marking any readings, and one is cutting undergrowth and excavating readings. The team members rotate at set

intervals. The demining group issued full body protection and their SOPs assumed the deminer would lie prone while excavating.

An initial internal accident report was written by an internal Technical Advisor to the demining group and made available by their UK office. Dated 27th February 1997, the following summarises its content. A brief MAC accident report follows.

Accident report 1

The investigator made a site visit on the day after the accident. The accident occurred at 14:15 and initial reports of injuries were that the victim had suffered "slight leg injuries, left hand injuries and both eyes had been injured". It was felt that the prodder may have been responsible for the injuries to his hand.

The accident occurred at a site with "laterite contaminated soil" and several strong signals were found with the detector. The detector man informed his colleague and was making his way back to the rest area when there was an explosion.

The victim was wearing body armour and a helmet. No-one saw the accident.

Fragments were found in the armour and helmet, and also the visor, which was taken to indicate that it was down at the time. [The country MAC investigator contradicted this by reporting that the visor was undamaged.] The helmet was lying on the ground after the explosion, giving rise to doubts that it was fastened at the time.

The injuries indicated that the victim was squatting at the time, and it was felt that he must have detonated the mine with his prodder [the prodder had not been found at the time the report was compiled]. Squatting was adopted for this site because there were so many red ants [the demining group's SOPs require deminers to investigate signals in a prone position].

The group's own investigator praised the supervisors, manager and medical staff for their professionalism after the accident.

Conclusions

The investigator concluded that the laterite content of the soil made pin-pointing the source of a signal "almost impossible" and the victim prodded onto a PMN-2 (the identification of the mine was certain because others had already been found). The direction of the blast indicated that it was either laid on its side or had been moved by rainwater.

As a result of the difficult conditions, it was decided that the deminer and his supervisors were not at fault, although the fact that the accident occurred 15 minutes before the end of the working day may have been a contributory factor.

Recommendations

The investigator made recommendations to procure a purpose-built ambulance and vehicle radios, [implying that there were problems with the evacuation and communications].

It was recommended that compensation must be paid as soon as possible as the victim had a family to support and it was not expected to ever find other employment.

Accident report 2

A country MAC investigation report (undated) was prepared by an expatriate Technical Advisor. It is reproduced below [edited for anonymity].

Situation

The accident occurred at minefield MI 897 at Rattanak Mondul in the Province of Battambang. At approximately 1415hrs on the 30th January 1997. [The Victim], a deminer with the [Demining group] was injured when a PMN-2 anti-personal [sic] mine exploded whilst he was probing.

Injuries

[The Victim] has several injuries. Injuries include blast damage to his left leg, his right hand and severe damage to his eyes.

Time of Accident

The accident occurred at 14:15, fifteen minutes prior to the end of a normal working day. It is not impossible to say that at this time of day the deminers attention span was diminished.

Damage to Equipment

The deminer was wearing his personal clothes plus upper body armour, carrying a prodder he also had a helmet with visor. The prodder has not been found and may be responsible for the loss of two fingers from his right hand. The body armour has damage and tearing of the outer layer around the location of the right breast. The jacket protected the deminer from injury to the torso. The helmet with visor had no damage what so ever indicating along with the deminers facial injuries he may not have been wearing the helmet at the time of the accident.

Procedures

It would appear that a number of procedures were not adhered to. In the first instance the injuries to the legs indicates the deminer was kneeling or squatting and not in the correct prone position for prodding.

The severe injuries to his face and lack of damage to the helmet and visor strongly suggest the procedure of wearing the helmet with visor down during prodding was dismissed by the deminer.

The investigator feels that if procedures were followed correctly the injuries to the deminer could have been less severe.

Other Factors

There is one other factor that may have contributed to the accident. Information from his partner (detector man) indicates the accident occurred within 20-30 seconds of them changing over. There is the possibility that the marking triangle used to indicate the start point for the prodding may have moved, possibly by the wind or was not put in its correct position by the detector man and the area of operation has a considerable amount of laterite contamination.

Conclusion

The investigation concludes that a number of important occurrences that are listed in the above report and a lack of adherence to SOPs led to the accident. The only recommendation the investigator can make is for the supervisors to ensure that the deminers are reminded of the importance of following SOPs, correctly wearing safety equipment and remaining alert at all times during demining operations.

Victim Report

Victim number: 220	Name: Name removed
Age:	Gender: Male
Status: deminer	Fit for work: not known
Compensation: not made available	Time to hospital: 2 hours
Protection issued: Frag jacket Helmet Short visor	Protection used: Frag jacket, Helmet, raised visor

Summary of injuries:

INJURIES

minor Face

minor Leg

severe Eyes

AMPUTATION/LOSS

Fingers

Eye

COMMENT

See medical report.

Medical report

A brief field "accident report" listed the Victim's injuries as:

"Left leg, Right hand, & eye injuries. Minor blast to all right side"

The victim was "bandaged, morphine and IV fluid and taken to hospital in 2 hours".

Analysis

The primary and secondary cause of this accident are listed as "*Field control inadequacies*" because the victim was not wearing his visor properly, or not wearing his helmet and visor at all, and his error went uncorrected. The victim's partner had not retreated to the safe area when the initiation occurred, so showing that the safety distance SOP was not adhered to.

There were serious management failings by the demining group's own investigator pretending that the helmet and visor had been worn properly, by extending the pretence to cover the unauthorised prodding position (ants can be an excuse almost anywhere in the tropics), and by the group's failure to provide an adequate ambulance or appropriate communications equipment. The victim's hand injury may have been exacerbated by the use of an inappropriate tool.

That a country MAC investigator then criticised the demining group for not lying prone to excavate is ironic because the country MAC's own deminers did not lie prone to excavate despite it being a requirement in their own SOPs.