DDAS Accident Report

Accident details

Report date: 18/05/2006

Accident number: 267

Accident time: 11:08

Accident Date: 22/05/2000

Where it occurred: Nr Kodralija, Peje District, Decani Province

Country: Kosovo

Primary cause: Unavoidable (?)

Secondary cause: Field control inadequacy (?)

Class: Vegetation removal accident

Date of main report: 01/06/2000

ID original source: KC/MD/JF

Name of source: KMACC

Organisation: Name removed

Mine/device: PMA-3 AP blast

Ground condition: ditch/channel/trench
metal scrap
route (verge)
trees

Date record created: 18/02/2004

Date last modified: 17/03/2004

No of victims: 1

No of documents: 2

Map details

Longitude:

Latitude:

Alt. coord. system: GR: DN457 088

Coordinates fixed by:

Map east: 4570

Map north: 0879

Map scale: Pec

Map series: M709

Map edition: 5-NIMA

Map sheet: 3080 11

Map name: 1:50,000

Accident Notes

request for machine to assist (?)

inadequate metal-detector (?)

vegetation clearance problem (?)

squatting/kneeling to excavate (?)

metal-detector not used (?)

Accident report

A Mine Accident Report was prepared for the country MACC and made available in August 2000. The following summarises its content. (See also the Internal preliminary report under Related papers.)

The demining group was working on a documented minefield reported to contain 30 PMR-3A and 70 PMA-3 mines.

Work started at 07:00 and by 08:00 the deminers had arrived at the work site. Four breaching lanes were working with a Section Commander in charge. The Section Commander "was doing checks on the individual deminers every three to five minutes". The weather was sunny with a temperature of 20-25 degrees C. The group were using a one-man-one-lane drill in which each deminer cleared a lane on his own, stopping for ten minutes rest every thirty minutes.

The victim was working in a shady ditch where visibility was poor.

The photograph above shows a dirt road with a line of low trees and a ditch alongside.

The ditch was in deep shadow. The ditch was heavily contaminated with rubbish so a detector was not used.

The victim was excavating at 11:08 when he initiated a PMA-3 [identified by inference] with his left foot. He received minor injuries to his left foot, right leg and both hands. The injuries were light enough to allow him to extract himself from the mined area to a "safe road" where he was met by the Section Commander and the two medics.

The victim was "stabilised" then moved to the Italian KFOR hospital by well equipped ambulance. The demining group HQ ordered a stop to all of their operations at 12:00.

The victim arrived at the hospital at 12:17.

The accident site was "secured" with "mine tape" and the victim's tools were recovered from local children who had taken advantage of the distraction to steal them. The victim "suffered only minor injuries and should fully recover".

A photograph of the accident site showed dappled shade from the overhanging trees.

The victim stated that he had his shears in his hands at the time of the accident and was in a "half-kneeling" position. He was excavating [presumably because of high contamination] and was using his excavation "hole" as his baseline. "As I was cutting the vegetation in the ditch, the mine probably rolled down in my excavating area and as I move my left foot I step on it". He said that the area he was working in was shaded by trees and "very dark".

The Section Commander said that the victim was "a good deminer". After the accident, he met the victim on the road. The victim removed his visor at that time. The Section Commander "asked him if he could see and he answered yes".

The medics stated that they checked the victim's entire body and that he had injured "his left foot toe and left hand finger, his eyes were filled with sand from the blast". The second medic added that he also had "some metal pieces in his right leg and also his ring finger on his right

hand". They "put bandage on his left foot and hands then cleared his face". "He didn't have too much bleeding". He was not given analgesics because he was not in pain and not given an IV cannula because he was "not bleeding". No oxygen was given. The medics stayed with him until he went into the operating room at the hospital.

The picture above shows the victim’s tools, PPE and the light “trainer” footwear he was wearing. The “trainer” is torn beside the toes but shows very little damage.

The victim was a "Kosovar deminer with three months experience".

Conclusion

The investigators concluded that the demining group's SOPs were adhered to but that the relative inexperience of the victim and his Section Commander meant that they did not stop work at that particular place due to poor visibility. They found that the victim was wearing his PPE correctly and that the CASEVAC was carried out in accordance with SOPs.

They found that the accident was "preventable" and was caused by a "combination of a difficult work site, unforeseen circumstances and the relative inexperience of the personnel".

Recommendations

The investigators recommended that the demining group "must" provide better supervision of their least experienced deminers "especially in complicated clearance tasks. It was further recommended that "alternative ways of clearance" be considered (mechanical bush cutter), that the group conduct a CASEVAC exercise, and that "where obstacles like ditches, rocks, high contamination, etc occur, a separate plan to approach and clear these obstacles" should be made prior to clearance.

It was further recommended by the MACC QA Medical officer that an IV cannula always be given in case of falling blood pressure, that blood pressure always be taken in case of internal bleeding, that oxygen be given in case of inhalation of explosives and that all demining personnel should have an anti-tetanus vaccination.

Victim Report

Victim number: 341	**Name:** **Name removed**
Age: 31	**Gender:** Male
Status: deminer	**Fit for work:** yes
Compensation: not made available (insured)	**Time to hospital:** 1 hour 9 minutes

Protection issued: Long visor

Short frontal vest

Protection used: Short frontal vest, Long visor

Summary of injuries:

INJURIES

minor Foot

minor Hand

minor Leg

COMMENT

See Medical report.

Medical report

The medic's report stated that first aid was given to the victim two minutes after the accident. "He had injuries on his left ring finger and his left big toe and sand in his eyes and face. He was awake and could walk by himself… he didn't have any pain and there was no large bleeding". His blood pressure was not taken and no medical treatment or oxygen was given in the ambulance.

On arrival at the hospital the victim was met and given an IV cannula, "fluid, analgesic and anti-tetanus vaccine before he was taken to the operating room". His left foot and left hand were x-rayed "only the big toe and left hand index had suffered light injuries".

The victim reported feeling no pain until he got to hospital and his foot was examined. He said that he had refused an IV cannula and painkiller from the medics.

The internal demining group report (See Related papers) records that “the casualty suffered the following injuries: deep gash to left big toe, abrasions to right shin, dislocated left index finger and abrasions to ring finger on right hand”.

In December 2001 the MACC reported that the Victim had fully recovered after two months rehabilitation in Peja and was then working for the same demining group as a mechanic.

Analysis

The primary cause of this accident is listed as *"Unavoidable"* because it seems that the victim was working as directed at the time of the accident. While the investigators imply that the supervisors should have stopped work because of the strong sunlight and shadow, the light conditions were certainly no worse than is common in Africa so stopping work may not have been a reasonable solution. The provision of hats with "peaks" for the blast visors might make it easier to see under these conditions.

The MAC identified that Field supervisors were inexperienced and inadequately trained, so the secondary cause is listed as a *“Field control inadequacy”*.

There is some inconsistency in the record of injuries, but they were light and perhaps could be easily missed. The victim's face and eyes had been struck by "sand from the blast", which implies that either the visor was raised or that it was torn off in the blast (a frequent occurrence with dust-filled, un-injured eyes resulting). Strong sunlight playing on the inside of the visor may have added to the victim's difficulty in seeing. If he were looking down in a position crouched above the blast it is unlikely that the sand entered beneath the long visor (but it is possible).

It is hard to see how the Section Commander could have checked individual deminers every three to five minutes as the report states. This would mean that, if deminers were working in

four lanes 25 metres apart, the Section Commander ran between them and watched them for a very short time before moving on.

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

Comment from the MACC Programme Manager confirmed the recommendations of the investigators and stressed that the need for better supervision applied especially to inexperienced Team Leaders.

Various statements were referenced in the report but the statement made by the country representative of the demining group was not seen by the researcher.

A computer sketch-map of the site implied that the victim walked 15-20 metres to the road after the accident.

Internal demining group preliminary report

The accident took place in a ditch that runs down the side of the original mined area which has been used as a rubbish dump by the locals. During the task recce it was reported that the locals had thrown PMA-3 mines into the ditch at the end of the war. [The Demining group] had already found one PMA-3 in the ditch. Due to the excessive rubbish causing high metal contamination, the clearance of the ditch uses excavation rather than detectors. The ditch is full of brambles, nettles, bones, scrap and other detritus.

Initial impression at the site and from the injuries suffered and damage to equipment is the deminer was working in a half-kneeling position in the bottom of the ditch leaning out over the uncleared area in front of his lane, cutting stinging nettle vegetation on the steep bank of the ditch. He says that something became dislodged from the bank of the ditch and rolled down. At this point the deminer turned to put down his shears and pick up his digging tool when the mine detonated.

It is thought that either the mine had been dislodged from the side of the bank as a result of the cutting and had rolled down next to the deminer's left foot - as he turned he applied pressure to the mine with the inside of his left boot causing it to detonate. Or, while generally working and shifting position the deminer's foot crossed the front of lane marker applying pressure to an uncleared area.

There is dust/debris blown into the underside of the shears and bottom edge of the visor which probably indicates the deminer was almost over the top of the blast. The body armour prevented any penetration of fragments to the torso.

The casualty suffered the following injuries: deep gash to left big toe, abrasions to right shin, dislocated left index finger and abrasions to ring finger on right hand. The casualty has been kept in the Italian KFOR hospital overnight for observation.

His section commander had inspected the lane shortly before the accident.

The deminer was following the correct drills of working up a bank, rather than down. However, it appears that he was cutting vegetation at too great a reach from his end of lane marker and as such did not have control of his tools and body position.

The team had been deployed onto the task for 2 months. The deminer had been working for [the Demining group] for 3 months. The site commander had been with [the Demining group] since October 1999.

A more detailed investigation will be carried out 23 May by UNMACC QA staff and [the Demining group].

This is [the Demining group]'s first accident in Kosovo since arriving in-country 11 months ago.

Sequence of events

1130 [The Victim] accidentally detonated a PMA-3 AP pressure mine while working in a ditch on a single section task. He suffered injuries to his left foot, right leg and both hands - these injuries were minor enough to allow him to walk unaided back down his lane he was working in and proceed to the base line (road at side of minefield).

1132 Medics begin administering first aid. The casualty was then loaded into ambulance.

1148 Ambulance departs for Italian KFOR hospital in Pec.

1150 [The Demining group] Operations Room Dubrava informed of the accident on [the Demining group] HF net.

1155 Accident control established at [the Demining group] Ops Room Dubrava, [name excised] manning radio's/sat phone in Ops Room.

1157 AF - Mech Supervisor rv's with ambulance en route to Pec and accompanies ambulance to Pec.

1200 Expatriate Demining supervisor, informed of accident, moves back to Dubrava.

1200 Programme Manager informed of accident and authorises all [the Demining group] sites to be stood down.

1202 [The Demining group] UK informed and warned there may be a need for an insurance claim.

1205 All [the Demining group] operations stood down in Kosovo, all deminers told to return to [the Demining group] compound Dubrava.

1210 Programme manager contacts MACC operation officer and informs them of accident saying casualty been evacuated to Pec hospital no external assistance required at this time.

1215 Initial Injury report passed to Programme manager, Deminer had suffered injuries to lower left leg and hands more information to follow.

1217 Casualty arrives Pec hospital

1220 Programme manager contacts MACC QA to arrange accident investigation.

1223 [Expatriate Demining supervisor] arrives Dubrava. Provided sitrep to Programme manager in Pristina. [Expatriate Demining supervisor] then tasked to go direct to site ensure area is secured, photographs taken, preliminary investigation begun.

1225 Injury sitrep provided by [Mech Supervisor] to Dubrava Ops room. This then passed to Programme manager in Pristina.

1227 Programme manager contacts MACC and informs them Casualty arrived Pec hospital and undergoing treatment. No further assistance required from the MACC.

1230 Complete injury sitrep provided to Dubrava and phoned through to Programme manager.

1240 [Expatriate Demining supervisor] arrives accident site. Secures area with mine tape. Local child had attempted to steal deminer's tools while everyone else distracted by accident. Tools recovered and transported to Dubrava to be held for investigation purposes.

1700 Name of casualty, grid of site and time of accident passed to UNMACC.

1730 Programme manager and The Demining group director visit accident site.

1930 Deminer interviewed in hospital by senior [Demining group] Kosovar - 2ic operations. He was lucid and spoke clearly about the accident. Injuries to big toe and leg will not involve any amputation, the tip of his finger will be dressed and monitored.

The accident is not unlike the Afghan deminer over stretching last autumn while cutting vegetation in a ditch and losing his balance. He also stepped onto a mine when his foot slid.

Follow-on demining points for [Demining group]. Outwith [sic] the question of this actual accident, the ditch is a possible site for mechanical back-hoe excavation, though one side is lined with trees and the other has a narrow lane. A [Demining group] Fiat Allis is small enough to work along side the ditch, but would need cab side armour as well as rear armour to allow the operator 90 degree swing. The stinging nettles are growing fast and could either be cut mechanically (though the ditch has rubbish that may damage a cutter and the access to the lane is narrow), or they could be sprayed with weed killer. The site is on the list for knapsack spraying using the existing in-country sprayer. The lane is frequently used by locals so could not be closed off for a large back hoe operation, nor is there space for dumping contaminated soil prior to inspection - the soil/rubbish would have to be carted off-site by the armoured tipper truck, which in turn would probably mess up the narrow lane.

Signed: Programme Manager