DDAS Accident Report

Accident details

Report date:	12/03/2004	**Accident number:**	1
Accident time:	15:15	**Accident Date:**	25/05/2000
Where it occurred:	Ljumbarda district, Deqani	**Country:**	Kosovo
Primary cause:	Unavoidable (?)	**Secondary cause:**	Victim inattention (?)
Class:	Victim inattention	**Date of main report:**	14/06/2000
ID original source:	MD/JF	**Name of source:**	KMACC
Organisation:	[Name removed]		
Mine/device:	PMA-3 AP blast	**Ground condition:**	bushes/scrub ditch/channel/trench grass/grazing area trees
Date record created:	11/01/2004	**Date last modified:**	17/01/2004
No of victims:	1	**No of documents:**	2

Map details

Longitude:		**Latitude:**	
Alt. coord. system:	GR: DN47175 10165	**Coordinates fixed by:**	GPS
Map east:	447217	**Map north:**	4710045
Map scale:	Alt: DN 4715 1035	**Map series:**	
Map edition:		**Map sheet:**	
Map name:			

Accident Notes

inadequate area marking (?)

Accident report

A Mine Accident Report was prepared for the country MACC and made available in August 2000. The Demining group also made available there own more extensive file including all communications arising from the accident. The following summarises the content of the main MACC Board of Inquiry.

The accident occurred in a minefield without records in which PMA-3, PMR-2 and PMR-3 mines has been found. Clearance was slow because of dense vegetation and varied ground conditions.

The demining team comprised 24 deminers, three Section Leaders and one Platoon commander. All were women.

The accident occurred on a clear day with a temperature between 20-25 degrees C and a light breeze. The presence of vegetation limited visibility from one working lane to the next. Photographs showed tall grasses and weeds under mature trees. The deminers on the site had last been visited by a MACC QA officer 15 days before. During that QA visit "it was mentioned that the overgrown vegetation and thick bush was limiting the supervision by the Section Commander" but the "command and control" was considered "adequate".

The accident occurred at the end of the working day while the victim was marking the end of her clearance lane after the deminers were all directed to stop work. At 15:15 she "slipped in a drainage ditch" at the end of her lane and "suffered blast trauma to her right foot resulting in an amputation below the knee". A photograph of the accident site showed a very shallow ditch on flat land with vegetation cover largely comprised of tall grasses.

[The picture above shows the accident site.]

The Section Commander was the first on the scene and she pulled the victim into the safe area (the victim's leg was still in the ditch). The victim refused treatment "and wanted to die" but was persuaded otherwise. The Platoon Commander expressed concern for the sister of the victim, who was also a deminer with the group.

The two medics on site provided emergency treatment to the victim within three minutes of the accident. After the victim had been stabilised and calmed, she was taken to the Italian KFOR hospital, arriving 22 minutes after the accident. Her "right foot was x-rayed and she was explained that the only choice she had was an amputation". "At 18:00 confirmation was given by Italian KFOR field hospital that [the victim's] right foot could not be saved and amputation was necessary". The victim "gave her consent for the amputation".

The investigators determined that the mine was a PMA-3 by inference because the ditch was known to contain PMA-3 mines.

The victim reported to others that she had slipped.

A witness reported going to attend the victim and noting that "the front of her foot and her boot was taken away". The witness started to remove her left boot and cut her trousers open because the victim "said she felt hot". The victim said that she was not in pain and asked the witness to remove her right boot [the destroyed one]. A photograph showed the remains on the victim's right boot and sock at the site [see Related papers].

The Section Leader reported that she was "busy" with a trip wire when the accident occurred. She looked up and saw "pieces of mud or mine in the air", and called on the radio for assistance.

Deminers reported that the victim was "trying to move away from the ditch" and screaming for help after the accident. "She was aware that she had lost a leg". "She was shouting that she had lost a foot and an arm". The deminers tried to "calm her down" until she was stretchered to the ambulance, then went to calm the victim's sister (another deminer in the group).

Conclusion
Because the accident was not witnessed, the investigators decided that either the victim slipped into the ditch or the edge of the ditch gave-way as stood on it. Work at the site was carried out according to SOPs and the victim was wearing her PPE. They noted that the victim and her supervisors had limited demining experience but stated that the supervisors had "demonstrated very good command and control".

The investigators "noted that the whole platoon had been emotionally affected" by the accident.

They concluded that the accident was "preventable" with a review of the group's SOPs "on the marking and approach to obstacles like ditches".

The MACC manager commended the group for the "immediate reactions of the team members" and for the way the CASEVAC was carried out.

Recommendations
The investigators recommended that the demining group management should review their SOPs and add "detailed procedures" for the approach, marking and clearance of obstacles such as ditches. They also stated that "proper psychological support must be given to the members of this platoon".

Signed: QA Officer, UNMIK Mine action co-ordination Centre

Comments by the Programme Manager

I concur with the findings of the Board of Inquiry. This accident did not occur through non-adherence to SOP, but rather was caused by a combination of previously unforeseen circumstances and tragically bad luck. The recommendations made by the Board fro a change to the [Demining group] SOP and counselling to team members are supported.

[The Demining group] are commended for the way the Casevac was carried out, in particular for the immediate reactions of the team members.

Signed: Programme Manager, UNMIK Mine-action Co-ordination Centre

Victim Report

Victim number: 1
Name: [Name removed]
Age: 24
Gender: Female
Status: deminer
Fit for work: yes
Compensation: up to 200,000 DEM (Insured SOS)
Time to hospital: 22 minutes
Protection issued: Frag jacket, Helmet, Short visor
Protection used: Frag jacket, Helmet, Short visor

Summary of injuries:

INJURIES

minor Arm

AMPUTATION/LOSS

Leg Below knee

COMMENT

See medical report.

Medical report

A medical report was compiled from interviews with the medic and the hospital and included with the accident report. The following summarises its content. (It is followed by the MACC QA's Medical report.)

The medics took the ambulance close to the site when they heard the detonation. They were in radio contact with the Team Leader who told them where to go, but also reported that "there was a lot of smoke and a very strong smell at the location".

The medics reported that the victim's "right foot was amputated and "there was a large bleeding". She also had "a large haematome at her right arm". The victim refused medical treatment until persuaded to accept it by the medics.

The medics moved her to the Casualty Collection Point where her bleeding was stopped, she was given an IV infusion of Ringer Lactate 1000 ml, and analgesic injection of 7mg Morphine (intra-muscular) and was calmed down before being taken to the ambulance. During the journey to the hospital she was given oxygen and her blood pressure was taken (result not recorded in the report seen). The medics stayed with the victim until she was taken into the operating theatre.

The medical report concluded that the medics had done "a very professional job" and the MACC medical officer recommended that the individuals concerned be praised.

No statement was taken from the victim because the loss of her foot had "very emotionally disrupted" her.

A statement from a medic included the observation that the victim "refused aid all the time" and "was very upset". In the ambulance the medics calmed her by talking to her. After treatment the victim confirmed "that the pain was reduced" and asked what her injuries were. The medics told her that she "had only injured one finger".

The other medic stated that she moved the victim to a safe area, bandaged her "right leg to stop the bleeding", put in an IV and put the victim on a stretcher. In the ambulance she gave the victim morphine and "kept her on oxygen the whole time" while monitoring her blood pressure and pulse.

A Section Leader reported that while the deminers were calming the victim she asked "for scissors and I cut her pants because I was daubing in injuries in other leg". [Injuries in the left leg are not reported elsewhere.] An arm injury was confirmed in the IMSMA summary.

Medical report (MACC QA)

This report is based on interviews with the two medics and the doctor at KFOR hospital in Peja.

Summary
At the time of the accident, there were two qualified medics with all their medical equipment, and one fully equipped Ambulance with a driver at the resting area.

When they heard the detonation, they immediately started the ambulance and went to the site. They had contact with their team leader, so they knew the exact location of the accident. There was a lot of smoke and a very strong smell at the location.

Two deminers stayed at the ambulance with the stretcher, while the medics went to the place of the accident with their emergency bags.

At the place of the accident one of the medics and one deminer lifted the victim to a safer area, she had the injured foot inside the minefield.

The right foot was amputated and there was large bleeding, and she had a large haematoma at her right arm.

The victim refused medical treatment at first, but the medics persuaded her.

At the CCP she was taken care of in a very professional way, she was examined, the bleeding was stopped, she got intravenous infusion Ringer's Lactate 1000ml, analgesic injection Morphine 7mg intra-muscular and she was calmed down before she was taken to the ambulance.

The medics stayed by her until she was taken to the operating room, they filled in the "Emergency journal" and gave it to the doctor at the hospital.

The team leader reported to [Demining group] HQ about the accident by radio, HQ reported to KFOR hospital by radio and the [Demining group] Medical co-ordinator went to the hospital. He was there when the ambulance arrived.

Conclusions
The medics did a very professional job at the scene of the accident, and all the way to the KFOR hospital.

The CASEVAC was performed according to the S.O.P.

The time, from the accident, until the victim was at the hospital was only 22 minutes.

Recommendations
This was a very good job from all personals involved, be sure to inform all of them.

Signed: Medical QA Officer

In December 2001 the MACC reported that the Victim, after rehabilitation and setting of a permanent prosthesis in Sweden, had started working as a Mine Awareness teacher based in Peja for the same demining group.

Analysis

The primary cause of this accident is listed as *"Unavoidable"* because the victim apparently slipped which is the kind of unavoidable event that must occasionally occur during any hazardous activity.

The investigator’s recommendation to improve area marking around ditches implies a failure in training or procedure that is a management responsibility.

The Country Manager of the demining group was commendably open about the accident, making all details available.

Related papers

An initial accident report from the Demining group (held on file) stated that the demining platoon involved in this accident was made up of 24 female deminers with three male medical staff. The demining platoon was split into three sections, each with a Section Commander. There was an overall Platoon Commander.

Photographs of the victim's trousers showed blast damage and tearing below the knee on the right leg. Photographs of the victim's high-leg military boot showed it with the toe torn away and the ankle cover separated. From this it may be inferred that her leg was also damaged below the knee by blast and by fragments from her foot.

The photograph below shows the top part of the victim's boot and the remains of her sock.

The report included a computer generated sketch and photographs of the site.

The injuries resulting from stepping on a PMA-3 vary from traumatic amputation to minor bruising. The picture below shows why this happens. It shows a cut-away section through a PMA-3. The 35g Tetryl is in the top and centre of the mine. The area of pressure-plate surrounding it is actually larger than the area of pressure-plate over it. If a victim is fortunate, they step on the pressure plate but the explosive charge is not beneath their foot.