

2-7-2007

DDASaccident449

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AID

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Recommended Citation

Database, Humanitarian Demining Accident and Incident, "DDASaccident449" (2007). *Global CWD Repository*. 648.
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DDAS Accident Report

Accident details

Report date: 28/12/2007	Accident number: 449
Accident time: 11:12	Accident Date: 07/02/2007
Where it occurred: AF/2008/18355/0069, Qalacha-e-Ghazi village, Kohsaan District, HERAT Province	Country: Afghanistan
Primary cause: Inadequate equipment (?)	Secondary cause: Field control inadequacy (?)
Class: Excavation accident	Date of main report: 12/02/2007
ID original source: BOI OPS/03/01-17	Name of source: UNMACA
Organisation: [Name removed]	
Mine/device: PMN AP blast	Ground condition: metal fragments soft wet
Date record created: 28/12/2007	Date last modified: 28/12/2007
No of victims: 1	No of documents: 2

Map details

Longitude:	Latitude:
Alt. coord. system:	Coordinates fixed by: GPS
Map east: 034 47 03.3	Map north: 061 03 38 5
Map scale:	Map series:
Map edition:	Map sheet:
Map name:	

Accident Notes

pressure to work quickly (?)
visor not worn or worn raised (?)
handtool may have increased injury (?)
inconsistent statements (?)
inadequate medical provision (?)

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.

INVESTIGATION OF MINE CLEARANCE ACCIDENT

At Kalat-e-Nayab Ghafor-MF-0069 Kohsan-HERAT on 7th February 2007

Investigation conducted by: [Name removed], Operations Associate UNAMAC Hirat.

To: [Name removed], Chief of Operation UNMACA, Kabul

From: [Name removed], Acting Area Manager UNAMAC Hirat, Western Region.

Report submitted: 12 February 2007

11:12 am 7th February 2007 PMN Mine Explosion: N=34 47 03.3 and E=061 03 38 5

Background history of the Kalat-e-Nayab Ghafor and MF-0069

The Kalat-e-Nayab Ghafor village is about 18 kilometres away to the north site of Islam Qala city. There is security post by the name is Cholonga, which is located near to IRAN border and the villages are located on vicinity of that area and during Russian invasion many AP mines planted all around the post as belt for preventing Mujahidin attacks, meanwhile, Mujahidin planted antitank mines in this large desert area and according to LIAT conformation approximal (7,200,000) sqm area contaminated by AT mines and according to information obtained from the residence and local elders, many accidents happened by local people and animals in the area.

In the past, Russian and Afghan soldiers planted mines in the whole area, in order to prevent Mujahidin from attacking on their positions.

MF-0069 was surveyed on 13/6/1997 with a total area is 46,535 sqm and again resurveyed on 16/11/2006 with total area 40,744 sqm and on 25 Nov 2006 the minefield was tasked to [Demining group] for clearance.

They have found and destroyed 42 AP mines and 642 UXO during clearance.

[Demining group], MCT-Team-06

Details of Accident

At 11:12hrs on Wednesday 7th February 2007 [Demining group] MCT-6, a deminer was involved in an accident at Islam Qala Kalat-e-Nayab Ghafor MF-0069 Kohsan district Herat province. The accident occurred while the deminer was excavating with shovel.

Injuries to the victim deminer occurred when he was using a shovel during operations.

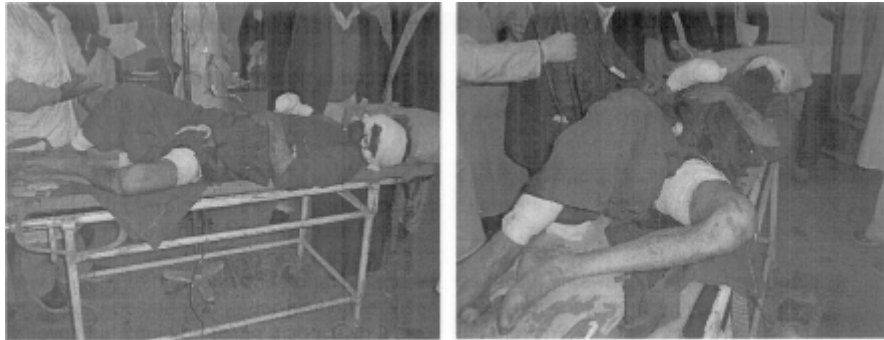
The injured person received first aid and was evacuated to hospital under the care of Dr. [Name removed], [other Demining group] Medical Officer Herat, because [this Demining group] medical officer was on leave, then evacuated to ISAF hospital, which is located at Herat airport for further treatment.

A copy of the [Demining group] situation report submitted by Mr.[Name removed], [Demining group] Field officer is attached at Annex A. [Not attached, held on file.]

Injuries

As a result of the explosion the deminer received serious injuries to his face, eyes right and left legs and lost right hand witness finger.

These injuries indicate that he was excavating the area by shovel at side position and his head was close to the point of detonation and he was facing sideways to allow the foreign object to pass beside and under his helmet visor. This is not consistent with proper use of the Shovel, but could be using a shovel in a sweeping motion?



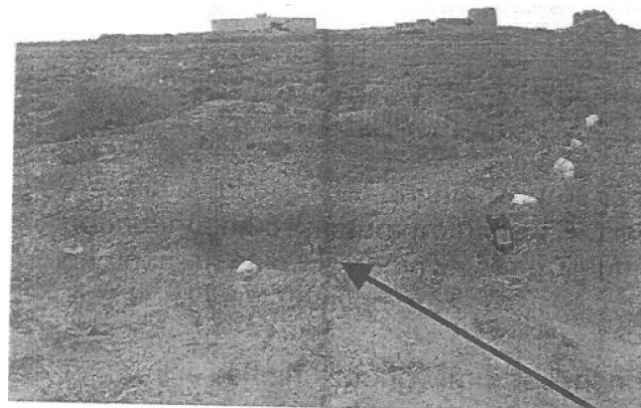
Injured Deminer Pictures

Site conditions

Site conditions (at the time of the incident/accident). [IMSMA report: the ground was flat, soft and wet. The weather was clear, calm and mild.]

The accident occurred on the flat ground and seven meters far from the surveyed boundary and 31 meters from the TP-3 inside the minefield. The area shown in the photograph below is a known mine belt that stretched for 400 hundreds metres in both directions into surveyed area.

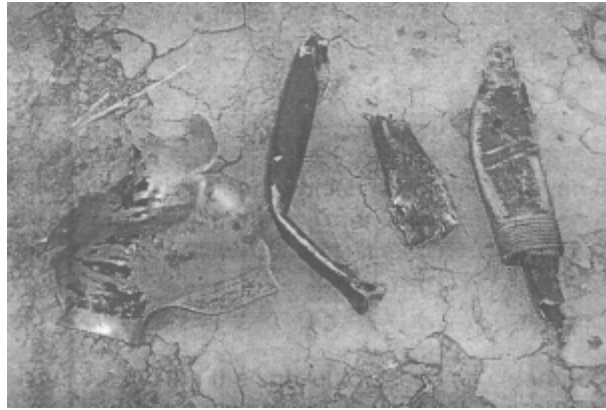
The soil is soft and spongy from recent heavy rain and contains small rocks. The investigating team believe the mine was buried not more than 3 cm and has been hit by shovel and caused the accident.



[The accident site.]

As the picture show the mine clearly, which is not deeper than 5cm and also the area is soft and suitable for prodding, therefore there is no need of shovel to be used, they must use the bayonet.

The victim deminer was using the shovel to speed up clearance and used it as a digging tool and the shovel is completely damaged. (refer to the below Photo.)



Equipment

The victim deminer was worn his PPE Jacket correctly but not apron during operations therefore he got some injuries in both legs.

He sat on side position about 40 Degrees and was excavating by shovel and caused the accident and he got injuries on his head, eyes.

The investigating team observed broken Bakelite pieces of a PMN mine at the accident site. According to the team command group the section leader was about 100 meters from the accident point at the time of the accident, so he had excellent observation of all the deminers and can control the improper procedures easily.

The accident occurred while the deminer was excavating. The soil condition in this minefield is medium fragmentation of the minefield and full excavation is necessary in some portion of the minefield.

The accident occurred during excavation process by shovel. The mine was detonated by the shovel being used as an excavation tool, instead of its proper role in cleared soil removal.

Photographs showing PPE damage [are too poor to reproduce. The visor is shown below].



Team member Statements:

The investigation team was unable to take a written statement from victim deminer, because he is illiterate, meanwhile, he was also unable to talk to the investigators as he was in unconscious condition.

Conclusions

- Based on the statements of interviewees and physical situation of the accident site, the accident occurred when the deminer was excavating by shovel and the shovel made strong contact with the mine and caused the accident.
- The accident occurred by incorrect use of the shovel.
- The victim deminer sat on side position and used the shovel faster for excavation.

- Section command and control at the site was poor.

Recommendations:

- All [Demining group] deminers must undergo refresh training on correct using of tools.
- All [Demining group] command staffs must undergo refresh training on their roles and responsibilities.
- All [Demining group] command group should not allowed deminer to use shovel instead of bayonet
- AMAC west recommended deducting/removing of shovel from demining tool kits, because, as per our experience it's third accident in western area, which happened during using of shovel.

Additional Comments by the BoI Investigation Team

Serial No: WR-83 2007

Date/Time: 07 Feb 2007 at 11:12 hrs

Location: Qalacha-e-Ghazi village, Kohsaan district of HERAT province

Task No: AF/2008/18355/0069

NGO Details: [Demining group] MCT-06

INTRODUCTION

The Investigation Team: [Name removed], Senior Technical Advisor, Operations UNMACA Kabul; [Name removed], Area Coordinator UNMACA Kabul.

Having perused in depth the BOI documentation attached, in order to 'read themselves in' to the established procedures within the AMAC Herat and in particular the NGO [Demining group], comment as follows :-.

The Investigation Team acknowledge that Mr [Name removed]'s first language is not English and therefore are not commenting on grammar or sentence construction, however, shall comment and concentrate on interpretation/misinterpretations, Technical detail, procedures and BOI format.

FACTORS

1. The accident occurred during prodding/excavation procedures.
2. It has not been conclusively established that the prodding/excavation drills were incorrect.
3. It has been established that the deminer's body position during the prodding/excavation process proved to be incorrect, resulting in the injuries to head, face and legs.
4. The statement by Mr. [Name removed], quote "The mine was detonated by the shovel being used as an excavation tool, instead of its proper role in cleared soil removal" unquote, is challenged by the Team by way of explanation with the aid of illustrations:-

COMMENT

The methodology of prodding and excavation is to use both prodder and the small shovel in combination. The bayonet as the [Demining group] NGO's choice of prodding tool, is used primarily to confirm the object detected by the mine detector and secondly to loosen the soil.

The small shovel is used to excavate and move the loosened soil. [Low quality illustrations showing the Senior Technical Advisor's prejudice in favour of lying down to excavate follow.]
The following pictures show the extensive damage to the deminers head and legs.



[Photographs showing the victim's injuries to head/eyes and legs.]

The positioning of the injured deminer's body at the time of the accident *confirms* the essential need to reposition the body for the various procedures during the location, confirmation and excavation phases. The visor and protective blast jackets/aprons are designed to be worn facing the explosive target. It is essential therefore that the deminer is trained to use the equipment in the manner they were designed for.

The deminer in the kneeling position has automatically adopted an aggressive stance, this frequently causes him to use strength as opposed to skill to penetrate hard ground, but in so doing he exposes unprotected body areas to danger.

This activity recorded in many accident investigations often results in the head turning sideways to the device/target, rendering him unsighted to the target.

The subsequent accidental detonation causing serious damage to the unprotected body areas.

When adopting the kneeling position, the deminer is to totally focus on the device/target area at all times.

On locating a device, the deminer is strongly advised to adopt a lying position during the entire excavation procedure, this body position shields the entire body less hands from all blast and shrapnel.

[This opposes the commonly held view that it is better to keep the head further away. This Senior Technical Advisor's bias is well known and his inability to answer questions regarding the increased risk when lying down coherently is held on record.]

The visor is the only PPE facing the target.

The kneeling or squatting position AUTOMATICALLY increases the angle of prodding to more than 30 degrees, subsequently increasing the danger of detonating a mine.

Signed: Senior Technical Advisor

Victim Report

Victim number: 597	Name: [Name removed]
Age: 45	Gender: Male
Status: deminer	Fit for work: DECEASED
Compensation: Not made available	Time to hospital: 3 hours and 48 minutes
Protection issued: Frontal apron	Protection used: Frontal apron

Long visor

Summary of injuries:

severe Face

severe Hands

severe Head

severe Legs

AMPUTATION/LOSS: Eyes, Fingers

FATAL

COMMENT: See Medical report

Medical report

ISAF hospital situation report

PERSONNEL DETAILS:

1. Deminer of [Demining group] MCT-06.

- Both eyes completely injured.
- Abrasions.

Victim injuries:

- Amputation (his right hand witness [index] finger lost).
- Haemorrhage.
- Laceration (got fragments on his right and left legs).
- The Patient has referred to the General Public Hospital of Herat then evacuated to ISAF hospital in airport Herat province.
- General condition of patient is severe.

Extract from letter from demining group

When he was transferred to Herat regional Hospital for treatment and admitted he received the following medicines and treatment.

Serum 1000 Mix

N.P.O

Ampicilin 1 g*3 analgesic

Dexametazone 8mg*3 Anti biotic

Amp.phnytoin 750mg

Suction.

O2 Therapy.

Folly calhefor

Recovery position

C.V.S

Amp.ceftroxin

Amp.dexamethazone

Serum 1000 Mix

Current Condition of the Injured Person:

According Herat regional hospital specialist doctors, the current condition of injured is satisfactory. Report from [Demining group] site office in Herat the injured has been transferred to Kabul by Kam Air flight and admitted in Kabul emergency hospital for further treatment.

Blood Group: B-

Right eye completely.

Left eye partially.

[Sketch shows amputated finger(s) on right hand and upper left leg cuts.]

Severe injury.

At 11:15 vital signs were Pulse: 74; Resp: 18; BP: 190/80.

A pressure bandage was used.

Intravenous infusion of Ringer Lactat was given at 11:25 1000 ml. Doclofenac (?) sodium 75 mg was given.

Wounds were irrigated and dressed.

Polyfoot (?) eye ointment was used. Both eyes irrigated by phsiolgc serum (?).

Casualty departed injury site at 11:32.

At 11:35 vital signs were Pulse: 80; Resp: 20; BP: 190/80.

Italian medical report from Herat hospital

[Handwritten, so some details only picked out. Original held on file.]

Age: 45

Admission Date: 07/02/2007

He has multiple trauma hands, legs, face & eyes. Admitted at 15:00. Taking treatment with fluids, haemic control & breathing control. He goes to the operating room.

Conscious. Glasgow 13. BP 130/70. No trauma in thorax nor abdomen. Acute injuries in both eyes, in the skin and muscle in right jaw with bone fracture. Through amputation of right hand index finger and part of right hand. (?) Grade burns in left hand. Left thigh injury not affecting veins (?) arteries.

Explorations/tests

Skull x-ray, thorax, abdomen and left femur x-rays. Dx right jaw fracture, central via and internal jugular vein. Evolutox.

Diagnosis:

Surgeons and traumatologists do:

Amputation of right hand index finger and part of right hand th.

Cleaning and cure of left hand burns,

Closing skin and muscle in left leg injury,

Closing skin and muscle in right side =jaw.

Right side jaw fracture not treated.

Observe blast left eye and acute injury in right eye cornea.

Evolution:

After released from operating room goes ICU for hemo dynamic (?), bleeding, breathing, analgesic controls. De-tubed without problems. (?) excited during 2h. Treated “fentauey”, fluids and antibiotics. Evolution – stable.

Treatment:

1. Parameters/6h. Monitor ECG, BP, OL SDT.
2. Bed at 45 degrees.
3. Have conversation with him in order to get him relaxed and communicate his injuries.
4. Injuries cure / 24h
5. Surgery treated areas cure / 24h.
6. Try liquid diet if tolerated through mouth (?)
7. 4 ampules “Ketorodaco” + 3 “Dolautina” + SCDs 0.9%, 500cc/24h. If pain – morphine.
8. SSF 0.9%, 500cc/6h
9. “Omeprazol”/1 ampule/24h.
10. “Ceftriaxona” 2 gr IV/24h (today 2nd day).
11. “Metronidazol” 1 gr IV/24h (today 2nd day).
12. Low molecular weight (?) 20mg s.c./24h.
13. It is required appointment with jaw/facial specialist to stabilise right side jaw fracture.
14. It is required an appointment with an optamologist to see possibilities of recovering both eyes.
15. Follow on for trauma and surgery injuries.

STATEMENTS

Witness statement 1

[Statement by Team Leader (experienced since 1992).]

Statement /witness report:

Question-1: Where was your location, while the accident happened?

Answer-1: Before accident I was away from the accident point with section 5 members.

Question-2: What were you doing when the accident happened?

Answer- 2: I was controlling section number 5 members when the accident took place.

Question-3: What was the injured deminer doing, when the accident took place? Please explain.

Answer- 3: The accident happened during excavation of suspected area.

Question-4: What caused the accident to happen?

Answer-4: The victim deminer used shovel for excavation faster, therefore the accident took place. It was victim deminer fault.

Question-5: How many mines identified by your team in this minefield so far?

Answer-5: Our team has found 42 antipersonnel PMN and PMN-2 mines in the minefield yet.

Question-6: How many square metres area have been cleared from mine yet?

Answer-6: We have still cleared 26291 Square meter areas from mine.

Question-7: How many square meters area have been cleared per day?

Answer-7: We have cleared approximately 600 sqm area per day.

Question-8: How is the clearance procedure process going on?

Answer-8: First using mine detector if there is signal putting red paint after that using bayonet for excavation and then the soft soil to be removed by shovel to the safe area.

Question-9: What equipments are you using for land excavation?

Answer-9: We are using PPE and complete demining tool kit during clearance.

Question-10: Which equipments were damaged in this accident?

Answer-10: PPE and Shovel are completely damaged.

Question-11: What type of first aid was given to injured deminer by team medic?

Answer-11: After the accident injured deminer was evacuated to safe area then Mr. Hamidullah and Said Mohammad Naman team medics did first aid to injured person and transferred him to Kohsan clinic.

Islam Qala

08 Feb 2007

Witness statement 2

Statement by Section Leader Report [experienced since 1992].

Statement /witness report:

Question-1: How the accident happened explain?

Answer-1: During working the accident took place.

Question-2: What was the caused of the accident please explained?

Answer- 2: The accident happened, due to deminer neglecting the roles.

Question-3: What did you do and where was your location before the accident happened?

Answer- 3: I was standing and controlling the deminers of Party No-03, when the accident took place.

Question-4: What is your equipment for excavation?

Answer-4: We are using the bayonet and Shovel for excavation of the land.

Question-5: How many mines have been discovered by injured deminer in this minefield yet?

Answer-5: He found just one mine, before the accident.

Question-6: How is the clearance procedure process going on?

Answer-06: We are using bayonet for excavation.

Question-07: What is your opinion for preventing of such accident?

Answer-7: For such kind of accident we should excavate carefully.

Question-8: Is this area excavated by Backhoe before accident or not?

Answer-8: No.

Question-9: Did injured person wear the PPE?

Answer-9: Yes he wore PPE during demining activity.

Witness statement 3

[Deminer for seven years.]

Statement and Witness Report

Question-1: What did you do when the accident took place?

Answer-1: I was working on the minefield.

Question-2: What was the cause of the accident?

Answer- 2: The accident took place in the area due to deminer neglecting the roles.

Question-3: How many mines have been discovered and destroyed by injured deminer in this minefield yet?

Answer- 3: He hasn't discovered any mine in this minefield.

Question-4: What did he use for excavation, when the accident took place?

Answer-4: He used Bayonet and Shovel for removing of soil.

Question-5: Did the injured deminer wear PPE or Not?

Answer- 5: Yes he wore PPE during demining activity.

Question-6: What is your comments and recommendation for preventing of such kind of accident?

Answer- 6: We should worked as per SOP and carefully; it would prevent other accidents.

Question-7: Where was your section leader location before the accident?

Answer-7: He was present in the area.

Letter from demining group

To: UN-AMAC Herat

From: [Name removed] [Demining group] sub office Herat

Date: 11.02.2007

Subject: Demining incident Report

Agency: [Demining group]. Site E, MCT.06

Date/Time: 07 February 2007, at 11:10hrs

Location of incident: Kohsan Islam Qala.Task No.AF/20081183551 MF 069

No of People Involved: One deminer

Name of Involved Persons: [Name removed] his ID No1649

Description of the Incident:

According to [Demining group] site office in Herat that the mentioned Deminer was busy in his work on the field when he pinpoint signal and start excavation.

During excavation the blast were happened. Which caused incident he has got rectal injured, Injury both leg, eyes, cut of right hand finger.

Treatment Given:

When he was transferred to Herat regional Hospital for treatment and admitted he received the following medicines and treatment.

Serum 1000 Mix

N.P.O

Ampicilin 1 g"3 analgesic

Dexametazone 8mg*3 Anti biotic
Amp.phnytoin 750mg
Suction.
O2 Therapy.
Folly calhefor
Recovery position
C.V.S
Amp.ceftraxin
Amp.dexamethazone
Serum 1000 Mix

Current Condition of the Injured Person:

According Herat regional hospital specialist doctors, the current condition of injured is satisfactory. Report from [Demining group] site office in Herat the injured has been transferred to Kabul by Kam Air flight and admitted in Kabul emergency hospital for further treatment.

Evacuation Route:

After incident occurred first aid has been done by our nurse at the time. After that he was carried out to Herat regional hospital emergency centre for further examination and treatment.

Cause of the Accident:

According to [Demining group] site office in Herat that the mentioned Deminer he has been busy on his excavation on the target while it blast on him caused got rectal injured, Injury both leg, eye, cut of right hand finger.

Analysis

The Primary cause of this accident is listed as “Inadequate equipment” because it appears that the Victim was using a dangerous tool, and that this was the policy of his demining group. The secondary cause is listed as a “Field Control Inadequacy” because the victim was working with his visor raised and this error was not corrected.

The tool broke into many parts (See Accident/Incident report) and the fragments may have been the cause of the Victim’s extensive injuries.

From the statements of witnesses, it seems that the Victim may have been under pressure to work quickly.

The failure to get the Victim to a hospital in a reasonable time is the “Inadequate medical provision” listed under “Notes”.