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DDAS Accident Report

Accident details

Report date: 23/03/2004	Accident number: 266
Accident time: 17:05	Accident Date: 20/04/00
Where it occurred: Nr Kraljane, MNBW district, Gjavoka municipality	Country: Kosovo
Primary cause: Management/control inadequacy (?)	Secondary cause: Inadequate training (?)
Class: Detection accident	Date of main report: 03/05/2000
ID original source: MD/KC/JF	Name of source: KMACC
Organisation: Name removed	
Mine/device: PMA-3 AP blast	Ground condition: bushes/scrub woodland (light)
Date record created: 18/02/04	Date last modified: 23/03/04
No of victims: 1	No of documents: 3

Map details

Longitude:	Latitude:
Alt. coord. system: GR: DN59490889	Coordinates fixed by:
Map east: 5950	Map north: 08700
Map scale: Klina	Map series: M709
Map edition: 4-DMA	Map sheet: 3180 3
Map name: 1:50,000	

Accident Notes

inadequate metal-detector (?)
pressure to work quickly (?)
visor not worn or worn raised (?)
inadequate training (?)
disciplinary action against victim (?)
inadequate area marking (?)
vegetation clearance problem (?)

Accident report

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

The people involved in this accident were clearing a safe lane in order to investigate the site of the accident that had occurred on 14th April 2000 (in which one of the group's surveyors was injured). The demining group's management were asked by the MACC on 16th April to clear a safe route to the accident site so that an investigation could be made. The group deployed immediately and was on its fourth day at the site when the accident occurred. Records of the mined area indicated that 210 PMR-2A and 380 PMA-3 mines had been laid there.



The picture above shows the mined area beyond the accident site.

The weather on that day was cloudy with a temperature of 15-20C. Work had to stop between 13:00 and 14:00 because of rain. Vegetation limited visibility at the site. A photograph showed an access path with low and fairly lush vegetation on both sides. Work at the site was conducted using a one-man one-lane drill, with deminers changing every hour, on the hour. A MACC QA had visited the site on 18th April 2000. The report stated that the detector used was an EBINGER MD8. [Ebinger do not make an MD8 model and the photographs showed a GUARTEL MD8, so a mistake is presumed.]

The deminers changed shift at 17:00 and the victim "did a time appreciation" and realised that they would not reach the site of the previous accident that day. The victim was an ex-pat supervisor with experience in Angola and Kosovo and was the most senior person on site. The precise place where the previous accident had occurred was uncertain and the vegetation limited his view of the area ahead.

Anxious to speed up progress, the victim decided to carry out a "reconnaissance". He checked a detector by passing it over his boot and in the air, then started to clear his way into the uncleared area ahead of the safe lane. He proceeded by checking a small area for each foot and stepping onto it if the detector did not signal. Having gone five metres in one direction, he could see that what he had thought was his target was not, and so turned the other way. His route traced a semi-circle. When he had passed in front of the safe lane to the other side, he stepped on a mine. The time of this was recorded as 17:05.

The victim stated that he had swept the area where the mine detonated and got no reading. It is not recorded how the victim reached the safe lane. Within seconds, two deminers and two supervisors were helping him in the one meter wide safe lane. The photograph below was taken as the victim was being evacuated. The investigators called it a "bad example of command and control" because the "one metre wide lane is overcrowded and offers potential for further injuries. Visors were also not worn and worn raised.



Two medics arrived in less than three minutes and the supervisors withdrew. The victim was moved to the "Casualty collecting Point" where he was stabilised and taken to the Italian KFOR hospital in a well equipped ambulance.

The victim was a "Swedish army officer (qualified EOD and mine clearance instructor) with one and a half years experience as a supervisor with [the demining group involved in this accident]".

Conclusion

The investigators found that the site was marked appropriately according to SOPs and had appropriate communications. The MEDEVAC from the site to hospital was carried out and recorded properly within an hour of the accident.

The victim's detector was checked and found to be working properly. Damage to the lining of the victim's helmet above his forehead indicated that his visor had been raised and explained his (light) facial damage.

The investigators also found that the demining groups SOPs were not adhered to during the clearance, that the risks taken by the victim could have caused a fatality, that the victim was experienced with a senior position but wore his visor raised and did not test the detector properly before using it. They also found that the "extraction of [the victim] from the minefield was executed dangerously".

Recommendations

The investigators recommended that the demining group's management take disciplinary action against the victim, carry out CASEVAC exercises for victim "extraction" as soon as possible and review their methods of testing the detector to include using a test-piece buried in soil.

Comments by the Chief operations Officer

I concur with the recommendations of the Board.

Signed: UNMIK Mine action co-ordination programme, Chief operations Officer

Comments by the Programme Manager

1. I concur with the findings of the Board of Inquiry into this accident.
2. This accident could have been avoided had the [Demining group] supervisor involved followed basic and well-known procedures. The decision by [the Victim] to undertake a reconnaissance in such a manner in a known mined area is both astounding and unprofessional. [The Victim] is extremely lucky that he received only minor injuries, as the situation could easily have been far worse.
3. The fact that this accident occurred as part of an investigation into a previous accident involving another [Demining group] supervisor is extremely disturbing. As in the previous accident, the list of transgressions made by [the Victim] reflects poorly on [the Demining group]. It adds to the impression that [the Demining group] has a cavalier attitude.
4. I do not concur with the comment in Appendix 1 to Annex B that [the Victim]'s excuse for breaking the rules was that he felt strong pressure from the UNMACC to open the lane to assist with the previous accident investigation. This attempt to deflect responsibility for his own actions and poor decision making reinforces my impression that [the Victim] lacks the ability to make the type of decisions expected of a mine clearance supervisor.
5. The issues such as the procedures for testing mine detectors before use and the extraction of casualties from mined areas need to be addressed by NPA management. The recommendation for a Casevac drill is also supported, and this is to be organised in consultation with the MACC.
6. One of the few pleasing factors to come out of this accident was that medical procedures within [the Demining group] had improved, with the proper recording of treatment given to the patient.

Signed: UNMIK Mine Action Programme, Programme Manager

Victim Report

Victim number: 340	Name: Name removed
Age: 37	Gender: Male
Status: supervisory	Fit for work: yes
Compensation: not made available (insured)	Time to hospital: 1 hour
Protection issued: Frag jacket Helmet Short visor	Protection used: Frag jacket, Helmet

Summary of injuries:

INJURIES

minor Eye

minor Face

severe Foot

COMMENT

See medical report.

Medical report

A brief medical report compiled on behalf of the MACC stated that the victim was given "proper first aid" by two qualified medics eight minutes after the accident. The victim's boot was removed at the "Casualty Collection Point" and it was found that three of his toes were "dislocated" and that he had "minor bleeding". He also "had some small wounds in the face but he had no pain". The victim refused an IV cannula and analgesic. In the ambulance he accepted 10mg intra-muscular morphine. The victim was "awake and stable" throughout the evacuation.

At the KFOR hospital the victim's foot was x-rayed and his three dislocated toes were "put back in place". No "permanent injuries were diagnosed with regard to the eyes".

The report concluded that the medics should have set up an IV cannula in case of falling blood pressure and should have given oxygen "according to medical training".

In December 2001, the MACC reported that the Victim was fully recovered and still working as an officer in the Swedish Army.

Analysis

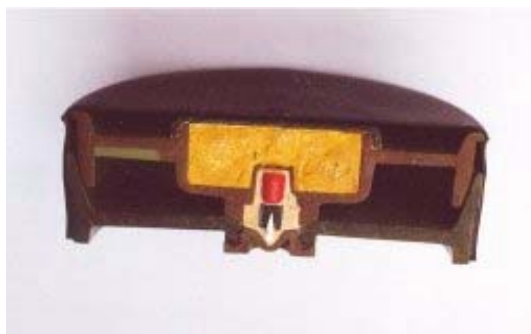
The primary cause of this accident is listed as a "*Management/control inadequacy*" because the victim was a member of the senior management team and was in breach of several basic SOPs at the time of the accident. Apparently, a desire to speed things up led to him taking several shortcuts and setting the deminers under his command a very poor example. It is assumed that he acted from ignorance and so the secondary cause is listed as "*Inadequate training*".

The photographs of the rescue team crowded in a narrow lane with visors raised was a further example of inadequate Field management.

The Country Manager of the demining group was commendably open about the accident, making all details available. He acknowledged the stupidity of the accident and accepted responsibility. When pressed, he said that his Head Office had appointed the personnel without reference to him and this had undermined his authority during his term as Country Manager.

The PMA-3 blast mine contains a very small high explosive charge. This accident illustrates how the results of stepping on a PMA-3 can be a lottery. This may be because of the design of the mine or because its depth sometimes allows energy to dissipate prior to impact with the foot. Crater depth in this case may have provided a clue – especially because the crater resulting from the previous accident at the site had been photographed – so the failure to record the crater in this accident is regrettable.

The injuries resulting from stepping on a PMA-3 vary from bruising to traumatic amputations. 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 the HE 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.



The report demonstrated an unusually thorough and critical approach to accident investigation. The Mine Action Co-ordination Centre which carried out the investigation was not engaged in demining, and this may (in part) explain the unusually objective nature of the investigation.

Related papers

Other photographs in the file showed the victim's PPE, his boot and his detector. No photograph of the blast site was included.

The Demining group programme manager made available their entire accident file which includes all communications surrounding the accident, original statements, etc. This is held on file. It includes a check of the detector (made by another Demining group) which concluded that the Guartel MD8 (dry) could detect the PMA-3 fuze at 11 cm in air.

Statements

The following are statements from the victim and witnesses, edited for anonymity. Other statements are held on file, but add nothing to the information herein.

Supervisor/Victim – Statement 1

Report from mine accident (21 [sic] April 2000) in Kraljane village

The task was to clear a lane to the place where [Previous victim] had his accident. The team was composed of myself and one section of deminers from 2 Platoon, under section leader [SL], plus medical team No.1.

We left the office at 8 o'clock in the morning and started the mine/UXO clearance around 0920hrs. The weather was not the best, with slight rain, but we could work. During the day work went normally, but we did have to stand down between 1320hrs and 1400hrs due to the rain.

After 1400hrs the weather was better.

During the day we were working on the small road, but at around 1530hrs we found [Previous victim]'s boots and had to go into the forest to find the accident site.

According to the information that I had it should have been 15 to 20 metres to the right of the small road. "So I turn the first deminer and start to go into the forest we could not see the accident place so I started him to where it look best to work."

At around 1615hrs [Name excised] turned up for a visit. When the 1700hrs change over for the deminers came, we had worked about 10 metres into the forest, but we could not see the target. We had different options about how to continue the clearance. There was one place to the left that looked suspicious, to the front was a bush and behind that also looked suspicious. We could not see much to the right of the lane, and according to the time we had left to work, approx. 1 and a half hours, we could only reach one of these places. The task was supposed to be finished that day so to go on to the correct target I decided to make a recce on my own.

So when the 1700hrs change over came I told the deminers to wait in the lane and I took a detector from the lane. I turned it on and off and did the check of the detector and it appeared that the signal was OK. I went out of the lane into the unclear area using the detector to clear in front of me. "In the area where the ground condition was best". When I got a signal I went around that area. First I went to the left target, searching about five metres closer to the target. After this distance I could confirm that the dark spot was an old plastic bag and not the crater. I decided to move to the right to clear the area in front of the working lane. I moved in a

half circle in front of the lane using the same method. I could see something that could have been some material that had been left at [Previous victim]'s accident site. So I needed to move about two metres more to confirm that, and if I had been correct I decided to go back. But after one metre the mine detonated. I had checked the area with the detector and didn't get any signal.

After the mine detonated I was on the ground, but I realised pretty soon that my foot was not in a bad condition. I think I was a little shocked and I was eager to get back to the lane and sit down. I used the same track that I had searched earlier to get back. The last two metres between this track and the lane [Name excised] and a deminer started to clear, and from that point they helped me to get to the CCP where the medic started the treatment.

Signed: Supervisor 21-04-00

Supervisor/Victim – statement 2

The following questions were asked by members of the BOI.

Q. In your statement you mention that "the task was suppose to be finish this day". Could you explain what you mean by that?

A. We had another possible hour of work for that day and if we finish we would not have to come back.

Q. Were you pushing for time or did someone impose time restraint?

A. No but if we cleared the 3 options it would take a few days more.

Q. Did you know that the metal detector were not working well and were affected by the rain?

A. Yes but it was before after the rain. The deminers were using the metal detector at that time. I took the detector and I did the air test and check over my boots before I move into the unclear area and it was working well.

Q. If deminer did what you did that day what would you do?

A. I would stop him and reprimand him and gave him a written warning.

Q. Why did you go in the unclear area?

A. To be able to concentrate on the spot where [name excised] had his accident.

Q. Did your medical [evacuation] go well?

A. Yes but the only problem was with the stretcher, they had problem to put it in and getting it out of the ambulance.

Q. Did you refuse the IV from the medic?

A. No I didn't understand why they wanted to put in an IV.

Signed: medical QA officer, 21-04-00

Supervisor

16.30 Coming to Kraljane and stop my car in resting area there I took my flak jacket and helmet. After that I went up to [the Victim].

16.40 to 17.00 I have been with [the Victim] up in the end of lane and [the Victim] said to me I think I go out and have a look (to save time)

Just before [the Victim] decided to go in, one of the deminers complain about his metal detector, and he informed us that the detector don't work well, there is something wrong with it.

17.05 to 17.10 [The Victim] took that detector did the check and started to go out (left from the lane) at the same moment I "said I will go down and take up my metal detector, because my detector is new. I then went to my vehicle to get the detector.

17.10 When I have gone 10-20 metres I heard an explosion and turn around. Running back to the end of lane there I took one prodder and said to [the Victim] "don't move, don't move". After that we started to prod, one deminer and myself. I also told [the Victim] to throw me his detector. I started with that "bad detector" but there was a lot of metal in the ground. When we only had a one meter lane to work and it wasn't sufficient place to work all in the lane so I took one step back and let the two deminers continue the prodding.

17.15 [The Victim] was back in safe lane again and there I told him to open his boots and have a look one his foot. After that two or three of the deminers draw [the Victim] back to safe lane and their medics took over.

17.19 Transport back to the ambulance and 17.23 the ambulance started to Pec/KFOR hospital.

17.47 I give order to medic to give morphine and [the Victim] got 10mg.

18.10 we come to the Italian KFOR hospital.

Signed: Supervisor, Pec, 21 April 2000

Deminer

Around 17h00, I was in the minefield conducting mine/UXO clearance, and [the Victim] took a detector and he went in to the minefield to go at the place where [the previous victim] step on the mine. I heard the bang and I inform the section leader who calls the ambulance and we give him first aid, after that we transfer him in to the ambulance and we left for the Italian KFOR field hospital in Peja.

The MACC QA Officer asked the following questions:

Q. Were you starting your demining shift?

A. Yes

Q. Did you have any problem with your metal detector?

A. No before rain, yes after rain.

Q. What was the distance between the deminers working?

A. Approximately 25m.

Q. Did you go in to evacuate [the Victim]?

A. No I stayed at the Casualty Collecting Point (CCP).

Not signed. 21.04.00