



Trial/Test Report Abstract

FREELAND 3000 Test and Evaluation

Authors:

P. Blomander

Publication year:

2008

Editor:

Swedish EOD and Demining Centre (SWEDEC)

Equipment category/Equipment:

Mechanical Assistance: Freeland 3000 medium flail

Link to full report:

http://www.itep.ws/pdf/SwedecFreeland3000CWA_2008.pdf

ITEP Project Number:

[3.2.47](#)

This abstract document contains the executive summary, summary or abstract taken without modification from the trial/test report, as well as the trial/test report table of content. Note that page numbers might not correspond

The abstract document has been compiled by the [ITEP Secretariat](#)

Abstract

A test of the Freeland 3000 was performed in Sweden by SWEDEC in August 2008. Performance and survivability tests were done according to the European Committee for Standardisation (CEN) Workshop Agreement "CEN Workshop Agreement 15044; Test and Evaluation of Demining Machines", available at the international Test and Evaluation Website (www.itep.ws).

Executive summary

During the week of August 20-28, 2008, the Freeland 3000 was tested at the SWEDEC facilities near Eksjö, Sweden. This trial was planned and facilitated almost entirely by SWEDEC. The methodology specified in CEN Workshop Agreement "CEN Workshop Agreement 15044; Test and Evaluation of Demining Machines" was used. It started with a performance test and ended with a survivability test. These tests make up the content of this report.

The machine is operated from the cabin on the machine. The weight is 18.7 tonnes and fits into what is normally regarded as medium-flail class of machines (6-20 tonnes).

The Freeland 3000 triggered or neutralized 450 mines of 450 mines - 100 % of the target mines used in these trials.

The results in each lane were varying between 44 up to 50 broken or triggered mines.

The penetration of the witnessboards during the tests was showing a small variation (chapter 6). The variation on some witnessboards shown different depth, the depth shows a different up to 10 cm right to left. This could depend on that the flail head is not in level.

The machine demonstrated the ability to penetrate well beyond the depth required to reach the deepest targets. In all but the most difficult soil, a smooth uniform cut across the whole width of the machine was observed.

The survivability test went well. The machine was not driving across the anti-tank mine the Swedish m/41-47 placed at surface. The machine was not driving across the mine because of that the machine had not done the operator survivability test.

The mine was placed in front of the flail and was remotely detonated.

The machine suffered no damage from the mine. No tools were missing. The machine could operate again after five minutes.

Freeland 3000 had done a Pre-Test Assessment at SWEDEC, this during August 18-19 2008. The Pre-Test Assessment report is available at ITEP.

Table of contents

Abstract..... 2
Executive summary 2
Table of contents 3
1. Introduction 4
2 Machine Description..... 5
 2.1 FREELAND 3000 Mine Clearance System..... 5
3. Trial Description..... 6
 3.1 Test Team..... 6
 3.2 Trial Conditions 6
4. Test Results..... 6
 4.1 Results against mine targets 6
 4.2 Tabular Data and Explanations 7
 4.2.1 Debris and Scatter 8
 4.3 Depth and Consistency of Penetration 9
 4.3.1 General..... 9
5. Survivability Test 18
 5.1 Trial Descriptions..... 18
 5.2 Anti-Tank Mine..... 18
 5.3 Test Methods..... 19
 5.4 Test Results 19
6 Test Facilities and Tools..... 21
 6.1 Soil Compaction..... 22
 6.3 Test Targets..... 23
 6.4 Mine Target Burial 25
 6.5 Mine Target Level of Damage 26
 6.6 Witness Boards..... 28
 6.7 Test Methods..... 30

Annex A – Test Data Sheets