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### DDASaccident606

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# DDAS Accident Report

## Accident details

<b>Report date:</b> 04/03/2011	<b>Accident number:</b> 606
<b>Accident time:</b> 10:00	<b>Accident Date:</b> 02/10/2010
<b>Where it occurred:</b> Juba-Nimule road, Central Equatoria	<b>Country:</b> Sudan
<b>Primary cause:</b> Management/control inadequacy (?)	<b>Secondary cause:</b> Management/control inadequacy (?)
<b>Class:</b> Missed-mine accident	<b>Date of main report:</b> 19/11/2010
<b>ID original source:</b> Bol: 2010/04	<b>Name of source:</b> UNMAO
<b>Organisation:</b> [Name removed]	
<b>Mine/device:</b> AT (unrecorded)	<b>Ground condition:</b> agricultural (abandoned)
<b>Date record created:</b>	<b>Date last modified:</b> 04/03/2011
<b>No of victims:</b> 1	<b>No of documents:</b> 1

## Map details

<b>Longitude:</b>	<b>Latitude:</b>
<b>Alt. coord. system:</b> Not recorded	<b>Coordinates fixed by:</b>
<b>Map east:</b>	<b>Map north:</b>
<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 (?)

mine/device found in "cleared" area (?)

machine missed mine (?)

## Accident report

Details of this accident were found in a "summary of Bol recommendations" received in January 2011. A longer "accident summary" was later found. Both are reproduced below. Text in square brackets [ ] is editorial.

## **BoI summary:**

On the 2<sup>nd</sup> of October 2010 a CIVCON grader operator struck an anti tank mine in a previously cleared area whilst conducting road works on the Juba-Nimule carriage way in Central Equatoria. The CIVCON grader operator suffered severe injuries and several weeks later succumbed to his wounds. For additional information regarding this BOI and full report see reference G. [Annex G not made available.]

## **Accident summary**

### **SUMMARY OF MINE ACCIDENT INVESTIGATION INVOLVING [Civil Contractor] GRADER — BOI 2010/04**

#### **Summary of Accident**

On Saturday 02 October 2010 at approximately 10:00am a [Civil Contractor] grader struck an AT mine approximately one meter from the road center-line whilst carrying-out maintenance on the Juba to Nimule Road. The grader operator suffered serious injuries as a result of the blast. He was evacuated to a hospital in Juba, stabilized and then as he was from Uganda he was evacuated the following day to Kampala for further treatment. The grader operator later died from his injuries 20 October in Kampala.

The mine blast was in a DA that was previously cleared by three clearance organisations. The first being in 2006, whereby the road carriageway was cleared out to a total width of 8in (4in either side of the road center-line) using VMMDS to a depth of 60cm, supported by MDD and manual deminers.

The next time clearance was conducted on this site was 2008 by another organisation, whereby their task was to expand upon the original clearance out to a total width of 26m. By this time the Juba — Nimule Road had been trafficked extensively by cars and heavy vehicles as well as road maintenance having been carried out. The task was not to re- clear the original clearance, but to extend that clearance, which meant clearing an additional 9m either side of the previous clearance (two polygons). The completion report sketch from this organisation when submitted however, showed one polygon that also included the area previously cleared by the first clearance organisation, even though the road was never cleared by the second organisation.

The next time clearance was conducted on this DA was June 2010, whereby the roading contractor [Name removed] had contracted another organisation to verify a number of previously cleared DA's along the Juba — Nimule Road. This organisation did not conduct clearance on the road, and only cleared from the left verge of the road (when traveling south from Juba) out to a distance of 13m.

The possibility that this AT mine was imported from a borrow pit was explored, however the roading contractor has stated that no soil was imported to this particular area of the road.

The possibility this mine was re-laid subsequent to clearance was also explored, however this was considered unlikely given the extensive amount of traffic that uses this road daily. If this mine was re-laid then it could be expected that another vehicle would have detonated this mine prior to the grader striking it.

On the morning of the accident the grader operator made three passes with the rippers of the machine loosening the hard compacted soil down to a depth of approximately 15cm. He then proceeded to shape the surface of the road with the blade and it was during this process that the blade of the machine caused the mine to detonate. It can then be deduced that by

loosening and then removing a layer of soil it then allowed enough pressure to be exerted to the top of the mine to then cause it to detonate.

If it is accepted this mine was not imported post clearance and was not as a result of re-mining, it can then be assumed this mine was in the ground during the original clearance in 2006. The BOI could not establish with any certainty however how deep the mine was below the ground during the clearance of 2006. Given that this road is extensively trafficked and has been maintained a number of times since 2006, it can then be expected the height of the road surface has most likely changed during this time. Therefore the BOI could not state with any certainty this was a missed mine.

The BOI did discover however that the quality of documentation for this task by all three clearance organisations was extremely inadequate. In all cases the completion documentation provided extremely limited detail as to where certain clearance assets had worked on the site, the documentation did not state what clearance depths were achieved in various parts of the site, nor did the documentation give detail as to where individual mines and items of UXO were located or what depth these were at. Signatures were also missing from completion reports and in one instance an organisation's completion sketch also included an area that was not even cleared by them.

The BOI also found that only one external QA visit was carried out during the time of clearance by the three organisations, and despite the poor quality of completion documentation, this was accepted and subsequently entered into IMSMA.

### **Lessons Learnt**

All clearance work is to be accurately documented, including providing detail as to the type of clearance asset employed within precise areas of a site, the depth of clearance achieved within specific areas of a site, the accurate recording of the location of mines/UXO within a site, as well as the depth these were discovered. The completion sketch should be produced electronically and should not include areas that have not been cleared or processed.

Whilst it is accepted that there are difficulties conducting regular external QA visits to all sites, as a minimum all sites should receive a Completion QA evaluation visit in order to verify all information is included in the completion report and that the completion documentation accurately reflects work carried-out on the site.

[Name removed] Chairman of BOI 2010/04, Deputy Team Leader, Standing Mine Action Capacity UNMAS, Geneva, 19 November 2010

## **Victim Report**

<b>Victim number:</b> 789	<b>Name:</b> [Name removed]
<b>Age:</b>	<b>Gender:</b> Male
<b>Status:</b> driver	<b>Fit for work:</b> DECEASED
<b>Compensation:</b> Not made available	<b>Time to hospital:</b> Not recorded
<b>Protection issued:</b> None	<b>Protection used:</b> None

**Summary of injuries:**

FATAL

COMMENT:

Severe injuries. Fatal "several weeks later".

No Medical report was made available.

"...died from his injuries 20 October in Kampala".

**Analysis**

The primary and secondary causes of this accident are listed as "Management Control Inadequacy" because the UN authority that contracted up to three demining organizations to clear the area did not insist of receipt of clear records of the work that had been done and precisely where it had been conducted. The investigators found it most likely that the mine had been present throughout the work that had been completed (rather than placed later).

The investigation, conducted by a UNMAS body, is refreshingly objective. It is regrettable that the full report has not been made available.