

DDAS Accident Report

Accident details

Report date: 07/02/2008	Accident number: 555
Accident time: 07:28	Accident Date: 29/05/2006
Where it occurred: Southern runway, Bagram Air Field (BAP), A4 and 6 mine line	Country: Afghanistan
Primary cause: Management/control inadequacy (?)	Secondary cause: Inadequate training (?)
Class: Excavation accident	Date of main report: 05/06/2006
ID original source: OPS-27/28/06	Name of source: UNMACA
Organisation: [Name removed]	
Mine/device: PMN AP blast	Ground condition: dry/dusty grass/grazing area rocks/stones
Date record created:	Date last modified: 07/02/2008
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 training (?)
no independent investigation available (?)
partner's failure to "control" (?)
squatting/kneeling to excavate (?)
visor not worn or worn raised (?)

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 report is reproduced below, edited for anonymity. The original PDF file is held on record. Text in [] is editorial. The report is "internal". The country MAC did not make an investigation, presumably for security reasons.

Cover letter

File: OPS-27/28/06

From: Chief of Operations/DPM, UNMACA

To: Area Manager UNAMAC Kabul

Date: 07 June 06

Subject: Demining Accident Investigation Report

Attached please find the investigation report along with its supporting documents and photos of the demining accident happened on [the Victim] deminer of team M [International demining company] on 29 May 06 at 0728 hours in Bagram Air Field (BAF).

AMAC received the initial report of the accident by email at the following day of the accident happened in [International demining company] standard format. While we entered the report in IMSMA as demining accident with ID-80, some information was missing. Therefore, we asked [International demining company] to provide us the report using standard format for demining accident issued by MACA MIS section.

The investigation of this accident has been conducted by [International demining company] and BAF MAC, while AMAC does not have permission to get into BAF. Therefore, we did not take action for the investigation of this accident.

The findings and recommendations are mentioned in the report, forwarded for your info and further action.

05/06/2006 Commercial-in-Confidence FINAL REPORT

CII BAFSR 29/05/2006

FINAL INCIDENT REPORT

BAF SOUTHERN RUNWAY, BAGRAM

MINE STRIKE

1 INTRODUCTION

During demining operations, a mine was involuntarily detonated in a mine line in the vicinity of Alpha 4 and Alpha 6 at approximately 7.28am.

One deminer was involved and sustained injuries: the deminer was immediately taken to Camp Lacey US military hospital.

All relevant authorities were notified.

An interim report was submitted within 24hrs after the event. This document will identify the findings.

2 MAIN BODY OF REPORT

2.1 Factual data

2.1.1 Date and time of Incident: 29th May 2006. 07.28 am

2.1.2 Location: Bagram Air Field (BAP), Alpha 4 and Alpha 6 mine line.

2.1.3 Witnesses/people present:

[the Victim]: Injured deminer

[Name removed] Partner: PRESENT at SCENE

[Name removed] Section Leader: IN CLOSE PROXIMITY

[Name removed] Team leader: IN CLOSE PROXIMITY

[Name removed] Supervisor: AT CP

[Name removed] Supervisor: AT CP

[Name removed] Medic: IN CLOSE PROXIMITY

[Name removed] Health & Safety Officer: AT CP

[Name removed] International Field Manager: AT CP

Statements are attached.

2.1.4 Client: [Name removed]. End User —USACE/USAF

2.1.5 Injuries

[Name and ID number removed]

Right middle finger: deep lacerations, possible extensor tendon rupture.

Right tibia/fibula area multiple abrasions and lacerations

Eyes: minor particles from blast damage to cornea (minor)

2.1.6 Property Damage: None

2.1.7 Organisations and people notified or involved.

USACE Bagram: BAF MAC: UNMACA.

CII Project Manager: CII [Name removed]

[International demining company] head Office:

2.1.8 Other relevant information

Responsible device was suspected to as being a PMN located in a 2nd mine line.

Detonation of a 1st mine line was carried out on 26th May 2006 by US EOD. 2 are known not to have exploded and were left- none of these 2 mines were part of the incident.

Work was suspended immediately.

[The accident site is indicated below. The arrow indicates the site of the initiation, which would have been well within reach of a deminer kneeling at the base-stick.]



2.2 Investigations

[Name removed] (USACE), [Name removed] (BAF MAC), [Name removed], (CII VMS), [Name removed] ([International demining company] EOD field manager), met at the Control Point at approximately 8.30am, 29th May 2006 to try and ascertain the facts.

Discussions were immediately held with regard to possible reasons for the accident; the initial discussions between the above parties concluded at that time that the accident was likely to be due to increased sensitivity of the PMNs as a result of deterioration through age and the demolitions carried out the previous Friday.

It was agreed that operations be immediately suspended and the remainder of the day would be spent on re-training; operations were to resume on the 30th May 2006.

The MAC informed the team that due to the current sensitivity of the mine line, they would provide a mechanical roller and flail to clear the line.

[Name removed] ([International demining company] health & Safety manager), and [Name removed] ([International demining company] Programme Manager) visited the site immediately upon being notified of the incident but were too late to join the above investigation.

The injured deminer was visited at the hospital and his condition was stable; he was awaiting surgery.

A visit to the site was made and photographs were taken.

All staff were instructed to provide statements.

The Deminers' PPE and visor was brought back to Kabul and photographed.

The PPE is not damaged internally and is intact in line with reports from the initial investigation. The visor shows significant soot and blackening on the outside of the visor, consistent with the visor being worn correctly and in the down position.

2.3 Corrective Action

Operations were immediately suspended and re-training initiated.

BAF MAC informed [International demining company] that due to the potential sensitivity of the PMN mines, they would run a mechanical roller and flail through the line.

3. CONCLUSIONS

Based on the evidence obtained and statements taken, this incident report concludes with the following series of events:

- Deminers were working in clearance lane as part of re-check; BAF EOD had carried out detonations on 26th May.
- After rotating deminers, [Name removed] watched his partner [the Victim] who he believed had detected a signal.
- [The Victim] states he was collecting soil with his trowel at this time.
- A mine detonated out of the lane, around 20cm North East from the deminers clearing position.
- No mine frog was found.
- Medic was called and operations stopped
- Section leader shouted to deminer who responded although it is unlikely he was in full comprehension as he believed himself to be unconscious in his statement.
- The section leader administered immediate first aid and helped him to a safe area; deminer was walking.
- The medic arrived within 4 minutes and applied further emergency first aid prior to taking him to the hospital.
- Relevant parties were notified.

The mine does NOT appear to have been within the deminer's lane or to the right of his operating position and so the conclusion is that this was not activated by touch.

The PMN is activated by a cock-strike principle; excessive vibrations will cause this mine to activate.

Two factors are likely to be responsible for its increased sensitivity and resulting detonation:

- Age deterioration- buried for approximately 12 years in harsh climates.
- Detonation of other mines within close proximity — controlled detonation by BAF EOD 26th May 2006.

Four issues are noted only:

1. The wearing of good quality PPE and adherence to procedures has prevented serious injury or even fatality.
2. Following the in-situ demolitions carried out by BAF EOD specialists, the 2 mines that failed to detonate were not clearly identified.
3. The response of the teams, medics, and subsequent treatment was a key component to minimising the deminers trauma.
4. In line with [International demining company] SOPs, PMN mines are no-touch items and must be disposed of in-situ.

4 PREVENTATIVE ACTION AND RECOMMENDATIONS

All procedures were strictly followed hence the minimal injuries sustained.

The investigation concludes with the following preventive action and recommendations:

1. Discussions should be held between BAF MAC, BAF EOD., and [International demining company] with regard to further in-situ demolitions when required.
2. Where demolitions are to be carried out in situ by BAF EOD, any mines that have failed to detonate must be clearly identified by BAF EOD and marked with a 25m safety distance by [International demining company]. An agreement should be sought between USMAC, BAF EOD and [International demining company] of how best to dispose of items that have failed to detonate.
3. Periodic practice emergency drills are to be strictly continued.
4. The correct and constant use of PPE in all areas is once again to be emphasized as the injuries in this case are mitigated to a large extent by the correct usage of PPE.

Prepared by [Name removed], [International demining company] Programme Manager

Copied to: [Military, Commercial demining agency and UNMACA AMAC]

INCIDENT REPORT FORM dated 1st April 2005 [Sic]

REFERENCE: AFG1011051106

Date of Incident: 29 MAY 2006

Time of incident: 07:28

At approximately 0728 29 May 2006 a demining accident occurred in the North Western area of A6 mine line. A suspected PMN detonated resulting in injuries to [the Victim], who sustained lacerations to his right lower leg, badly injured 3rd finger, lacerations to his right arm/shoulder and facial/eye injury from the blast.

Injuries:

RIGHT MIDDLE FINGER: DEEP LACERATIONS, POSSIBLE EXTENSOR TENDON RUPTURE. RIGHT TIBIA/FIBULA AREA MULTIPLE ABRASIONS AND LACERATIONS

EYES: MINOR PARTICLES

FROM BLAST DAMAGE TO CORNEA (MINOR)

Serious, stable, non-life threatening

Victim Report

Victim number: 730	Name: [Name removed]
Age:	Gender: Male
Status: deminer	Fit for work: not known
Compensation: Not made available	Time to hospital: 16 minutes
Protection issued: Frontal apron Long visor	Protection used: Frontal apron, Long visor

Summary of injuries:

minor Face

minor Shoulder

severe Arm

severe Eyes

severe Leg

COMMENT: See Medical report.

Medical report

[From internal reports (not medical personnel).]

Right middle finger: deep lacerations, possible extensor tendon rupture.

Right tibia/fibula area multiple abrasions and lacerations

Eyes: minor particles from blast damage to cornea (minor)

[The Victim] "sustained lacerations to his right lower leg, badly injured 3rd finger, lacerations to his right arm/shoulder and facial/eye injury from the blast."

"Injuries:

"RIGHT MIDDLE FINGER: DEEP LACERATIONS, POSSIBLE EXTENSOR TENDON RUPTURE. RIGHT TIBIA/FIBULA AREA MULTIPLE ABRASIONS AND LACERATIONS. EYES: MINOR PARTICLES FROM BLAST DAMAGE TO CORNEA (MINOR). Serious, stable, non-life threatening.

STATEMENTS

Statement 1: Supervisor

Date: 29/05/2006

Demining and BAC Clearance were going on normally according with plan.

As usual work Started at 6:30 I was on Admin area busy with paper work. My paper work was finished. I was getting ready to go to the site.

Suddenly incident happened on Team (M) after we stopped work. Me and [Name removed] got to the point about 2 minutes by Ambulance which was parked at Admin Area. We saw that in one of Team (M) lines. Team Leader of the Team [Name removed] and its Section Leader [Name removed] Mine exploded on [the Victim] 350 Blood G. A+ Mine PMN. As the result of explosion Deminer received injury on his right hand but seemed which the injury is on external. I myself asked the Deminer his Blood Group and ID. He clearly answered me. We evacuated the patient from the site we assisted with Medic did the first Aid.

The incident happened at 7:28/ 6 minutes first Aid been done on him and transferred to the hospital around 10 minutes. [Name removed] (Medic), [Name removed] went to hospital with patient. And I had the responsibility of the site. I out all personnel from the site and kept them on Admin Area then I marked the incident point. I moved Deminers Demining kits from the site and was carried to Admin Area by Section Leader when Mr. Darren was back from hospital. A group of USA EOD, Contract; and other visitors visited the site we understand this from their visit.

USA EOD on 26/05/06 exploded 10 mines on Mine field in this line. As the result of explosion one meter in unlearned area two Mines were exploded. Which this mine is located between those two Mines. It was very sensitive while excavation with a little bit touch explosions took place

Because mine blow up (as gathered) which have made around Mines very sensitive finally? Deminer was Demining according to SOP, who is healthy by god's grace.

Statement 2: Team Leader

[No date]

After I come to the site. Before Deminers got to the lines as usual I controlled the lines and Section Leaders ordered the pairs to the lines. About one hour passed the pairs were busy in all lines I controlled all pairs from the first up to the fifth. I was close to the fifth line about 40 meters far. Suddenly explosion happened reported to Medic by Section Leader. And emergency first aid did by Section Leader before Medic arrive. The patient was evacuated from site after first aid by Medics. Patient transferred to hospital by Ambulance.

Note: It is mentionable Mines were found and were blown up by EDD they were difficult and dangerous completely to recheck the explosion point. The explosion on [the Victim] line is located on the right side of the destruction point. In consequence EOD Team Explosion on Friday all site Mines got dangerous.

More soil have been pried on them and got sensitive. Which the destruction cause Mine get sensitive and dangerous. By smallest touch get explosion which explosion took place while excavation today.

Statement 3: the Victim's working partner

[No date]

I was looking him he detected his area Found the signal put Mine marker on the signal and started work after few moment explosions happened.

Statement 4: Section Leader

[No date]

15 minutes before I went to that line one meter left from previous explosion point. I told them when you finish this Start your line from other side.

After few minutes I wanted to announce break but 2 minutes left for break time. I waited two minutes. Then Explosion happened the first action I did I called Ambulance. And I walked toward the person called him [the Victim's name]. Are you fine answered yes I am fine then I got to him — and picked him up I did the first aid and evacuated him to an open area.

Statement 5: Report of Mine Incident by safety officer

Date: 29/05/06

A mine incident happened on Team (M) field. As the result of the accident [the Victim] Deminer I B.G (0+) received injury on his right arm, right hand , middle finger, right leg, and external injury on other part of his body which is not critical.

The first aid accomplished after incident.

(Medic) [Name removed] with Ambulance arrived to the incident point and did the first aid. After first aid the patient transferred to the hospital accompanied with me and a Supervisor.

I was with patient tip to the end of surgical operation and reporting to responsible persons.

Reason of Incident.

The incident happened on the time where the first Deminer changed and second Deminer starts work.

The area that Deminer was working is the area which 13 mines found and exploded by American EOD Team when Mines found and exploded by EOD Team. As the result of explosion three Mines were exploded on unclear area as well.

On this area Mines have been found very deep. In different depth from 15 cm to 30cm as the result of Ground badness some of them have changed their state.

The mentioned Deminer was working on the point where those three exploded Mines sprayed dusts around after explosion.

This Mine is one of the Mines which other Mines blown up around it in unclear area. This mine got sensitivity after the Mines explosion. When the Deminer is starting clearance of area and soil his trowel touches to the Mine which cause Mines explosion and incident.

Cause of incident in light of safety and security issues.

Deminer was working. Regarding all safety and security issues. As it's cleared from injuries. Deminer was dressed with PPE and visor we understood that part of visor has destroyed. And PPE also harmed in some part

Suggested issues before incident.

For emphasizing to the issue.

Found Mines, UXO Should be reported to [Name removed], Contract QC officer, and MAC. Reason for emphasizing. If the found Mines destroyed on time the site would more progress beside that if the Mines exploded individually the opportunity would no be paved for dust sprayed and wave. Supervisor investigation sheets and reports are also apart of statement.

Statement 6: deminer

[No date]

After safety briefing we were walking to site. [Name removed] was my partner. First [Name removed] started work. Then he changed and I started work. We were working on the area where already Mines blew up by American. The soil was soft. I was collecting the soil by trowel and I progressed half meter a head. Suddenly explosion occurred.

The explosion occurred on the area where there already Mines were exploded. That is to say that was explosion area. After explosion I become unconscious when I got conscious I was in hospital. [Name removed] was in hospital with me and was looking after me up to end of the operation.

While transferring me from the site [Name removed] and [Name removed] (Medic) were also present. Before start work I ordered my PPE and visor and I entered to the area.

I feel lucky that — Mine exploded but I haven't injured so much. As far as I think this is because of the PPE which protected me from Mines frag and wave.

About safety and security-

About work and Mines we are being given information every day which is very useful for us. And help us much while working.

At the end I am happy from all responsible persons. All helped me as much as they could.

Statement 7: Medic

[No date]

On 29/05/06 Monday 7:28am suddenly an incident happened on Bagram (012) site on Team (M) [the Victim] (Deminer) Blood Group O+ received injury on his right arm, right finger and right leg.

Also in consequence of mines wave he has received extra injury on his face and eyes

[Commercial demining group] Ambulances arrived on incident point on time. I started first aid and implemented A,B,C procedure around 4 minutes.

Health condition of Deminer was completely good not serious. Also he was conscious.

He was transferred to Bagram ISAF hospital in (10) minutes.

Note: first aid done:

1. injuries dressing
2. washing face with serum
3. Fluids using
4. Analgesics injection

Statement 8: Supervisor

Date: 29/05/06

As usual we left the compound at 4:45 and entered to check point 5:00 and at 5:40 search finished and were got to the site 6:00 I briefed for personnel for 10 minutes I briefed all

personnel about what Demining procedures and safety brief was also done by [Name removed] and then work as normal days at 7:28 me with were going to the site from Admin area suddenly explosion occurred on Team (M) we were closed to Ambulance we got on the Ambulance and moved to the incident point.

We arrived to the incident point after 2 minutes. At this time Team Leaders were ordered to stop work and none of the personnel move from their place and the injured evacuated to the cleared area by [Name removed] (Medic) and [Name removed] (Supervisor).

The first aid done very good in 6 minutes and I myself handed over the responsibility of the site to [Name removed]. I went to hospital with injured.

The injured transferred to hospital in (10) minutes.

Totally took (16) minutes.

Our responsible [Name removed] arrived to the Hospital after (10) minutes.

After he visited the injured said to me, [Name removed] Medic and Ambulance stay here. We go back to site. We got to the site.

And we had exchange of views with [Name removed], MAC, and 1SAF about sudden explosion. Then we came to control point. visitors investigated from Team Leader, Section Leader, and injured partner [Name removed] the investigation shows that as the result of previous exploded mines in this line (10) mines in on line already found which were exploded by ISAF EOD as the result of explosions shake on ground 5 extra mines were blown up in distance of one meter.

This exploded mine was one of the unclear mines which was gotten sensitive and more dusts sprayed on it as the result of ISAF EOD destruction by small touch causes explosion.

Regarding to site responsibility, experience and investigation we did.

Deminer was doing his job very good and used PPE and visor properly which cased to his healthiness.

Analysis

It is remarkable that the only people who did not think that the deminer touched this mine with his prodder were the demining company's own internal investigators. The witnesses (including the Victim and his partner) acknowledge that he touched the mine with his prodder, but the investigators seemed determined to conclude that the mine had been made sensitive by nearby demolitions and detonated spontaneously. While the PMN mechanism can be decayed by corrosion of the central spring, this can only happen when the rubber top and retaining "clip" has decayed to allow water to get in. There is no evidence of this having happened elsewhere in Afghanistan. The mine involved in this accident may have been more deeply concealed by ejecta from the earlier demolition but there is no reason to believe that it was made more sensitive. (If the PMN could be reliably initiated by vibration as the investigators claim, demining would be a lot easier.)

The Victim's face and eye injuries are a clear indication that his visor was not worn properly. The injuries to his right arm, right shoulder and right leg show that he was worked side-on to the mine, rendering the frontal apron PPE ineffective. The hand injuries provide compelling evidence that his hand was close to the mine, and prodded onto it. Deminers should work with their body in-line with the area being explored.

Reports on other accidents in this country at this time were conducted through the National MA Authority and the above failings would all have been recognised by professional national personnel.

The primary cause of this accident is listed as a "Management control inadequacy" because it is clear that the Demining company's senior management sought to conceal what happened in the accident and so avoid correcting glaring errors. It is likely that the Field supervisors did not know that they were allowing errors to be made, so indicating inadequate training. The secondary cause is listed as "Inadequate training" because that failing seems to apply to senior ex-pat personnel as well as to Field supervisors and deminers.