DDAS Accident Report

Accident details

Report date:	22/01/2004	**Accident number:**	6
Accident time:	11:10	**Accident Date:**	10/11/1997
Where it occurred:	Gomley Village, Sharbazar District	**Country:**	Iraq
Primary cause:	Field control inadequacy (?)	**Secondary cause:**	Inadequate equipment (?)
Class:	Victim inattention	**Date of main report:**	14/11/1997
ID original source:	SB (date nominal)	**Name of source:**	MAG
Organisation:	[Name removed]		
Mine/device:	Valmara 69 AP Bfrag	**Ground condition:**	rocky, wet
Date record created:	11/01/2004	**Date last modified:**	11/01/2004
No of victims:	1	**No of documents:**	2

Map details

Longitude:		**Latitude:**	
Alt. coord. system:		**Coordinates fixed by:**	
Map east:		**Map north:**	
Map scale:	not recorded	**Map series:**	
Map edition:		**Map sheet:**	
Map name:			

Accident Notes

inadequate equipment (?)

no independent investigation available (?)

inadequate medical provision (?)

Accident report

The demining group was operating a three-man team with a two-man drill at the time of the accident. One man used the detector, marked any readings, and another man came forward to excavate the reading, feel for tripwires and cut any undergrowth. A third man at any one time was resting.

An internal report was compiled by the demining group and made available. The following summarises its content. [See Related papers.] The report stated that the mined area ran across a valley from one side to the other, so the area was very steep. The soil varied from

"loamy" soil with large rocks to dry and sandy. The mine belt comprised ten rows of Valmara-69 bounding fragmentation mines.

The team started work at 07:30 and at 09:30 it started to rain so they stopped work. The rain was light but it prevented the deminers from seeing through their visors until 10:55 when they started work again. At 11:10 the victim found a mine and was starting to mark it. He turned to his No.2 to request some pickets and as he did so he slipped and fell backwards onto the mine. The victim was holding his detector at the time. He was thrown into a mined area so a safe lane was cleared to reach him. He was given first aid and put into the ambulance at 11:30 He died at 11:45 and the ambulance arrived at the Emergency hospital at 13:10.

The victim's partner said that after locating the mine his partner informed the team leader and then cleared around it. He then put down two marking sticks and turned to ask for two more. He slipped and put his hand behind him to break the fall. His partner did not see why he slipped, "it may have been a rock on the ground".

An examination of the victim's boots revealed that they had hardly any tread left. The victim's helmet and visor were undamaged and the jacket was only slightly damaged at the bottom.

Conclusion

The investigator concluded that the victim slipped and put his hand on the crown of the mine. It bounded and exploded between his legs. His injuries were so severe that death was “inevitable”.

Recommendations

The investigator recommended that all deminers should have their boots inspected and a minimum of 3mm of tread ensured, also that work should be suspended during any period of rain.

Victim Report

Victim number: 16

Name: **[Name removed]**

Age:

Gender: Male

Status: deminer

Fit for work: DECEASED

Compensation: not made available

Time to hospital: 2 hours

Protection issued: Frag jacket
Helmet
Short visor

Protection used: Helmet, Frag jacket, short visor

Summary of injuries:

INJURIES

severe Abdomen

severe Arm

severe Genitals

severe Hand

severe Legs

AMPUTATION/LOSS

Fingers

Genital

FATAL

COMMENT

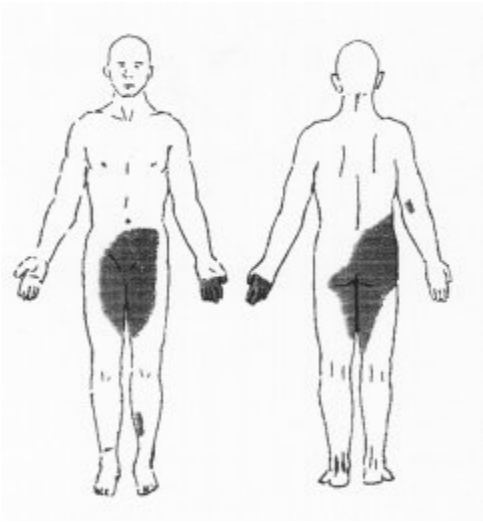
See medical report.

Medical report

No formal medical report was made available but a report of an examination of the deceased included the following:

"massive soft tissue injury in the groin with loss of genitals and muscle tissue in both inner thighs; both femoral arteries severed and femur bones fractured. Loss of tissue to right buttock; muscles in the right outer thigh were severed and pelvic bone visible; deep soft tissue damage to the left hand with partial amputation of fingers; soft tissue injury to outer side of right upper arm".

The medic's sketch below shows the extent of the severe injuries.



Photographs showed extensive buttock, genital injuries and a severe arm injury (poor photocopies not reproducible).

Analysis

The primary cause of this accident is listed as *"Field control inadequacy"* because it seems that the victim was obliged to work with slippery soled shoes in a muddy area (the delay for rain meant that supervisors cannot have doubted the muddy conditions). Although "slipping" is often unavoidable, it seems that in this case it may have been avoided if appropriate footwear had been issued.

The failure to supply appropriate footwear and ensure that it was replaced when required may have been a failure higher in the management chain.

The time taken to reach a hospital raises questions about adequate medical provision.

Related papers

The following is the demining group's internal investigating specialist's report, edited for anonymity.

General

On the 10 November 1997 I was in Barswen village, Sharbazar district carrying out a minefield recce with the Chwarta Advance team, myself and the NSMS had just returned to the village, when we received a radio message from the SMS informing us that an accident had occurred at "Tangy Gulan" minefield.

I was tasked by the SMS to go directly to the minefield and to carry out the accident investigation. The accident casualty was at that time on route to the hospital in Sulymania.

The SMS also informed the minefield supervisor to meet me at Chwatta camp with the team leader and the remainder of the team. Therefore I took the Advance team medic and ambulance and myself and the NSMS left "Barswen" to meet the team at Chwatta.

On arrival at Chwarta camp I completed the "initial Accident Report" in the camp office with the Supervisor, Team Leader, and Deminer No 2 from the sub-team. The NSMS was also present.

On completion of the briefing we received from the Supervisor about what had happened, we set off for the site. We arrived at the minefield rest area at 1430 Hrs.

Due to the short daylight hours at this time of year, and the distance between Sulymania and the minefield, we had limited time on the site, therefore we carried out an inspection of the accident site, took photographs and assessed the evacuation carried out. We had to leave the minefield at 1530Hrs to allow sufficient time to return in daylight to Sulymania.

To enable a more detailed inspection of the minefield itself, and to question the men involved, we all returned to the minefield on the following day 11 November l997. I took the video cameraman from the R.P.U. along to record the minefield layout, however due to weather conditions this proved very difficult and the resulting video which is enclosed with this report does not clearly show the accident site.

On the 12 November 1997, after the early morning funeral for [the Victim],I took statements from all the witnesses to the accident. These were taken in the head office in Sulymania. The statements are all included in this report. [Not reproduced at this time.]

Minefield

This minefield was laid by Iraqi forces against the Kurdish Peshmerga fighters, during the period of 1973 to 1984.

It contains V69 mines laid in rows with the mines placed about 5 metres apart and the rows laid about 2 to 5 metres apart. The Northern side of the minefield contains up to 7 rows and the Southern side contains up to 14 rows. The minefield straddles a river valley with steep sides on both the Northern and Southern edges, the centre of the minefield is relatively flat and has a small river running through it.

Clearance started on this minefield on 05 Oct 1997, so far the 4sub-teams have cleared a total area of 3,600 metres and have destroyed 695 V69 mines and 5 items of UXO.

In the centre of the minefield there is a large natural mound of earth which separates the fiat area.

Minefield Layout (Deployment of sub-teams)

On the day of the accident the sub-teams had been deployed with two teams working either side of the mound, although they were less than 50 metres apart they were out of sight of each other and protected from potential danger by the height of the mound. The other two sub-teams were deployed with one team on the Northern side and one team working on the Southern side. The accident occurred in the safe lane on the Southern side. The sub-team on

the Southern side were working along the side of the slope as they were unable to be deployed at the bottom of the hill due to the proximity of the other sub-teams in the centre of the minefield.

The marking of the minefield was very clear and the standard of layout was good, all cleared areas were clearly marked and the mined area could easily be identified.

The marking of the V69s which had been found that day was incorrect, and did not conform with SOPs this was in part due to the fact that the mines are laid so close together and they cannot be marked in accordance to SOPs in all instances. However the mines were still clearly visible and did not present a danger.

Accident Site

The accident site was at the end of a safe lane which had been cleared about 3 metres before a V69 mine had been found. The safe lane had been clearly marked and was easily identifiable, as can be seen in photograph No8. The safe lane was traversing the side of the hill as previously explained.

On the day of the accident, I visited the scene about 3 hours after it had happened. The ground was dry and sure under foot. All equipment was still on site and the Schiebel was still switched on.

I photographed the site, and interviewed each of the witnesses separately at the scene.

The next day I returned to check the safe lane and to video the site.

I cleared and excavated the seat of the explosion and found the remains of a V69 pot still in position buried in the ground although the mine had functioned. The pot was lying at an angle of about 45 degrees, and the mine had obviously functioned close to the ground causing a larger than normal amount of damage to the ground.

The mine which had functioned was part of a row of mines which had been laid about 0.5 metre apart, and all the mines had fallen over onto their sides. The position of this mine would have been just on the edge of the 1 metre safe lane.

Some of the wooden markers had been blown into the mined area when the mine functioned and therefore the marking at the end of the safe lane was not complete. Three wooden markers had been removed from the area just below the safe lane, this is where the team leader had cleared into the minefield to extract the casualty after the accident. [The Victim's] prodder and trowel were both in the mined area.

I examined the area where first aid had been given, and the bulk of the casualty's clothes had obviously been removed here, including his protective equipment. His trousers and tracksuit bottoms were completely destroyed in the blast, his helmet had no damage and his ballistic jacket had only slight damage to the bottom portion at the rear.

I recovered [the Victim's] boots from the first aid area and examined them for wear and tear, and for any blast damage, there was only slight blast damage to the left boot, however both boots had hardly any tread.

Conclusions

The minefield was well laid out and clearly marked, the task was well organized and well controlled.

There were some errors on the marking of the mines found, however this did not contribute to the accident.

The evidence of the team leader and the deminer No 2,would appear to be substantiated by the injuries sustained by the casualty. It would appear that when [the Victim] turned to ask the No 2 for the extra wooden markers to mark the mine he had located, he lost his footing and fell backwards. On falling he put out his left hand automatically to break his fall, but unfortunately he put his hand onto the "crown" of the V69. The mine functioned and the main charge was thrown out at an angle and exploded directly under [the Victim's] buttocks or

between his legs, causing the massive injuries and throwing him into the mined area from the safe lane.

Despite the prompt action of the team leader and the quality of first aid given by the medic, the injuries sustained were so severe that death was inevitable, as [the Victim] had absorbed the complete blast and any fragmentation from the mine, hence the No 2 received no injuries at all.

The condition of [the Victim]'s boots was such that even on even ground in dry conditions he would have had little or no grip or traction. He should not have been allowed to work with such poor footwear.

The positioning of the safe lane was not dangerous in firm conditions, when I visited the safe lane on the day of the accident I had no trouble walking or moving around, however on the second day after a night and day of solid heavy rain the area was treacherous.

On the day of the accident the rain had been light and the area was safe to work, the No 2 had no doubt of this, although the team leader had some misgivings.

The evacuation of the casualty was well organized and well controlled, however the team did not contain enough deminers of the same blood group.

It is impossible to know exactly why [the Victim] fell, I can only conclude that as he turned to speak to [his partner] he lost his footing and could not maintain his balance and then initiated the mine with his left hand.

Recommendations

All operational staff should undergo a boot inspection immediately and a minimum depth of tread of 3mm should be applied.

Work on the Southern side of this minefield should be suspended during any period of prolonged heavy rainfall. This is particularly relevant as the next stage to be cleared is even steeper than the area of the accident.

The comment made by the team leader that he felt he would be open to criticism by visitors if the team was not working should be looked into in depth. This may be a common belief amongst team leaders and a meeting to discuss the situation with all team leaders should be held.