

DDAS Accident Report

Accident details

Report date: 26/06/2008	Accident number: 585
Accident time: 12:37	Accident Date: 12/07/2007
Where it occurred: CDS, Jebel Kujoor; Juba, Eqatoria	Country: Sudan
Primary cause: Inadequate equipment (?)	Secondary cause: Management/control inadequacy (?)
Class: Vegetation removal accident	Date of main report: 16/07/2007
ID original source: None	Name of source: UNMAO Sudan
Organisation: [Name removed]	
Mine/device: Fuze	Ground condition: demolition site (explosives) grass/grazing area hard rocks/stones
Date record created:	Date last modified: 26/06/2008
No of victims: 1	No of documents: 2

Map details

Longitude:	Latitude:
Alt. coord. system:	Coordinates fixed by: GPS
Map east: 31033'26.5" E	Map north: 04049'38.0" N
Map scale:	Map series:
Map edition:	Map sheet:
Map name:	

Accident Notes

inadequate equipment (?)
inappropriate vegetation cutting tool (?)
no independent investigation available (?)
protective equipment not worn (?)
vegetation clearance problem (?)
inadequate investigation (?)

Accident report

The report of this accident was made available in separate files in June 2008. The conversion into a DDAS file has led to some of the original formatting being lost. Text in square brackets [] is editorial. This record will be revised if more information becomes available.

BOARD OF INVESTIGATION REPORT

Report Compiled By [Demining group involved] Date : 16 July 2007.

Agency Involved : [Name removed]

1. Introduction

On 12 July 2007 at 12:37 pm an UXO accident occurred at Task Site CDS Jebel Kujoor. PKF-BGD-JBA-02448. Lance Corporal [Name removed] of [Demining group] was involved in the accident and his part of two fingers (ring finger and adjacent part of palm of right hand and little finger and adjacent part of palm of left hand) were injured. The investigation team visited at the site at 14:00 pm on the same day. The Investigation Team took photographs of the accident place and interview of the team members and concern personnel of the working group. The team also took interview of the injured person during the investigation and collected the circumstantial evidences to draw the conclusion. [No photographs were made available.]

2. Summary

- a. While carrying out clearance operation of Surface Visual Clearance Task(Task ID: SS-273 and DA ID:SS-890) at CDS Jebel Kujoor by BAC method an uncontrolled detonation took place and the accident occurred.
- b. [Name removed], Section Commander, Demining Platoon-1 who was a member of Battle Area Clearance Group-1 during the clearance operation got injured due to the explosion. As a result of the accident part of two fingers (ring finger and adjacent part of palm of right hand and little finger and adjacent part of palm of left hand) were injured. Later on he was evacuated to Level-II Hospital, Juba at 13:10 pm.

3. Location of Incident

Task ID:SS-273, DA:SS-890: CDS, Jebel Kujoor; Juba, Eqatoria

Grid Ref: 31033'26.5" E; 04049'38.0" N

SS UNMIS Briefing Map Stock No– S1M7 BRFV0503STHSU30T: Scale : 1 : 1700,000

4. Date and Time of Incident

Date : 12 Jul 2007, Time : 12:37 pm.

5. Reported By: [Name removed]

6. Reported To: [Name removed]

7. Person(s) Involved: [Name removed, the Victim] Section Commander, Demining Platoon-2.

8. Vehicle(s) or Machine(s) Involved : [Not applicable]

9. Investigation Team: [Three members of demining group involved: names removed]

10. Location of Investigation: [Demining group] Camp, Juba, 31035'26" E; 04052'28" N, and: CDS, Jebel Kujoor, Juba 31033'26.5" E; 04049'38.0" N: SS UNMIS Briefing Map Stock: No – S1M7 BRV0503STHSU30T: Scale : 1 : 1700,000.

11. Date and Time of Investigation: 121400 July 2007 to 162000 July 2007

12. Execution of Investigation

Approach to Site

Method : Vehicles; Direction : South-East Corner From [Demining group] Camp along Juba-Yei Road; Distance : 10 KM from [Demining group] Camp; Duration : 30 Minutes Journey; Terrain : Juba-Yei two way all weather road running within 400 m of the place of accident. Light vehicle can ply up the accident place.

13. Evidence

Ground: On the point of accident the ground was found disturbed and blood stain could be detected. The location was thickly vegetated with long standing grass. The grass of the surrounding place was found disturbed. Ground condition of the accident site is firm. Gravels and small rocks are also available around the dangerous area.

Mine / UXO:

- a. The accident place is littered with UXO, small arms munitions, detonators, mortars, grenades and explosive substances.
- b. Around the point of accident, yellow granular propellant and energetic explosive substances were seen.

Casualty(s) (position, clothing, injuries):

- a. Casualty was in kneeling position, hands were positioned together at the front at the time of the incident.
- b. On his left a plastic sand bag was seen with blood stain. The plastic bag was used for the collection of small arms ammunition/UXO scraps.
- c. The injury caused soft tissue damage to the base of both 1st and 2nd digits and left palm on both hands simultaneously. The injuries are reported as "superficial" in nature.

Interviews: [Names and identifiers of six demining group staff removed.]

14. Casualty Information

[Name removed, the Victim]. Part of two fingers (ring finger and adjacent part of palm of right hand and little finger and adjacent part of palm of left hand) were injured. No fracture could be diagnosed, only soft tissue damage occurred which is minor in nature.

15. Incident Details (Circumstances/Sequence of Events)

- a. EOD teams of special platoon augmented by Demining Platoon-1 of [Demining group] started surface visual clearance at CDS, Jabel Kujor at 08:30 am on 12 July 2007.
- b. EOD Teams were divided into two working groups that is BAC Group-1 and BAC Group-2.
- c. BAC Groups started surface Visual clearance operations at two different boxes of 20m x 30m size.
- d. UXO Accident victim [the Victim] was a member of BAC group-1 led by Captain [Name removed]. This group started clearing box beside UXOs/scraps storing point at CDS.

- e. Members of BAC Group-1 started visual surface clearance from start line 2m apart from each other. Direction of the clearance was from West to East.
- f. During BAC, Lance Corporal [the Victim] was second member from the left at the start line (SL) while on his left hand side LCpl [Name removed] and at the right side Private [Name removed] were following the same drill.
- g. This BAC Group observed 10 minutes break each after 30 minutes of work. As such, at 12:10 pm that period of clearance operations commenced which was scheduled up to 12:40 pm.
- h. On 12:37 pm suddenly a small explosion occurred and [the Victim] was found in kneeling position stretching his hands front which were found bleeding.
- j. LCpl [Name removed] from his left and Private [Name removed] from his right rushed to him and hold him. Injured Lance Corporal [the Victim] found in a concussed and disoriented state.
- k. Medical Officer (MO) and Medics who were at the medical point at that time in Admin Area, attended the injured within 5 minutes of the accident and provided Trauma Medical support. After stabilizing the condition of the UXO victim, he was evacuated to the Level-II hospital at 13:10 pm by ambulance.
- l. The accident was reported to UNMAO, Juba within 10 minutes and the investigation team reached to the site by 14:00 pm. Mr [Name removed], Ops Officer, Juba, UNMAO also visited the site at that time.
- m. The Investigation Team interviewed the witnesses, Medical Officer, Medics, Team Leader and the Victim on the same day.

15.1 Medical assistance and evacuation (procedure, treatment, equipment)

- a. One ambulance with full trauma support, one medical officer and one qualified medic were present at the Admin area of the working site.
- b. Medical support was given within 5 minutes of the accidents by the medical officer.
- c. Injured person were evacuated to the Level-II Hospital with in 30 minutes of the accident.

15.2 Geography and Weather

- a. Geography: Typical Southern Sudan hard rocky ground at the foot hill of Jebel Kujoor. The area is thickly vegetated with 0.5 m to 2.5 m height long grass.
- b. Weather : It was rainy morning up to 08:00 am. The day was cloudy and the temperature at the time of accident was 30-32 degree Celcius.

15.3 Demining Procedure (manual, mechanical, dogs)

Manual/ Battle Area Clearance Method.

15.4 Demining Equipment / Tools/PPE / Explosives (use, transport, storage)

Not Applicable.

15.6 Communications

- a. Communications between working site and Company Headquarters was maintained by HF radio set and between the working groups were maintained by hand held radio set.
- b. Accident report from working site to Company Headquarters reached by 03 minutes of the accident.

15.7 Site Layout and Marking

Administrative area, medical post, rest area were established fulfilling the requirements of [Demining group] SOP and in accordance with the NTSG Sudan (See Annex A).

15.8 Command and Control

Command and control was found to be sound and good.

15.9 Quality Assurance and Control

- a. Daily Internal quality assurance and control is carried out through the constant presence of Supervisor Major [Name removed].
- b. Regular Internal quality assurance is carried out by Ops & Planning officer of [Demining group].
- c. Periodic External Quality Assurance by UNMAO, Juba in accordance with NTSG.

16. Planning (training, survey, tasking)

- a. The EOD Team carried out detailed survey before deployment.
- b. The Team was augmented by the deminers of Demining Platoon-2.
- c. On 12 July 2007 two BAC Groups each comprising of 10 persons were deployed for BAC operation as part of the daily programme.

17. Details of Non Compliance to Agency SOP / NTSG / IMAS

Not Applicable.

18 CONCLUSIONS

- a. On 12 July 2007 one EOD Team of [Demining group] comprising of two BAC Groups was carrying out BAC as part of their daily programme.
- b. The day's work started at 08:30 am which was a bit later than the other days work. This delay occurred due to heavy rain in the morning.
- c. Lance Corporal [the Victim] being a member of BAC Group-1 was carrying out visual search operation in the CDS Area. After a 10 minutes of routine break at 12:10 pm he started his search along with his other team members.
- d. At 12:37 pm a small explosion occurred while he was searching inside thick grasses by his hand and the explosion caused soft tissue injury to his hands.
- e. Based on the physical evidence at the site, witness statement from other BAC team members and the casualty, the [Demining group] internal investigation board conclude, that the incident was caused due to the collection of explosive or energetic substances being collected or imparted on the hands while the casualty was searching on or near the ground. The cause of the initiation of these substances is thought to have occurred when the casualty brushed or rubbed his hands together in an attempt to clean his hands of this small particle debris.

19 Further Actions, Recommendations and Lessons Learned

- a. All personnel must be vigilant during clearance operation.
- b. Team leader and group commander should conduct a site risk assessment to the extent of UXO hazard and must brief the working group accordingly.
- c. BAC Team should not touch unfamiliar items.

d. All working member must wash their hands during break or BAC Team should wear gloves during operations. No one should rub hands before washing.

e. Boots and associate clothing should be checked for "contamination" prior to departing the work site. Appropriate cleaning should be conducted prior to embarking on any vehicle.

Background Information

a. CDS Jebel Kujoor (DA SS-890) was a former gallery range for SAF troops. In May 2006 the area was used to destroy unwanted SAF ammunition prior to their departure from Juba. Unfortunately the operation was not successful and consequently resulted in various items of ordnance being spread over the area in various conditions.

b. [Demining group] surveyed and completed demarcation of total 879,750 sqm for the assigned surface visual clearance operations.

c. 411,750 sqm of the total area were found cleared by [Demining group] till March 2007. Remaining 468,000 sqm area have been reconnoitred, surveyed and marked for the clearance operations which commenced on 07 May 2007.

Victim Report

Victim number: 761	Name: [Name removed]
Age: 29	Gender: Male
Status: supervisory	Fit for work: presumed
Compensation: Not made available	Time to hospital: 33 minutes
Protection issued: None	Protection used: None

Summary of injuries:

severe Hands

COMMENT: See Medical report.

Medical report

Medic's statement

...I heard a mild explosion at 12:37 pm. Then the Team Leader [Name removed] informed me that an explosion took place and requested me for necessary care. Then I, with my medical assistant and ambulance driver rushed to the spot of the accident with the ambulance within 2 minutes. There I observed that [the Victim] was brought to the safe area and given 1st Aid treatment by nearest EOD personnel to control bleeding. After examining the patient thoroughly I detected multiple lacerated injuries on his both hands especially injury to the moderate soft tissue on right middle finger, small sized wound over right ring finger, cut like injury at the left ring finger and lacerated wound over the hypothener eminence of left palm. The patient was fully conscious. The airways and circulation were normal, bleeding was moderate and there was no fracture. Other physiological parameters were normal. At 12:45, after giving the proper treatment I evacuated the patient by ambulance to level-11 hospital, Juba for further management.

[Signed and dated 12th July 2007]

[A hospital report from Juba hospital records the injuries as: “blast injury hand bilateral moderate. AN IMSMA report records the Victim’s DoB as 17th January 1978, and the time to hospital as 33 minutes. Injuries were summarized as: Two fingers (ring finger and adjacent part of palm of right hand and little finger and adjacent part of palm of left hand) were injured. He was evacuated to Level-II Hospital, Juba at 13:10 pm. No fracture was found in any part of the fingers.]

Statements

The Victim

I [Name removed] hereby state that we a group of 10 personnel were clearing the Battle Area on 12 July 2007 from 08:30 am in a place near to the Field Ammunition Dump. After long tea break ast 12:37 pm when we were carrying out visual search close to the field ammunition dump during removal grass by hands suddenly I heard a mild sound of explosion of front of me, within the grasses and felt blow causing injury on my both hands. Within 2 / 3 seconds EOD personnel came to me and gave bandage on my both hands to control bleeding. Then the Platoon Commander and Medical Officer reached to the spot and after giving necessary treatment ent me to Level-II Hospital.

[Signed and dated July 2007.]

Analysis

The primary cause of this accident is listed as “Inadequate equipment” because the Victim was removing grass 50cm to 2m long by hand. Clearing tall grass by tearing it up with hands does not promote a cautious advance or result in thorough ground coverage. The secondary cause is listed as a “Management control inadequacy” because the group’s management did not provide appropriate vegetation removal equipment and did not investigate the accident with a view to determining what really occurred, so allowing identification of changes to procedure that could prevent a repetition of the accident. The investigation was conducted internally and the conclusions do not follow from the evidence collected.

Although the investigators decided that the Victim was rubbing his hands together when an “Explosive Energetic Substance” detonated, this is in direct conflict with the Victim’s statement and with his injuries - which were not burns but lacerations. There was a “mild” detonation, as might be associated with the explosion of a detonator or fuze. In the Victim’s statement (which is not challenged anywhere) the Victim stated that he was removing grass with both hands and something among the grass detonated and he “felt blow causing injury”. He was “found in a concussed and disoriented state”. Having suffered lacerations on both hands, it is most likely that the device was a fuze and detonator of unidentified ordnance spread during the earlier inadequate demolitions at the site.