9-25-2001

DDASaccident367

HD-AID
Humanitarian DeminingAccident and Incident Database

DDAS Accident Report

Accident details

Report date:	15/03/2004	**Accident number:**	367
Accident time:	14:25	**Accident Date:**	25/09/2001
Where it occurred:	MNB West, Kurvala Region, Albania border	**Country:**	Kosovo
Primary cause:	Victim inattention (?)	**Secondary cause:**	Field control inadequacy (?)
Class:	Victim inattention	**Date of main report:**	09/10/2001
ID original source:	014/2001	**Name of source:**	KMACC
Organisation:	Name removed		
Mine/device:	PMA-3 AP blast	**Ground condition:**	grass/grazing area rocks/stones
Date record created:	21/02/2004	**Date last modified:**	15/03/2004
No of victims:	1	**No of documents:**	1

Map details

Longitude:		**Latitude:**	
Alt. coord. system:	DN 2944 0742	**Coordinates fixed by:**	
Map east:	GR 34T	**Map north:**	
Map scale:		**Map series:**	
Map edition:		**Map sheet:**	
Map name:			

Accident Notes

inadequate communications (?)

inadequate area marking (?)

Accident report

The MACC carried out a Board of Inquiry and made its report available in early 2002. The report is reproduced below, edited for anonymity.

Introduction

In accordance with the Mine Action Co-ordination Centre (MACC) Standard Working Procedure No 4, the MACC Programme Manager issued a Convening Order on Tuesday 25 September 2001 for an Accident Investigation Board of Inquiry. Annex A details the Convening Order.

This is a comprehensive report by the Board of Inquiry into the mine accident that occurred on Tuesday 25 September 2001. Based on the investigation, interviews, statements from [Demining group] personnel involved in the accident, visits and photos of the accident site, this accident is considered preventable.

This finding is based on the fact that at the time of the accident the [Victim] placed his left foot outside the cleared area and detonated a PMA-3 Anti Personnel Blast Mine.

The accident occurred at minefield number 431, Task Dossier number W01-43, GR 34T DN 2944 0742 on 25 September 2001 at 1425 hours.

Events leading up to the Accident

The [Demining group] team callsign 13M have been conducting manual clearance in the Kurvala region along the Albanian border for the past three weeks and have been living on site in a field camp. The location is very remote and mountainous and requires a 40-minute walk up to the site from the road. There are four minefields within the Task Dossier W01-43. The minefield number 431 contains PMR2A fragmentation mines with PMA-3 blast mines as keepers. Within the vicinity of the accident site approximately 40 PMA-3 blast mines and three PMR2A fragmentation mines have been removed and destroyed.

At the time of the accident at approximately 14:25hrs, [the Victim] was clearing a 1.2m wide by 1.2m long area in preparation to commence a 1.2m wide clearance lane up the hill. Approximately 70cm past this 1.2m x 1.2m area was a visual PMR2A. [The Victim] had an indication from his metal detector and was investigating this reading. He had cut the vegetation and was in the process of turning around to get his detector to pin point the reading when he placed the outside of his left foot on the mine and it detonated. He received blast injuries to his left foot, however was extremely fortunate that he did not place his foot directly over the mine. He sustained broken bones in his foot with severe lacerations.

Immediately after this [the Victim] stood up and began walking back toward the CP. The team leader and a deminer from the team that witnessed the explosion assisted [the Victim] to the access lane and applied a field dressing to the wound. The team medic and (callsign 13A) the Programme Manager for this [Demining group] team arrived at the scene a few minutes later. First Aid treatment was given and a call was made to the [Demining group] base in Gjakova callsign 56 notifying of the accident and a request for a helicopter CASEVAC. Once the casualty was stabilised he was then stretchered to the winch area approximately 300m to the East of the accident site.

Normally all requests for helicopter CASEVAC's are requested through the particular MNB KFOR HQ in which the clearance is conducted. MNB(W) where this accident occurred is the responsibility of the Italian KFOR, however they do not have a winching capability in their helicopters, and as there is no area suitable for an HLS for the Italian KFOR in close vicinity to these minefields, a winch area has been designated. The German KFOR in MNB(S) do have a winch capability and therefore all helicopter CASEVAC requests are directed through the senior partner in MNB(S) and then onto the German KFOR.

Initially there was wasted time and confusion as the request from the accident site for the helicopter CASEVAC was first sent to [Demining group] (Gjakova) callsign 56 on the Kosovo wide net. This was then relayed to [the senior partner] on the MNB(S) net by callsign 56, despite good communications on the MNB(S) net from the accident site to [the senior partner]. After a period of time whereby information in regards to the casualty and the helicopter CASEVAC were passed from 13A to 56 and then relayed to [the senior partner] through both the Kosovo wide channel and the MNB(S) channel, the MACC COO instructed 13A to contact [the senior partner] directly. This then occurred without the previous double handling of information.

The initial grid reference for the helicopter winch point given by 13A to DSL was DN 3149 0555. This grid reference was not correct as it was to the other [Demining group] team (callsign 56B1) working near by at another site. The helicopter flew up the valley to this grid reference and circled over 56B1. From the winch point 4Km further along the ridgeline, callsign 13A and the CASEVAC party could see the helicopter circling the wrong site. Another call was made from 13A to [the senior partner] to inform that the helicopter was at the incorrect site and that the helicopter should fly to the west for one minute. [The senior partner] then sought verification of the grid reference and it was then that another grid reference of DN 2955 0742 was given which was the correct grid.

This information was then relayed to the pilot and the helicopter then proceeded to the winch point. The wind at the time was very gusty and unpredictable. The pilot circled a few times and made a number of aborted attempts at landing. However he eventually did land and shut down. The doctor and para-medic on board then proceeded to ascertain from the team medic the treatment given and then administer further pain relief before loading the casualty onto the helicopter and proceeding to the German KFOR hospital in Prizren.

The MACC QA Officer had visited team 13M earlier in the day and had then proceeded to visit 56B1. He arrived on the site from callsign 56B1 location at the time that the helicopter was arriving. An investigation of the accident site was carried out immediately after the casualty had departed. In order to determine the cause of the accident the blast hole and immediate surroundings were examined. It was difficult to ascertain the position of the base stick in relation to the blast hole, as there was only a small piece of it left. This indicated that the base stick was in very close proximity to the blast. The PMR2A fragmentation mine was clearly visible to the front of the blast hole.

[The picture below shows the accident site and the blast hole The marking is use is "cursory".]

[The picture below shows the victim’s boot and sock.]

Work History of the Casualty

[The Victim] has been with [Demining group] since 1999, and commenced working in Kosovo August 2001.

Past History of the Area

The accident site is Task Dossier W01-43, at minefield number 431. The minefields in this task dossier are all in the Kurvala Mountain Range and were laid by the VJ Army along the Kosovo – Albanian Border. There are a number of minefields along the border with Albania and the majority have a high density of mines. The minefields contain both anti-personnel fragmentation and blast mines.

Sequence, Documentation and Procedure of Tasking

The Task Dossier No W01-43 was issued to [Demining group] on 3 September 2001. There are four minefields detailed in this dossier, 418, 431, 434 and 436. Minefields 434 and 418 have been completed and work continues on 431 and 436.

Geography and Weather

The Kurvala region is situated in the West of Kosovo along the Albanian border and approximately 5Km South East of the Montenegrin border. It is a remote mountainous area with heights exceeding 2600m in places. The height of this minefield is at 2300m. Access to these minefields is either by foot or helicopter with no vehicle access. The nearest road is a 40 minute walk. The local populous from both Kosovo and Albania use these high plateaus for summer grazing of their livestock. The weather at the time of the accident was slightly overcast with variable winds and a temperature of approximately 15 degrees Celsius.

Site Layout and Marking

The site layout and marking at the site was in accordance with [Demining group] SOPs for mine clearance. According to the Vojska Jugoslavije (VJ) minefield record, there are three mine rows containing PMR2A fragmentation mines with PMA3 blast mines as keepers. The mine rows are running generally along the hillside in a South Westerly direction.

Management Supervision and Discipline

[Demining group] is a commercial mine clearance company that employs Zimbabwean Deminers, Team Leaders and Operations Officers. As such there is no local demining capability within the company in Kosovo. The Operations Officer has operational responsibility for the [Demining group] demining teams, with the team leaders directly responsible for the day to day supervision on site of their respective teams. Each [Demining group] demining team consists of a Team Leader, four manual deminers and a team medic.

Quality Assurance and Quality Control

[Demining group] internal Quality Control (QC) is achieved through a system of on-site checks by the Team Leader to ensure adherence to the mine clearance SOPs. The normal procedure for QC is for the team leader to conduct a 10% check of the clearance lanes using the same detector that the deminer used for the clearance. The MACC QA teams conduct external Quality Assurance on a regular basis, normally each site is visited a minimum of once per week. A QA inspection had been conducted the day of the accident by a MACC QA team. Prior to this a number of visits by the MACC COO, Ops Offr and QA Offr had been conducted to this site.

Communications and Reporting

At the time of the accident there was effective communication by VHF hand-held Motorola radios between the team site and callsign 56 ([Demining group] Gjakova) on the Kosovo wide net as well as the team site and DSL on the MNB(S) net. The initial notification of the accident was reported to the MACC in accordance with the MACC Guidelines and Technical Standards.

Medical Details

The initial injuries that Deminer [Victim] suffered were deep lacerations and broken bones to his left foot. After arriving at the German KFOR hospital the doctors have amputated two of his toes with the possibility of another toe being amputated at a later date.

Personnel

Written statements from the [Demining group] personnel involved in the accident are at Annex E.

Dress and Personal Protective Equipment (PPE)

At the time of the accident [the Victim] was wearing personal protective equipment in accordance with [Demining group] SOPs.

Tools and Equipment

[The Victim] had a reading from his metal detector (MineLab) and had cut the vegetation in order to further investigate it. He was in the process of turning to take up his detector again when he placed his left foot on the mine. Therefore at the time of detonation he was not using any tools or equipment.

Details of Mine Involved

[Large drawing excised.]

Account of Activities

The following is a description of the events from the time of the accident until the casualty was at the hospital:

Tuesday 25 September 2001

14:25hrs –Uncontrolled detonation at minefield number 431.

14:26hrs – Initial first aid treatment given by team leader and a deminer to [the Victim].

14:28hrs – Team medic and [Site Supervisor] arrive on scene and further first aid treatment is applied. Callsign 56 notified of accident and a helicopter CASEVAC is requested.

14:36hrs – Casualty is stretchered to the winch area to await the helicopter CASEVAC.

15:20hrs – CASEVAC helicopter is seen flying toward 56B1 site and calls are made to redirect the pilot toward the winch site.

15:30hrs – CASEVAC helicopter lands at winch area and German doctor provides further medical treatment to the casualty.

16:00hrs – CASEVAC helicopter departs the site for German KFOR hospital in Prizren.

16:10hrs – MACC QA Officer conducts scene examination of accident site.

Insurance Details

All [Demining group] staff involved in mine clearance activities in Kosovo are covered by the standard [Demining group] insurance through Lloyds of London.

Conclusions

Based on the investigation, interviews, the statements and visits to the site, the Board of Inquiry concludes the following:

- There was an uncontrolled detonation of a PMA3 anti-personnel mine on Tuesday 25 September 2001 in [Demining group] minefield number 431 situated in the Kurvala region of Kosovo. It appears [the Victim] inadvertently placed the outside of his left foot on the mine as he was turning to take up his metal detector.
- [The victim] initially suffered deep lacerations and broken bones to his left foot as a result of the uncontrolled detonation. He has since had two toes of his left foot amputated by the German KFOR doctors in Prizren.
- Initial confusion and time delays resulted from relaying the CASEVAC information from the accident site through callsign 56 ([Demining group] Gjakova), despite effective communications from the accident site directly to [relay point]. This confusion was compounded when the first grid reference given was to callsign 56B1 location instead of 13M.
- The exact position of the base stick in relation to the uncontrolled detonation cannot be determined as it was destroyed in the blast. However the fact that it was destroyed indicates that it must have been in very close proximity to the explosion.
- A PMR2A was visible 70cm past the blast hole. This may have been a distraction to [the Victim] as he was clearing toward it. It appears he has not concentrated and taken due care whilst conducting his manual clearance drill.
- The German KFOR CASEVAC helicopter crew displayed exceptional flying ability to land the aircraft in adverse conditions.

Recommendations

The following are recommendations based on the Board of Inquiry conclusions:

- The [Demining group] teams in the Kurvala region that are supported by German KFOR CASEVAC helicopters are to establish and maintain direct radio communications on an hourly basis during operations, and are to communicate directly for helicopter CASEVACs.
- [Demining group] management and supervisory staff are to re-emphasise to their deminers the need to maintain concentration and focus whilst conducting manual clearance drills. [Demining group] team leaders are to be extra vigilant to ensure their deminers are conducting their clearance drills effectively and safely.
- The German KFOR be commended for their CASEVAC and medical support in difficult conditions.

Signed: UNMIK Mine Action Co-ordination Centre. Quality Assurance Officer

Annexes: (No annexes were made available)

A. MACC convening order for accident investigation Board of Inquiry.
B. Map of the general area.
C. Schematic diagram of the general accident area.
D. IMSMA Mine Accident Report.
E. Witness Statements.

F. Medical report from the MACC QA Officer.
G. [Demining group] Internal Report.

Victim Report

Victim number:	471	**Name:**	**Name removed**
Age:		**Gender:**	Male
Status:	deminer	**Fit for work:**	not known
Compensation:	not made available	**Time to hospital:**	more than 1 hour 45 minutes
Protection issued:	Frontal apron Long visor	**Protection used:**	PPE details inferred

Summary of injuries:

INJURIES

severe Foot

AMPUTATION/LOSS

Toes

COMMENT

No medical report was made available.

Analysis

The primary cause of this accident is listed as *"Victim inattention"* because it seems that the victim inadvertently stepped over his base stick as he turned. However, the damage to the base stick may indicate that the mine was beneath it and had so been missed during clearance. If so, the systems in place allowed the base stick to be moved beyond the cleared area, which would be a *"Field control"* inadequacy. The cursory area-markings in use may have been a contributory cause of the deminer's mistake.

The investigator did not record the PPE in use and the photographs at the site showed no PPE. The absence of such detail in accident reports is unusual in this theatre.