

# DDAS Accident Report

## Accident details

<b>Report date:</b> 08/02/2011	<b>Accident number:</b> 597
<b>Accident time:</b>	<b>Accident Date:</b> 14/06/2010
<b>Where it occurred:</b> Kurmuk, Blue Nile State	<b>Country:</b> Sudan
<b>Primary cause:</b> Inadequate survey (?)	<b>Secondary cause:</b> Management/control inadequacy (?)
<b>Class:</b> Missed-mine accident	<b>Date of main report:</b>
<b>ID original source:</b> NR-553	<b>Name of source:</b> UNMAO
<b>Organisation:</b> [Name removed]	
<b>Mine/device:</b> M14 AP blast	<b>Ground condition:</b> grass/grazing area
<b>Date record created:</b>	<b>Date last modified:</b> 08/02/2011
<b>No of victims:</b> 0	<b>No of documents:</b> 1

## Map details

<b>Longitude:</b>	<b>Latitude:</b>
<b>Alt. coord. system:</b> UTM	<b>Coordinates fixed by:</b>
<b>Map east:</b> 341908.5 E	<b>Map north:</b> 103236.7 N
<b>Map scale:</b>	<b>Map series:</b>
<b>Map edition:</b>	<b>Map sheet:</b>
<b>Map name:</b>	

## Accident Notes

dog missed mine (?)  
inadequate investigation (?)  
inadequate survey (?)  
no independent investigation available (?)

## Accident report

The only report of this accident that has been made available to date is an incident report provided as a PDF file. The conversion into a DDAS file has led to some of the original formatting being lost. Text in square brackets [ ] is editorial.

The UNMAO incident report is reproduced below, edited for anonymity.

United Nation Mine Action Office, Kurmuk 10/06/2006 Incident Report

Incident Date: 14/06/2010

Incident Location: Kurmuk, Blue Nile State

Task Dossier: NR-553

UTM: 103236.7 N, 341908.5 E

Clearance start date: 15/03/2010 Completion date: 23/05/2010

## 1. Introduction and Background

1.1 Kurmuk minefield E was tasked through the NRMAO tasking order NR 553 to be worked by [Commercial demining group] from 15 March 2010. The minefield was part of the border mine fields that ran along the banks of the river on the Sudanese border with Ethiopia. The mine rows were not recorded and no information other than accident sites was known at the start of the clearance of these minefields back in 2007. During clearance it was discovered that the mines (Anti Personnel M14) were laid in rows at equal spacing, with start of row and end of row marked using metal stakes at both ends normally painted white. The rows were normally single, though double rows were also located. The lateral distance between the rows varied but commonly the rows were normally on flat ground or in open areas between small slopes. The mine rows were in general within 50 metres from the river bed towards the Kurmuk village and were fenced off from the village side using a barbed wire fence. The areas between the river and the wire fence were initially identified as the High Threat Areas (HTA). The minefield clearance completed on 21st of May 2010 and handed over as a part of Kurmuk minefields.

## 1.2 The task area

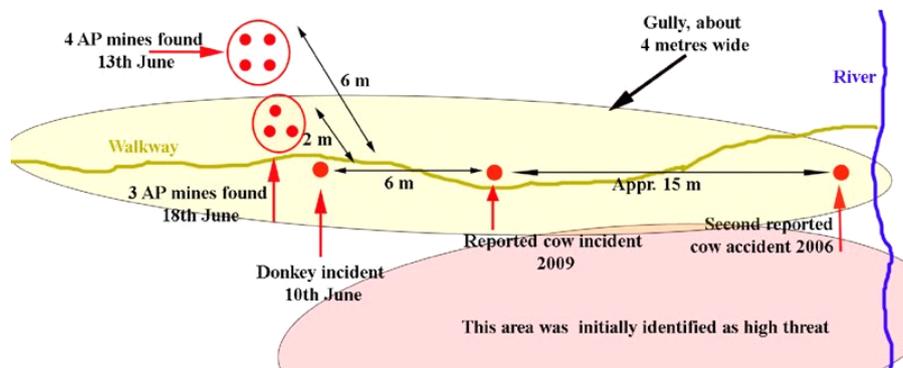


Figure 1: Schematic of the incident area and around it.

The gully where the incident took place has been used as a walk way for local people to collect water from the river, at the end of the gully. Near the river, a clear path could be seen where people would walk around to gain access to the river since the gully came to a sudden drop into the river and was too steep to walk down. The gully sides showed clear signs that over the years that water rushing down the gully had in time eroded the sides creating now what is a sizeable wide gully.

During the reconnaissance phase of task NR 553 in March 2010, [Four names removed] (IMCT team leader) stood at the river at the end of the gully and pointed out that a cow accident took place in the gully in 2009. A verbal decision was made that the gully was a high threat area along with the open area to the south-east of it.

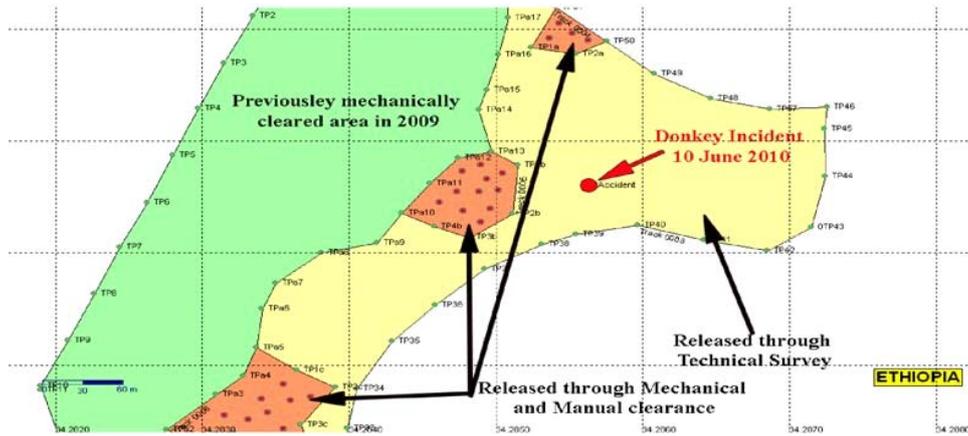


Figure 2: The completion map with areas marked as released through clearance (green and red) and released through technical survey (yellow)

The high threat flat area to the south east of the gully (see Figure 1 above) was cleared using the tiller of Armtrac 100 as was a flat area to the west of the gully. No mines or evidence of mine / ERW was found while operating the Armtrac in the flat areas above the gully. As a result, a decision was made [for Demining group] to release the land in the flat areas through technical survey in the completion report (see Figure 2).

The floor of the gully was covered in silt but in the area where the detonation took place a number of large rocks could be seen sitting on a shoulder of silt at a greater height than the floor of the gully. There could be seen a line in the side of the gully of where recent erosion had taken place confirming that the water was eroding the gully sides with downwash of rain.

The gully is in dead ground and anyone walking along the line of the gully or along the side of the hill that the gully follows would not be seen from the main defensive positions that were manned during the conflict time.



Picture 1: Photograph of the incident site with the donkey incident (blue) and seven mines (red and yellow circles) found during the subsequent clearance. Photo taken on 18th June 2010.

1.3 The accident area has been partially cleared during the initial clearance operations using a 1 metre MDD search lane going on the bottom of the gully. The entire gully has not been searched initially due to the misunderstanding of the MDD team leader and his failure to report and seek further advice from and the team managers. The fact that the gully has only

been cleared is documented in the MD team leaders report attached to this report as Annex A. [Not made available.]

[Name removed], the UNMAO MDD QA Officer, visited MDD clearance operations during the clearance of that gully on 24th March 2010 with no adverse comments on the QA side. Having looked at the accident photos, [the QA Officer] confirms that the gully shape has changed from what it was in March 2010.

When the site was revisited again on Wednesday 16th June with the NMAC Damazin, [Demining group] and UNMAO Damazin personnel, changes were observed in the shape of the gully between the first visit on 14th June and 16th June. A serious rain storm on the night of the 15th June changed the shape and more erosion could be seen at the bottom of the gully.

## **2. Recommendations**

2.1. The MDD teams and all other demining assets shall have separate daily diaries to be introduced into the site task folder with hand drawn sketch of the days work with a GPS reading of a reference point. This will assist any future investigation.

2.2. Any gully identified in the future that have had accidents reported in them (i.e. are high threat) or is suspected by local community members, shall be subjected to full search from bottom to top and out on the shoulders to at least 5 metres away from the top edges of both sides. If dogs cannot be used, then manual, mechanical or a combination thereof shall be used.

2.3. Verbal instructions given by UNMAO managers to Contractor's managers and by the Contractor's managers to the Contractor's team leaders on the ground must be documented and kept in the task dossier with a copy kept at the relevant sub-office. UNMAO / Contractor shall consider introducing an operational comments log, where all visitors making comments and instructions on the clearance procedures must leave their instructions in written and signed against.

2.4. Any reported mine / ERW incident within the task area shall be paid more attention. A thorough search for the evidence of reported incidents (craters, bones, etc) shall be done prior to releasing land through technical survey with more local knowledge involved.

2.5. The NTSGs Chapter 15 shall be amended to describe the actions on mines found in areas released through non-technical or technical survey. For that purpose, UNMAO's operational cell shall convene an NTSG review meeting.

2.6. In the future, when an operational incident / accident takes place, there shall be one UNMAO member that is involved in supporting the initial accident investigation team on the ground. The dedicated UNMAO representative shall be the key and the only contact point for all correspondence between the investigating officers, the contractor(s) involved and the UNMAO headquarters. This is to avoid contradicting statements and confusion received via different sources by different people. This shall be applied across the Sudan Mine Action Programme.

2.7. In case of any incident / accident, a formal instruction on further actions shall be issued to the Contractor upon the submission of the first detailed / internal investigation report within the first 48 hours. Until then, the area shall be closed off and marked until further formal instructions are received from UNMAO.

2.8. It is recommended that [Demining group] continues clearing the area around the incident and the mines until they achieve 10 x 10 metres (as per the NSTGs Chapter 26 on Land

Release) around each mine found, and as per paragraph 4.2 above. The entire gulley shall be treated as a high threat area.

2.9. It is recommended that since all the facts in this paper are agreed upon and signed by UNMAO and [Demining group], no Board of Inquiry shall be convened in this case.

2.10. It is recommend that this report is treated as an Independent Investigation Report as per NTSG Chapter 15 para 5.3 (b) where lessons learnt can be applied to future demining operations in Sudan Mine Action Programme and documentation updated accordingly. The report shall be disseminated to all parties.

No victim: donkey

## **Analysis**

The primary cause of this accident is listed as “Inadequate survey” because there seems to have been confusion about the area that required search. The secondary cause is listed as a “Management Control Inadequacy” because the failure to search the areas that were very obviously hazardous appears to have been the result of poor communication, a lack of adequate task documentation, a failure to keep MDD working records, poor understanding of Technical Survey, and other “shortcuts” that commercial demining groups may be expected to make when inadequately tasked.

The large number of mines found in an area recently released as “Cleared” is evidence of inadequate management at all levels.

The “Inadequate investigation” listed under notes refers to the absence of a full accident report and the rather strange fact that the UNMAO’s internal investigation was presented as an “Independent investigation”.

That the UNMAO accepted the mechanical processing of the area outside the gulley as “clearance” is disturbing because it is widely recognized that mechanical processing is not equal to “clearance” as defined in the IMAS.