NEW FRAGMENT SAFETY DISTANCES FOR EOD OPERATIONS

J.R. van Deursen, L.H.J. Absil

TNO Defence, Security and Safety
PO Box 45, Lange Kleiweg 137, 2280 AA Rijswijk, The Netherlands
Jolanda.vandeursen@tno.nl

In the Netherlands, old World War II ammunitions still pose a great problem to the Dutch community. Consequently, the Ordnance Disposal Unit (EOD) of the Royal Netherlands Army has to clear WWII-munitions on an almost daily basis. The military field manual VGVK 19 is used when performing EOD operations. In this manual, safety distances like evacuation distances and fragment zones are given for different ammunition articles.

Within the EOD-organisation, doubts have risen concerning the validity of the safety distances given in VGVK 19. TNO Defence Security and Safety was tasked to evaluate and when necessary, modify these. First a literature study has been performed by TNO to discover the origin of the distances. Next, TNO conducted a series of arena tests, using different ammunition articles with charge weights less than 25 kg and aircraft bombs. These tests are presented at MABS in 2004 and indicated that the fragment safety distances in VGVK 19 are, in most situations, too small.

Comparison between the safety distances in VGVK 19 and those used in the USA or UK showed that the distances used in The Netherlands are extremely small. New fragment safety distances are advised by TNO based on test data and analysis. In the safety distance table more distinction has been made for ammunition articles with a small explosive weight. In addition, the RNLA EOD utilises protective measures/structures in many of their operations to minimise the effects of an (accidental) explosion. The mitigating effect of a sand coverage and a protective structure has been tested and safety distances are advised.

In the paper, the findings of the test program will be described and the advised safety distances for EOD operations will be presented.