6-26-2001

DDASaccident306

Humanitarian Demining Accident and Incident Database
AID

DDAS Accident Report

Accident details

Report date:	19/05/2006	**Accident number:**	306
Accident time:	07:05	**Accident Date:**	26/06/2001
Where it occurred:	MF MAG/E/0099	**Country:**	Iraq
Primary cause:	Inadequate equipment (?)	**Secondary cause:**	Field control inadequacy (?)
Class:	Excavation accident	**Date of main report:**	28/06/2001
ID original source:	JJ	**Name of source:**	UN/JJ/AVS 2001:KI03
Organisation:	Name removed		
Mine/device:	VS50 AP blast	**Ground condition:**	grass/grazing area soft
Date record created:	19/02/2004	**Date last modified:**	19/02/2004
No of victims:	1	**No of documents:**	1

Map details

Longitude:		**Latitude:**	
Alt. coord. system:	MF MAG/E/0099	**Coordinates fixed by:**	
Map east:		**Map north:**	
Map scale:		**Map series:**	
Map edition:		**Map sheet:**	
Map name:			

Accident Notes

pressure to work quickly (?)

inadequate equipment (?)

visor not worn or worn raised (?)

handtool may have increased injury (?)

squatting/kneeling to excavate (?)

inadequate investigation (?)

Accident report

A UNOPS MAP Board of Inquiry was instigated and the following BOI report provided. Apparently for “political” reasons, the original report was not provided. What was provided did

not include details of the demining group's name. The following has been edited to allow it to be read smoothly.

The victim had been employed for three months prior to the accident, beginning work in the minefield on 1st April 2001.

On the day of the accident the weather was fine and hot, the ground was soft and flat, the vegetation was sparse grass to a height of 10cm. The method of clearance being used was a "full excavation".

On the day of the accident the team had started work at 06:20hrs and had conducted a change over drill at 06:50hrs. The victim had been working in his lane for the first time that day for only 15 minutes when the accident happened. His section leader had conducted a routine check of the victim's clearance lane only two minutes before the accident.

The victim was squatting while carrying out a "full excavation clearance" drill in the lane. He was using an unauthorised digging tool when he detonated a VS50 anti-personnel mine. The excavation tool is use was a Garden Trowel. The excavation tool was being used in a pushing motion rather than a scraping motion.

The victim sustained "injuries" to both eyes, a "big wound in the neck caused by a big shell, (Lt. Hand) two fingers amputated and open fracture in wrist join; Small wound in the face and below knees".

The injured deminer was treated immediately (07:15) and under constant medical attention for the duration of his journey to the main hospital. He was stabilized and evacuated from site within 13 minutes of the accident and in the Sub-District hospital by 08:00. From here he was taken to the District Hospital arriving at 08:45 and held there for observation and redressing of his wounds until 09:05 before being referred to Main Emergency Hospital arriving at 11:45.

The victim was wearing a Full-face Visor (30cm and Strap) and a "Vest procured from The Trading Force". The investigators reported that there was a gap between the bottom of the visor and the top of the collar of the protective vest.

Conclusion

The BOI concluded that the blast marks on the front of the visor showed that it "had been worn correctly".

The victim's visor was "scratched and sustained blast" and his protective vest showed "cuts and impact of rocks and dirt sustained blast". They found "a bent and partly broken excavation tool and severe tearing of the left-hand glove".

"The investigation team believe that a combination of the potential force of the modified digging tool, the manner in which it was being used and his squatting position caused the casualty to detonate the mine with the back of his hand. The accident was human error."

Recommendations

The investigators made the following recommendations:

"Any disciplinary action against the deminer is at the discretion of the PC and Manual Clearance Contractor's PM.

1. Manual Clearance Contractor's SOP No. 1.3.8 and 7.3.5 should be reviewed immediately to possibly allow SL/DTL/TL [abbreviation for field supervisors] to approach and observe working deminers without the secession of work.
2. Review the excavation drill to determine if it is the best method available.
3. Review the kneeling position with a view to reducing fatigue levels and possible introduction of alternative working positions.
4. The removal of unauthorized excavation tools needs to take place immediately.
5. There needs to be a review and inspection process within the program to assess the suitability of the varying types of current digging tools.
6. The feasibility of future digging tools being manufactured from hardened steel with hand guards to prevent the loss of fingers.

7. Immediate retraining in the use of the new excavation tool to reinforce its suitability and dispel the current rumours about the tool.
8. The withdrawal of all dark blue vests as they do not offer rigid neck protection, and, when used with the visor increase the chance of eye damage. Alternatively address the armour slippage problem, modify the neck flap if it is viable in country. Should this not be able to be achieved then withdraw the vest from the program.
9. All visors shall be inspected to remove and replace faulty wingnuts. The program should assess the viability of using face goggles either singularly or in combination with visors to add an extra level of protection and reduce soft tissue eye damage in the event of mine explosions.
10. Manual Clearance Contractor to immediately investigate the deminers allegations of coercion regarding metres cleared per day, and further to that re-educate all program deminers on their responsibilities and dispel any misconceptions that may be in the teams at the moment."

Appendices referenced in the report were not made available.

Summarised Statements from the Team Leader, Site Commander, Witnesses and the victim were not made available.

Victim Report

Victim number:	386	**Name:**	**Name removed**
Age:		**Gender:**	Male
Status:	deminer	**Fit for work:**	not known
Compensation:	not made available	**Time to hospital:**	3 hours 40 minutes
Protection issued:	Frontal apron Long visor	**Protection used:**	Frontal apron; Long visor

Summary of injuries:

INJURIES

minor Face

minor Legs

severe Eyes

severe Hand

severe Neck

AMPUTATION/LOSS

Fingers

COMMENT

See medical report.

Medical report

No formal medical report was made available. The BOI stated that:

The victim sustained “injuries” to both eyes, a “big wound in the neck caused by a big shell, (Lt. Hand) two fingers amputated and open fracture in wrist join; Small wound in the face and below knees”.

The victim was treated immediately (07:15) and under constant medical attention for the duration of his journey to the main hospital. He was stabilized and evacuated from site within 13 minutes of the accident and in the Sub-District hospital by 08:00. From here he was taken to the District Hospital arriving at 08:45hrs and held there for observation and redressing of his wounds until 09:05hrs before being referred to Main Emergency Hospital arriving at 11:45hrs.

Analysis

The primary cause of this accident is listed as *“Inadequate equipment””* because it seems that the victim was using an unauthorised tool in an unauthorised manner when the accident occurred. The provision of appropriate tools and training is a management responsibility. The supervision of the working method is a field control responsibility, so the secondary cause is listed as a *“Field control inadequacy”* because the victim was not corrected about wearing his visor raised or about using his tool correctly. That there was a pressure for the deminers to work quickly is implied by the Board of Inquiry's recommendation “10”, which would be a further management failing.

The analysis of this accident is hampered by the fact that the full report of the Board of Inquiry, including statements of witnesses, was not made available. On the evidence available it seems that the BOI made significant errors (two examples follow).

1) The investigators were wrong to conclude that the victim’s visor was being worn correctly simply because there were marks on the outside of it. Recommendation “9” concerns the replacement of “faulty” visor “wing-nuts” – implying that some of those present complained of faults. The victim may have been obliged to wear the visor raised because of “faulty” fastenings. For whatever reason, a 30cm long full-face visor must have been at least partly raised for the wearer to sustain injury to both eyes.

2) The investigators made the ill-informed recommendation “6” calling for a feasibility study on “digging tools being manufactured from hardened steel with hand guards to prevent the loss of fingers”. Hardened steel shatters in an explosion and so increase the risk of severe injury. Work on the right steels has been done. The same work showed that tool length is a more effective means of reducing blast damage than a hand guard on its own.

The failure of the BOI to investigate the circumstances thoroughly is a serious *“Management Control Inadequacy”* meaning that an opportunity to correct dangerous practises was lost.