

DDAS Accident Report

Accident details

Report date: 29/01/2008	Accident number: 540
Accident time: 11:28	Accident Date: 08/10/2004
Where it occurred: Erlalai Municipality, Valikamam South, Jaffna, Northern Province	Country: Sri Lanka
Primary cause: Unavoidable (?)	Secondary cause: Unavoidable (?)
Class: Excavation accident	Date of main report: 08/10/2004
ID original source: None	Name of source: [Name removed]
Organisation: [Name removed]	
Mine/device: P2Mk2 P4Mk1 AP blast	Ground condition: agricultural (abandoned) bushes/scrub residential/urban soft wet
Date record created:	Date last modified: 29/01/2008
No of victims: 1	No of documents: 1

Map details

Longitude:	Latitude:
Alt. coord. system: Sri Lankan Grid	Coordinates fixed by: GPS
Map east: Easting/ Long.: 0118686	Map north: Northing/ Lat.: 0505425
Map scale: Mallakam, Erlalai	Map series: IMSMA
Map edition:	Map sheet: GIS Arc Explorer 4.0
Map name: 1:10000	

Accident Notes

long handtool may have reduced injury (?)
no independent investigation available (?)
metal-detector not used (?)
non injurious accident (?)
standing to excavate (?)

use of rake (?)

Accident report

The report of this accident was made available in January 2008 as an IMSMA file. Its conversion to a document had led to its formatting being lost. The substance of the report is reproduced below, edited for anonymity. The original file is held on record. Text in [] is editorial.

From IMSMA report

Date of demining incident: 08.10.2004

Date report received: 08.10.2004

Place: Erlalai Municipality, Valikamam South, Jaffna, Northern Province

GR: Easting/ Long.: 0118686; Northing/ Lat.: 0505425; GPS

Coord. System: Sri Lankan Grid

Map name: Mallakam, Erlalai

Map series: IMSMA

Map sheet: GIS Arc Explorer 4.0

Map scale: 1:10000

Demining accident coordinates description: Navigation: Take K.K.S road from Jaffna and continue north for 10 kilometers. Stop in big junction (left- Mallakam right- Erlalai), reverse for 50 meters and turn right to school yard. Corner of the school wall is the benchmark of LK-148, find briefing area 25 meters in front.

Less than 500m East of nearest town.

Type of area: city [Actually urban garden: the researcher visited the site.]



[The accident site.]

Demining accident description: Mine clearance was on-going in minefield LK-148, Mallakam, when blast occurred at 11:28 am.

Incident spot terrain is hard, red clay type soil with vegetation. Soil was soft now because of severe raining during past days. Antipersonnel mine was situated in a spot containing some small rocks. The only possible disturbing object could have been a small stone pressing the AP-mine.

Deminer [the Victim] used his rake in normal manner. He set off a P4 MK1 antipersonnel mine with his 2-tooth heavy rake. Heavy rake bended but remained in one piece in the blast. Deminer was in perfect health and didn't get bruises nor other minor injuries.



[The rake tines were splayed in the blast.]

Section leader and paramedic came to spot and found deminer ok. Lane was closed and after investigation of technical advisor and acting team leader, demining continued in normal manner.

Before that, acting team leader conducted medevac routines according to Standard Operative Procedure, stopping all the demining in the minefield, evacuating team to admin area, counting personnel and closing the incident lane to remain untouched. Furthermore, he informed [Demining group] Jaffna administrator, technical advisor and the headquarters. Technical advisor informed Mine Action Office, Jaffna.

There is no definite explanation for how the incident happened. According to deminer, he used his tools slowly and correctly letting the rake to come towards himself by its own weight while pulling. Visual appearance of the incident lane supports this claim. Deminer's raking tracks are visible, 50 cm in length and symmetrical.

Shape of the explosion crater is small 30 cm x 30 cm x 15 cm and perfectly round shaped, which slightly leads to a conclusion that P4 was laid in normal horizontal (pressure plate upwards) position. It is possible, that P4 was damaged and missing parts of its pressure plate and therefore more sensitive.



[The crater is shown above, fairly round in shape.]

Victim Report

Victim number: 709	Name: [Name removed]
Age:	Gender: Male
Status: deminer	Fit for work: yes
Compensation: Not appropriate	Time to hospital: Not appropriate
Protection issued: Frontal apron Long visor	Protection used: Frontal apron, Long visor

Summary of injuries:

COMMENT: Non-injurious accident.

Analysis

The primary and secondary cause of this accident are listed as “Unavoidable” because it seems likely that the deminer was working as directed when the accident occurred.

Some doubts about the suitability of the rakes in use were raised at the time, and the criticism not well received by the demining group. Many rakes seen in this demining group’s minefields had no (or very reduced) curvature and so the tines had the downward pointing spikes associated with a garden rake. When the rake is placed in front of the deminer and pulled back towards him, it is meant to dig itself in. When the rake tines are straight, it is tempting to hit the ground with the rake head to get some penetration before drawing the rake head forwards. The photograph of the damaged rake head accompanying this accident report shows reduced curvature, but that could have been the result of the blast.

The demining group had put in place the use of a long tool (rake) that kept the Victim far enough away from a blast to avoid injury, and his PPE was effective at protecting him from any risk remaining at that distance. Had he been using conventional short hand-tools, some injury would have been expected.

Stand-off (distance from the detonation) is the most effective PPE and the Rake Excavation system makes use of this. It is possible that the extreme length of the tool makes initiation of small AP blast mines with the Heavy rake more likely, but any increased risk of initiation is offset by the reduced chance of that initiation resulting in injury. The accident is an example of balancing an effective demining process and PPE to result in a very low risk of injury.

The type of rake in use would not be suitable for use when larger AP blast mines were anticipated because the rake head would almost certainly break apart in a blast.