10-8-2000

DDASaccident310

Humanitarian Demining Accident and Incident Database
AID

DDAS Accident Report

Accident details

Report date:	19/05/2006	**Accident number:**	310
Accident time:	08:45	**Accident Date:**	08/10/2000
Where it occurred:	Rayat B MF, Choman district	**Country:**	Iraq
Primary cause:	Field control inadequacy (?)	**Secondary cause:**	Inadequate training (?)
Class:	Excavation accident	**Date of main report:**	10/12/2000
ID original source:	JJ/PR/ADJ	**Name of source:**	UN/JJ/HT
Organisation:	Name removed		
Mine/device:	Fuze	**Ground condition:**	agricultural (abandoned) hard
Date record created:	19/02/2004	**Date last modified:**	19/02/2004
No of victims:	1	**No of documents:**	2

Map details

Longitude:		**Latitude:**	
Alt. coord. system:	MAG/E/0015 MF	**Coordinates fixed by:**	
Map east:		**Map north:**	
Map scale:		**Map series:**	
Map edition:		**Map sheet:**	
Map name:			

Accident Notes

visor not worn or worn raised (?)

inadequate equipment (?)

inadequate training (?)

inadequate investigation (?)

squatting/kneeling to excavate (?)

Accident report

A UNOPS MAP Board of Inquiry was instigated and the following BOI report provided. For unexplained “political” reasons, the original report was not provided by UNOPS. [The original report was sourced elsewhere and is reproduced under Related papers.] UNOPS supplied a censored report that is reproduced below, edited to allow it to be read smoothly. See also Related papers.

The victim had been employed for approximately two years and six months. Because the victim was a section leader, there was no record of any rest breaks he may have taken that day. His last refresher training was an Excavation refresher training course three weeks previously.

The task site was on flat ground surrounded by steeper ground/hills. It was “bounded by small local dwellings” and was predominantly agricultural land. All manual clearance at the site used a “full- excavation” method. The ground was very hard and required “constant wetting down to facilitate clearance.”

On the day of the accident, work started at the site at 05:45. The victim was a Section Leader who had been conducting his duties for three hours when, at 08:45 a deminer informed the victim “that there was a strange object in his excavation lane”.

The Section Leader tried to excavate the object but had some difficulty “seeing it clearly because his visor was dirty and scratched. So he raised his visor halfway to see better, than grasped the object with the thumb and forefingers of his left hand and tried to pull and pry the object from the earth with the trowel”. He was wearing his ROFI vest correctly. The object detonated.

The BOI decided that the object had been a “detonator of some type” and that “due to the blast signature on the protective equipment and the ground it was approx. 7 cm deep”.

The victim sustained injuries to both hands and his right eye. “Left hand amputated fingers are (thumb, index and middle) fingers at the level of distal phalanges. Eye: Extensive wedge shaped corneal wound, with hyphema”.

There was “minor blast damage to the inside of the visor. The board feels that since the visor was subjected to blast damage, therefore weakening it, it should be taken out of operational service”. There was also blast damage to the casualty’s vest, which the board felt was repairable. The demining trowel also sustained minor blast damage but was considered to be “still operationally deployable”.

“The BOI has deemed that all medical treatments (all stages) and medical evacuation procedures provided by Manual Clearance Contractor personnel were adhered to and performed in a proficient and timely manner. The casualty was transported directly to the emergency first aid in Sub–District Hospital, where he was stabilized. He was then transferred straight to the Main Emergency Hospital.”

Conclusion

The following is the conclusion of the BOI reproduced verbatim:

“It is the opinion of the Board of inquiry that there was no evidence whatsoever of any misuse of drugs, alcohol or medication involved in or that contributed to the cause of the accident.

It is, however the opinion of the board that the accident was caused by the carelessness of the section leader (casualty), due to the fact that he made a serious error in judgment by not instructing the deminer to retreat 25 metres.

The board concludes that the scratches and cleanliness of the visor was partly attributable to the reason that the casualty carried out his actions with his visor raised. “

Recommendations

The BOI made the following recommendations:

“a) As a matter of IMMEDIATE priority all visors on all sites be inspected, and if scratched to the point of reducing visibility they are to be replaced.

“b) All sites be issued cleaning equipment for visors e.g two tubs or buckets for water and detergent, large enough to accommodate a visor each and also the immediate issue of some sort of non scratching cleaning tissue.

“c) Manual Clearance Contractor conduct immediate remedial action/training, focusing on adherence to correct safety distances/procedures while conducting investigations of suspected mines/UXOs.”

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

Victim Report

Victim number:	392	**Name:**	**Name removed**
Age:		**Gender:**	Male
Status:	supervisory	**Fit for work:**	not known
Compensation:	not made available	**Time to hospital:**	not recorded
Protection issued:	Frontal apron Long visor	**Protection used:**	Frontal apron

Summary of injuries:

INJURIES

severe Eye

severe Hand

AMPUTATION/LOSS

Fingers

COMMENT

See medical report.

Medical report

No formal medical report was made available. The BOI described the injuries as:

“Injury of both hands and right eye. Left hand amputated fingers are (thumb, index and middle) fingers at the level of distal phalanges.

Eye: Extensive wedge shaped corneal wound, with hyphema.”

Analysis

The primary cause of this accident is listed as a *“Field control inadequacy”* because the victim was a Field Supervisor and he behaved irresponsibly by incautious excavation, wearing his visor raised and failing to enforce safety distances. The selection and training of Field Supervisors is a management responsibility. The secondary cause could be either *“inadequate equipment”* because the condition of the visor was unserviceable or *“inadequate training”* because the supervisor had apparently not been trained in UXO recognition.

The provision of appropriate PPE in a serviceable condition is also a management responsibility and the management's failure in this case may have worsened the victim's injury considerably.

The BOI made several incorrect or misleading statements in their investigation. A few are detailed below.

The BOI recommended that cleaning tissues, detergents and buckets for cleaning visors be provided. Detergents should NOT be used to clean polycarbonate. Liquid soaps, warm water and very soft material such as clean (washable and so re-useable) chamois leathers are recommended.

The Board reported that there was "minor blast damage to the inside of the visor. The board feels that since the visor was subjected to blast damage, therefore weakening it, it should be taken out of operational service". There was also blast damage to the casualty's vest, which the board felt was repairable."

The members of the BOI should be advised that ALL PPE damaged in an explosive accident should be destroyed, not repaired.

The BOI decided that the explosive object had been a "detonator of some type, due to the blast signature on the protective equipment and the ground it was approx. 7 cm deep".

The BOI should be advised that any crater analysis made without a soil-hardness tester is simply guessing – and that a detonator needs a means of initiation: the object was probably a fuze included a detonator.

The failure of the BOI to investigate the circumstances thoroughly and suggest practical solutions is a serious *"Management Control Inadequacy"* meaning that an opportunity to correct dangerous practices was lost. The failure of the country MAC to make available the full BOI may imply that they were aware that their work could be criticised.

Related papers

Access to the following BOI report was denied by the UNOPS MAC for "political reasons". It was obtained from another source and is reproduced below, edited for anonymity. A Memo agreeing to the main points and querying the delay in releasing the report is appended.

UNOPS BOARD OF INQUIRY ON A UXO/MINE ACCIDENT IN RAYAT "B" MINEFIELD IN CHOMAN

Introduction

1. On 8 October 2000, a UXO accident occurred in the Rayat B minefield (E/0015) in Choman. The accident happened at approximately 0845 hours.

2. On 9 October 2000 a Board of Inquiry (BOI) was appointed to investigate the accident, with [two UNOPS personnel] and a [Demining group representative] instituted as the members of the Board.

Process of Investigation

3. The BOI formally convened on 10 October 2000 and collected written statements and conducted separate interviews with personnel who were involved in the accident.

Initial Investigation

4. The initial investigation was conducted by [the Demining group] Location Manager on 8 Oct 2000. All personnel involved in events leading up to and including the accident were made available for interviews. The initial accident report is at Annex A. [Not made available.]

5. The victim, Section Leader, was seen by the BOI team at the Erbil Emergency Hospital on 10 October. [The Victim] was in some discomfort, on advice from medical staff questioning was delayed to enable time for [him] to gain more strength. Photos were taken and a interview date was set for 15 October. [The Victim] was interviewed by the BOI team at the

Erbil Emergency Hospital on 15 October. Although in some degree of pain [the Victim] appeared to be alert and coherent and had little difficulty relating the events leading up to and including the accident (See interview at Annex B). [Not made available.]

Geography

6. The accident occurred in the Rayat B minefield, in the Choman district. The site is approximately 90 km East of Soran Base. The task site is on flat ground surrounded by steeper ground I hills. It is bounded by small local dwellings and is predominantly agricultural land.

7. All manual clearance on this site is full excavation, the ground on site is very hard and requires constant wetting down to facilitate clearance. The location of the accident is approximately 150 metres from the task site control point.

Tasking

8. The Mine Clearance Team was conducting manual demining operations.

Supervision

9. The task was supervised by the Team Leader. It should be noted here that the demining pair, Deminer No 1 and No 2, were operating in "two-man drills" as they have only recently graduated from the last demining course (Sep - Oct 00). Further supervision was conducted by [a demining group person]. [The demining pair] were spoken to by the BOI team but not formally interviewed, as it was the opinion of the Board that due their positions on site i.e. where they were standing at the time, they were not able to provide sufficient insight as to the Section Leader's actions.

Communications

10. Communication was two way between the task site and UNOPS in Soran Fort. At the time of the accident all means of communication were functioning effectively.

The UXO

11. It is unclear as to the type of UXO involved in this accident. It is the opinion of the BOI that it was a detonator of some type due to the blast signature on the protective equipment and the ground, and also injuries suffered by [the Victim]. It is also the opinion of the board that further investigation with current resources will not accurately identify the UXO.

Leave/Stand-down

12. The last official leave period for the deminers was 22-24 Sep 00 PC's long weekend, however the deminers still had the normal weekend breaks prior to the accident.

Work Timings

13. Work commenced that day at 0545 and concluded for 24 hours after the accident, as per [Demining group] SOP 1, para 1.3.7.

Monitoring

14. In accordance with the site log, the team was monitored on 5 October 2000 by their Group Supervisor. The last complete on-site visit by the [the demining group's internal] monitoring team was conducted over the period 3-5 Sep 00.

Kit and Equipment

15. All deminers at the time were wearing protective equipment i.e. vest and visor.

16. Medical equipment was available with the medic, approximately 80 metres from the site and an ambulance was stationed approximately 100 metres from the accident site, in the admin area.

Damage to Equipment

17. There was minor (blast) damage to the victims' vest which is repairable. There was also minor blast damage to the inside of the visor. The board feels that since the visor was subjected to blast damage, therefore weakening it, it should be taken out of operational

service. The demining trowel suffered minor blast damage, however it is still operationally deployable.

18. The "splash'[1] marks caused by the blast to the visor, however, are confined to the inside of the visor. This indicates that the visor was in the upright position at the time of the accident, as confirmed by the victim (Annex B).

Medical Treatment/Medevac

19. The BOI has deemed that all medical treatment (at all stages) and medical evacuation procedures provided by [the Demining group] personnel were adhered to and performed in a proficient and timely manner, with little or no problems. It should be noted that [the group] carries out regular casualty evacuation exercises, and had conducted their last one on 5 October.

20. The patient was transported directly to the emergency first aid post in Soran, where he was stabilised. He was then transferred straight to the Emergency Hospital in Erbil. See medical report from [Demining group] Health and Safety Supervisor attached at Annex D. [Not made available.]

Revision/Refresher Training

21. All teams in [the group] conducted the appropriate revision I refresher training within 24 hours of the accident occurring (see Annex E para 6 "Actions Taken"). The training that was conducted covered the following subjects;

a. Confirmation of emergency procedures;
b. Correct use of personal protection equipment;
C. Safety distances; and
d. Handover procedures

Account of Accident

22. This account is assembled from statements and interviews taken from witnesses.

23. At approximately 0745 the Deminer No 1 changed over with [his No.2] and started working. At approximately 0815 [the deminer] partially uncovered what he thought was a strange object, and so called the Section Leader, [the Victim] for assistance.

24. Upon viewing the object, [the Victim] directed [Deminer No.2] to remain where he was, 25 metres away, but told [Deminer No.1] to go back 10-12 metres and wait.

25. [The Victim] then knelt down at the excavation and proceeded to carry out his own investigation (probably to satisfy his own curiosity before notifying the Team Leader, but this cannot be ascertained). Upon examination of the site, [The Victim] saw a small object, which he thought to be some sort of capsule, but because of the scratching on his visor could not be sure.

26. He attempted to excavate the object but had some difficulty whereby he raised his visor halfway to see better, then grasped the object with the thumb and forefingers of his left hand and tried to pull the object to loosen it from the earth. It was at this time that the device functioned. The "stop stand still" order was given and medics dispatched to the aid of the victim. Immediately after the detonation, [The Victim] stood up and moved to the perimeter (approximately five metres away) where the medical personnel found and treated him.

CONCLUSIONS

Cause of the Accident

27. It is the opinion of the Board of Inquiry that there was no evidence whatsoever of any misuse of drugs, alcohol or medication involved in or that contributed to the cause of the accident.

28. It is, however the opinion of the Board that the accident was caused by the carelessness of the Section Leader [the Victim], due to his actions described above, and in his statement (Annex B). Also, the Board considers that [the Victim] made a serious error in judgment by not instructing the No 1 to retreat 25 metres.

29. The Board concludes that the state of visors are partly attributable to the reason that [the Victim] carried out his actions with his visor up. [The Victim]'s visor was dirty, poorly cleaned and scratched which would have made it extremely difficult for him to identify what is believed to have been a small object.

30. Furthermore, all visors issued to the Board by the Team Leader of [the group] were of similar condition to the one worn by [the Victim]. Poor visibility through the visors is common, to the extent that members of the Board, while conducting a close examination of the site experienced extreme difficulty identifying small objects in the soil. It should be noted that a close examination of the site was conducted by the Board at approximately the same time as the accident, two days after and in the same weather conditions, to better ascertain actual conditions during the accident.

RECOMMENDATIONS

31. The Board of Inquiry recommends the following:

a. As a matter of IMMEDIATE priority all visors on all sites be inspected, and if scratched to the point of reducing visibility they are to be replaced,

b. All sites be issued cleaning equipment for visors e.g. two tubs or buckets for water and detergent, large enough to accommodate a visor each and also the immediate issue of some sort of non scratching cleaning tissue, and

c. [the demining group] conduct immediate remedial action/training, focusing on adherence to correct safety distances/procedures while conducting investigations of suspected mines and/or UXOs.

Dated 16 October 2000 [See following paper for actual release date.]

Memo

To: UNOPS Project Co-ordinator

Date: 10 Dec 00

Bol Requirements

1. The requirements listed in your UNOPSIOP/4071324100 dated 3 Dec are noted and the recommendations are agreed. It is also noted the Bol finished the report on 16 October and it is only just released to [Demining group] on 10 Dec almost two months after the event. This delay makes it difficult to ensure that all [demining group] staff will be advised of the requirements prior to the close of operations and that SOP amendments can be staffed. However, the relevant instructions will be issued to ensure the remedial steps are in place prior to the start of operations in the New Year. SOP amendments will be produced in the New Year.

2. The remedial steps that have already been taken already to mitigate a repeat of the accident are:

a. Daily inspections of all Deminer’s personal protective equipment is made by the Team Leader prior to the start of operations each day to ensure the serviceability of such kit,

b. Methods to return the clarity of vision to scratched visors have been investigated - such as "buffing" of the visor with a jeweller’s grinder to remove scratches, use of a paste to clean scratches.

c. Issue of protective covers and carry bags for the visors for use when the visors are being transported.

d. Training of Team Leaders in recognition of basic UXO components.

e. Revision of Basic Deminers Course syllabus to include recognition of basic UXO components which will be incorporated in future courses.

f. Imposition of disciplinary proceedings against personnel who fail to wear the visor correctly when inside the demarcated areas of a minefield and also against that person's immediate supervisor,

g. Closure of the operations site if non [demining group] personnel fail to comply with the requirement to wear a visor correctly inside the demarcated areas of the minefield and reporting of that situation via the Monthly Report.

3. The concerns about the repeat nature of this accident are shared. [The Demining group] has already conducted an analysis of all mine accidents to attempt to identify any trends. The results of this analysis have been forwarded to UNOPS separately.

4. It is requested that further BoI reports be issued to [the Demining group] as soon as possible after the completion of the Investigation to allow the necessary remedial action to be carried out.

5. Thank you