

6-6-2015

# DDASaccident806

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# DDAS Accident Report

## Accident details

<b>Report date:</b> 13/08/2016	<b>Accident number:</b> 806
<b>Accident time:</b> 08:51	<b>Accident Date:</b> 06/06/2015
<b>Where it occurred:</b> MF2, Border post 7, Khoshima, Shoh Village, Qubodiyon District, Khatlon Region	<b>Country:</b> Tajikistan
<b>Primary cause:</b> Unavoidable (?)	<b>Secondary cause:</b> Management/control inadequacy (?)
<b>Class:</b> Excavation accident	<b>Date of main report:</b> 10/06/2015
<b>ID original source:</b>	<b>Name of source:</b> TNMAC
<b>Organisation:</b> [Name removed]	<b>Ground condition:</b> dry/dusty; hard
<b>Mine/device:</b> PMN AP blast	<b>Date last modified:</b> 13/08/2016
<b>Date record created:</b>	<b>No of documents:</b> 2
<b>No of victims:</b> 1	

## Map details

**Map east:** E 68°12'11,107"

**Map north:** N 37°1'36,984"

## Accident Notes

no independent investigation available (?)

inadequate investigation (?)

visor not worn or worn raised (?)

handtool may have increased injury (?)

squatting/kneeling to excavate (?)

## Accident report

This accident report was made available in 2015 by the national Mine Action Centre TNMAC - in the Tajik language. TNMAC did not carry out its own investigation for unknown reasons. The demining group involved was asked to provide their own English language version but they declined. Some of the formatting and content has been omitted during preparation for inclusion in the DDAS. The substance of the report after translation is reproduced below, edited for anonymity. Text in square brackets [ ] is editorial.

## Internal investigation report

Internal Investigation Report on mine accident in mine field-2 Khoshima, Qubodiyon Distruct, on 06 June 2015. The investigation was conducted by the [Demining group] Head of Operations [Name removed] and Technical Operational Adviser [Name removed].

10 June 2014, Dushanbe, Tajikistan

### **Background Information**

During a landmine explosion a light injury has been received by [Demining group] member Mr. [Name removed]. This occurred on 06.06.2014.

### **Background and Family history**

[The Victim] was born 20.07.1983 in the family of [Name removed]. He has 4 brothers and a sister. He lives in Mulojoni village Faizabad. In 2004 [the Victim] was called to compulsory military service in military unit 45095 Committee of Emergency Situations and Civil Defence of the Republic of Tajikistan. The same year, he was trained the basic de-mining course which has been conducted by [Demining group], and he was accepted as a de-miner and work for them.

After his military service ended in 2006, he came back to [Demining group] as an experienced de-miner and was accepted into their civilian humanitarian de-mining team and started his work. Since then he continued his operations in this organization.

### **The internal investigation of the mine explosion on June 6**

Task MMTMM: TSTM 60 MF 2

Day and time of the explosion: 06/06/2014, 8:51 morning.

Location: Khatlon Region, Qubodiyon District, Shoh Village

Coordinates: E 68°12'11,107" N 37°1'36,984"

Team: Team №5 (MAT-5)

Organization: [International Demining group]

### **1. Report**

The investigation team comprised the [Demining group] Head of Operations and Operational advisor. The investigation team was present in the area on 6 June 2014 at 15:52 and their report of the internal investigation was presented to TNMAC on June 07.

The explosion occurred in the mined area of the Khoshima Novobod Qabodiyon community. As a result of a PMN explosion a deminer received light injuries This de-miner had been sent by [Demining group] for the mine clearance operation according to the task.

TNMAC registered this task under the number TS TM 60 MF2 and the task was prepared for authorization according to the required procedures. The head of TNMAC operations Mr. [Name removed] on May 08, 2013 [Name removed] sent the task to the representative of the [Demining group] Mr. [Name removed] Operations Manager.

General survey in this area was conducted in 2009 by [Demining group] and the area of the minefield was identified as being approximately 17,500 m<sup>2</sup>. According to available documentation, on December 26 1993 the area was planted with mines by soldiers of the Russian Border Guard. In this minefield there are 40 PMN blast mines and 5 OZM 72 fragmentation mines. The mine clearance operation in this area started on 25.09.13 using the [Demining group] dog teams and a manual team. The PMN mines in this minefield were located and they were found to be close to each other at distances of between 1 and 2 metres. The OZM-72 in this area are in a straight line from each other for 40 metres distance.

The higher level perimeter of this minefield was searched by de-mining dogs, over a 3,262 m<sup>2</sup> area. 4,140 m<sup>2</sup> of the remaining higher land was cancelled by de-mining group's dog team. The remainder of the higher land was cleared by manual de-mining manual team, which is 14,467 m<sup>2</sup>.

The depth of the mine clearance operation was from 20 to 80 cm.

As the result of the work in the minefield 13 PMN items antipersonnel mines and 2 OZM-72 antipersonnel mines had been found and destroyed before the accident.

Total hours of work in this area before the accident was 490 hours.

Approximately 88,2% of the land had been cleared/released.

This minefield is situated near observation border point #7 Khoshima. One part of this minefield is laid on an earth ridge of high ground and the lower part is in a reedy area. Due to the location of mines which lie on the crumbling edge of the ridge, the mines have been covered by soil. The depth of these mines is 50-80 cm. For this reason we applied a full excavation method until finding the real minefield area. According to submitted reports from the group in May 2014, in one working day 48.5 m<sup>2</sup> of land was cleared. Due to this reason the work was running very slow in that minefield.

### **3. Management and discipline in the working area:**

This mine clearance group was established in 2005, but the staff of this team was formed in 2010. During this period, the staff of the team conducted operations in Tajikistan in the following territory: Darvoz, Shahritus, Khusrav, Rudaki, Kabadiyon, Qumsangir and in other places. They have good experience in minefields.

The last refresher de-mining training for this manual clearance group #5 was conducted from 03.03-14 to 14.03.2014 with the following topics:

- Rules of safety in the mine area.
- Marking minefield.
- Marking administrative zone.
- ZP recognition mines and ZT.
- Recognising unexploded munitions.
- About mine detector Ebinger 421.
- First aid.

Last briefing on the internal quality and external quality control was conducted by:

- Head of Operations Manager [Demining group], on 7 May 2014
- Quality Control TNMAC 4140 [Name removed], on 30 May 2014

In this team, the last accident happened in 2010. In this minefield during the day of the mine accident 12 staff operated.

THE TEAM PERSONNEL WHO WERE CONDUCTED OPERATION IN THE AREA DURING MINE ACCIDENT. [Table naming 13 individuals removed.]

The TMAC given task (TS TM 60 MF № 2). Demining in the minefield started at 05:30 on 06 June 2014. According to the report submitted by the team leader, the accident happened in

the minefield area at 08:51 and resulted in one injured de-miner, namely [the Victim], type of blood A (II) + .

### **Description of explosion from [the Victim]**

According to the [Victim]'s words, he was in his line of working area and tested the Detector Ebinger 421 GS and started working through the line and then with a full excavation operation method at a depth of approximately 20-80 cm. He was working with spade and during the excavation process ground fell from above and a mine accident occurred. As the result of the explosion, the deminer was thrown back six metres.

### **Medical First Aid Assistance**

During the mine clearance operation of the de-miners, the team leader was observing the staff. The de-miner who was working near the injured de-miner after hearing sounds of the explosion he came to the place of the injured de-miner [the Victim] and provided him with first aid assistance. Further medical assistance by team doctor #5 [Name removed], was provided at the medical point area.

After providing medical assistance, the injured de-miner was taken to the Ambulance with support of the other de-miners and at the same time the doctor provided him regular assistance. The injured de-miner was taken to the Shahritus Central Medical Hospital with the Team Leader [Name removed], and De-miner [Name removed]. At 10:46 the injured de-miner arrived at the hospital.

The explosion time was at 08:51. The time of the 76 km evacuation from the minefield area to the hospital was 1 hour 55 minutes.

Detailed information on injured de-miner [the Victim].

After the medical investigations it was found that the mentioned injured de-miner received the wounds described below:

- Small wound on the lips.
- A small wound on the bottom lips.
- Small wound under his chin.
- Sores get small pieces.
- Three front tooth broken.
- Light concussion
- [A possible lung injury is reported in the statements. Eye, arm and leg injury is shown in the photographs.]

The following staff provided first aid assistance:

- Team doctors № 5 [Name removed]
- [Demining group] Coordinator [Name removed].

### **Damaged equipment during accident:**

- Protection Visor: at the time of the accident filled with dust and soil.
- Uniform protection: at the time of the explosion was covered with black sand and blood. [See pictures below.]
- Trousers: after the explosion was torn.



[Visor showing a light mud spray and water droplets, but no damage. Frontal armour showing mud on right thigh and all over upper chest. ]



Demining equipment for excavation [Picture included does not show the short tool used at the time of the accident.]

[Picture of Ebinger 421 GS metal-detector removed]

### **Communication timeline**

According to the accepted rules the [Demining group] communication used via cell phones, satellite (globe), VHF.

### **[Demining group] radio operator reports**

08:54 - the team supervisor #5 [Name removed] called to [Demining group] radio operator [Name removed] and reported the mine accident TS TM 60 MF 2 Khoshma that occurred at 08:51 as resulted in [the Victim] being injured. According to the primary information, [the Victim] during the explosion he was wearing his personal protection equipment visor and in explosion he received wound on lips from the visor face. He broke tooth but had no injuries on hands and legs. He also received some wounds caused by sand during the explosion.

08:55 – [Demining group] radio operator Mr. [Name removed] informed the [Demining group] Operational Supervisor Mr. [Name removed] about explosion of the mine and provided primary information.

08:57 – [Demining group] Operational Supervisor [Name removed] reported to the TNMAC Head of Operations and informed him about the mine accident explosion in the field.

09:04 - The Supervisor of the mine clearance team #5 [Name removed] called to the [Demining group] Supervisor Operation Mr. [Name removed] and reported on condition of the injured de-miner. He said that the injured de-miner was under shock but had no life threatening injuries. The deminer was wearing his PPE and his lips were swelled and his tooth broken.

09:05 – [Demining group] Operational Supervisor [Name removed] reported to the TNMAC Head of Operation and provided primary information.

09:21 - The Supervisor of the mine clearance team #5 [Name removed] called to the [Demining group] Supervisor Operation Mr. [Name removed] and reported that the explosion occurred at 08:51 during the working time, during the full excavation operation method at the depth of approximately 20-80 cm when a piece of the ground fallen from the upside of the ground and the explosion occurred. At this time they were driving the injured de-miner to the central hospital of the Shartuz.

09:24 – It was reported that as a result of a landmine explosion, the lower part of visor hit to the bottom part of the face of de-miner and he received lips wound and broke a tooth.

10:46 - The Medic team brought de-miner injure to the district hospital of Shartuz.

11:05 – Two cars left from the [Demining group] office in Dushanbe. In one, the [Demining group] Supervisor [Name removed] travelled together with Technical Advisor [Name removed]. In the other the [Demining group] Chief Medic [Name removed] travelled.

11:07 - [Demining group] Operational Supervisor Mr. [Name removed] reported to [Demining group] radio operator Mr. [Name removed] and informed that the condition of the injured de-miner was normal and the hospital doctors were treated his lip wounds.

13:38 - The medics with injured de-miner departed from the district toward Dushanbe city.

14:57 – [Demining group] Supervisor [Name removed] together with Technical Advisor of [Name removed] arrived to the field.

16:51 - The medics with injured de-miner arrived to Dushanbe city.

17:15 - The injured de-miner reached to the Central Hospital of Dushanbe, Qaria Bolo.

Equipment which was visible in the field after mine explosion occurred.

1. Visor of the de-miner: (distance) 12 metre located
2. Excavation shovel : 60 cm located
3. Working equipment from accident area: 1,330 cm located
4. Plastic Bucket: 1,150 cm located
5. Basestick: 70 cm located

## Pictures



Place of accident



Visor 12 m.



Excavation shovel 60 cm



The place of the accident

Minefield map TS TM 60 MF 2 Shoh, [Removed]



Injured picture of [The victim]. [Picture shows left eye slightly puffed and red, lips and chin both split. No damage at all to nose. Other pictures show light fragmentation on right arm from wrist extending over elbow and upper right thigh.]

### Minefield pictures



Minefield area on the slippage.



Marking used on the minefield.

Personal staff of [Demining group] MAT-5 [Picture removed]

Personal staff of [Demining group] MAT-5 during evacuation [Picture removed].

Minefield sketch [Picture removed].

#### 4. RECOMMENDATIONS AND SUGGESTIONS

- After mine explosion, a refresher training/course should be conducted with the demining team number #5
- When the de-miners hear the high signal of the detector, the de-miner should inform the team leader.
- Each evening, all de-mining teams should conduct a meeting and discuss the mistakes that have occurred in the field in order not to repeat such mistakes.
- During full excavation in the soft ground the using of the prodder tool is not recommended.
- Before using shovel, the ground should be checked with the detector.
- A guidance and safety briefing should be provided to the teams each morning according to the SOP [Demining group].
- Each Team leader should provide detailed information on the result of the daily activities.
- The system of the confirmation (time, place) should be in the place and training in the evacuation of casualties should be provided (as required in the [Demining group] SOP).
- This reporting and registration of the training should include in [Demining group] Office and in the field supervisor level.
- Once each month refresher training on safety and de-mining is important to give to the team in the administration area.
- After destruction of the mines and UXO, the team and section leader should check the place of the destruction.
- This minefield presents challenges to the operation of the de-miners and has a very high risk. It is requested from TMAC use other mine clearance operations, probably mechanical.

Signed: Operational Supervisor [Name removed]

Technical Advisor of [Demining group] [Name removed].

### **Victim Report**

<b>Victim number:</b> 1002	<b>Name:</b> [Name removed]
<b>Age:</b> 32	<b>Gender:</b> Male
<b>Status:</b> deminer	<b>Fit for work:</b> yes
<b>Compensation:</b> Not made available	<b>Time to hospital:</b> 115 minutes
<b>Protection issued:</b> Frontal apron; Long visor	<b>Protection used:</b> Frontal apron

**Summary of injuries:** minor Arm; minor Eye; minor Face; minor Head; minor Leg

COMMENT: Possible lung injury (see statements). No medical report was made available.

### **Statements**

Addressed to operations Manager [Name removed]

#### **Statement 1**

I am the Head of de-mining group #5 [Name removed]. On the date of 06.06.2014 I woke up in the morning, prayed, ate my breakfast and went to the minefield with my group. When we came to minefield I have briefed my group on security rules and took their signatures that they were informed on that, after that with three de-miners I have entered the minefield where I settled them and briefed them on methods of full excavation, then I approached each de-miner near his working stick and in practice showed the full excavation method. I then approached the working point of de-miner [Name removed] and in this moment the explosion occurred in the minefield. I and all our group ran to the place of the explosion and gave first aid to de-miner then we brought him to the group doctor who gave him his first aid After that we loaded him to the ambulance car and drove him to District Hospital of Shahrituz. In the hospital they gave him their additional treatment. Due to lung injury we have sent him to Dushanbe hospital . This statement was written by me is correct, I don't have any additions.

Signed [Name removed]                      06.06.2014

#### **Statement 2**

I am de-miner Mr. [Name removed]. I woke up in the morning, prayed and had breakfast and after that go in the car toward the minefield area. After that we arrived to the minefield and prepared all equipment. The team leader provided us safety briefing and then with the section leader we moved toward the minefield area. We have been informed by the section leader about carefulness and preparation of the equipment. After the 3 break times I heard the sound of the explosion and I came to the area saw de-miner [the Victim] was injured and we assisted him with first aid and took him to medic area.

This statement written by me and it is correct.

Signed: [Name removed]

### Statement 3

I am de-miner [Name removed]. In the morning I woke up and prayed, had breakfast and after the breakfast got into the car and moved to the minefield area. After that we arrived to the field and prepared de-mining equipment. The team leader conducted safety procedures. With the section leader we moved to the field and the section leader informed us the right way of the work. After the 3 break times, I heard the sound of the explosion and came and seen [the Victim] injured by mine and we provide him the first aid assistance. We took him to the medic area.

This statement written by me and it is correct.

Signed: [Name removed]

### Analysis

The primary cause of this accident is listed as a “*Unavoidable*” because the investigators thought it likely that loose but heavy material from higher up the slope fell as the deminer was working, and this detonated the mine. This could have occurred. The secondary cause is listed as a “*Management Control Inadequacy*” because the senior demining group staff who investigated the accident were either attempting to conceal a field management failure or were entirely ignorant of the properties of a protective blast visor. The blast visor is permanently curved in one plane so that it wraps around the face. To curve in the opposite plane it would have to split. In a blast event, its existing curve may flatten out slightly and spring back, so demonstrating the elastic properties of polycarbonate, but it cannot bend backwards in the middle without splitting (which it can only do if enough force is applied – a force far greater than the force of an AP blast mine detonation at 60 cm). To have struck the Victim’s mouth and lips with a force hard enough to remove teeth the visor would have had to have flattened and crushed the wearer’s nose further back than his teeth, which it did not (and has never done in any recorded accident).

The unrecorded (but photographed) damage to the Victim’s eye (which appears “normal” in his ID card photograph) may have been caused by sand sucked into the post-blast low-pressure area (a common occurrence) and so does not provide evidence that the visor was not worn before the blast. However, the injury to chin and mouth could not have been inflicted with the visor worn correctly unless the visor had split into separate parts. The visor was undamaged. These facts make it safe to infer that the visor was not worn or not worn in a down position at the time of the accident. The internal investigators appear to have been concealing the breach of SOPs involved in not wearing the visor correctly.

From the photographic evidence, it is clear that the Victim’s small and short trowel (called a shovel in the report) was damaged. It is likely that the tool was in his hand at the time of the accident and thrown backwards by the blast. The back of the flat blade may have struck the deminer on the chin and mouth, knocking out his teeth. The mud stains on the body armour show that the force of the blast appears to have struck his upper body and the investigators report him having been thrown back six metres (a very unusual distance). If this is so, it implies that he was leaning over the top of the explosion but this may not indicate that he was working incorrectly if the blast were caused by a heavy fall of material from above.

The “Recommendations and Suggestions” with which the report concludes recommend compliance with several activities that should already have been being conducted: this may imply a broad lack of control by senior management over field activity.