

DDAS Accident Report

Accident details

Report date: 05/02/2011	Accident number: 588
Accident time: 14:10	Accident Date: 04/07/2008
Where it occurred: Central Demolition Site (CDS), Magwi County, Eastern Equatoria	Country: Sudan
Primary cause: Inadequate training (?)	Secondary cause: Management/control inadequacy (?)
Class: Handling accident	Date of main report: 11/07/2008
ID original source: Juba A/01of 2008	Name of source: UNMAO
Organisation: [Name removed]	
Mine/device: Propellent and projectile	Ground condition: demolition site (explosives)
Date record created:	Date last modified: 05/02/2011
No of victims: 1	No of documents: 1

Map details

Longitude:	Latitude:
Alt. coord. system:	Coordinates fixed by:
Map east: E 31° 59' 21.0.	Map north: N 03° 48' 35.6"
Map scale:	Map series:
Map edition:	Map sheet:
Map name:	

Accident Notes

inadequate training (?)
no independent investigation available (?)
protective equipment not worn (?)
visor not worn or worn raised (?)

Accident report

The report of this accident was made available in 2008. The cover letter of an UNMAO independent investigation was supplied, but with no accompanying report apart from the demining group's internal investigation (which appears to have been accepted by UNMAO).

The conversion into a DDAS file has led to some of the original formatting being lost. Text in square brackets [] is editorial.

United Nations Mine Action Office (UNMAO), Juba Office, Independent Accident Investigation – UNMAO/[Demining group]/Juba A/01 of 2008

Introduction

1. In accordance with National Technical Standards and Guidelines (NTSG's), the UNMAO Deputy Programme Manager issued a written convening order on the 5th July 2008 to investigate an incident resulting in injury to [Demining group] international consultant, [Name removed].
2. The incident occurred at approximately 1400 hours on Friday 4th July 2008 at a [Demining group] Central Demolition Site (CDS) in Loa. This report is based on an interview with [the Victim] at Level II hospital Juba, conducted by the UNMAO investigating officer on 5th July 2008, and a [Demining group] internal investigation report into the incident, presented by the [Demining group] Operations and Information Officer, [Name removed].

Summary

3. Notwithstanding the initial statement taken from [the Victim], I find that the Internal Investigation conducted by [the Demining group] to be open, honest and transparent. It represents an accurate account on the events of the day that lead to the injuries sustained by [the Victim].
4. Recommendations made in the internal investigation report should be reviewed and acted upon where necessary.

Signed: [Name removed], QA Officer Juba, Investigation Officer, 17 July 2008

Attached: [Demining group] Internal Investigation and supporting documentation [No supporting documentation was made available.]

Demining group's internal investigation report

[Demining group], SOUTH SUDAN MINE/UXO ACCIDENT AND INCIDENT INVESTIGATION REPORT

Reference:

A. [Demining group] Sudan Internal Investigation Convening Order No. [Demining group]SUDAN 01/08 dated 5 Jul 08

B. Amendment to Convening Order dated 10 July 2008 Part One - Introduction

Investigation Team

1. [Name removed], [Demining group] Operations Manager

2. [Name removed], [Demining group] Operations, Information & Liaison Officer (under instruction)

3. [Name removed], [Demining group] EOD Team Leader (under instruction). Subsequently removed from the team when it became apparent that he was also a witness to certain events connected with the accident. See amendment to Convening Order dated [sic].

Location of Accident:

Loa area, Magwi County, Eastern Equatoria, South Sudan

Coordinates: N 03° 48' 35.6", E 31 ° 59' 21.0.

Date and time of Accident:

14.10 (approx), 4 July 2008

Executive Summary

[The Victim] was carrying out an unauthorised experiment with UXO near the [Demining group] Central Demolition Site at Loa, South Sudan. Contrary to SOPs he was attempting to burn out some High Explosive filling which was remaining in an item of UXO using propellant from a 23mm cartridge case. He was using matches directly onto the propellant to initiate the burn. Although the explosive filling was in an "open" casing of the UXO, it burned to detonation which fragmented the casing and resulted in a piece of metal going into the right leg, calf muscle area of [the Victim].

[The Victim] is not from a military background and is a former paramedic. He has completed a similar EOD course as the Team Leaders he is advising and has insufficient knowledge to be conducting any experiment, even though he obviously has first world background knowledge to supplement this lack of experience.

It is considered unnecessary to amend either [Demining group] SOPs or NTSGs as this was the actions of an individual's contrary to SOPs, without authorisation and the minimum team requirements for any EOD task as already stated in SOPs.

The credibility of [Demining group] advisors has been adversely affected by this accident within [Demining group] operational staff, UNMAO, SSMAA and SPLA/Local authorities in Loa.

Part Two - DETAILS OF ACCIDENT / INCIDENT

On the 4 Jul 08 [The Victim] remained at the [Demining group] base camp in Loa to assist the departure of the other [Demining group] Technical Advisor, [Name removed] and [Demining group] teams who were scheduled to deploy to Magwi.

In the meantime, the two EOD teams remaining in Loa (Teams 2 & 4) deployed as one unit, as the Team leader (TL) of EOD Team 4 was ill, to the area where we conduct the burning of Small Arms Ammunition (SAA).

[The Victim] left the camp at approximately 10.45 after informing the Senior Medic, [Name removed] that he was going to go to the area where the teams were burning SAA.

He arrived at the burning area at about 11.00 and after observing the activities of the team he informed TL, [Name removed] that he was now going to the CDS to plan and prepare the UXO for the demolitions for the following day.

In addition to planning and organising piles UXO for the demolition, [the Victim] took it upon himself to conduct a burning experiment. The teams frequently come across large calibre UXO which have already had most of the explosive content removed; however, there is

normally a small amount of filling remaining and the projectiles cannot be certified as being free from explosives. [The Victim] stated he was trying to find a simple method to destroy these or remove the filling, thus making them free from explosive without having to use large quantities of demolition explosives.

There was part of a recoilless projectile, with the tail spigot broken off and only rear part of the projectile body remaining, at the CDS. He stuck the tail spigot part in the ground and then emptied the propellant from a corroded 23mm cartridge case onto the explosive filling. At that stage he had no matches with him to light the propellant.

At approximately 13.15 [the Victim] returned to the camp and asked the cook at the kitchen and asked for a box of matches. He had his lunch at the camp during which time the cook gave [the Victim] a box of matches. At approximately 13.40 [the Victim] left the camp having informed [the Medic] he was going to the CDS.

During the time [the Victim] was having his lunch at camp, a woman reported some items of UXO to Teams 2 & 4 who were still at the burning area. They investigated the items and found they were unfired 82mm mortars and the team decided to take them to the CDS. [The Victim] was not at the CDS when they arrived there. While they placed the mortars inside the "taped-off" UXO storage area they noticed the recoilless projectile with the tail spigot stuck in the ground and the open end that had been filled with grains of propellant. This was about 6 metres away from the UXO holding area.

The teams left the area and on reaching the main road at approximately 13.45 and about 1 km from the CDS they met [the Victim] on his way back to the CDS. He asked them what they were doing and the TL informed him. Subsequently the team continued back to camp and [the Victim] proceeded to the CDS.

When [the Victim] arrived back at the CDS he ignited the propellant with a match and this in turn caused the filling to burn to detonation and fragment the casing. In [the Victim]'s statement he says he checked the result of this burn, thought it had been successful and that had gone back to sorting out UXO at the CDS storage area into piles for future demolition when the recoilless round exploded. He was hit in the leg by a high velocity fragment and applied a field dressing onto the wound before making his way to the vehicle and driving back to camp.

At approximately 14.30 [the Victim] drove into the camp and shouted for the [Name removed] the Senior Medic. [The Medic] attended to him and bandaged his right calf.

[The Victim] telephoned [Name removed], the operations manager who on hearing from [the Victim] that there might be a piece of fragment still in his leg advised him to go to the closest hospital at Nimule.

After several minutes [the Victim] rung back and advised the Ops Manager that they were going to Juba. It transpired later that they had telephoned the hospital in Nimule and found out that X-ray facilities were not available.

[The Operations Manager] advised them that they would have to get an SPLA escort back to Juba as the area is at Security level 3. They went to visit the SPLA and at sometime during [the Victim]'s conversation with an SPLA Captain [Name removed] the conversation was actually interpreted that [the Victim] might have been shot. The SPLA were understandably concerned as there are several SPLA units in the area in addition to suspected other armed groups.

When [the Victim] and escort continued their journey to Juba the TL, [Name removed] and SPLA Capt [Name removed] went to the CDS to look around and to see if they could

determine what caused the accident. This was done at the request of the SPLA as they were concerned that it was indeed a shooting as interpreted at the time of [the Victim]'s meeting with the Capt [Name removed] requesting an escort to Juba.

[The TL] and Capt [Name removed] saw the seat of an explosion where there was still blackened soil; the hole where the tail piece of the projectile had been placed in the ground was then still visible. They were also able to see where the blood trail started at about 6 metres from the explosion area. They photographed the site where [the Victim] applied a field dressing to the wound.

The investigating officer visited the UXO storage area where [the Victim] said he had been working at the time of the accident/explosion. The four piles of UXO were where he said they were, but there was no evidence of an explosion inside the UXO storage area.

During this investigation on Tuesday 8 Jul there was no evidence of blood remaining on the ground as there had been heavy rain the previous day and evening. The bandage wrapping was still where it had been dropped.

Part three – ACCIDENT SITE CONDITIONS

The area where the accident took place is flat, clear of vegetation but the surrounding area is full of dense bush.

The weather at the time was sunny, no wind and clear blue sky.

Part four – TEAM AND TASK DETAILS

The Technical Advisor, [the Victim] was alone in the area.

[The Victim] is a former paramedic who became a Technical Advisor after completing a Level 3 EOD course at IMATC in Nairobi in March 2007

The teams in Loa had been externally QA monitored in June 08 by [Name removed], UNMAO QA officer and achieved a satisfactory report.

The tasking in Loa is SS-473 – GMAA and UXO Clearance Task of the area

See statements of [the Victim], [Name removed] and [Senior Medic] (attached)

Part five – EQUIPMENT AND PROCEDURES USED

No equipment was being used at the time of the accident and PPE was not being worn. The procedure used was not in either [Demining group] SOPs or NTSGs.

The normal operational phase is from the 1st to the 22nd of every month with a stand-down from 23rd to the end of the month.

Teams and TAs usually leave camp at 07.30 in the morning and return to camp from 14.30 onwards. This is flexible depending on the location and the actual task.

[The Victim] had been on R&R from the 14–21 June 08.

Part six – EXPLOSIVE HAZARDS INVOLVED

The UXO involved were a Recoilless Projectile BK-881 and 23mm projectile propellant.

The recoilless round was incomplete – tail spigot broken off, no fuse and the forward section of the main body was also broken off and missing.

The propellant was in granular/pellet form which is the same as that found in the cartridge case of a 23mm projectile.

[Name removed] witnessed the projectile with the tail part stuck in the ground and with the open part of the projectile uppermost and filled with propellant granules prior to the accident.

On the day of the investigation the area was still blackened by the explosion, there were still 23mm propellant granules in the vicinity of the blackened area.

Part seven – DETAILS OF INJURIES

Injured person- [the Victim] suffered a single fragment wound to his right calf. There were no other persons involved or in the vicinity. He was admitted to the UNMIS Level 2 hospital in Juba where he underwent surgery but they were unable to remove the fragment. [The Victim] was subsequently taken to Nairobi by air ambulance and to the Aga Khan hospital where surgeon's removed the fragment

Part eight – EQUIPMENT/PROPERTY/INFRASTRUCTURE DAMAGE

No damage was sustained to any equipment

Part nine – MEDICAL AND EMERGENCY SUPPORT

DATE: 4 Jul 2008

14.10 Time of Accident

14.12 (estimated) - [the Victim] applies a field dressing to the wound. He stated that he tried to call the team on VHF with no response.

14.30 [the Victim] drives to camp and calls for [the Senior medic] who examines and dresses the wound

14.35-45 [the Victim] telephones the Operations Manager 14.45 Nimule hospital contacted but no X-ray facility

14.55 [the Victim] and [the Senior Medic] travel to the nearby SPLA camp to request a SPLA armed escort for journey to Juba

15.45 Travel to Juba in [Demining group] vehicles

18.30 Vehicles arrives at [Demining group] office in Juba

18.40 Vehicles arrives at UNMIS camp in Juba

19.00 Onwards:

Taken initially to the Bangladesh Battalion (BanBat) demining company medical facility
Referred to Level 2 hospital at UNMIS by BANBAT medical staff

Surgery in an attempt to remove the fragment

22.00 (approx) Operations Manager advised by the CO of UNMIS Level 2 hospital that air evacuation would be required the following day because they could not remove a metal fragment

DATE: 5 Jul 2008

12.05 Air Ambulance arrives in Juba

12.40 Air Ambulance departs Juba after pilot files flight plan

Date: 12 Jul 2008

[The Victim] re-interviewed at Aga Khan hospital in Nairobi and he writes a second short statement that now supersedes his original statement made in the UNMIS Level 2 hospital on 5 July 08

[The Victim] is discharged from hospital and with his wife is conveyed by ambulance to Jomo Kenyatta international airport and flown back to UK

Note:

1. It is fortuitous that the [Name removed], Deputy Programme Manager, UNMAO was able to assist in having [the Victim] admitted to the UNMIS medical facility to deal with the wound as [Demining group] personnel are not authorised to receive treatment in this facility.
2. A letter of entitlement should be sought for access to the UNMIS facility in case of future emergencies
3. The medical insurance company CEGA was initially informed at 1649hrs on 4 July and were kept informed on all events. CEGA entered into direct contact with UNMIS doctors and made all the air ambulance and subsequent medical arrangements.

Part ten – REPORTING PROCEDURES

The reporting requirements were carried out IAW [Demining group] SOPs

1. The initial accident report was sent at 15.45 on 4 Jul 08
2. The interim report was sent at 15.08 on 5 Jul 08

Part eleven – SEQUENCE OF EVENTS

DATE: 4 July 2008

14.10 Time of Accident

14.12(estimated) - [the Victim] applies a field dressing to the wound. He stated that he tried to call the team on VHF with no response.

14.30 [the Victim] drives to camp and shouts for medic- [the Medic] examines and treats the wound 14.35 [the Victim] telephones OM

14.35-45 Nimule hospital contacted- no X-ray facility

14.55 Travel to SPLA to seek SPLA armed escort for journey to Juba

15.45 Drive to Juba

18.00 SPLA Capt [Name removed] and TL 2 visit accident site

18.30 Vehicles with [the Victim] and escort arrives at [Demining group] office in Juba

18.45 Vehicles arrive at UNMIS camp in Juba. UNMAO Deputy Programme Manager contacted and he escorted vehicles into the UNMIS camp.

19.00 [the Victim] taken to BANBAT demining company medical facility for cleaning and assessment of wound and was then referred to Level 2 hospital at UNMIS.

After various discussions with doctors [the Victim] was taken to the x-ray department and afterwards into the operating theatre. The surgeon was unable to remove the fragment as they could only use a local anaesthetic because the UNMIS anaesthetist had gone to Khartoum. They had to cut the calf muscle to relief pressure from the internal bleeding. The hospital also requested a blood donor (blood group B -ve) and [Name removed] volunteered as he had the same blood group.

22.00 (approx) Advised by CO of Level 2 hospital that air evacuation would be required the following day because they could not remove a metal fragment

DATE: 5 Jul 2008

[Name removed] and Capt [Name removed] visit site

12.05 Air Ambulance arrives in Juba

12.40 Air Ambulance departs Juba after pilot files flight plan

DATE: 7 July 2008

Investigation team travel with armed escort from Juba to Loa

DATE: 8 July 2008

Investigation team visit site of accident

DATE: 9 July 2008 Accident report writing DATE: 11 July 2008

Operations Manager travels from Loa to Juba with armed escort.

DATE: 12 July 2008

Operations Manager travels to Nairobi and re-interviews [the Victim] and obtains another statement

Part twelve – CONCLUSIONS AND RECOMMENDATIONS

Conclusions

[The Victim] did not admit to carrying out this unauthorised experiment until he was re-interviewed in Nairobi and presented with the investigation evidence.

There was confusion and problems regarding the [Demining group] entitlement to access the UNMIS Levels 1 & 2 medical facilities. [Demining group] Medevac SOPs state that we should go to Unity in the first instance, however their resources to stabilise a potentially serious accident victim prior to air evacuation are limited. The Operations Manager contacted [Name removed] whose timely intervention made it possible for [the Victim] to be admitted to UNMIS facilities.

The credibility of [Demining group] as an organization and that of the Technical Advisors has been adversely affected within the national staff, UNMAO, SSMAA, SPLA and local authorities.

Recommendations

[Demining group] should request a formal agreement to afford [Demining group] expatriate staff access to UNMIS Level 1 & 2 medical facilities, especially in case of accident or illness emergencies. [Demining group] has two signed agreements, with UNMAS and UNHCR with a third UNDP contract likely in the near future.

It is recommended that [the Victim] is not employed as a [Demining group] Technical Advisor in Sudan after his convalescence.

[Demining group] should conduct a confidence building exercise involving staff with the objective of reviving the professional credibility of [Demining group] TAs.

[Demining group] should review recruitment procedures to ensure that TAs with appropriate qualifications and experience are employed.

The curriculum and experiential development qualities of the IMAS Level 2 and 3 courses currently run at IMATC, Nairobi should be reviewed. This accident and subsequent investigation suggest that the courses are not sufficient to produce an expatriate Technical Advisor; rather it produces a Team Leader. The courses could, however, be utilised as refresher training for experienced international EOD operators should it be necessary.

Signed [Name removed], {Demining group} Operations Manager

14 July 2008 Annexes: [Not made available]

- A. Copy of Initial Accident Report
- B. Witness Statements
 - 1. [the Victim]
 - 2. [Senior Medic]
 - 3. [Team Leader]
- C. Site and Technical Photographs
- D. IMSMA Demining Accident Report
- E. Convening Order and TOR

Victim Report

Victim number: 772	Name: [Name removed]
Age:	Gender: Male
Status: supervisory	Fit for work: presumed
Compensation: Not made available	Time to hospital: 5 hours
Protection issued: Not recorded	Protection used: None

Summary of injuries:

INJURIES: severe Leg

COMMENT: No formal medical report was made available.

The Victim had surgery to remove a single fragment from his leg. A first attempt at surgery to do this was reported unsuccessful (9:50 hrs after the accident) and a second attempt was successful more than 24 hours after the accident.

Analysis

The primary cause of this accident is listed as “Inadequate training” because, as the Demining Group recognised in its investigation, the Victim’s EOD training had not prepared him appropriately, and seems to have given him an unjustified confidence without the required competencies. The secondary cause is listed as a “Management Control Inadequacy” because it was the management’s responsibility to train and control its field representatives. The Demining Group’s internal investigation appears to have been conducted with commendable transparency and its responses to have been both reasonable and humane, so correcting its management inadequacy with professionalism.

This accident is recorded under “Notes” as having “No independent investigation available” because the UNMAO QA officer’s “report” does not constitute any kind of investigation. That said, the apparent quality of the internal investigation is so unusually high that an independent investigation may have been a waste of resources.