Trial/Test Report Abstract

Report:

DIGGER D-2 Test and Evaluation

Authors:

P. Blomander

Publication year:

2009

Editor:

Swedish EOD and Demining Centre (SWEDEC)

Equipment category/Equipment:

Mechanical Assistance: DIGGER D-2 flail and tiller

Link to full report:

http://www.itep.ws/pdf/DiggerD2_CWAfinal.pdf

ITEP Project Number:

3.2.43

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 Digger D-2 was performed in Sweden by SWEDEC in September and October 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 last week of September and first of October 2008, the Digger D-2 was tested at SWEDEC facilities Norra Kulla near Eksjö, Sweden. This test was planned and facilitated 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 up with a survivability test. The machine was tested with both flail and tiller. These tests make the content of this report.
The tracked, remotely controlled Digger D-2, at approximately 9 tonnes, fits into what is normally regarded as a medium class of machines (6-20 tonnes).

The Digger D-2 whit flail triggered or neutralised 447 out of 450 mines, 99 % of the targets. Of the 447 mines 416 were triggered and 31 mines neutralised with live fuzes. 3 mines were left live and intact.

When the machine was using tiller, it triggered or neutralised 429 out of 450 mines, 95 % of the targets. Of the 429 mines 372 were triggered and 58 mines neutralised with live fuze. 20 mines were left live and intact.

The variation of speed and problem with maintaining the right depth penetration are the main reasons to a low result of triggered mines.

The penetration of the witnessboards during the tests were showing some small variation (chapter 4). It was almost the same penetration with flail or tiller.
The machine has always been clearing to the required depth and deeper than strictly nessasary.
The tendency to clear deeper than necessary, depends probably on a lack of depth control system.

The survivability test was performed in two steps. At first the machine was tested with flail and after that with tiller. The target used during the test was the Swedish Anti-Tank Mine 41/47 boosted with 2.25 kg of plastic explosive, giving a total equivalent of 8 kg of TNT.
The result was that both flail and tiller shafts was so damaged that further clearing was not possible, the frame of the tool was not affected. The machine itself showed no damage.

The machine has done a Pre Trial Assessment, tested by the Defence RoD Canada-Suffied in 2006. The report is available at the international Test and Evaluation Website (www.itep.ws).

Table of contents