DDAS Accident Report

Accident details

Report date:	18/05/2006	**Accident number:**	274
Accident time:	08:12	**Accident Date:**	23/05/2000
Where it occurred:	Nhacondo-Inharrime, Inhambane Province	**Country:**	Mozambique
Primary cause:	Field control inadequacy (?)	**Secondary cause:**	Unavoidable (?)
Class:	Excavation accident	**Date of main report:**	26/05/2000
ID original source:	none	**Name of source:**	IND/HI
Organisation:	Name removed		
Mine/device:	GYATA-64 AP blast	**Ground condition:**	grass/grazing area residential/urban sandy trees
Date record created:	18/02/2004	**Date last modified:**	18/02/2004
No of victims:	1	**No of documents:**	3

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

incomplete detonation (?)

squatting/kneeling to excavate (?)

non injurious accident (?)

inadequate investigation (?)

Accident report

The demining group operated a two-man team with a one man drill when observed by the researcher in 1999. In this a single deminer cut undergrowth, used an Ebinger 420 detector (with a long handle extension), and excavated finds. His partner did not "control" him but waited in a rest area. The group wore full-face visors and simple frontal blast-aprons.

Two accident reports were made available. The report made by the National Demining Authority is followed by the demining group’s internal report.

Accident report 1

The National Demining authority carried out an investigation and provided an accident report in February 2001. Written in Portuguese, the incomplete report was not signed or dated. The following summarises its content.

The mined area was around Inharrume Vila, an area with an abundance of cashew nuts, coco trees and many shrubs of different species. The soil is sandy with grass cover. The demining group had been working in the area since 22 June 1999 and had found Gyata-64, PMN and POMZ-2 mines.

[The picture above shows a deminer excavating a detector reading. This is a “still” from a video made at the site during research in 1999.]

The accident occurred after the victim had just changed roles with his partner in the working lane. He used the detector and after a few minutes, he detected a sound and began to cut the grass lower. It was when he started to use the spade (trowel) that the detonation occurred. The deminer was not injured.

The crater opened by the explosion was about 17cm wide (across) and about 14cm deep.

[The picture above shows the rubber top of the Gyata-64 mine after the accident – clearly illustrating that the mine did not detonate as designed (photographed by the researcher later).]

After medical examination, the victim was given four days to rest.

Conclusion

The investigators concluded that:

The victim acted in accordance with his SOPs in all that he did, including the use of the prodder and the trowel.

The position of the mine on its side in the ground could have been the cause of the accident.

Recommendations

The investigators made the following recommendations:

Detection techniques capable of finding minimum metal and mines on their side must be used. Excavation techniques must otherwise be used.

Deminers should be told that mines can be found at depth and on their side. This will help them to know how to deal with such mines, which has been a regular problem. In this regard, it is necessary to test the performance of the detector and its ability to detect mines at their maximum depth. This should also be done for the range of mines expected.

Accident report 2

An internal investigation of the accident made on the day it happen found that:

1. The victim's general performance in the days preceding the accident had been satisfactory.
2. At the site, 16 mines and 16 pieces of ordnance had been found and destroyed previously. Some mines had been reinforced with a mortar at 10-15cm deep.
3. The detonation occurred minutes after the detonation and before the victim's partner had arrived at the rest-site.
4. The synchronisation of the detector, searching techniques and cutting of the grass were all correct.

The investigators also observed that:

- There was no problem with vegetation.
- There was no problem with the equipment.
- The marking sticks and one meter sticks were all in order.
- The investigators carried out a Quality Control check and found no metal in the cleared area.
- At the time of the accident the demining team had cleared 10 metres in an hour and ten minutes, which was normal for the programme.
- In the same lane two days before a Gyata-64 reinforced with a mortar had been found.
- The metal contamination in the uncleared area of the accident was normal.

Conclusion

The investigators decided that the cause of the accident was:

During the excavation, the victim did not verify the depth of the mine. In trying to correct this, and due to the mine being at an angle of about 20 degrees, he struck the upper part of the mine and detonated it. Therefore the accident was caused by a bad digging technique and the angled position of the mine.

Recommendations

The investigators recommended that:

A demonstration on proper digging methods should be made and all Team Commanders told to use these methods.

Victim Report

Victim number:	349	**Name:**	**Name removed**
Age:	35	**Gender:**	Male
Status:	deminer	**Fit for work:**	yes
Compensation:	not made available	**Time to hospital:**	not appropriate
Protection issued:	Frontal apron Long visor	**Protection used:**	Long visor; Frontal apron

Summary of injuries:

COMMENT

No medical report was made available. No injuries were recorded.

Analysis

The primary cause of this accident is listed as a *"Field control inadequacy"* because the demining group's accident investigation found that incorrect digging techniques were being used, and the victim's error was not corrected. If the correct techniques were not known, that would have been a failure of training and so a "Management/control inadequacy". The secondary cause is listed as *"Unavoidable"* because it is possible that the victim was working according to the group's SOPs at the time of the accident.

The accident reports were inadequate because they lacked detail of the mine and did not record the PPE in use at the time.

Related papers

Two related papers were found and translated. The following summarises their content:

Note de service

A "Note de service" from the demining group involved was made publicly available. This was issued prior to the formal investigation. The following summarises its content.

The victim had been trained by the UN national group and the demining group in 1997 "and had received regular training since that date".

At 08:12 the victim was investigating a detector reading "by hand trowel in loose soil". As he worked "a pressure was applied to the upper part of the mine". The "Chief of Project" believed that the "prescribed approach angle" may not have been "strictly applied".

The demining group's own site investigation and an examination "of the fragments" indicated that the HE in the mine "was possibly in a degraded state". The facts that the trowel "remained intact" and there was no fragment damage to the deminer's "body armour" and visor were taken as evidence supporting the idea that the explosive in the mine had "degraded".

The type of mine was not recorded.

The victim "was immediately put on R&R for several days".

Operations manager letter

A letter from the Operations manager dated 23/05/00 stated that the victim had been working at the mined area since work had started, and had been working at that particular part of the mined area since 21/06/99. It went on to give the internal investigation reproduced under “Accident report 2”.

Statements

Team paramedic

The team paramedic stated that the accident occurred at 08:12. When it occurred he was told to take the victim to the Control Point where he examined him and concluded that he was in good physical and psychological condition.

Victim’s partner

On 26/05/00 the victim’s partner stated that he started work at 07:35 after changing roles with his partner. He worked until 08:05 when they changed roles again. His partner came to relieve him and he started back to the rest area. Before he had arrived in the rest area he heard an explosion. He stopped and he saw the Team Commander making his way to the scene.

The Victim

on 24/05/00 the victim stated that he had changed roles with his partner at 08:00 and that after working about two metres he detected a strange signal. He followed procedures, marked the place with sticks and started digging. As he was digging thee was a sudden explosion. He stood up disorientated and began to run backwards with all his equipment. Then he realized that the explosion had occurred in his own lane. He could not see because his visor was covered in sand.