7-11-2003

DDASaccident390

Humanitarian Demining Accident and Incident Database
AID

DDAS Accident Report

Accident details

Report date:	19/05/2006	**Accident number:**	390
Accident time:	06:00	**Accident Date:**	11/07/2003
Where it occurred:	MF 324 (NDO 253) at Nabatieh	**Country:**	Lebanon
Primary cause:	Unavoidable (?)	**Secondary cause:**	Inadequate equipment (?)
Class:	Vegetation removal accident	**Date of main report:**	[not recorded]
ID original source:	IAB	**Name of source:**	NDO Lebanon
Organisation:	Name removed		
Mine/device:	Fuze	**Ground condition:**	grass/grazing area
Date record created:	22/02/2004	**Date last modified:**	22/02/2004
No of victims:	1	**No of documents:**	2

Map details

Longitude:		**Latitude:**	
Alt. coord. system:	GR 735028/3696255	**Coordinates fixed by:**	
Map east:		**Map north:**	
Map scale:	UNIFIL Genimap	**Map series:**	Marjayoun
Map edition:		**Map sheet:**	B
Map name:	1:50,000		

Accident Notes

vegetation clearance problem (?)

incomplete detonation (?)

inadequate investigation (?)

inadequate training (?)

Accident report

The following Board of Investigation report was made available in January 2004. It had been edited for anonymity and a few extraneous pictures removed.

National Demining Office Lebanon

REPORT FOR ACCIDENT INVESTIGATION BOARD OF INQUIRY

Demining Accident that occurred in MF 324 (NDO 253) on 11 of July 2003 in which [Demining group] DEMINER [The Victim] was injured.

Map Reference: UNIFIL Genimap 1:50,000 Sheet B (Marjayoun).

References: Janes Mines Manual.

Introduction

In accordance with the National Technical Standards and Guidelines (TSGS), the NDO Operations Officer issued a Convening Order on Friday 11 of July 2003, for an accident investigation Board of Inquiry.

This is a comprehensive report by the Board of Inquiry into the Demining accident that occurred on 11 of July 2003. Based on the investigation the statements from [Demining group] personnel involved in the accident (see Annex A); visits to the accident site and the photos from the accident site, this accident is considered preventable.

The information provided by [Demining group] to the NDO QA section in the "IMSMA Accident Report", attached as (Annex B) is confirmed. The accident occurred at approximately 06:00 hrs on the 11 of July 2003, in Minefield MF 324 (NDO 253) at Nabatieh, GR (735028/3696255).

Events leading up to the accident

[Demining group] manual clearance operation commenced in M/F 324 (NDO 253) on the 27th of May 2003 (Mechanical clearance started on the 23 of May 2003). At the time of the accident, [Demining group] Manual Clearance Team (Total of 12 persons) was the only clearance asset in the M/F 324 (NDO 253). From the start of the clearance operation on the 23 of May 2003, a total of 121x TM-46 (AT mine), 59 x GYATA-64 (AP mine) and 2 UXOs were located and destroyed in this MF 324.

Shape of cleared lanes is shown in the schematic diagram (see Annex C).

Deminer [the Victim] was working in his lane. On the 11 th of July, he didn't find any mine in this lane. He was told to continue clearing according to SOP and clearance plan.

The Deminer [the Victim] begins work at 05:15 hrs and he continued work for 45 minutes in this lane 1 metre wide. At that time, he was cutting vegetations as per SOPs.

Events following the Accident

At approximately 06:00 hrs, an uncontrolled detonation occurred in the clearance lane where Deminer MEHIC was working. The Deminer [2nd deminer] was the nearest to [the Victim]. He is his 2nd man. He had his face to the direction of the casualty, standing at 25 m from him as per SOP's, and waiting to switch with the casualty in less than 15 minutes. He saw [the Victim] walking in the cleared area. He ran and put down his visor at the corner and helped [the Victim] to take off his visor and took him from his side, supporting him by putting his hand under his shoulder and escorting him out to the safe area. The TL helped [2nd deminer], and they carried him out to the safe area. On the arrival of Medic, initial he put bandage on his right hand. The other team members in the minefield went out to the safe area and one of them started helping the Medic by putting bandages on the left hand and the left leg. Others prepare the stretcher. After full medic stabilization, they transported him to Nabatieh Government Hospital for further stabilization and medical treatment.

When treating the casualty the TL passed back the initial accident report to [Demining group] base location. The accident scene was secured, marked as per SOPs and National TSGs by the [Demining group] OPS Officer.

BOI Post accident Activities and General Observation:

On arrival at the accident scene and after initial inspection the following general observations were established:

There had been an uncontrolled surface detonation of a detonator. Probably it's a Gyata-64 detonator booster.

[The Victim] 's scissor had been in direct contact with the detonator booster at the time of detonation.

No mines were located at the date of the accident.

The vegetation in the minefield is very thick and this makes the visual inspection more difficult.

VIEW OF THE ACCIDENT SCENE

[The original report indicated that the detonation occurred in front of the base stick in the "cleared" area.]

Dress and Personnel Protective Equipment (PPE)

At the time of the accident, [the Victim] was wearing his PPE and protective visor. On inspection of the PPE, the following point was noted:

There was no part or complete fragmentation penetration.

On inspection of the protective visor, the following point was noted:

The visor maintained its integrity and fragmentations did not penetrate it.

Tools and Equipment

On inspection of the scissors used by the casualty we found there was evidence of blackening on it caused by the detonation.

Work History of the Casualty

[The Victim] commenced his employment with [Demining group] about three months before the accident. He is a Deminer since six years and worked before with demining organization such as MPA (Norway). [Presumably NPA is meant.] He is considered by [Demining group] to be competent and trustworthy. Disciplinary action never had to be taken against him.

Sequence, Documentation and Procedure of Tasking

14. Task Dossier for the area containing MF 324 (NDO 253) was issued to [Demining group] on 14 th of May 2003. Up to the time of the accident a total of 121 x TM-64, 59 x Gyata-64 and 2 x UXOs were located and destroyed in the minefield.

Minefield Description

This minefield is located to the left hand side of the road between Kfar-Tibnit and Jarmak, one hundred metres away from the bridge on the Zlaikony river (GR735250/3696053). The Palestinian laid this minefield and there is no records or sketch map for the area.

Geography and Weather

The site is hilly and the mined area was previously arable agriculture land.. The weather at the day of the accident was warm with a temperature of approximately 25 to 30 degrees Celsius.

Site Layout and Marking

The site layout and minefield marking prior to the accident was in accordance with National TSGs and [Demining group] SOPs; as was the post accident marking.

Management, Supervision and Discipline

An International Operations Manager supervises [Demining group] clearance operation and an International TL is in over all charge of the manual clearance team. There are no reports of disciplinary action being taken against [Demining group] personnel on the site.

Quality Assurance

Internal QA is a continuous process with daily QA checks and evaluations being conducted by [Demining group] personnel; there are no reports of any indifferent evaluation results.

The NDO QA section carries out external QA; the last external QA visit was on the 8 July 2003 (See Annex D). [Not made available.]

Communications and Reporting

Communication in between the site and [Demining group] base location is maintained via use of VHF radio systems. On site communications in-between teams is maintained via VHF handled radios.

On the day of the accident, the site had proper and appropriate communications and managed to pass all relevant accident information back to [Demining group] base location, which in turn passed the information to the NDO in a timely manner.

Medical Details

[The Victim] suffers minor injuries in right, left hands and the left leg. [The Victim reported minor injuries to both legs in his statement.]

[Demining group] manual team medic administered medical treatment and stabilization on-site to [the Victim] ; casualty evacuation by road to Nabatieh Government Hospital then took place. On arrival at Nabatieh Hospital, [the Victim] was transferred to the emergency department for X-rays and final treatment. Annex E details the medical report from Nabatieh Government Hospital and Annex B details the IMSMA Casualty Report. [Not made available.]

Details of The Mine Involved

Photos and details of mine evolved are in Annex F. [Not made available.]

Insurance Detail

[The Victim] is covered by the standard [Demining group] insurance for all international personnel conducting [Demining group] mine/UXO clearance activities in Lebanon. A copy of the scale of entitlement is held at the NDO QA Section.

Conclusion

Based on the investigation, the statements and visits to site, BOI concludes the following:

a. A Hungarian GYATA-64 AP Mine Detonator Booster detonated whilst [The Victim] was cutting vegetation.

b. The Booster was supposed to be found during visual inspection before the deminer started cutting vegetation.

c. The mine Detonator Booster functioned when the scissor pressed down on it. Evidence to substantiate this conclusion are:

The scissor had no deformation and maintained its integrity.

The blackening confined to the scissor is a residual effect of detonating explosives.

d. The BOI agrees and accepts [Demining group] IMSMA Accident Report.

e. The protective jacket maintained its integrity following the uncontrolled detonation of the booster.

f. The protective visor maintained its integrity following the uncontrolled detonation of the booster.

Recommendations

The following are recommendations based on the BOI conclusions:

No amendments are necessary to the National TSGs for Mine/UXO Clearance.

One week of refresher\confidence training with all [Demining group] manual teams working in demining in Lebanon, the training is to include the following:

Mine Clearance Techniques i.e. Chapter 4 of TSGs and specially Para. 4.1 thru Para. 4.5.

As in this case of thick vegetation and to prevent accidents, the National TSGs allows burning the vegetation (Chapter 4, Para. 4.21), so we recommend using this method if it's suitable to be used (Supervisor decision).

Follow the Para. 4.22 Chapter 4 of TSGs which talks about working and break time in special weather and vegetation.

The conclusion detailed in this report be distributed and discussed among all [Demining group] Operational Field Staff.

Signed: QA Officer, National Demining Office

Annexes: [All except Statements not made available]
List of personnel involved with attached statements as Appendices.
[Demining group] IMSMA mine/UXO accident report.
Schematic diagrams of the general working area and accident area/scene.
[Demining group] Visitor Log.
Medical Report from Nabatieh Government Hospital.
Photos and Details of Gyata-64 AP Mine.

Copies to: NDO Operations Department; [Demining group]

Comments by the NDO Operations Officer

I concur with the conclusions and recommendations of this report.

[Demining group] is to ensure that the recommendations of this report are addressed.

Signed: NDO Operations Officer

Annex A to NDO Accident Report No 002/2003 Dated 11/07/03

List of Personnel:

1. The following personnel are members of [Demining group] Manual Team No 1 and were working in the accident area on the day of the accident:

Team Leader

Deminer No.2

Appendices:
Witness Statement from [Team Leader]
Witness Statement from Deminer No.2
Casualty Statement from [the Victim].

[The statement are reproduced under Statements at the “Other documents” tab.]

Victim Report

Victim number:	505	**Name:**	**Name removed**
Age:		**Gender:**	Male
Status:	deminer	**Fit for work:**	presumed
Compensation:	not made available	**Time to hospital:**	not recorded
Protection issued:	Frag jacket Long visor	**Protection used:**	frag jacket, long visor

Summary of injuries:

INJURIES

minor Hands

minor Legs

COMMENT

No medical report was made available.

Analysis

The primary cause of this incident is listed as “Unavoidable” because it is not at all clear what the Victim initiated with his vegetation cutting shears. The photographs indicate that the detonation occurred behind the Victim’s end-of-lane marking stick. It is not normal to move the stick forward before cutting the undergrowth and clearing the area with a metal-detector or excavation, so the device may have actually been “missed”.

If the victim saw the device but did not recognise it and so prodded it with his shears, that would indicate inadequate training.

A booster from a GYATA-64 is a small bakelite cylinder with HE inside. At the centre of the HE is a stab-sensitive detonator. This is unlikely to be initiated by touching it, unless the end of the cutting shears probed into the end of the booster. A pin-pull fuze and detonator like that used in the Israeli No.4 AP mine may have been easier to initiate accidentally.

The picture above shows a GYATA-64 booster. The detonator is lacquered red.

Statements

The following statements were appended to the Board of Inquiry report that was made available. They have been edited for anonymity.

Appendix 1 to Annex A to NDO Accident Report No 002/2003 Dated 11/07/03

Witness Statement From [Team Leader]

On 11/07/2003; we started the work as usually at 5:00 A.M. I gave the team my daily safety briefing and they started the work about 15 minutes later.

[The Victim] was working in his lane and I was around watching the work.

At 6:00 exactly an uncontrolled detonation happened at [the Victim]'s lane. I called the Medic and walked in the safe lane towards the casualty, I saw [Deminer No.2] helping the casualty to walk towards the C.P. [The Victim] was suffering from minor injuries, I helped [the Victim] to get to the C.P. and after that the medic started to treat the casualty with the help of the deminers. At that time every body went out of the minefield and all the lanes were closed waiting the orders from the supervisor.

The medic stabilized the casualty, put him in the ambulance and left to Nabatieh Hospital.

At the same time I was filling my initial accident report and passed the available information to the [Demining group] base location.

From the initial information available I guessed that the uncontrolled detonation was from some detonator.

During our work in this minefield we didn't find any fuze before.

The casualty was wearing full Protective Jacket and Visor.

I closed the accident lane and decided to stop the work at that day waiting the orders from the operations officer.

[The Victim] is a good deminer and never negative comments were given to him.

Signed: TEAM LEADER

Witness Statement from Deminer No.2

On 11/07/03; after daily safety briefing from the Team Leader at 5:15 A.M. I started the work with the [Victim], he started first and I was waiting my shift about 25 to 30 m away in the safe

lane as per SOPs, I was watching him and waiting my turn. [The Victim] was using visor and protective jacket during work, and he was cutting vegetation…

About 45 minutes later, it means around 6:00 an uncontrolled detonation happened and I saw [the Victim] standing and turning to the safe area, directly I walked to him, took my visor off and helped him to take his visor off. I saw minor injuries on his hands and I helped him walking toward the C.P. in this time the T.L. came, helped us and asked all the other deminers to go out of their lanes and stay in the C.P.

When we arrived to the C.P. we helped [the Victim] to take off the protective jacket and the medic started his first aid. Many of us helped the medic to stabilize the injuries, put the casualty in the ambulance and send him to the hospital in Nabatieh.

As I saw I can say that the detonation was from a detonator only because the casualty had minor injuries only.

The team leader asked us to close all lanes and to take all our equipment out to the C.P. except for the lane where happened the accident.

I saw the casualty tools, the scissor had only some blackening and there was no deformation.

I'm a deminer since 5 years, I started two years ago with [Demining group] and I never had a negative points on my report.

Signed: DEMINER No.2

Casualty Statement from the Victim

On 11/07/03; I started work after daily safety briefing at 5:15, I did the set up to the detector, took my tools and started my daily work in demining.

The vegetation was very thick and as per SOPs I do the visual check, use the trip wire feeler, cut vegetation and continue the normal drills of demining, it means the detection and probing.

At 6:00 I was cutting vegetation and suddenly an uncontrolled detonation occurred and I got scared for few seconds. I stand up, turned to the safe direction and walked toward the C.P. with help from another two people, as I knew after they were the T.L. and Deminer [No.2].

I was using my visor and protective jacket.

In that morning, before the accident I didn't find any mine, and I didn't see any detonator or mine before the detonation occurred.

When I was walking out to C.P. I saw minor injuries on my hands and I feel some injuries in my legs.

I'm working in demining since six years, I worked with [two other demining groups, one NGO, one commercial]. And I started with [this Demining group] two month ago and I never had some negative council.

I was scared in the beginning but now I feel good with the way everything happened, specially the medical treatment and I'm ready to go to the work again.

Signed: [The victim]