10-23-2012

DDASaccident830

HD-AID
Humanitarian DeminingAccident and Incident Database

DDAS Accident Report

Accident details

Report date:	30/12/2019	**Accident number:**	830
Accident time:	12:40	**Accident Date:**	19/10/2012
Where it occurred:	Area 3-010 CBU 319, Talloussa Village, MARJEYOUN, NABATIEH	**Country:**	Lebanon
Primary cause:	Victim inattention (?)	**Secondary cause:**	Inadequate training (?)
Class:	Handling accident	**Date of main report:**	23/10/2012
ID original source:	01/2012	**Name of source:**	LMAC
Organisation:	[Name removed]		
Mine/device:	M42 submunition	**Ground condition:**	rocks/stones; steep slope
Date record created:		**Date last modified:**	29/12/2019
No of victims:	1	**No of documents:**	1

Map details

Longitude:		**Latitude:**	
Alt. coord. system:	UTM 730688-3680080	**Coordinates fixed by:**	

Accident Notes

protective equipment not worn (?)

inadequate training (?)

inadequate medical provision (?)

Accident report

A report of this accident was made available by the national mine action authority in 2019. Some of the original formatting has been removed but the original report is held on file. The substance of the report is reproduced below, edited for anonymity. Text in square brackets [ ] is editorial.

REGIONAL MINE ACTION CENTRE - NABATIYEH (RMAC-N)

BOARD OF INQUIRY (BOI) INVESTIGATION REPORT Ref No. 01/2012

Report Category: Accident: BAC: SUBMUNITION

Cause: Uncontrolled detonation of mine/UXO by: Human

Report Compiled By RMAC-N: [Name removed] RMAC-N Ops Officer and [Name removed] RMAC-N QA/Ops Officer.

Location: Talloussa [Report] Date: 23 October 2012

Casualty(s): Human

Agency Involved: [International Demining Agency]

Annexes [Not made available.]
A Area Satellite image – Location of CBU 319
B Detailed Photos
C [International demining organisation] Internal accident report (including: Initial casualty report, RMAC-BOI Witness statements, and Medical reports)
D IMSMA De-mining Accident report
E IMSMA Casualty report

1. Introduction
In accordance with National Mine Action Standards (NMAS), the Chief of RMAC, [Name removed] issued a Verbal Convening Order on Friday the 19th of October 2012 for an accident investigation Board of Inquiry (BOI). On the 23rd of October 2012 a follow up visit was conducted to the site to accomplish the investigation.

The board members are [Name removed] Operations Officer and [Name removed] QA/Ops officer.

This is a comprehensive report by the Board of Inquiry (BOI) into the [International demining organisation] BAC Accident that occurred on the 19th October 2012 which is based on the RMAC-N investigation, statements from [International demining organisation] personnel involved in the accident and evidence from the accident site.

The accident occurred at 1240hrs (local time) on the 19th October 2012 in Area 3-010 CBU 319 Coordinates 36S 730688-3680080 which is near the village Talloussa.

The BOI is an impartial investigation conducted by the RMAC-N on behalf of the Lebanon Mine Action Centre (LMAC). The primary objective of the BOI is to examine evidence in order to conclude the cause of the accident and make recommendations for the prevention of further accidents.

2. Executive Summary
On the 19th October 2012 at [International demining organisation] task CBU 319, an uncontrolled detonation of two US M series M42 sub-munitions occurred while [International demining organisation] site supervisor [the Victim] was preparing for the demolition of these found sub-munitions.

[The Victim] sustained amputation of his left wrist and injuries in his abdomen, intestine, spleen, and left kidney. When he picked up two armed M42 sub-munitions and detonated above the ground.

Based on all available evidence, the BOI team concludes that the accident occurred due to the handling of two Armed M series M42 sub-munitions by [the Victim], most likely for moving the items or rendering safe.

There is conclusive evidence to suggest that incorrect procedures contributed to the accident and it is concluded that [the Victim] was not working in accordance with [International demining organisation] Lebanon SOPs and National Mine Action Standards (NMAS) at that time.

The RMAC-N BOI investigation team considers that it is conclusive that the accident was preventable.

3. Location of Accident: Task No 3-010, Team No. BAC 5, Talloussa Village, MARJEYOUN /NABATIEH, UTM 730944 3680014

4. Date and Time of Accident: 19 October 2012, 12:40 hrs (local time)

5. Reported By: [International demining organisation], [Name removed], Operations manager.

6. Reported To: RMAC-N, [Name removed], Chief of RMAC-N

7. Person(s) Involved: [the Victim], [International demining organisation] Site Supervisor BAC 5, ID 63511

8. Investigation Team: [Name removed], Operations Officer, RMAC-N 3; [Name removed], QA/Ops Officer, RMAC-N 5.

9. Date and Time of Investigation: 19 October 2012 and 23 October 2012, 0930 hrs (local time)

10. Execution of the Investigation

Approach to Site:
The accident site is located at IMSMA Task number CBU-319 which is approximately 800 meters west of the village of Talloussa. The RMAC-N investigation team drove to the accident site from the RMAC-N Nabatieh. The journey took approximately 1/2 hour and the route was primarily paved and in a reasonable condition.

The RMAC- BOI team arrived at the control point together. He ensured that the site was secured in accordance with the NMAS and in preparation for the arrival of the remainder of the investigation team.

After a site briefing and arrival formalities, the team began the investigation. Due to the site being a BAC task the investigation team approached the accident site accompanied by [International demining organisation] program manager [Name removed], Operations manager [Name removed], Senior QA Officer [Name removed], QA Officer [Name removed], BAC V Team Leader [Name removed].

Process: visual: Verbal.

11. Evidence
1.1 Ground
Accident Site
The site of the accident was on the eastern slope of a valley running south to north. This slope consisted of rocky terrain interspersed with trees, bushes, grass and soil. There are large boulders and smaller rocks and stones strewn across the slope. The land is not cultivated or being used by local people.

The area of the accident was in an area cleared by [Name removed] going upward in a rocky and very steep area.

Vegetation: The vegetation consists of grass, plants, bushes and trees varying in size from knee to overhead height, which grow in irregular patches across the slope of the ridge.

Crater: There was no crater in the surrounding of the accident which indicates that the explosion didn't happen on the ground.

Location of accident

Marking: Marking in general on the task was in accordance with [International demining organization] Lebanon SOPs and NMAS, where the two items were marked with three pickets in the same triangle due to the close distance in between (10cm).

11.2 Vehicle(s) and Equipment

Ambulance: One ambulance and medic was located at CBU 319 at the time of the accident.

Demolition Tools

- The ohmmeter and exploder were in the vehicle away about 200 meters from the accident location (Coordinates: 730831-3680215).
- The explosives and the end of the electrical wire were away about 50 meters from the place of the accident (Coordinates: 730706-3680129).
- The detonating cord and the detonator were in [the Victim]'s pocket at the time of the accident according to searcher [Name removed] statement, and [the Victim] requested from [Name removed] during the CASEVAC to take them off and throw them where they were located during the investigation in an uncleared area (Coordinates: 730698-3680075)
- The boxes designated for explosives and detonators were found in the vehicle all empty.
- According to [International demining organisation] SOP-NMAS and to the statement of [Name removed] that used to escort [the Victim] during the preparation of the demolitions, the ohmmeter, exploder, and the two boxes were always carried by [the Victim] during the demolition.
- A personal multi-tool was found, next to the original place of the two Sub-munitions, without any damage or blood trace.

Personal Protective Equipment (PPE)
At the time of the accident [the Victim] wasn't wearing his [International demining organisation] issued PPE (Visor and body armor), they were located inside the vehicle without any evidence of damage or blood trace.

11.3 Explosive Ordnance involved in accident
The type of explosive ordnance involved in the accident is believed to be two armed M-series M42 sub-munitions. Prior to the accident, [Name removed] had already located them that morning approximately close 10 cm to each others, and during the investigation one of them was found near the accident location without any explosives or firing mechanism and the second was exploded.

11.4 Casualty Information
Casualty's position
According to the injury, there was no fragments on his legs and there was no crater on the ground, we can assume that he wasn't kneeling and the explosion didn't happen on the ground, in other words [Name removed] was standing at the time of the accident.

Casualty's clothing: There was no damage on his trouser or on his boots.

Description of Injuries: Amputation of his left wrist and injuries in his abdomen, intestine, spleen, and left kidney.

11.5 Interviews

The following [International demining organisation] personnel were interviewed in this sequence by the RMAC-N BOI team on 23 October 2012 at CBU-319.
See Annex C – Witness Statements. (From RMAC/[International demining organisation] Investigation) [Not made available.]
[Name removed], [International demining organisation] BAC 3 Site Supervisor
[Name removed], [International demining organisation] BAC 5 Team Leader
[Name removed], [International demining organisation] BAC 5 Medic
[Name removed], [International demining organization] Searcher
[Name removed], [International demining organisation] Searcher

12. Accident Details (Circumstances / Sequence of Events)

The following information is based on an assessment of the evidence obtained by the RMAC-N BOI team at the accident site and from witness statements.

Chronology of Events (According to witness statements and site documentation) on 19 October 2012:

0705 - [International demining organisation] BAC Team 5 commenced operations at CBU 319

0900 - Searcher [Name removed] found two cluster munitions (M42) and Informed TL.

1120 - Team 5 stopped work for lunch and for the day. The lanes were closed and equipments were stored away.

1130 - Explosives were delivered to [the Victim].

1220 - [The Victim] went to his car. He made a phone call informing TL that 3 of the searchers should set up a box close to the resting area. This is the last contact with the team.

1240 - Site Supervisor for Team 3 heard the explosion and saw the smoke. Contacted [the Victim], but no reply. Contacted TL of Team 5 to investigate what is going on.

1251 - OPS Manager informed RMAC-N Chief.

1305 - Casualty loaded into the ambulance and departed to Meiss al Jabal hospital.

1321 - Arrival of the casualty at the hospital.

1350 - Ops manager arrived to the site CBU-319.

1400 - RMAC-N CLO [Name removed] arrived to the site.

1600 - [Name removed] arrived to the site.

2000 - [The Victim] pronounced dead.

The investigation was followed up by an onsite investigation on the 23rd of October 2012 by [Name removed] and [Name removed].

12.1 Medical Assistance and Evacuation (procedure, treatment, equipment.)

On the 19th October 2012, there was one medic [Name removed] at task CBU 319 who was positioned with the ambulance and driver at the control point during clearance operations.

At 1240 hrs an explosion occurred. The medic heard the shouting of the searcher [Name removed] and moved with the ambulance to reach the entrance of the site. From there the medic entered the site on foot guided by one of the team searchers. The medic arrived at the accident location and immediately assessed the casualty. She found him to be fully conscious. She then found amputation on his left hand and injuries in the abdomen and these injuries were dressed with searchers shirts. The team then moved the casualty to the ambulance. Once inside the ambulance and on the way to the hospital the medic performed periodical checks of the casualty's condition such as blood pressure and pulse.

According to the statements from the [International demining organisation] personnel at the site; from the time of the accident to the evacuation of the casualty from the task site took approximately 25 minutes and the ambulance arrived at Meiss al Jabal hospital 16 minutes

later. Therefore, a total time of 41 minutes had elapsed from the time of the accident to the casualty's arrival at hospital.

12.2 Geography and Climate: the area of the accident site is located approximately 800 meters west of the village of Talloussa. The task site is on a rocky slope of a valley with high vegetation.

At the time of the accident the weather was calm, sunny and warm with clear sky. Visibility was good.

12.3 Communications: The [International demining organisation] team utilized handheld VHF Radios for internal team communications. Communications between the team and the RMAC-N were maintained by VHF radio. The team also had access to mobile phones.

12.4 Command and Control: The [International demining organisation] team composition was in accordance to their SOP; previous internal and external QA reports had indicated good command & control at all levels.

12.8 Quality Assurance and Quality Control

External QA: Between the period 27th April 2011 and the 19th October 2012 a weekly basic RMAC-N QA inspections were conducted at CBU-319. Eight of these inspections were unacceptable or required improvement mostly due to missing signals by searchers which has nothing to affect on the demolition procedures.

Accreditation: The [International demining organisation] team received a renewal for the full accreditation on January 2012

Training: The last training for the team had occurred after the Ramadan break in August 2012.

13. Details of Non Compliance to Agency SOP / NMAS / IMAS: The Demolition procedures at CBU-319 were not in compliance with [International demining organisation]'s SOP and NMAS.

14. Task Status: Current. Start Date: 27.04.2011.

15. Background Information

CBU 319 is a BAC task within the task dossier 3-010 issued to [International demining organisation] by the RMAC-N. During the 2006 Hostilities with Israel, sub-munitions were dispensed into the area by Israeli rockets and projectiles.

16 Conclusions

From the evidence gathered the board concluded the following:

An uncontrolled detonation of US M series M42 sub-munition occurred with site supervisor [the Victim] most likely during demolition preparations.

a. [The Victim] was not conducting demolition in accordance with [International demining organisation]'s SOP. None of the following points was followed according to the SOP:
    1. **Sentries:** the sentries shall be in place prior to all handling and destruction of armed explosive ordnance, none of the searcher was informed to make sentry points. (par 13.3)
    2. **PPE and Visor:** PPE and visor are to be worn when handling high explosive ordnance. (par 14.2)
    3. **Detonators:** it must be treated with the utmost care, the detonator and the detonating cord were in [The Victim]'s pocket ([Name removed]'s statement)

4. **Ohmmeter and Exploder:** they were in the vehicle instead of being with the site supervisor.

b. [The Victim] moved the sub-munitions which contradicts with NMAS Chapter 14.

c. [The Victim] didn't inform any member of the team or the medic about his location and what he was planning to do.

d. From the injuries sustained by [the Victim] and the absence of the crater on the ground, he was standing at the time of the accident.

e. The marking of the site in general was in accordance with [International demining organisation]'s SOP and NMAS.

f. The casualty evacuation from the site to the hospital was carried out in a timely and professional manner.

g. During the course of the investigation the RMAC-N BOI team received full cooperation from [International demining organisation].

h. The accident is considered to be conclusive as preventable

17. Further Actions and Recommendations

a. Two days refresher training to be conducted for all [International demining organisation] BAC teams. (Completed)

b. Closer supervision from all levels to ensure there is strict adherence to [International demining organisation] SOP especially on demolition conduct.

c. BAC team 5 to be moved to another site until training a new supervisor to command the team, and send the team later back to CBU 319 to conduct normal BAC operations.

d. The breach of the demolition procedures in [International demining organisation] SOPs should be discussed with Site supervisors to ensure it does not happen again.

Report Written and Agreed By: [Name removed] RMAC-N QA/Operations Officer and by [Name removed], RMAC-N Operations Officer.

Comments by: [Name removed] RMAC-N Chief Ops and [Name removed] RMAC-N Chief QA.

Seen/Agreed by the RMAC-N Programme Manager, [Name removed].

Victim Report

Victim number: 1048	**Name:** [Name removed]
Age:	**Gender:** Male
Status: supervisory	**Fit for work:** DECEASED
Compensation: Not made available	**Time to hospital:** 41 minutes
Protection issued: Vest; Helmet; Short visor	**Protection used:** None

Summary of injuries: AMPUTATION/LOSS: Hand. FATAL

COMMENT: No Medical report was made available.

Analysis

The primary cause of this accident is listed as ‘Victim inattention’. Without the witness statements, the analysis cannot be conclusive but it is clear that the Victim deliberately handled the submunitions in breach of SOPs, had not ordered a safety cordon to be established prior to a demolition, and had not taken the necessary demolition equipment from the car (although he did apparently have a detonator in his pocket). The Victim’s Leatherman tool was open on the ground along with one of the two submunitions scheduled for demolition.

This submunition has not detonated in a conventional way and it is not likely that it could have had its fuzing system and content removed by the detonation of the other submunition. The Victim should not have picked up the submunition at all. He was standing and the complete amputation of the left hand at the wrist implies that the munition was lying laterally in that hand with the shaped charge facing towards his wrist while the other end (the fuze mechanism) was exposed to be worked on. After the accident, the Victim asked a deminer to take the detonator from his pocket and throw it aside, which may have been to avoid anyone knowing that it had been in his pocket and criticising him. After his death, that would have no longer mattered.

The accumulated evidence points heavily towards the conclusion that the Victim was deliberately handling the submunitions in order to disarm them, so avoiding any need for a demolition. It may be that he successfully removed the fuze mechanism and contents from the first submunition and was preparing to work on the second when he inadvertently pushed its firing pin into the stab-sensitive detonator (which requires very little force). However, although the investigators acknowledged the possibility that he was disarming the munitions they did not consider it the most likely explanation, so it is possible that he was doing something else.

If the Victim was deliberately disarming the submunitions, there should have been a separated fuze system, copper cone and bits of explosive on the ground. None is visible in the photograph made available but it could have been removed (the second stage of the investigation happened days later).

The secondary cause of this accident is listed as ‘Inadequate training’ because whatever happened, it is clear that the Victim was deliberately handling the submunitions and breaching several SOPs. The Victim was in a responsible position and should not have thought it acceptable to breach SOPs and take risks that were entirely unnecessary (the detonator in

his pocket was also an entirely unnecessary risk). His training and/or his selection for a responsible position obviously failed to achieve the desired result and that is a ‘Management Control Inadequacy’.

The ‘Inadequate medical provision’ listed under Notes refers to the Medic being obliged to use the shirts of other deminers to dress the Victim’s wounds.