

DDAS Accident Report

Accident details

Report date: 15/03/2004	Accident number: 329
Accident time: 15:45	Accident Date: 24/09/2000
Where it occurred: Nr Macedonia border	Country: Kosovo
Primary cause: Management/control inadequacy (?)	Secondary cause: Inadequate training (?)
Class: Detection accident (survey)	Date of main report: 02/10/2000
ID original source: MD/KC/JF	Name of source: KMACC
Organisation: Name removed	
Mine/device: PMA-1 AP blast	Ground condition: grass/grazing area
Date record created: 20/02/2004	Date last modified: 21/02/2004
No of victims: 1	No of documents: 3

Map details

Longitude:	Latitude:
Alt. coord. system: GR DM 796 473	Coordinates fixed by:
Map east:	Map north:
Map scale:	Map series:
Map edition:	Map sheet:
Map name:	

Accident Notes

inadequate communications (?)
inadequate medical provision (?)
inadequate area marking (?)
protective equipment not worn (?)
visor not worn or worn raised (?)
inadequate equipment (?)

Accident report

The following is the MACC accident report, edited for anonymity. Excess pictures have also been removed.

Introduction

1. In accordance with the Mine Action Co-ordination Centre (MACC) Standard Working Procedure #4, the MACC Programme Manager issued a Convening Order on Monday 25th September 2000, for an accident investigation Board of Inquiry (a copy of the Convening Order is attached at Annex A).
2. This is a comprehensive report by the Board of Inquiry on the mine accident that occurred on the 24th September 2000. Based on the investigation, the statements from [Demining group] personnel involved in the accident (see Annex B), visits to the accident site on the 26th September and the photos from the accident site, this accident is considered as a preventable mine accident.
3. The information provided by [the Demining group] to the MACC Headquarters in the "Accident Report" attached as Annex C, is confirmed. The accident occurred on Sunday at approximately 15h45 on September 24th 2000 in a suspected VJ (Vojska Jugoslavije) minefield located near the border with Macedonia GR DM 796 473. A reconnaissance party led by [the Victim - Operations Manager] accompanied by [Demining group Team Leader] and [Demining group Assistant team Leader] were conducting a reconnaissance for a new Helicopter Landing Site (HLS), camping ground and future minefield for the coming week.
4. After finding and marking the first minefield, they went on to a second site. When they found empty bodies of PMA-1 mines they started surveying to identify the minefield boundary. Working in accordance with the appropriate safety distances, they were individually sweeping around the suspected area. They were expecting to find the same minefield layout pattern of mines as the previous task site in the area.



The picture above shows the accident area and the improvised marking system in use.

5. [The Victim] found a row of PMA-1 mines and decided to follow the row and neutralize mines (6 - 7 PMA-1). As he was following the row he stepped with the outside front part of his right foot on two PMA-1 mines on top of each other. He suffered serious blast trauma to his right foot and leg, resulting in an amputation of the leg above the knee. There were no other personnel injured in the accident. The blast from the two mines (a total of 400g of explosive) was so powerful that it damaged the control box of the metal detector that he was carrying in his right hand.
6. [The Victim] is [Demining group] Operations Manager in Kosovo. He has approximately 8 years experience with the South African Defence Force. He has been employed by [Demining group] since March 1998 and was a Team Leader with one of [Demining group] teams during their mine/UXO clearance operation in Kosovo last year. He is considered by [Demining group] management to be an experienced leader and a good asset.

7. The accident could have happened in either of two VJ minefields, VJ# 3342 or VJ# 3343. This has not yet been confirmed as the actual minefield location is situated between the recorded location of these two minefields. In both cases, the pattern in which the mines have been laid is the same (see map and VJ records at annex D). The identification of the exact minefield cannot be determined until clearance operations are completed in the area, and this is not likely to occur in this clearance season. However, this will not have a major impact on this investigation.

Sequence, Documentation and Procedure of Tasking

8. The task dossiers for the two different minefields were given to [Demining group] by the MACC Operations on two separate dates. The task dossier for VJ record #3342 was given on 2 September 2000 and the task dossier for VJ record #3343 was given on the 23 September 2000. All minefields in the area were identified by [Demining group] to have the same layout. The mines found in the minefield were mainly anti-personnel blast and fragmentation mines PMA-1, PMR-2A and anti-tank mines TMA-5 (see map and VJ records at annex D).

Geography and Weather

9. The task site is located in an open mountainous area with compacted soil and very small bush and grass vegetation. The access to the site is very difficult and can only be reached by foot and with help of horses for resupply from the base camp in Brod village (1.5 to 2 hours). This stresses the importance for an HLS on site or near the site. The problem with any HLS site in the area is that the weather can change very quickly and any low cloud makes it impossible for the helicopter to land in case of an accident.

Site Layout and Marking

10. The only marking left from the VJ occupation was a VJ mine sign and cases of PMA-1 that were probably neutralized by local population. The sign was standing up on the day of the accident and was one of the first indications of the presence of mines in the area.



Pictures above show some of the PMA-1s previously separated by the Victim, and the VJ mined-area sign.

Management Supervision and Discipline

[Demining group] supervision is achieved by an International staff as the Team Leader and Assistant Team Leader. Every member of the reconnaissance team was a supervisor and had experience and knew what to do to comply with the [Demining group] SOPs.

Quality assurance and Quality Control

12. [Demining group] internal Quality Control and Quality Assurance is attained through a system of adherence to [Demining group] SOPs and on-site supervision of mine/UXO clearance operations by qualified and experienced International Team Leader and Assistant Team Leader.

13. External Quality Assurance is conducted by the MACC QA visits. No QA visit had yet been conducted at the site where the accident happened.

Communications and Reporting

14. In accordance with [Demining group] SOP and the MACC Guidelines and Standards, no clearance operations are to be performed without effective communications. On the day of the accident the radio communications were not very reliable. The 1200 hr scheduled radio check from the camping ground to the [Demining group] Base Camp in Brod didn't work (see deputy Project Manager statement). The main reason for the problem was the mountainous ground and the bad weather, especially the low ceiling. However, the MACC Operations Officer had provided a radio set on Saturday the 23rd September to be used for the series of tasks in the accident area. The hand held radios were working for the short distances between the survey team and the camping ground.

Medical Details

15. Two [Demining group] Paramedic's provided medical coverage to the survey team from the camping ground. At approximately 1545 hr, after hearing an explosion, [Medic 1] got on the radio (radio communication was not very good) and found out that [the Victim] just had an accident. He was equipped with a medical trauma pack, medical stretcher. After loading everything on a horse he went to the accident site. It took approximately 25 minutes before he reached the accident site where, with the help of the other paramedic he started to provide adequate medical treatment to the casualty. After a detailed examination of the leg injuries, the medic decided to evacuate the casualty to the Base Camp in Brod village on a stretcher mounted on the horse. The decision was made because the CASEVAC helicopter could not land due to the low clouds. During the evacuation that took over 3 hours, [the Victim] was conscious and in pain the entire time. The total time of the evacuation to the German KFOR field hospital took approximately five hours.

Personnel

16. A list of all personnel and their duties is attached at Annex B. Written statements from [Demining group] personnel involved in the accident are attached to Annex B as appendices.

Dress and Personal Protective Equipment

17. At the time of the accident, [the Victim] was not wearing the Personnel Protective Equipment (PPE) in accordance with the [Demining group] SOPs. [Photographs in the file show that the normal PPE is a full-face visor and frontal apron with thigh straps.

Tools and Equipment

18. [The Victim] was sweeping with the standard [Demining group] metal detector (MIL-D1) at the time of the accident. The detector was working well since it had indicated the 6 to 7 PMA-1 mines that he had neutralized before the accident occurred. The MIL-D1 detector was seriously damaged by the blast.

The blast broke the connection of the control box and the cover of the batteries case.

Details of Mine Involved and evidence of Minefield

19. The mines were 2 PMA-1 anti-personnel blast mine on top of each other. See the pictures [above] of the PMA-1 blast mines that were neutralized by [the Victim]. The technical information on the PMA-1 is provided at Annex F.

Account of Activities

18. The following is the description of the events that led up to the accident. The statements that were used as a basis to describe the events are attached in Annex B:

- At approximately 08h00 on the 24th September, [name excised] and [the Victim] had a radio conversation. Requirements for resupply were discussed and agreement was made for the next radio check at 12h00 the same day.
- At approximately 11h00, the local deminers arrived at the Base Camp near the village of Brod. They informed [name excised 2, no job description given] that the bad weather was persisting on top of the mountains and any further work was not possible. [Name excised 2] decided to send the deminers' home for two days.
- At 12h00 [Name excised 2] was not able to establish radio contact with [name excised] or any other member of the team at the camping ground.
- At approximately 12h25, [the Victim], [Team Leader] and the [Demining group Assistant team Leader] left the camping ground to conduct a reconnaissance to find a new camping ground, a new HLS and survey a few minefields for the coming week.
- After identifying a new camping ground, the reconnaissance team circled the area to determine the proximity of the closest minefield. They marked the four corners and moved on to find a new HLS and minefield.
- After finding pieces of PMA-1, scattered around a suspected area, they started searching for the boundaries of the minefield using only the metal detector.
- The [Team Leader] went ahead and swept the small path, [Demining group Assistant team Leader] went left to investigate and found the row of anti-tank mines (TMA-5). [The Victim] was approximately 30 meters behind the [Team Leader] sweeping to find the row of PMA-1 mines.
- At approximately 15h45, after finding and neutralising the first two PMA-1 mines on top of each other, he decided to follow the row and neutralized 6 or 7 of them. As he was going down the row to mark the end of the row, he stood on two PMA-1 mines on top of each other.
- He rolled downhill and stopped in the path that had been cleared by the [Team Leader] a few minutes before. The [Team Leader] reached him first and provided first aid. He applied pressure on the right foot and called for [Demining group Assistant team Leader] who was already on his way.
- Radio communication was established with the camping ground and request for medical assistance was sent to the accident site.
- [Name excised 3 – a new name not apparently present at the accident site] informed [Name excised 2] of the accident during the 16h00 radio check. [Name excised 2] started to organize the CASEVAC from his end. He contacted the MACC senior partner in MNB (South) for helicopter support.
- Approximately 25 minutes later the two [Demining group] paramedics arrived at the accident site and took care of the casualty.
- After a detailed examination of the leg injuries, the paramedics decided to evacuate the casualty to the Base Camp, in Brod village on a stretcher mounted on a horse. The decision was made because the helicopter CASEVAC could not land due to the low clouds. During the evacuation that took over 3 hours [the Victim] was conscious and in pain the entire time.
- German KFOR helicopter arrived at approximately 18h00 but because of low cloud was not able to locate the evacuation party on the mountain slope. They landed near the [Demining group] Base Camp and waited as long as they could before darkness. The German KFOR doctor was left behind and linked up with the German KFOR that had been dispatched to the [Demining group] Base Camp.
- At approximately 19h00, the casualty arrived at Brod village. [A medic] briefed the KFOR German doctor about the treatment he provided to [the Victim].

- At 19h15 the KFOR German military ambulance left for the KFOR German field hospital in Prizren.

Insurance Details

19. [The Victim] was covered by the standard [Demining group] insurance for all personnel involved in mine/UXO clearance activities. A copy of the H.M.T. Insurance Brokers Ltd policy is at Annex G.

Conclusions

20. Based on this investigation, the statements and visits to the site, the BOI came to the following conclusions:

- At the time of the accident, the [Demining group] reconnaissance team was conducting a Level 2 Survey without proper communication, medical support and without wearing PPE. This activity was being carried out despite an earlier decision to suspend clearance operations because of poor weather conditions.
- Because it took approximately 25 minutes for the [Demining group] paramedic to reach the accident site, the medical support during the recce/survey was not in accordance with [Demining group] SOPs and the MACC Guidelines and Standards. According to [Demining group] SOP No.7 “every mine/UXO clearance and EOD activity will have adequate medical cover. The MACC Guidelines and Standards stipulate in chapter 7, paragraph 7.2 (a) that a trained medical assistant with all his equipment will be sited within 5 minutes of each mine clearing or marking team.
- The medical treatment provided to the casualty was exceptional under the very difficult conditions.
- The access to the site is very difficult and can only be done by foot and with help of horses for resupply from the base camp in Brod village (1.5 to 2 hours). This stresses the importance and need for an unconditional HLS on site or near the site.
- The living conditions at the satellite camping ground are not acceptable. The reasons being that [Demining group] do not have the proper equipment to camp in the current weather conditions and resupply is very difficult.
- The medical support from KFOR was very good considering the circumstances.
- [The Victim] took an unnecessary risk by neutralising mines. Their task was to identify the boundaries of the minefield and mark them for future work. As mentioned in the Project Manager’s statement the VJ minefield records in the area are several hundred meters off from where they should be according to the map. This was not taken in consideration and should have dictated to the team to be more cautious and to work in a safer manner.
- This accident was preventable.

Recommendations

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

- It is recommended that [Demining group] manual clearance operation be suspended until safety limitations at the accident site are resolved. If the [Demining group] cannot resolve those safety issues, the MACC Operations should give them another task and suspend this task until next summer. The following are the minimum actions that [Demining group] Management have to take before re-deploying in the area of the accident:
- Conduct clearance only when the weather allows it. If [Demining group] decides to set up a secondary HLS on the lower ground to avoid cloud concentration, this HLS will have to be approved by KFOR and the time to evacuate a casualty to this secondary HLS should be taken in consideration (no more than 1 hour).
- Set up the proper communications system in accordance with the MACC Guidelines and Standards (Chapter 12 para 12.5).

- [Demining group] will have to provide proper living conditions and clothing for their staff living and working from their satellite camping ground.
- [Demining group] Management must make sure that they work in accordance with their approved SOPs. Calling the work that was conducted on the day of the accident “recce”, does not change the fact that they were conducting a Level 2 Survey.
- Addition safety measures must be taken when the VJ records in the area of work are off by several hundred meters.
- [Demining group] must provide proper psychological support to the staff involved in the accident.

Signed : QA Officer

Annexes:

- A: MACC convening order for accident investigation Board of Inquiry
- B: IMSMA Mine/UXO Accident Report
- C: Statements
- D: Dangerous Area Report and VJ Record
- E: MACC QA Medical Officer report
- F: Technical data on the PMA-1 anti-personnel blast mine.
- G: Copy of the [Demining group] Insurance Policy.

Comments by the Chief Operations Officer

I concur with the findings and recommendations of the Board of Inquiry.

Signed: Chief Operations Officer

Comments by the Programme Manager

The conclusions and recommendations of the BOI are concurred with.

This accident was caused by poor judgement and decision making on the part of [the Victim] and cannot be considered as anything but avoidable. Whilst there are some extenuating circumstances surrounding the difficulty of the location, this does not provide an excuse for the events that took place immediately prior to the accident occurring. There were no tangible benefits to be attained from clearing the rows of mines once the minefield had been located. These could have been systematically cleared by the demining personnel at a future time.

[The Victim] chose to conduct operations in such a way that he and other members of the survey team were placed in unnecessary risk. There were a number of deviations from approved SOP that, if followed correctly, would have prevented this accident from occurring. However, it is noted that whilst he was not wearing his PPE at the time of the accident, this would not have provided protection against the blast injuries sustained to his leg. [The Victim] is fortunate in that he did not receive serious secondary injuries to other parts of his body.

It is acknowledged that [the Victim] may have felt some pressure to achieve a high rate of productivity and to clear as many of the minefields in this area prior to winter setting in. However, the need for safety is paramount and organisations are expected to make decisions regarding their ability to undertake operations. In this instance, the decisions made by [the Victim] were not appropriate.

On the positive side, the medics that provided treatment to [the Victim] are to be congratulated for the way in which they handled this difficult situation. There is no doubt that they contributed to saving [the Victim]’s life.

Signed: Programme Manager

Victim Report

Victim number: 413	Name: Name removed
Age:	Gender: Male
Status: supervisory	Fit for work: yes
Compensation: not made available (insurance)	Time to hospital: 5 hours
Protection issued: Frontal apron Long visor	Protection used: none

Summary of injuries:

INJURIES

minor Hand

AMPUTATION/LOSS

Leg Above knee

COMMENT

See medical report.

Medical report

Introduction

This report is based on statements and interviews with a Paramedic, the KFOR Doctor and my own experiences after a visit of the accident site.

Summary

At the time of the accident there where no Medics and no medical equipment at the site.

The two [Demining group] Paramedics were at a temporary camp approx. 30 min walking distance from the minefield.

At 15:45 they heard a detonation and in the next minute they got a radio call informing them that [the Victim] had hit a mine was badly injured.

The Paramedics packed all medical equipment and a stretcher at the back of a horse and went off in the direction of the detonation.

After approx. 25 minutes they reached the site.

When the Paramedics got to the casualty he was lying in the minefield

There was a cleared path to the casualty and the area around the casualty had been cleared.

His right foot and leg where badly injured and bleeding and his right hand had minor wounds. He was in great pain but he was conscious. [The Team Leader] applied pressure on the leg to stop the bleeding.

The Paramedics did an examination of the injuries and compressed the artery to the leg while waiting for the medical equipment to arrive.

After approx. 5 minutes the horse arrived with the stretcher and all the medical equipment.

The Paramedics starts to stabilise the casualty and he is placed on the stretcher

He gets two intravenous cannulas and he gets analgesics and fluid intravenous. His right leg was immobilised and bandaged and his right hand was bandaged.

He was then carried on the stretcher to a safe area where the stretcher was placed on the back of the horse.

With the help of two locals they transported the casualty to the temporary [Demining group] camp to wait for the helicopter.

A KFOR helicopter had been sent to the location even though it was not an approved HLS.

Due to the weather conditions at the mountain the helicopter could not reach any area close to the camp but it landed in the village Brod approx. 1-hour downhill walking distance from the camp.

One civilian Ambulance and one KFOR Ambulance were also sent to Brod.

When the Paramedics knew they would not get helicopter support at their location they decided to walk down the mountain with the casualty.

With the help of four locals to hold the stretcher and the horse, the Paramedics walked for almost two hours downhill from the mountain with a seriously injured person on a stretcher at the back of a horse.

The casualty was in pain but conscious all the time he got more analgesic and more fluid intravenous during the transportation.

Due to the uncomfortable transport the bleeding increases and his bandages had to be reinforced several times. In addition because of the cold weather and the loss of blood the casualty got very cold and his blood pressure drops.

During the whole transportation the sight was minimal due to the mist.

Before darkness the helicopter had to leave Brod and return to the base, but the KFOR Medical crew stayed on ground to wait for the casualty.

When the casualty arrived at Brod he was transferred to a civilian Ambulance and transported through the village to the KFOR Ambulance. (KFOR APC Ambulance couldn't enter the village because of narrow streets).

At 19:15 the Paramedics gives a report to the KFOR Doctor and the casualty is taken care of and transported by road to the German KFOR hospital in Prizren where they arrives at approx. 20:45.

The Paramedics were not allowed to go with the casualty in the KFOR Ambulance. They got to the hospital at 22:00 but the casualty was then in the operating theatre.

Because of the bad injuries [the Victim]'s right leg was amputated above the knee.

Conclusions

The Paramedics did an exceptionally good job under very trying conditions.

The medical support from KFOR was very good considering the circumstances.

There was no approved HLS at the site.

There were no communications with KFOR at the site.

CASEVAC by helicopter was not possible due to the weather conditions at the site.

Time from accident till casualty gets to KFOR hospital is 5 hours.

Recommendations

Get an approved HLS close to the site.

Ensure that communication lines are always functional with KFOR.

Before starting any clearance activities, ensure you can get CASEVAC by helicopter if needed.

Cancel all clearance activities when CASEVAC by helicopter is not possible due to the weather conditions at the site.

The objective must always be to get the casualty to the hospital within 1 hour.

Signed: QA Medical Officer

In December 2001 the MACC reported that the Victim had been fitted with a permanent prosthesis and was then living and working in South Africa.

Analysis

The primary cause of this accident is listed as a *“Management/control inadequacy”* because the Victim was member of the management team and was in breach of several basic safety SOPs. His own insistence that he did not intend to clear mines when he left camp (see Related papers) is a bizarre excuse. His age is not recorded but he was a young ex-pat.

The secondary cause is listed as *“Inadequate training”* because it seems that the Program Manager was unaware of the basic safety rules that they were in breach of.

That the demining group chose to operate in an area without adequate medical or other support is a further management failing.

As with most reports from the Kosovo MACC, the accident report demonstrates an unusually thorough and critical approach to accident investigation. The Mine Action Co-ordination Centre that carried out the investigation was not engaged in demining, and this may (in part) explain the unusually objective nature of their investigations

Related papers

First are the annexes made available with the MACC accident report, edited for anonymity.

They are followed by a list of questions asked of the demining group by the investigating team – and their responses.

Finally, a “REPORT ON QA COMPLETION REPORTS” for the demining group in the area of this accident is included to illustrate their “professionalism”.

ANNEX A: MACC convening order for accident investigation Board of Inquiry

ANNEX B: IMSMA Mine/UXO Accident Report – not included in digitised form.

ANNEX C: Statements – see separate Statements file.

ANNEX D: Dangerous Area Report and VJ Record – not in file.

ANNEX E: MACC QA Medical Officer report – see Victims tab and click on Medical report button.

ANNEX F: Technical data on the PMA-1 anti-personnel blast mine – omitted for brevity.

ANNEX G: Copy of the [Demining group] Insurance Policy – omitted for anonymity – Continental scale compensation.

INCIDENT INVESTIGATION Questions

MACC QA OFFICER QUESTIONS Dated 30 September 2000

1. For PM; Did you authorize the teams to work on Sunday?

Answer; The teams were authorized to work on Sunday to conduct necessary recce's in order to have work ready for the mine clearance teams. This decision was taken jointly by the PM , DPM , and the OPS Manager

2. For the PM; If yes did you coordinate this with the MACC Operations Office?

Answer; The PM and the DPM had spoken with MACC OPS and the MACC Program Manager reference our intentions to move up to the mountains for the duration of the task dossiers; that we would stay there because of the logistics and work straight through until the tasks were completed. Because of the helicopter support and the general minimized Sunday support being reduced, it was not intended to do tasks other than recce's for camp movement, water sources, HLS's etc on Sunday's.

3. Questions for the Operations Manager; Who gave you authorization to work on a Sunday?

Answer; Due to the nature of the tasks and the physical location, it was a company decision to maximize our time and conduct recce's on Sunday.

4. Question; You mentioned in your statement that you were conducting a recce to find a new field camp, a new HLS and a couple of minefields. I conclude that according to your accredited SOP's, you were conducting a level 2 survey?

Answer; In order to safely locate a field camp, HLS and find a water supply, it is necessary to ensure that they are not within a dangerous area of a minefield. In trying to determine to find out where everything is in relation to each other the mined areas need to be identified and located. I did not intend to go out and find a minefield to clear.

5. Question; Why didn't you bring the medic with you?

Answer ; I was planning a recce only and I didn't think that I needed a medic for a recce.

6. Question; Did you or any of your team members wear your PPE?

Answer; We were not wearing PPE.

7. Question; If not why not?

Answer ; As I have said, it was planned to be a recce only, PPE would not have made any difference what so ever to the extent of my injury because stepping a mine with or without PPE would not have lessened my injury. Injury from a frontal blast from a fragmentation mine would be lessened but not stepping on a mine.

8. Question; Did you have any information on the minefield in the area (VJ records)?

I had no VJ records, but I had copies of the VJ battle maps from S5- 11 and S5 12 dossiers.

9. Question; Why did you decide to lift and neutralize the PMA – 1 mines?

Answer ; As I have said, I did not intend to clear any mines that day. Once I found the minefield, I realized that it was out of location from where it should be. I wanted to determine if it was a similar pattern and size as the previous minefields in our area. At that point I unintentionally disregarded the Sunday policy.

I hope that this answers your questions. If there are any more concerns or questions please let me know.

Signed: Project manager

REPORT ON QA COMPLETION REPORTS

DONE FOR [Demining group] IN THE BROD AREA

On 25 October 2000 it was arranged to carry out a series of completion evaluations in the area of Brod by my QA Inspector and myself. This arrangement included a helicopter from KFOR to transport us with [Demining group manager] and a medic to the site so that these outstanding tasks could be carried out as quickly as possible. One of these sites had also been the scene of the accident to [Victim name] the previous month. The completions could

not be accepted, as there were no pickets in the ground as required by the UN MACC Standards. There were also, in a number of cases not even Reference points. The [Demining group manager]'s attitude to this blatant refusal to adhere to the MACC Standards was that if **the MACC wanted metal pickets in the ground then the MACC could do it itself**. We had to walk down from the site after the evaluations, as the helicopter could not stay for the duration of the evaluations. I reported these events to my Project Manager and to the QA Officer of the MACC.

On 27 October it was agreed to again go up the mountain on 30 October, by horse, and the [Demining group manager] would personally hammer metal pickets in at the turning points and at the reference point positions. It was also agreed that my QA Inspector would accompany the [Demining group manager] so that the QA evaluations could be completed.

On Monday 30 October I took my QA Inspector to the [Demining group] offices at 0700. Before they left I asked the [Demining group manager] who would be the medic for the trip, as I did not see any of the usual [demining group] medics in the office. I was introduced to a young man who said that he was the medic for the trip. I accepted his word and they left.

When they came down my QA Inspector reported to me that he had completed all the completion evaluations. He also reported that he had fallen off his horse at some point while up on the mountain and that when he stood up he saw a PMA -1 anti personnel mine on the ground. He told the [Demining group manager] that they were in a minefield and pointed out the mine to the [Demining group manager]. The [Demining group manager] said that they must move slowly out of the area and once out my QA Inspector realized that his wristwatch had come off when he fell. The owner of the horses wanted to go back to retrieve it but my QA Inspector stopped him. They came off the mountain about 1800 that evening.

I found out on 2 November that the man introduced to me as the medic on 30 October is in reality the [Demining group manager]'s son and that he is not a medic but a mechanical assistant on the site with the [Demining group]. I was extremely upset that the [Demining group manager] had so recklessly endangered the life of one of my Inspectors in his rush to correct a series of completions that should have been done correctly in the first place.

I hope that I never have to work with a person like the [Demining group manager] again, whose attitude to the safety of other people is definitely not in the spirit of Humanitarian Mine Clearance.

Signed: QA SUPERVISOR

The QA Inspector's report follows.

Date: 2000-11-03

To: Q.A Supervisor

From: [QA Inspector]

1) Today 03-11-2000 {Name 1} told me that [Name 2] required a report from me. I was instructed by [Name 2] on 30-10-2000 (Monday) that together with the [Demining group manager] I was to go to the area of Brod to do the completion of 6 minefields, which minefields I together with [Name 1], had been to before to do completions but they were not in accordance with the UN MACC rules.

2) On Monday 30-10-2000 I arrived at the [Demining group] office at 6:50 where [Name 1] was waiting for me together with the [Demining group manager] (Deputy Program Manager). After a consultation between [Name 1] and the [Demining group manager], they, the [Demining group manager] and [Name 3] (the [Demining group manager]'s son) who was the medic (**I found out that [Name 3] is not a medic, he is a mechanic**) we decided to leave for Brod. We left with their vehicle at the 7:15 and we arrived at Brod at 8:45. There was a local person with 4 horses waiting for us, and that person offered us a drink of café, so we drank a café and about 9:00 we left to get the horses and we prepared all our things and we left at 9:15 at the Brod.

3) The trip took some time - about 2 hrs 15 or 20 min. We had some problems with the horses and all the way the local person was in the lead and I was behind all of them. At some

time the local person stopped and he showed me that in this place there had been before one big minefield, which [the Demining group] had cleared. At that moment I tried to jump from the horse, but the horse was afraid and I fell from him. I had some injuries to my head and in some other places. After the [Demining group manager] and his son asked me from a distance am I OK and I answered them that I am OK.

4) The [Demining group manager] saw that we were in a minefield and in this minefield there had been one accident (a demining group Operations Officer lost his leg) and he told [Name 3] not to move because we were in a minefield, and in that moment he asked his son for the detector. When I heard this news I stopped and I thought that is not true **but I started to look around and I saw the mines**. Then I believed that we were in a minefield area. The [Demining group manager] didn't use the detector but he ordered his son to follow his steps and also me to follow [his son's] steps. Also I informed the local person to come back behind me and to follow my steps, because we have been in the minefield area. Slowly we moved from the minefield area without any accident, only that fall from the horse and that I lost a wristwatch in the process of falling from the horse.

5) After that we left to the area where we were to do the completions and we started with the completions of the first minefield, second and the other one to the last minefield which was in a very bad situation. In all the minefields I fixed the Benchmark, start point and I marked area by the UN MACC rules. After the completions of the minefields we returned to the base at Prizren. We arrived in our base about 17:40 where [Name 1] was waiting for me and I reported to him about all that had happened in that day.

Signed.

Statements

The following are the statements of witness accompanying the MACC accident report, edited for anonymity.

Statement 1 – deputy Project manager

The deputy Project manager sent a letter to president of the demining company dated 25th September 2000 in which he explained the events surrounding the accident.

The Victim was Ops Manager and was left in charge of transferring the camp to a new location over the weekend. Ten local deminers, three team leaders and two medics were left with him with two horses and their handlers.

The weather in the mountains deteriorated over the weekend and radio communication was sometimes difficult due to low cloud. On Sunday 24th the deputy project manager spoke to the victim by radio when he requested a resupply of bread and fruit but neglected to mention that he was sending the ten deminers down the mountain because of the weather. The deminers arrived at 11 am and explained about the weather, so he sent them home for two days. They left the camp at 11:30 leaving him with a local assistant at the campo at the base of the mountain.

A radio contact was scheduled for 12:00 but he was unable to make contact.

At 16:00 hours (next scheduled contact) he was able to make contact although cloud was now covering "half of the mountain". He was informed that the accident had occurred and that medics were on their way to the victim. He instructed the Team Leader in charge of the accident not to wait for a helicopter if the bad weather conditions made a landing unlikely, but to bring the victim down to the village of Brod with the horses. He would ensure that a doctor and an ambulance were waiting at the village. He then drove to the village of Dragas where he hired a local ambulance and sent it to Brod. From Dragas he could also contact KFOR and the [Demining group] base camp, asking them to pass the information on to relevant parties. By 17:20 he was in the village of Brod organising locals to assist in the evacuation down the mountain.

A KFOR helicopter arrived at 18:00 but could not see the evacuation party on the mountainside. Using the police blue light as a guide, the helicopter was able to leave a doctor on the ground. Another KFOR unit also sent an ambulance. Radio contact with the evacuation party was good. The evacuation party arrived in Brod at 19:00. At 19:15, the KFOR ambulance left for Prizren hospital with the victim.

The deputy programme manager made arrangements for the rest of the team and followed with the Team Leaders who had been on the mountain with the victim, arriving at Prizren hospital at 22:00 hours when the victim was in surgery

Statement 2 – the Victim

On 24th of September 2000 at 08:00 the victim of the [Demining group] accident gave a statement to the Project Manager while in a KFOR hospital in Prizren.

“On Sunday the 24th of September at approximately 12:20 or 12:30 hours [two named others] and myself were doing a recce to find a new field camp. A new HLS, and to recce a couple of minefields in the general area for the next weeks work. We had identified an area for a new campsite and we were circling that area to determine the proximity of the closest minefield. We pegged the four corners of it and moved out to find the new HLS and to find the next minefield. We came to a big rock along the trail and found traces of mines and pieces of PMA-1s scattered around that general area. [Name] and myself continued down the sheep trail and [Name] went to the left to the higher ground to try to find the AT row.

I had located and excavated a number of PMA-1 mines on the front row of keepers: maybe 6 or 7. I then went to continue down the row to the end to put up a marker. [Name] was approximately 30 meters ahead of me along the path. I heard a bang and realised that I had stepped on a mine.

[The Team Leader] was at my side in a few seconds and applied pressure to my femoral artery and told [Name] to contact for assistance.

I remained conscious the entire time, and I was still awake and aware of everything including the move down the mountain to the ambulance and the road trip.

Statement 3 – Team Leader

In a “Minefield Accident Statement” [undated] the Team Leader who was the first man to reach the victim stated that the group left the camp site to carry out a recce at 12:30 on the day of the accident [inconsistent timings].

They found a suitable campsite close to a small stream. As they followed the stream to look for a suitable spot to refill water bottles, the victim noticed the “hole for a TMA-5”. They moved away and “started preparing our detectors”.

“....Once our detectors were ready [the victim] said he would follow the holes towards the East and [Name] and I said we would head to the West. [Name] and I followed the holes checking the area until about 20m past the last hole we spotted. I suggested to [Name] that he head South and try to find the end of the PMR rows and I would head back and mark the TMA holes and he agreed. I headed along the line marking the holes with pieces of toilet paper on sticks and paper from my notebook. Along the way I collected whatever mine parts or explosives I saw and placed them in an existing pile on some high ground. I then followed [the victim's] route marking the holes. When I arrived at [the Victim's] area he informed me I had marked the last hole and that he had found both PMR lines and marked the first with a red stick. We then proceeded back to the detector bags.... we then packed up and headed in the direction of the second minefield.

“We followed along a trail heading East where [the Victim] said the second one should be.... We followed a dry riverbed up to the next trail and followed along it until we came across a large rock next to the trail and [the Victim] pointed out a mine sign and then [Name] pointed out a second one further along the trail. We then assembled our detectors.... [The Victim] and I said we would check the trail where some mines were laying off to the side. When [the

Victim] and I arrived at the mine sign I said I would go forward and check the trail as far as the next sign and see if I could find the end, he said he would look for any more mines along the edge. I proceeded ahead until I came across a PMR next to the trail. I then removed the fuse and detonator placing them in a PMA-1 that was next to it with some dirt and laid everything on the trail so [the Victim] could see it as he came along. When I turned around to continue the sweep I heard a loud explosion and ducked. I looked around and saw [the Victim] rolling towards the trail. I dropped the detector and ran to [the Victim] who was about 30 meters behind me.

When I arrived he was lying half on the trail and half down the hill. I asked him if he was all right and did not notice anything wrong until I looked towards his foot. He responded by cursing and saying something about he didn't see it coming. I applied pressure to his leg and shouted to [Name] for help. I asked [the Victim] what had happened and he replied he did not know. I noticed [Name] on the hill talking to someone on the radio and reassured [the Victim] that help was on the way. As [Name] approached us I asked him to sweep the area around us in case we were in a dangerous area. When he had finished I asked him to relieve me keeping pressure on Clinton's leg. When we switched I told [the Victim] I was going to meet the medics and he told me to take his radio in his pocket. I then ran to the top of the hill to call the medics. I made contact with the medics and guided them to our location. I kept the horses by the big rock and told the medics to stay on the trail. I remained there keeping in radio contact with [Name] at the base camp. When the medics brought [the Victim] to the horses I returned to the minefield to gather the detectors. I then followed the horses back to camp and waited there for further instructions."

Statement 4 – Assistant Team Leader

A statement dated 24th September 2000 and signed by the Assistant Team Leader was on file. The English was poor and has been corrected where the meaning was obvious in the following. Information duplicating that in other statements has been omitted.

The witness stated that the group left the camp at approximately 12:30 to look for a new camp site, a "chopper landing zone and to see if we could locate the minefields that would be worked on Monday 25th September".

At the second minefield site, the witness separated from the Victim and went to find the top edge of the minefield. "While I was walking on the top path I spotted a TMA-5 lying on the grass with a PMA-1 next to it. I then left the path to investigate the TMA-5 hole. I found that the PMA-1 fuse was already taken out. I then told [the Victim] that I had found the TMA-5 row."

"Then I heard a large explosion. When I looked up I saw [the Victim] rolling downhill.... I then jumped up and ran to where we had left our detector bags. I then contacted [Name] our medic who was still at the camp and asked for assistance.....

.....at about 16:05 [the Medics] arrived on the site to work on [the Victim]. Then we loaded him onto a stretcher and walked him out of the minefield. We loaded him on horseback and started walking in the direction of Brod. When we got to the ambulance at Brod it was about 19:10.

Witness 5 – paramedic

A statement signed and dated by a paramedic on 25th September 2000.

"At approximately 15:45 that day our horses returned from Brod from a logistic run.... [As] we were waiting for the horses to get closer we heard a detonation from the hills behind us. It sounded close and I immediately put on my boots and started to get ready to go investigate closer to the sound. About 30-sec to one minute later I heard [Name] on the radio calling for me. We could not reply [because] he was too far obstructed by the hill but by the sound of his voice we knew that someone was injured. The horses were unloaded and my stretcher and medical bag was loaded on and myself [Name] and two locals went off in the direction of the blast along the track on the side of the hill.

On the way [Name] told me [the Victim] hit a mine. I relayed that to [Name] back at camp to get the necessary procedure going for help while we got to him and stabilised him. At about 16:00-16:05 we arrived at the site of the accident. [The Victim] had a serious wound to the lower leg with protruding bone fragments and the foot was amputated with the exception of the big toe. There was significant bleeding but [Name] was applying femoral pressure most of the time.

[Name] covered the wounds with field dressings and I set up an IV transfusion of Ringers Lactate on his left arm. He was complaining of severe pain on the leg. I set up another transfusion in the right arm to give IV pain medication. I gave him 100 mg Tramal at around 16:30. We continued to stabilise the leg and applied two long splints and elevated the leg. The pain was not relieved very well but I was afraid of overdosing and causing sedation. Due to the mist the chopper would not be able to land and decision was made to travel by horse to Brod. [Name] radioed that [Name] would be waiting in Brod. I requested that he get a medical team to meet us in Brod and this was confirmed. We then loaded [the Victim] on a horse and started to move towards our campsite as the road to Brod led past our site. On arrival we got more medical supplies and I gave another Tramal 100mg IVI at around 17:35. I also tried to get the IVs to run but only got one patient line. Total fluid replacement to then was Haemacel 300 mg (Colloid) and 2.5 L Ringers Lactate. Pain relief was minimal. We also confirmed that the helicopter was not able to land in mist and try to land in Brod. Blood pressure was 100 mmHg systolic and pulse 85.

We moved slowly down the mountain talking to him. He remained conscious and in pain all the way down. At one stage the chopper tried to approach but mist was too thick to get a landing zone. We continued by horse down the mountain. I walked ahead to try to determine the distance as the visibility was about 50m all the way.... I was about 15 minutes ahead...the other medic and [Name] stayed with the horses the whole way. I [reported] the Victim's condition and treatment given to the German doctor waiting by the ambulance. I handed over the patient to the doctor completely at 19:15. [The Victim] was conscious and in pain, and very cold. The two space blankets he had on were not enough as it was very cold and exposed. The IV he had was no longer patent in the right arm."