DDAS Accident Report

Accident details

Report date:	25/01/2008	**Accident number:**	509
Accident time:	09:10	**Accident Date:**	18/01/2007
Where it occurred:	MF # AF/3208108364/MF01 1, Dwa-Mandy Village, Nadersh-Kot District, Khost Province	**Country:**	Afghanistan
Primary cause:	Field control inadequacy (?)	**Secondary cause:**	Victim inattention (?)
Class:	Detection accident	**Date of main report:**	24/01/2007
ID original source:	OPS/2/2/21-014-07	**Name of source:**	UNMACA
Organisation:	[Name removed]		
Mine/device:	PMN AP blast	**Ground condition:**	dry/dusty rocks/stones
Date record created:		**Date last modified:**	25/01/2008
No of victims:	1	**No of documents:**	2

Map details

Longitude:		**Latitude:**	
Alt. coord. system:	WGS 84	**Coordinates fixed by:**	GPS
Map east:	E 069 3546	**Map north:**	N 33 16 50
Map scale:		**Map series:**	SHA#3208/08364/SHA .1
Map edition:		**Map sheet:**	
Map name:	1/2500		

Accident Notes

inadequate area marking (?)

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 report is reproduced below, edited for anonymity. The original PDF file is held on record. Text in [ ] is editorial.

Cover letter

File: OPS/2/2/2/ Date: 24/1/2007

To: Chief of Operations, UNMACA Kabul

From: OIC/OPS Associate UNSAMAC SE

Cc: Senior National OPS Manager UNMACA

Subject: Demining Accident Investigation Report of [National demining agency] MCT#1

Attached please find the demining accident report of [National demining agency] MCT#1, which was happened on 18/1/2007 at Dwaminday village, Nadir Shah Kot district of Khost province.

The following documents are attached:

Initial demining accident report.

Investigation report of Mine/UXO accident/incident within the ground of demining.

Medical report.

Minefield map.

The involved persons statements

Forwarded to your information and kind consideration.

Initial Demining Investigation Report

[Derived from IMSMA forms]

Location: WGS 84: E 069 3546: N 33 16 50: GPS: Map series - SHA#3208/08364/SHA.1: Map scale - 1/2500

Description of incident/accident: The accident occurred during manual clearance, where the deminer was wearing PPE and was utilising normal clearance techniques including the use of a metal detector.

CASEVAC intentions: The casualty was evacuated to Khost Regional Hospital after receiving first aid from the team paramedic.

Casualty report: Left foot amputated just below the ankle joint and right hand has severe and deep injuries above the elbow joint and has superficial injuries on whole body of casualty.

Accident occurred during “prodding (excavation)”. [Conflicts with story below.]

Mine type: PMN AP blast

The device detonated when the deminer moved into an un-cleared area before using the metal detector. [The detector was damaged, so with the deminer, who said he was preparing to use it.]

History of Minefield: Minefield No: AF/3208/08364/011 is located 33 KM to the west of Khost City on the Khost to Gardez road. It is 0.5 km to the west of the small town, Nadir Shah Kot. The area is recorded in the LIS as a High Impact area. It is on sloping, stony ground with some bushes and is located close to a local bazaar and a populated area.

The area was surveyed by [National survey specialist agency] in 11/11/2005 and clearance commenced on 8/2/2006. The UNMACA Annual Plan suspended clearance during the cold

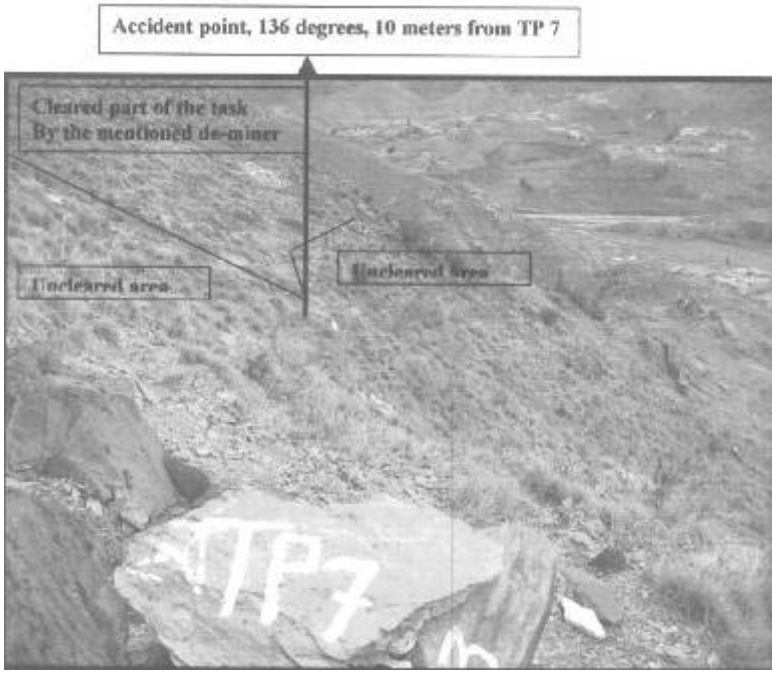
season and recommenced again when the weather changed. The task had been planned for completion on the day of the accident.

The device detonated when the deminer moved into an un-cleared area before using the metal detector to check the area was clear.

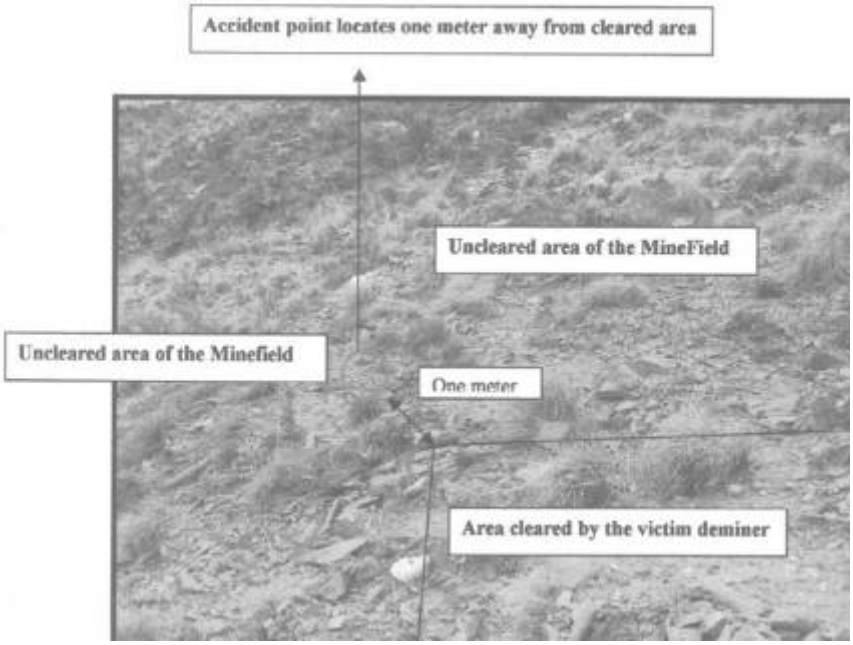
Device was detonated in area where it was difficult to be clear from the right to left, due to sloppy [sloping] condition.

It was easy to work from down to up side.

The area of ground being cleared was sloping and the deminer was clearing 1 meter across the slope before proceeding up the slope a further 5 meters.



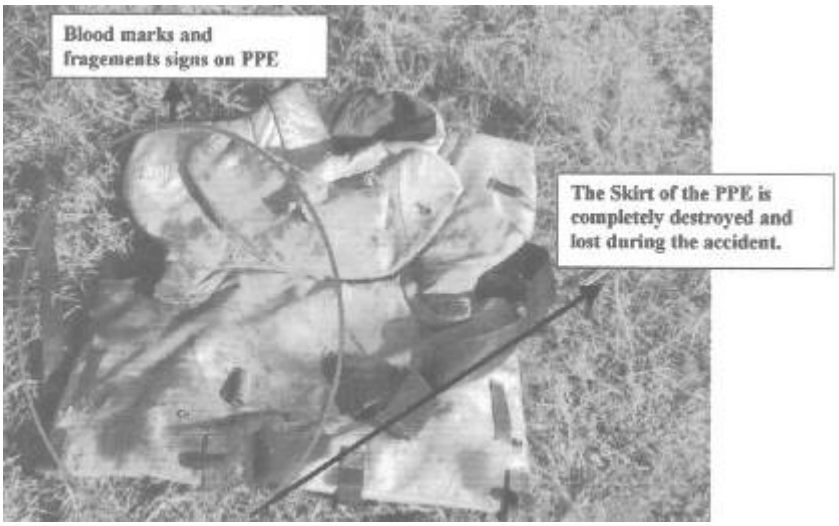
The accident site



Description of the incident/accident: The deminer was tasked to clear across the slope before clearing up the slope and it appears that he has carelessly moved into an unclear area before physically clearing it and has stepped on a PMN Mine.

[The Victim suffered] Lower left leg amputation and injury to upper right arm and lower right leg.

Equipment/property damage: Metal detector (MLD-1); Frag-vest; Helmet, visor. [The apron style vest is shown below.]



Site conditions: The terrain was uneven hillside. The soil was medium, dry. The weather was cloudy and mild. The vegetation was light bush.

Team and task details: Last QA inspection - 16/12/2006, (because the team was on mission leave and Eid Leave From 22/12/2006 to 8/1/2007 therefore one QA is done). The Team had been at the site since 6/11/2006. Working hours were from 7:00 am to 1:00 pm, with two breaks. The hand tool is use was the bayonet. Last leave was from 22/12/2006 to 8/1/2007.

Medical reaction time. Time of accident to Paramedic was on the accident site: 2minutes (9: 12 am). Time of Paramedic starting treatment to the casualty was in the ambulance ready for transport: 10 minutes (9:22 am). Time for ambulance to drive from site to hospital: 50 minutes (10:12 am). Distance from site to hospital in km: 30 Km. Last time a CASEVAC drill was done: 10/1/2007.

Conclusion

The conclusions are as below are based on observations by the investigation team that visited the accident site and witnesses statements:

The team was working on two tasks at the same time (Task # 11 & 14) and the Team Leader was based at the other larger task. The Assistant team Leader was in Kabul attending the Middle Management Course. Two sections were working on completing the remaining 500m2 of the task area however, the Team Leader had not detailed anybody as the overall task supervisor.

The section commander had briefed the deminer to clear 1 metre across the slope before clearing a further 5 metres up the slope which was not according to SOP. The deminer appears to be unclear about his instructions and has stepped into an unclear area and detonated a PMN Mine causing him to have a lower leg amputation.

Special Note: Initially the accident victim was evacuated to Khost civilian hospital where he remained for 2 hours before the doctors recommended he be transferred along with a referral sheet to the NATO Hospital at Salarnow, Khost City. The NATO would not initially admit the deminer and he remained at the door of this hospital for a further 45 minutes before being

informed that he should return to the civilian hospital in Khost. The explanation was because all their beds were full of patients.

The Khost Hospital did not have a surgeon and it was not until a number of approaches were made to private medical facilities that a surgeon was found who could perform the amputation. Fortunately the delay was not fatal to the deminer.

Recommendations

The following is recommended;

1. That a clear chain of command be identified if a Team Leader is to split his team and complete two tasks at the same time. Especially if his deputy is not in attendance then one of the two Section Commanders should have been identified as in over all command of the task. This point should be reminded to all AMAC ASAP.
2. The person that has been identified must be fully briefed by their Team Leader on how to safely clear the task and to ensure it is in accordance with SOP.
3. That Section Commanders ensure that their deminers fully understand how to perform clearance before moving into the hazard area and if they are unsure then they should ask for clarification immediately.
4. The relationship between NATO and UNMACA is formalized to ensure that if medical coverage is offered for UNMACA teams then it will be provided in a timely manner. This may require a document i.e. Memorandum of Understanding (MOU) to be drawn up so that Team Leaders can produce this at coalition medical facilities in the event of an accident.

Attachments: [Held on file.]

Lessons learned letter

File: OPS/03/01-29

Date: January 30, 2007

To: See distribution list

From: Chief of Operations, UNMACA, Kabul

Subject: Follow up action on Demining Accident happened to the Deminer of [National demining agency] MCT-01 in MF AF/3208/08364/MF011, located at Dwa-Mandy village, Nadersh-Kot district of Khost province.

Reference: Demining investigation report File: OPS/2/2/2/-014-07 dated January 24th, 2007 of UNAMAC South Eastern stationed in Gardiz:

A demining accident took place on January 18, 2007 on one of [National demining agency] MCT-01 deminers [The victim] at 09:10 Hrs in MF # AF/3208/08364/MF011, located at Dwa-Mandy village, Nadershah-Kot district of Khost province.

In result of the said accident the involved deminer lost his left leg of lower knee, received some severe injuries on his right hand [arm] and multiple superficial injuries on his body.

The investigation report of the said demining accident, which was received from AMAC Southeast, has highlighted the following failures as contributor factors for the mentioned demining accident:

Weak Communication (Improper delivery of the message): The section leader has tasked the victim deminer to clear an access line at the middle of a sloppy [sloping] unclear portion of the minefield horizontally and then go upward 5 metres but the deminer without clearing one metre entered to the unclear area and stepped the mine. Entering to unclear area may be because of improper communicating of the message to the deminer.

Unprofessional deployment: Report indicates that the section has unnecessarily and unprofessionally deployed the deminer to make up an access lane, while he should have deployed the deminer from the entire bottom of the sloppy [sloping] unclear area going upward. It is noted that at the time of the accident only one party (two deminers) were working in the said unclear portion while the other parties were already deployed to another task because of safety distance requirement. This considered unnecessary exercise because there has not been any safety distance affection [?].

Weak Command and Control: The [National demining agency] MCT-01 was working on two tasks simultaneously because of safety distance requirement. The team leader was in charge for the other part of the team while the Assistant Team Leader was in Kabul attending the Middle Management Course (MMC). Two sections were working in Task # 011 but the Team Leader had not designated any of them to take the overall supervision of the operations in this task.

Weak Medical Evacuation Plan: The victim firstly has been evacuated to Khost public hospital and stayed for 2 hours before he was transferred to NATO hospital at Salarnaw, Khost city but unfortunately he was not admitted in NATO hospital and remained other 45 minutes at the door of this hospital; based on explanations, all their beds were already full of patients. The victim deminer was returned back to Khost public hospital but no surgeon was available. Attempt on finding private surgeon finally succeeded and the amputation was done.

Recommendations:

The team's command group should make sure the subordinates apprehend their instructions/orders correctly.

1. A clear chain of command should be identified in case the team is split into two tasks specifically if the Assistant Team Leader is not present, a person should be designated by the Team Leader to take the overall command and control of the operations.
2. The Team Leader is to fully brief the one who take the overall lead of the operations on how to perform the clearance in safely manner and in accordance with the SOP.
3. The team should have a proper medical evacuation plan with the assistance of the respective AMAC. AMAC SE is recommended to have initial contact with all available medical facilities at regional level in order to prevent such delays in provision of medical assistances to the other probable casualties in future. Moreover, all AMACs are advised to strengthen their relations with the ISAF/PRT medical centres through their provincial or regional commands.

Distribution List With attachments: Director [National demining agency]

Without Attachments: AMACs (5), Sub AMAC Gardez, Sub-AMAC Kunduz, [All demining groups in-country.]

Victim Report

Victim number:	668	**Name:**	[Name removed]
Age:	35	**Gender:**	Male
Status:	deminer	**Fit for work:**	not known
Compensation:	Not made available	**Time to hospital:**	
Protection issued:	Frontal apron Long visor	**Protection used:**	Frontal apron, Long visor

Summary of injuries:

minor Body

severe Arm

severe Leg

AMPUTATION/LOSS: Leg Below knee

COMMENT: See Medical report.

Medical report

Medical reports were not translated. Some text was in English but illegible.

"…lost his left leg of lower knee, received some severe injuries on his right hand and multiple superficial injuries on his body."

"Left foot amputated just below the ankle joint and right hand has severe and deep injuries above the elbow joint and has superficial injuries on whole body of casualty."

"The victim firstly has been evacuated to Khost public hospital and stayed for 2 hours before he was transferred to NATO hospital at Salarnaw, Khost city but unfortunately he was not admitted in NATO hospital and remained other 45 minutes at the door of this hospital; based on explanations, all their beds were already full of patients. The victim deminer was returned back to Khost public hospital but no surgeon was available. Attempt on finding private surgeon finally succeeded and the amputation was done."

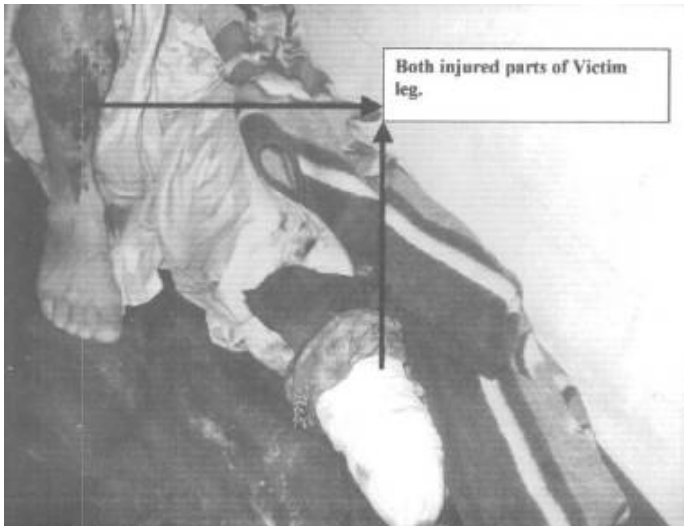
IMSMA Casualty Form

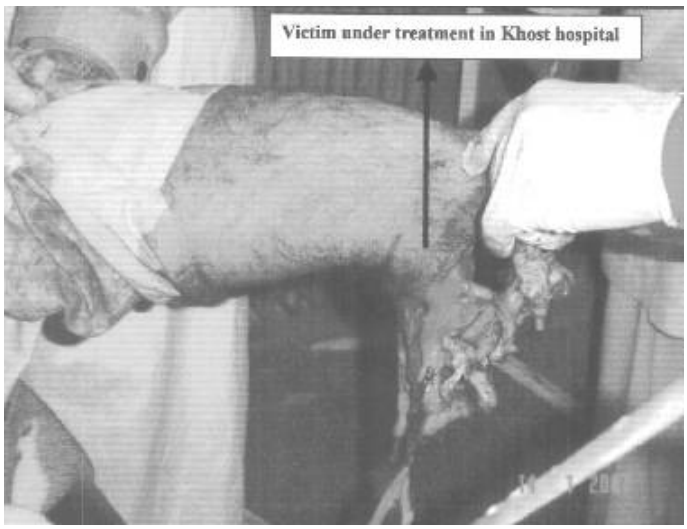
DoB: 1972

The IMSMA sketch showed loss of left foot, other injuries to upper limbs and lower limbs.

Left foot amputation. Right arm injury. Right knee joint injury.

First hospital was reached after 34 minutes. [Variance with other statements.]





STATEMENTS

Statement and Witness Report 1: the Victim

Date: January 21, 2007

1. Can you tell me shortly how the incident happens?

Answer No. 1: It was beginning of my work in the morning that to make five metre cross line forward, then I had plan to move ahead, so I started the detecting suddenly and unluckily my foot was slide, in result, mine incident happened.

2. What action to be done to prevent the incident?

Answer No. 2: In my point of view, if the operation be started from down to up side, hence deminer would have safe area at down side. It could prevent the incident in the future.

3. Where was your section leader while the accident happened?

Answer No. 3: Our Section leader was existed 40 meters away.

4. Did another parties work or not?

Answer No. 4: Yes, Two more parties were carrying on operation closed to me.

5. Did you have any problem regarding your health and family before the incident?

Answer No. 5: I was very healthy and did not have any problems.

Statement and Witness Report 2: Section Leader

Date: 21/1/2007

Question No.1: Please give the short information, how the accident happened?

Answer # 1= As a routine the work has started at 7:00 am, after 2 hours and 10 minuets, [the Victim] was detecting the contaminated area while the incident happened. After each 45 minutes, the rest is given to him.

Question No. 2: During the incident where you was busy and you had control of much persons?

Answer # 2=Just five minutes before the incident I give some instructions to the [Victim] then I moved toward other party to give them also instructions, in this day I had responsibility of the 3 parties.

Question No. 3: What did you do after the incident occurred?

Answer # 3= after the incident happened I call the other parties to come with their detector, they arrived. By the help of detector and marking, we transferred the victim to the safe area.

Question No. 4: what did deminer do while the accident happened?

Answer # 4= During the detecting, the incident happened to the deminer.

Question No. 5: By your opinion what was the main reason of the incident?

Answer # 5=The main reason was condition of the area, which could be crashed his foot to the stone and go forward.

Question No. 6: Which safety precaution could be taken to prevent the mentioned incident?

Answer # 6= This incident was out of my idea. The mountainous and stony area is caused the mine incident.

Question No. 7: When the incident happened where was the location of the team leader and team assistant?

Answer # 7=The team assistant was at the management course and team leader was in task # 014.

Question No. 8: After the incident happened did you face any problem?

Answer # 8=We faced to the problem, first we transferred the victim to the civil hospital then according to their instruction we transferred the patient to the PRT hospital and then back to the civil hospital, there was no doctors, even we brought them form the houses, amputation was very late.

Statement and Witness Report 3: Deminer

Date: January 21, 2007

Question No. 1: Please gives short information, how the incident happened?

Answer No. 1: When the incident happened, the section leader instructed me to hurry up toward the incident point and I did so and checked around the victim. Then, me and section

leader transferred the victim to safe area. Following the medic arrived with his stretcher. Section leader and I helped the medic taking of victim to medic post.

Question No. 2: When the incident occurred where you were, and what were you doing?

Answer No. 2: I was at my area of responsibility and I finished the assigned area, and was busy to collect the read marks suddenly the incident happened.

Question No. 3: During the detecting toward the injured deminer whether you faced any signal or mine and in this situation, what kind of marking did you used?

Answer No.3: Whenever, I tried to reach the victim, only I made a circle around the signals on ground surface, and have not faced any mine.

Statement and Witness Report 4: Paramedic

Date: 20/1/2007

Question No. 1: What did you do following the accident?

Answer No. 1: According to the instruction of the section leader, I reached immediately to the victim by the use of the boundary line. In the meantime, they transferred the victim to the safe area, and then I start the first aid help.

Question No. 2: What was your first action and how did you help the victim?

Answer No.2: When I reached to the victim, first, I assessed his general situation and stopped the bleeding by the crepe bandage. In addition, I passed the canola then we transferred the victim by the stretcher to the ambulance. Moreover, I passed the ringer serum and completely dressing is done inside the Ambulance. It means that I start the ringer serum and washed injures parts by the antiseptic and at the end I used the Payodin solution. Furthermore, the heart pulse of the victim was approximately 70 to 80 per minutes. It was completely normal and the blood pressure was 120/80. The condition of the patient was good when he transferred to the Khost civilian hospital.

Question No. 3: Please give information, how much it takes to arrived to the victim and explain how long it take to hospital?

Answer No.3: During the incident, I was approximately 150m away forms the incident. Since the area is hillside, I reached after four minutes at a time that the victim was transferred to the safe area. Approximately, after 35 minutes we transferred the victim to the Khost civil hospital. I have to mention that after the stopping of the bleeding I give the Sosigon injection to the patient as well.

Question No. 4: Please give information about injures of the victim?

Answer No.4: Left Ankle joint Amputation, right arm wound and right thigh injuries.

Statement and Witness Report 5: Team Leader

Date: 20/1/2007

Question No. 1: How the accident happened, please explain briefly?

Answer No.1: While my team was working on two tasks (task# 011 and task# 014). I was at task # 014 and I have not information about the incident.

Question No. 2: On your opinion, what was the mean reason of the incident?

Answer No. 2: When I assessed the accident, the deminer was detecting the ground by mine detector. He put his left foot on a stone and then the stone slide down, his foot reached to unlearned area; consequently, the incident has occurred.

Question No. 3: Please explain, working experience of the victim?

Answer No. 3: The mentioned deminer was approximately 35 years old and he was owner of good health. He has not any family problems. In addition, he had good work experience. He good background of politeness.

Question No. 4: Was it possible to prevent the accident or not, if it was preventive, what should has to be done?

Answer No. 4: Yes, the stone, which he used for walking, has to be detected by the detector then it to be taken to the safe area. The incident could be prevented.

Question No. 5: According to your information, your assistant team leader joined the basic management course, so who is responsible for his duty.

Answer No. 5: As my team has started one-man drill procedure from the 10/1/2007, therefore, the relevant section is not instructed by me to stop one working party and assign him as assistant team leader.

Question No. 6: Please explain, how was health condition of the victim, while the incident occurred?

Answer No. 6: As I mentioned at the first answer that my location was at task no 014, which was approximately 5km away and its mountain area, even form the some point I could not contact by VHF radio, therefore, I have no information about team.

Question No. 7: In such case while, the team is working on two tasks and you did not have team assistant, why you did not request in this regard?

Answer No. 7: No, we didn't discuses with office because our head office sent the team assistant to course. Furthermore, our site office is also in the picture therefore, we didn't do so.

Question No. 8: In case, you work on two tasks, whom would be responsible for the second minefield?

Answer No. 8: As our office is in the picture that our team assistant is not in the team, on behalf of the assistant I haven't assigned any one as team assistant.

Statement and Witness Report 6: Field Supervisor

Date: 20/1/2007

Question No. 1: Please give information, How the incident happened?

Answer No. 1: I was on the way toward the task No. 011 of Do-minday, while, I was at mentioned bazaar, I received the incident report by mobile phone that the incident has occurred, so I was not in picture.

Question No. 2: According to our information, the assistant team leader of the mentioned MCT was officially at the management course and the team is working at two tasks on the same time. During the accident the team leader was in the second task. What was your action in this regard?

Answer No. 2: Five breaching parties were carrying on operation in the task, and two section leaders were available at the task, the team leader was responsibility of assistant team leader to [Name removed] one of section leader. In addition, the team leader informed me regarding his decision. Moreover, I had plan to visit the team and take the necessary action. Unluckily, I received the massage that the incident has occurred at the team.

Question No. 3: Please give us the responsibilities of the command group in a clearance team in according to your SOP especially regarding the rest and control time?

Answer No. 3: Command group has the job and responsibility to give 45 minutes regular work and 15 minutes break to the relevant section. During the break time he has to check his all works, which is done by the relevant parties.

Question No. 4: In your opinion, what was the main reason for the incident and what was the preventive ways?

Answer No. 4: As I investigated, the main reason of the incident could be the slope of the ground when the deminer put his foot on the stone, the stone slipped and deminer foot touch the mine; therefore, the incident happened. It was better that not to task demining team in such a slope area.

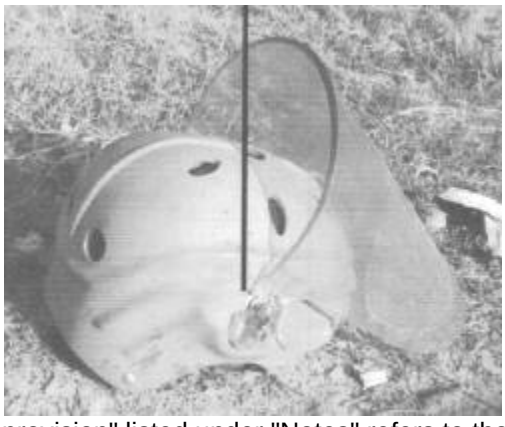
Analysis

This accident is classed as a “Detection accident” because the Victim had the detector in his hand when he slipped on loose stones and entered the unclear are. A photograph of the damaged detector was included in the report. It is possible (looking at the photograph of the accident site) that the area marking was inadequate. Painted stones are used, and are often placed sparsely, so the Victim may have walked out of the cleared area without knowing it.

The primary cause of this accident is listed as a “Field control inadequacy” because the investigators determined that there was inadequate site supervision, and that the clearance plan for the site put the deminers at unnecessary risk (they should have worked uphill).

The secondary cause is listed as “Victim inattention” because it seems that the Victim either slipped out of the cleared area, or stepped out of it without realising he was doing so.

The lower part of the PPE was “lost”, raising questions over whether the PPE design offers adequate protection to the body when stepping on a mine. The visor snapped at its fixing point, (shown below) which is a common failing of this type of helmet-mounted visor.



The "Inadequate medical provision" listed under "Notes" refers to the lack of an effective CASEVAC plan and the unacceptable delay before the Victim could be admitted to a surgical facility for treatment.