DDAS Accident Report

Accident details

Report date:	08/02/2011	**Accident number:**	589
Accident time:	12:05	**Accident Date:**	20/04/2010
Where it occurred:	Jabir village, 3 (MF:476), Mafraq Region	**Country:**	Jordan
Primary cause:	Field control inadequacy (?)	**Secondary cause:**	Unavoidable (?)
Class:	Missed-mine accident	**Date of main report:**	29/04/2010
ID original source:	None	**Name of source:**	NPA Jordan
Organisation:	**[Name removed]**		
Mine/device:	M14 AP blast	**Ground condition:**	dry/dusty grass/grazing area hard
Date record created:		**Date last modified:**	08/02/2011
No of victims:	1	**No of documents:**	2

Map details

Longitude:		**Latitude:**	
Alt. coord. system:		**Coordinates fixed by:**	
Map east:	36.20349 E	**Map north:**	32.50907 N
Map scale:		**Map series:**	
Map edition:		**Map sheet:**	
Map name:			

Accident Notes

disciplinary action against victim (?)

no independent investigation available (?)

inadequate metal-detector (?)

Accident report

An internal demining group Accident report was made available as a PDF file. The conversion into a DDAS file has led to some of the original formatting being lost. Text in square brackets [ ] is editorial. This record will be revised as more information becomes available.

The internal report is reproduced below, edited for anonymity.

[Demining group] Mine Action Team – Jordan

Task Name: Jabir 3 (476), north border project, North SECTOR

GRID REF: 32.50907 N; 36.20349 E

Village Name: jabir

20 april 2010

MINEFIELD NO - 476; minefield TASK ID - jabir 3, SECTOR - EAST

PLACE – jabir, region- mafraq

Investigation conducted by – [Name removed]

deminer (Team leader): [Name removed]

DATE OF BIRTH: 10 dec 1965

NIC NO (ID Number): [Removed]

Team: Alfa

TIME OF INCIDENT: 12:05 hrs

DATE OF INCIDENT: 20 April 2010

NATURE OF INJURY: Fracture in left Ankle

TYPE OF MINE: M14 AP Mine

IMSMA DETAILED REPORT

FOR MINE INCIDENT Tuesday, 20 April 2010, EAST SECTOR, VILLAGE NAME: JABIR

[The content of this report has been reproduced from an IMSMA style tick-box form.]

Part 1: Description of the accident

1) Organisation name [Name removed], JORDAN Team No: ALFA

2) Incident date 20 Apr 2010 Time: 12:05hrs

3) Location of incident: EAST SECTOR Province: Mafraq Village: Jabir
Project or task No: Jabir 3 (476)

4) Name of site manager or team leader: Same as injured

5) Type of incident: uncontrolled detonation of a mine/UXO

6) Device was detonated by: Team leader

7) Device detonated while: Quality Check on Deminer

8) Device was found in an area classified as: hazardous area

8a Provide accurate location of incident and name of organisation that did the clearance, if known [No entry]

9) Narrative (Describe how the incident happened. Attach additional pages and photographs or diagrams to assist in clarifying the circumstances surrounding the incident):

The team leader [the Victim] was doing a QA check on one of the Foot Track already cleared by the deminer. Out of five mines laid only one M14 AP mine has been recovered from this FT. The team leader was trying to recheck the cleared area again with the metal detector trying to find the missing mine, during his QA check he stepped on one deep buried M14 AP mine in the area which has been already checked by the deminer and Team Leader.

Part 2 – Injuries

10) Did the incident result in any injuries? Yes

11) List people injured and nature of injury

Name	Occupation	Injury
Mohd Salti Al Jedayyeh	Team Leader	Fracture in Left Ankle

Part 3 – Equipment damages

12) Did the incident result in any damage to equipment or property? Yes

13) List any mine action equipment or property damage

Item (and Serial No):	Condition:
Demining Boots (NA)	Damaged (not reusable)

14) List damage to equipment or property owned by a member of the public or the government. Include contact details of the owner or responsible person. NIL

Part 4 – Explosive hazard

15) Provide details of mines/UXO/ other devices that were involved in the incident.

Device Type:	Method:	Determined by:
AP (Blast) Mine Buried		

16) State specific device (if known): Anti-Personal Mine, M14, 1

17) Comments (include measurements of any crater resulting from the explosion): Crater Depth: approx. 17 cm / Width: approx. 45 cm

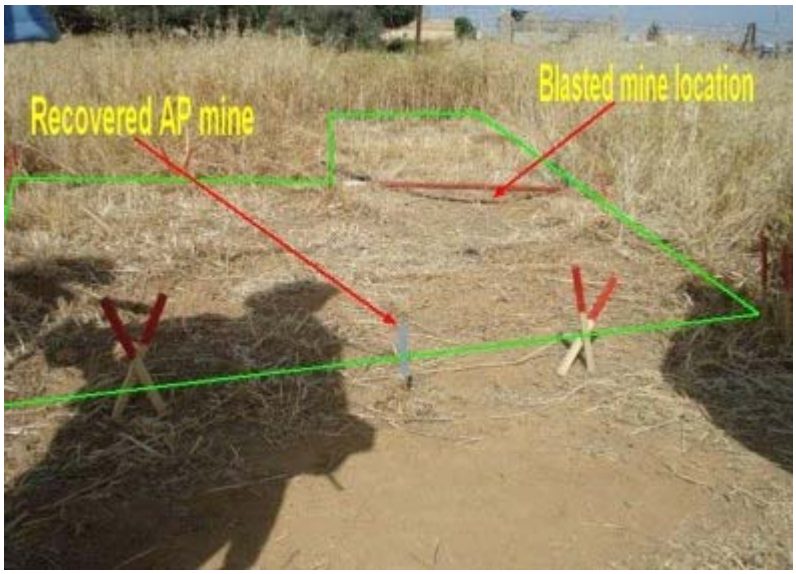
Part 5 - Site conditions

18. Describe the conditions at the site at time of the incident

Ground/Terrain: Hard, flat

Weather: Clear, mild

Vegetation: Light, grass



Part 6 – Team and task details

20) Qualifications of Member(s) involved in the incident:

[Name removed] Team Leader

21) How long had this team been?

a. At this site? 3 Month

b. working on this task? 3 Month

c. working on the day? 4 Hours & 35 minutes

22) Detector type: NA

Tripwire feeler used? No

23) Hand tool: NIL

24) PPE: Vest, Goggles [Blast boots]

25) Comments: [None]

Part 7 - Medical & First Aid

Medical treatment required: yes

26) Medical Support at Incident Site: Medic, 1st Aid Kit, Stretcher, Ambulance, Radio to call forward medic

27) Was a Mine Incident Drill carried out? Yes

28) Time and distance data

a. Time from incident to SECTION MEDICAL POINT: (4) minutes

b. Time spent at site administering treatment: (2) minutes

c. Time from evacuation FROM to arrival King Abdullah Hospital: (19) minutes

Part 8 – Reporting procedures

Reported by: [Name removed], [Demining group] Jaber Office to: [Demining group] Offices & NCDR

Copied to: NCDR

Investigation conducted by: [Name removed]

Report compiled/translated by: [two names removed]

Verified by: [Name removed]

Printed Name: [Name removed]

Attachments:

Statements by Injured Members	yes
Statements by Witnesses	yes
Photographs of Injuries	yes
Injury data sheet(s)	yes
Photographs of Incident Site	yes
Copy of Survey Map	no
Copy of Incident Report	yes
Copy of Medical Report	yes
Copy of Injury Card	no
Technical Details of Device	no

Observation and Findings of the investigating officer

Marking system as per as SOP.

MD procedures as per as SOP.

Depth of the blasted mine more than 16 cm.

Metal detector which used to clear accident location was checked and it is perfect (MD1 ser. No.N14679).

Metal detector which used to make QA by team leader was checked and it is perfect (MD3 ser. No.N14685).

Missing mine drill was not applied in the accident area as per as our standards which lead to the accident.

[Name removed] Investigation Officer

Observation and Recommendation of Operations Manager

I am agree with the findings of the investigation officer. The mine blast incident happened due to not following the right missing mine drill. This is the mistake of the team leader because he has not ordered the deminer to carry out the missing mine drill as per the laid down in procedures.

It is recommended to take necessary disciplinary action against the team leader once he rejoins after his medical leave.

[Name removed] Operations Manager Dated:29 Apr 2010

Victim Report

Victim number:	773	**Name:**	[Name removed]
Age:	44	**Gender:**	Male
Status:	supervisory	**Fit for work:**	presumed
Compensation:	Not made available	**Time to hospital:**	25 minutes
Protection issued:	Frontal apron Goggles	**Protection used:**	Frontal apron, goggles, blast boots

Summary of injuries:

INJURIES: severe Leg

COMMENT: Fracture in left ankle. See Medical report.

Medical report

No formal Medical report was made available, but the photographs below show the injured foot with bruising where the shock wave exited the limb and no obvious injury where it entered.

See “Analysis”.

Statements

Team Leader: [the Victim].

While I was checking on the de-miner [Name removed]'s site, after he finished his job I told him to follow me to the foot track area to complete the work there, as he didn't complete it before and I found the entrance angle of that area, I took the detector and asked him to follow me with his working instruments, I made QC for the lane before he starts clearing when I arrived to the end of the cleared area I went back to centre lane while am walking back an explosion happened under my left foot then I fell down and de-miners [Name removed] and [Name removed] and [Name removed] came and informed the ambulance and I was evacuated outside the field.

Questions & Answers

Q: Who cleared the area before?

A: De-miner [Name removed].

Q: When was this area cleared?

A: A week ago.

Q: Did you make a QC for this foot track before?

A: Yes, I did more than once checked the location.

Q: Was the detector used for clearance working and did you make sure of it?

A: Yes, it was working and I am sure of it.

Q: Did the sector coordinator give you a brief about the nature of foot tracks?

A: yes, he gave me all the details about these areas.

Q: why you didn't follow the missing mines drill as the de-miner didn't find any mine after the 1st one to 5 meters distance?

A: because I couldn't signify the direction of mines in the ground as the laying pattern was zigzag.

Q: Did the sector coordinator give you order to follow the missing mine drill in that lane?

A: No he didn't, but he told me to do that in the site of the de-miner [Name removed].

Q: Did you make QC for the whole area or you took samples?

A: No I made QC to the whole area.

Q: was the detector you are using working well?

A: yes it was.

Q: were you wearing all the protection gears?

A: yes I was.

Q: Did you hear any signal while making QC to the area?

A: No.

Q: who took off your boot after the accident?

A: I did, to check on my foot.

Q: Did you notice that there was any mess in the accident area?

A: No I didn't.

Q: Did you order de-miner [Name removed] to work in the incident lane for clearing or for carryout missing mine drill?

A: I told him to continue clearing the area.

Witness De-miner 1:

[Name removed]

I was the nearest working deminer to the accident site about 50 meters distance, the team leader came and took the detector from me because I was working manually using the rake to find missing mines in the foot track, when I finished he told me to follow him to another foot track the one where the accident happened, he went before me and took the detector I was collecting my stuff, I saw him making QC to the area then suddenly an explosion happened and the team leader fell down, I went to see him and he asked me to inform about the accident, I brought the radio and he informed about the accident himself, then the de-miner [Name removed] came and we evacuated him outside the field.

Questions & Answers

Q: Did the team leader check with you the foot track you cleared?

A: Yes, he did, and gave me all the details about the type, numbers and direction of mines there.

Q: Did he check the area you cleared?

A: Yes, he did.

Q: Anything wrong happened to the detector while you were using it on this task?

A: Yes, interference happened in it.

Q: what do you do when such a thing happen?

A: I inform the team leader about it and immediately I go to the main task where there is no interference happens and I will be under the team leader control.

Witness De-miner 2:

[Name removed].

I was working on the centre lane when I heard a sound of explosion on my back, I looked in the sound direction and it was at 100 meters distance from me, I went to the accident site and find the team leader [the Victim] injured on the floor, we evacuated him outside the field.

Questions & Answers

Q: who cleared the accident area?

A: I did.

Q: when was that?

A: Before two weeks

Q: who made the QC for the area before two weeks?

A: The same team leader made it.

Q: was the detector you were using in a good condition?

A: yes it was and I cleared a mine that day using it from the same area at the same day and same hour at a depth of 15 cm.

Q: Did the team leader explain the foot track area for you?

A: yes he did according to the number of mines, types, direction and he told me that they could be laid in a zigzag way.

Q: Why you didn't follow the missing mine drill when you didn't find the 2nd mine in the foot track area according to the [Demining group] instructions and you kept on using the detector the whole 5 meters?

A: because I didn't know the direction of the mines planted and the team leader didn't tell me to carryout the missing mine drill.

Analysis

This is a border minefield with generally well disciplined mine-laying patterns that are sometimes visible on the surface. But the mines were laid more than 30 years ago and some have become deeply buried. Most of the mines are US made M14 AP blast Mines and M19 AT mines which have a very small metal content and are very difficult to locate when at depth.

The primary cause of this accident is listed as a *Field Control Inadequacy* because the Victim was a field supervisor and failed to order the missing-mine drill to be used when the mine was not found where expected. This was apparently because he failed to recognise the direction of the mine-laying pattern and so be able to predict where a mine was missing. It may be that the direction of the pattern only became obvious after the accident revealed the position of a second mine in the pattern, so the secondary cause is listed as "*Unavoidable*".

The detectors in use could locate the minimum-metal M14 at 15cm (which is good) but not reliably at greater depth. The area had been traversed and QA checked with metal-detectors several times without a detector signaling, so it is unlikely that a detector failure was the cause of the mine being missed. Rather, it seems that the mine was too deep to be located with any metal detector. It is unfortunate that the MDD used in the area stopped just a short way from the accident site, as shown in the captions on the picture below.

Unfortunately the report does not show the BFR “blast-boot” being worn at the time of the accident. The M14 has a small explosive charge (28g) and was apparently too deep to detect, so it is probable that the blast boot was not the reason for the Victim avoiding severely disabling injury. This database contains several records when a deminer has stepped on a small mine and not suffered disabling injury – even when wearing ordinary footwear.

The bruising on the top of the Victim’s foot where the shock wave left the leg and moved into air may be of interest to manufacturer’s of blast boots. It was not where the shockwave entered the foot that the flesh damage occurred, but where it left. This phenomenon can be observed in several other missed-mine accidents.

The demining group’s concern to investigate and share accident reports indicates a commendable professionalism.