DDAS Accident Report

Accident details

Report date:	03/01/2008	**Accident number:**	446
Accident time:		**Accident Date:**	13/02/2007
Where it occurred:	AF/2008/183551 069, Qalacha-e-Ghazi village, Kohsaan district, Herat Province	**Country:**	Afghanistan
Primary cause:	Management/control inadequacy (?)	**Secondary cause:**	Field control inadequacy (?)
Class:	Excavation accident	**Date of main report:**	20/02/2007
ID original source:	BOI OPS/03/01-32	**Name of source:**	UNMACA
Organisation:	[Name removed]		
Mine/device:	PMN AP blast	**Ground condition:**	dry/dusty hard metal fragments rocks/stones
Date record created:	28/12/2007	**Date last modified:**	03/01/2008
No of victims:	1	**No of documents:**	3

Map details

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

Accident Notes

inadequate investigation (?)

inadequate equipment (?)

handtool may have increased injury (?)

visor not worn or worn raised (?)

squatting/kneeling to excavate (?)

inadequate area marking (?)

Accident report

The report of this accident was made available in August 2007 as a PDF file. Its conversion to a text file for editing means that some of the formatting has been lost. The substance of the BoI report is reproduced below, edited for anonymity. The original PDF file is held on record.

BOARD OF INQUIRY

INTRODUCTION

Mr [Name removed], Programme Manager for the United Nations Mine Action Centre for Afghanistan (UNMACA) convened a Board of Inquiry (B01) team tasked with investigating the circumstances into the death of [the Victim], a deminer with the [Demining group], Mine Clearance Team Six ([Demining group] MCT-6).

The BOI comprised the following personnel:

a. Mr [Name removed] (UNMACA Senior Technical Advisor — Operations),

b. Mr [Name removed] (UNMACA Area Coordinator),

c. Mr [Name removed] (Acting Area Manager — AMAC West), and

d. Mr [Name removed] (Operations Coordinator [Demining group]).

Attached to the BOI as observers were;

a. Mr [Name removed] (Weapons Removal and Abatement (WRA) Technical Advisor to [Demining group]), and

b. Mr [Name removed], ([Demining group] Field Officer — Herat).

GEOGRAPHY AND WEATHER

The clearance site (MF 069) surrounds the Chaghaty Security Post approximately 1km South of Kalat-e-Nayab Ghafor Village that is located within close proximity to the Afghanistan border with Iran. It is part of the Koshan District of Herat Province, Afghanistan.

The terrain is flat and open, with hard dry sandy soil with small stones. The weather on the morning of the accident was clear and cool with no rain.

PRIORITY OF TASK

AF/2008/183551MF-0069 is identified in the Afghanistan Landmine Impact Survey (ALIS) as a Low Priority task but was reassessed as High priority by a landmine impact assessment team (LIAT) from AMAC West as the result of injuries occurring to local people at the suspected hazard area (SHA).

SITE LAYOUT AND MARKING

The site layout is in accordance with [Demining group]'s SOPs and site is well marked to define the safe and hazardous areas. A detailed drawing of the site layout is attached at Annex B to this report.

MANAGEMENT, SUPERVISION AND DISCIPLINE ON SITE

As a result of the area being cleared, being too small to support any additional deminers, the victim was detached from his section and working under the supervision of 2 Section Leader, [Name removed].

A previous accident had occurred to the same [Demining group] MCT on the site, only six days prior.

The BOI found the Team Leader (TL) adopted an unprofessional approach to the investigation by continually finding amusement at questions he was being asked and not addressing his answers to those questions in a direct manner. He also displayed a marked lack of confidence and weak leadership qualities.

QUALITY ASSURANCE AND QUALITY CONTROL

A Quality Management and Inspection Team (QMIT) from the Area Mine Action Centre (AMAC) West had last visited the site on 25 January 2006. An internal [Demining group] Quality Control (QC) team had last visited the site on 5 February 2007.

COMMUNICATIONS AND REPORTING

Communications from the site are good and the accident reporting procedure worked well.

MEDICAL REPORTS (INCLUDING INJURIES SUSTAINED)

Doctor [Name removed] performed the medical inspection of the victim at the Herat General Hospital. The doctor's report indicates that the victim sustained a severe blast wound below the right armpit and attributed the death to a cardiac arrest.

The BOI chairman at the Herat Hospital briefly interviewed Doctor [Name removed] on 19 February 2007. Dr [Name removed] stated that when the body arrived at the hospital he was informed that a bomb had killed the deceased. With that introduction he examined the body, found clotting and pronounced that the deceased had died of cardiac arrest.

On further questioning regarding the wound in the right armpit the Dr [Name removed] stated that it was an irregular shaped wound consistent with a blast, and if it were a knife wound it would be a regular shaped wound. Questioned further on whether it could it be a metal shrapnel wound he replied "No that would be a regular shaped wound".

The question was then rephrased "Could it have been an irregular shaped piece of metal shrapnel?" Answer "No that would cause a regular shaped wound".

Final question "Did Dr [Name removed] look for any foreign object in the wound?" Answer, "No."

WITNESS STATEMENTS

A number of witness statements were compiled by the BOI team and are attached at Annex E to this report. [The statements were not made available in a translated form: originals are held on file.]

It should be noted that when the BOI team convened, Mr [Name removed] stated that all large shovels should be removed from demining teams, as they were the cause of most accidents. In open discussions with [Demining group] and AMAC Herat personnel at the accident site, a large shovel was mentioned frequently as being missing. On site, the question of what detonated the mine was raised and the general consensus was that the victim might have used a large shovel during clearance. On direct questioning to the Team Leader and Section leader regarding the use of a large shovel, and the possibility of it being missing, this was denied vehemently by both persons.

DEMINING EQUIPMENT AND TOOLS

The standard set of issued deminer's equipment/tools were inspected by the BOI investigation team and found to be in good working condition with no visible blast marks that could be attributed to causing the accident. The metal detector was also not damaged.

The exception to this was the 1.0 & 1.2 metre base sticks. Both items were well used with their painted safety markings worn away. While the base stick is painted in accordance with [Demining group] SOPs (Ref - Pt 2, Sect 3, para 3.2) it is not in accordance with the Afghanistan Mine Action Standards (AMAS).

DETAILS OF THE MINE INVOLVED

The anti-personnel mine detonated is assumed to be a PMN type mine, this assumption is based on the fact that the deceased deminer was working on a line of mines and having successfully located 7 x PMN mines during the previous 2 days work. The crater was consistent with the explosive found in this size and type of mine and was estimated to be buried at between 5 and 10 cm. There is no evidence of the mine being booby-trapped.

EVIDENCE OF RE-MINING

The BOI found no evidence of re-mining of the clearance site and this therefore did not contribute to the accident.

EVIDENCE OF SITE INTERFERENCE OR TAMPERING AFTER THE ACCIDENT

The BOI found that the accident site was not preserved intact as required of [Demining group] and in accordance with both AMAS and the International Mine Action Standards (IMAS) Chapter 10.60 paragraph 5.2. The BOI Team noticed the following discrepancies:

a. There is photographic evidence that the site marking was tampered with after the accident where red and white marking stones have been relocated.
b. The deminer's PPE, equipment and tools were also removed from the accident site and taken to the AMAC in Herat. This is in contravention of AMAS but is detailed as allowable in part of [Demining group] SOPs (Part 2, Sect 15.6.3).
c. It is clear that in a photo taken during treatment of the victim that the helmet visor was in the "Up" position; however the visor was "Down" when the BOI team inspected it. Some explosive residue was found inside the visor and more may have been wiped off when it was wrapped in rags for transportation to the AMAC.

DRESS AND PERSONAL PROTECTIVE EQUIPMENT

The deminer was not wearing an issue uniform, and was dressed in typical Afghan casual shirt, long trousers, socks and boots. The PPE worn was a standard [Demining group] issue ROFI protective jacket with attached skirt/ apron and a MedEng Helmet complete with Visor.

The victims PPE was physically inspected by the BOI team and was found to have performed as per specifications with no blast penetration that could have contributed to adding to the victim's injuries.

The helmet visor worn by the victim did not sustain any damage and this may have been a result of it being in the `up position' at the time of the accident.

USE OF DOGS

No MDDs are used on this site, although it is a site conducive to this asset.

USE OF MACHINES

No mechanical machines were being used on site at the time of the accident however an armoured Backhoe was being used at an adjacent clearance site.

DATE OF LAST REVISION COURSE FOR TEAM INVOLVED IN THE ACCIDENT

The team had been involved in revision training only days prior to the accident. This training was put in place by [Demining group] as a result of an earlier accident as detailed earlier in this report.

DETAILS OF MEDICAL EVACUATION AND ADEQUATE TREATMENT

The victim was treated initially at the site by the team paramedic at the scene of the accident where he was stabilised before being moved to the ambulance and then transported to the Herat General Hospital in order to receive further treatment. The victim died on the way to the hospital while still in the ambulance.

PARTICULARS OF DEMINER'S INSURANCE

No particulars of the victim's insurance were made available to the BOI team.

DETAILED ACCOUNT OF THE ACTIVITIES ON THE DAY OF THE ACCIDENT

The deminer was detached from his section and working under the guidance of another Section Leader (SL) at the time of the accident. He had not indicated to the SL that he had found a mine and it is unknown exactly what tools were being used, if any, at the time of the accident.

The two knee kneeling position is the position observed by all the deminers on the site over a two day period, so it is assumed that prior to the blast, the victim was in a kneeling position and the victim was observed by two fellow deminers to stumble backwards and fall to the ground. The first deminers to arrive pulled the victim away from the hazard area and when the medic arrived on scene he commenced to perform first aid. The victims PPE was also cut from his body to aid in treatment. The victim was then moved to the ambulance and then further transported to the Herat General Hospital.

SUMMARY

The deceased deminer detonated the PMN mine with an unidentified object. He was in a kneeling position with his right side facing towards the mine. The blast struck him on the chest and right hand side, causing a fatal wound to the right under arm (armpit). He suffered extensive bleeding from this wound and also from the mouth and nose at the time. He was evacuated by ambulance but died en route to the hospital.

CONCLUSION

It is the BOI team's conclusion that at the time of the accident [The victim] was performing an excavation drill that was not in accordance with [Demining group] SOPs. This resulted in him receiving a blast mine injury that led to cardiac arrest and subsequently death.

The deceased detonated a PMN mine with an unidentified item or object. There were no injuries to his hands, feet, or any other appendage on his body. There are no stone fragments in or around the mine crater.

RECOMMENDATIONS TO PREVENT REOCCURRENCE

The BOI recommend the following;

a. All members of the victims team undergo a full days retraining under the supervision of QMA staff from AMAC West with assistance from [Demining group] QA. The details and attendance of this retraining to be officially recorded.
b. [Demining group] supervisors at all levels are to ensure that correct marking procedures are followed at all times during clearance operations.
c. [Demining group] SOPs be amended immediately in regard to the correct painting of the base stick from White to Red and that all sticks are re-painted.
d. [Demining group] SOPs be amended to reflect that all accident sites should be preserved intact until an investigation team's arrival and that all tools and equipment, less valuable items (i.e. Metal Detector), be left as they are found at the time of the accident, when such valuable items are to be removed, accurate details with photographs are to be recorded for the Investigation team.

e. The Team Leaders professionalism and leadership qualities should be immediately reassessed and his further employment be re-evaluated by the management of [Demining group].
f. [Demining group] must immediately attend to the "cover up" situation observed on site and ensure it is not repeated, as it could initiate the suspension of its accreditation if encountered again by UNMACA accident BOI teams.

Signed: Senior Technical Advisor, BOI Chairperson

Victim Report

Victim number:	594	**Name:**	[Name removed]
Age:		**Gender:**	Male
Status:	deminer	**Fit for work:**	DECEASED
Compensation:	Abdul Haleem (Halim) s/o Mohammad Alam	**Time to hospital:**	Not recorded
Protection issued:	Frontal apron	**Protection used:**	Frontal apron, Long visor (?)

Summary of injuries:

severe Abdomen

severe Chest

severe Face

FATAL

COMMENT: See Medical report.

Medical report

“The blast struck him on the chest and right hand side, causing a fatal wound to the right under arm (armpit). He suffered extensive bleeding from this wound and also from the mouth and nose at the time.” The victim died on the way to the hospital while still in the ambulance.

Doctor [Name removed] performed the medical inspection of the victim at the Herat General Hospital. The doctor’s report indicates that the victim sustained a severe blast wound below the right armpit and attributed the death to a cardiac arrest.

The BOI chairman at the Herat Hospital briefly interviewed Doctor [Name removed] on 19 February 2007. Dr [Name removed] stated that when the body arrived at the hospital he was informed that a bomb had killed the deceased. With that introduction he examined the body, found clotting and pronounced that the deceased had died of cardiac arrest.

On further questioning regarding the wound in the right armpit the Dr [Name removed] stated that it was an irregular shaped wound consistent with a blast, and if it were a knife wound it

would be a regular shaped wound. Questioned further on whether it could it be a metal shrapnel wound he replied "No that would be a regular shaped wound".

The question was then rephrased "Could it have been an irregular shaped piece of metal shrapnel?" Answer "No that would cause a regular shaped wound".

Final question "Did Dr [Name removed] look for any foreign object in the wound?" Answer, "No. "

RELATED PAPERS

Letter from Chief of Operations, Kabul

File: OPS/03/01-32

Date: 22 Feb, 2007

To: Director [Demining group]

Cc: Area Manager, AMAC Herat

Subject: Follow up action on [Demining group] MCT-6 Fatal Demining Accident in MF # AF120081183551069, located at Qalacha-e-Ghazi village, Kohsaan district of Herat Province.

Please find attached the investigation report of the fatal demining accident happened on [the Victim] deminer of [Demining group] MCT-6 on 13 Feb 2007 in Kohsaan district of Herat province. Attached to this investigation report, there are commentary notes from the UNMACA Chief of Staff and myself that are sent to you for further follow up. Please take action as recommended in the investigation report by the Board of inquiry (B01) and the comments of the UNMACA chief of staff and myself.

The [Demining group] MCT-6 demining operations should be kept suspended until further notice. AMAC Herat is advised not to task this team until it is authorized by this office.

CHIEF OF STAFF COMMENTS

Reference: NMACA BOI Report dated 20 February 2007

GENERAL

I concur with the UNMACA BOI report into the death of [the Victim]. However it must be noted that the task of the UNMACA Investigation Team to identify the exact cause of this fatal accident was hindered by several factors:

1. The accident site had been altered prior to the arrival of the investigation team onsite.
2. The deminer's tools had been cleaned and removed prior to the investigation team's arrival and the tool which most likely caused the fatality was not available for inspection.
3. The Team Leader, Section Leader and fellow deminers appeared reluctant to provide accurate details regarding the events leading up to, during and after the accident.

Furthermore it was apparent during the BOI investigation that the command element of the demining team lacked good command, control and judgment and that this fatal accident follows within six (6) days of another demining accident which occurred on the same site on the 7th February 2007. It was concluded that poor command and control was also a factor in this accident. As well as this previous accident the BOI team identified that another accident had occurred on an adjoining site days prior to this accident involving a mechanical asset that detonated a mine resulting in damage to the vehicle, this incident was not reported to the AMAC on the day but several days later.

The poor lack of command and control within the command group of this team is a serious concern to me. The Team Leader and Section Leader must take ultimate responsibility for all deminers' actions on their site. As a consequence I seriously doubt the ability of both these individuals to command a demining team.

ADDITIONAL RECOMMENDATIONS

I recommend that in addition to the BOI and Chief of Operations recommendations, the following apply immediately:

1. The Team Leader and Section Leader are dismissed from service with [Demining group] immediately.
2. The operational accreditation/licence of [Demining group] MCT-6 is revoked immediately.
3. When a new Team Leader and Section Leader has been identified then MCT-6 undergoes a through retraining period. When [Demining group] Management deems that MCT-6 is at the required operational standard then they are assessed by Herat AMAC QMA for operational accreditation.
4. UNMACA recommends that UNOPS NY stop the payment for this team for a one (1) month period.

Signed: Chief of Staff UN Mine Action Centre for Afghanistan Kabul

Date: 20 February 2007

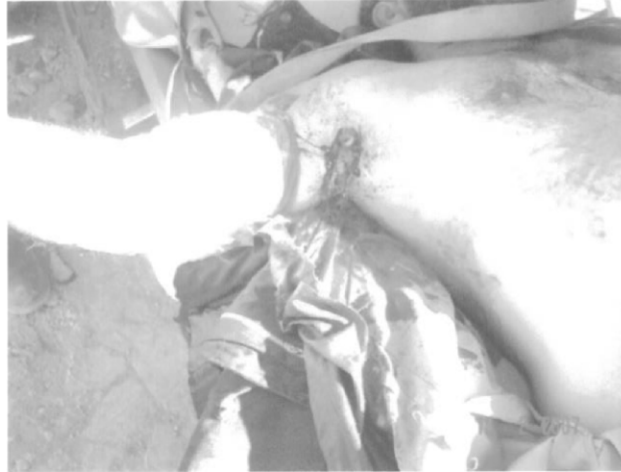
Chief of Operations Comments

I concur with the recommendations of the Board of Inquiry into the death of [the Victim] deminer of [Demining group] MCT-6:

1. The training at all field levels on the field management, training and retraining, equipment procedure, demining drills and the importance of the PPE, and QA and QC is to be conducted along with the training on the revised concept of operations.
2. The MCT-6 is to be suspended, retrained subject to end of course evaluation and external QA by AMAC Herat. If the evaluation was acceptable the team will be re assessed in the field once they are re authorized to commence operations.
3. The employment of the command group of MCT-6 is to be seriously re looked and necessary disciplinary action needs to be taken.

Signed: Chief of Operations

PHOTOGRAPH OF THE VICTIM



View of Wound to the Armpit

EVIDENCE OF SITE INTERFERENCE

Day of Accident: - 13 Feb 07

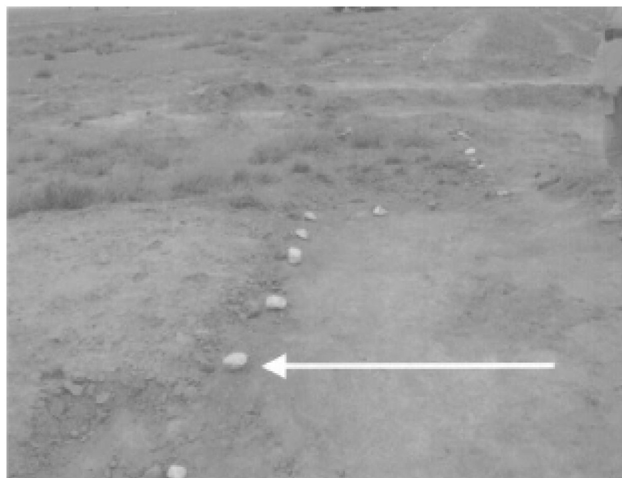
Note: There are no marking stones on the minefield side of the cleared lane.

Yet there are marking stones on the cleared side of the clearance lane.

Comment:

The rows of Red & White stones on the right of the clearance lane are incorrect. The area to the right of the clearance lane is a cleared area, therefore, the stones should only be white to designate the lane width and also that the area is cleared.

Site Inspection - 15 Feb 07



Note: The marking stones have now been moved to the minefield side of the cleared lane after the accident. This process should occur after each meter of ground is cleared.

LESSONS LEARNED SUMMARY

DEMINING ACCIDENT (February 13, 2007)

INTRODUCTION:

4. As a result of a demining accident on [[the Victim] the deminer of [Demining group] MCT-06 in task # AF/2008/18355/MF-0069 of Chatgari village, Kohsan district Herat province, a Board of Inquiry was convened by UNMACA to conduct an investigation to find out the main causes of mentioned accident.
5. The accident caused a fatal wound to the right under arm (armpit) of said deminer. He also suffered extensive bleeding from this wound and also from the mouth and nose at the time

SUMMARY:

6. The investigation report of BOI concluded that the deceased deminer detonated the PMN mine with an unidentified object. He was in a kneeling position with his right side facing towards the mine. The blast struck him on the chest and right hand side, causing a fatal wound to the right under arm (armpit). He suffered extensive bleeding from this wound and also from the mouth and nose at the time. He was evacuated by ambulance but died en route to the hospital.

CONCLUSIONS:

7. It is the BOI team's conclusion that at the time of the accident the victim, [Name removed] was performing an excavation drill that was not in accordance with DAFA SOPs. This resulted in him receiving a blast mine injury that led to cardiac arrest and subsequently death.

The deceased detonated a PMN mine with an unidentified item or object; there were no injuries to his hands, feet, or any other appendage on his body. There are no stone fragments in or around the mine crater.

The lack of some key command and basic strategies were contributing factors to the accident, if the basic rules and standard working procedures are adhered, the number of accidents will decreased.

RECOMMENDATIONS:

5. The following points are to be considered:
    1. All members of the victims team undergo a full days retraining under the supervision of QMA staff from AMAC West with assistance from [Demining group] QA. The details and attendance of this retraining to be officially recorded.
    2. [Demining group] supervisors at all levels are to ensure that correct marking procedures are followed at all times during clearance operations.
    3. [Demining group] SOPs be amended immediately in regard to the correct painting of the base stick from White to Red and that all sticks are re-painted.

4. [Demining group] SOPs be amended to reflect that all accident sites should be preserved intact until an investigation team's arrival and that all tools and equipment, less valuable items (i.e. Metal Detector), be left as they are found at the time of the accident, when such valuable items are to be removed, accurate details with photographs are to be recorded for the Investigation team.
5. The Team Leaders professionalism and leadership qualities should be immediately reassessed and his further employment be re-evaluated by the management of [Demining group].
6. [Demining group] must immediately attend to the "cover up" situation observed on site and ensure it is not repeated, as it could initiate the suspension of its accreditation if encountered again by UNMACA accident BOI teams.

Signed: Chief of Operations, UNMACA Kabul

Statements

Witness statement 1

[Statement by Team Leader (deminer since 1992).

Not translated (original held).]

Witness statement 2

[Statement by deminer (seven years experience).

Not translated (original held).]

Witness statement 3

[Statement by Assistant Team Leader (six years experience).

Not translated (original held).]

Witness statement 4

[Statement by Section Leader (five years experience).

Not translated (original held).]

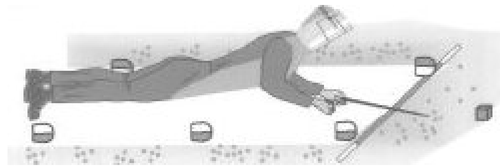
Analysis

The primary cause of this accident is listed as a management control inadequacy because the investigators' concluded that the demining group needed extensive retraining, the field supervisors should be dismissed, and that the Victim was working "side-on" to the mine to receive the injuries he sustained (the body armour did not extend to cover the side of the Victim). The demining group had its accreditation suspended as a result. The secondary cause is listed as a field control inadequacy because it seems that the field controllers did not control the deminer appropriately and did not assist with the inquiry.

The investigation of this accident is considered inadequate because it did not lead to any understanding of the events that actually occurred. When interviewing the hospital staff it is obvious that the investigators' were concerned that the fatal wound might have been inflicted

by other means that a blast event, but this is not resolved. (The cause might have been the use of the wrong tool, or a non-blast related injury.)

The investigation was also flawed because: no record of the coordinates of the accident site was made; there is no timeline in the original BoI, so that the time of the accident is gleaned from the medical details; witness statements were not translated and the senior Technical Advisor pressed his own bias to lie down to excavate.



The Senior Technical Advisor (STA) included extensive illustrations of how to excavate, which are sadly incorrect both in detail and substance. The illustrations include the above, showing the “prone” position, which is only used by soldiers working under fire or when working uphill on steep slopes. The position is not used for many reasons. For example, the head is dangerously close to an initiation if one occurs; the armour is not designed to protect from above; the tool actually used in Afghanistan is far shorter than that illustrated; when leaning on elbows you cannot work effectively with your hands, etc.

The Senior Technical Advisor (STA) criticised the English language failings of an earlier BoI covering another accident at this site, which was conducted by Afghans, in a manner that may have been provocative. His own spelling, punctuation and understanding of grammatical logic were poor [punctuation and spelling have been corrected]. It is possible that the STA’s attitude was the cause of the lack of cooperation. His ignorance of actual demining is apparent from his bias towards the “prone” position. The failure of the field staff to co-operate with the BoI may also imply that his approach was “confrontational”.