

STANAGs vs UN Orange Book

Continuing with our issue's theme of testing and standards, we take a closer look at some of the discussions that took place in Munich at the IMEMTS in 2010 on these subjects.

As explained on page 2, NATO STANAGs lay out the regulations for military explosives and the UN Orange Book the civil regulations for transport of dangerous goods in general. Even though the IM definition is now the same for NATO and UN, which is a significant step forward, UN Hazard Division (HD) 1.6 (described on page 2) is not fully harmonised with STANAG 4439. For example, the ruling procedures in the STANAG differ from those in the UN Orange Book on things such as the nature of a combustible for Fast Heating.

This leads to a duplication of tests in various countries and therefore a waste of money. Each national authority can choose what type of STANAG test procedure to use. The test set up is not specified in sufficient detail, with the stimulus not always well defined and the result subject to interpretation. This

means that some significant differences for undertaking vulnerability tests have appeared in different test centres and that in France and the UK for example, munitions responses can be demonstrated through small-scale tests and simulations while in others full scale trials are required.

Another concern for IM stakeholders is that so far the lack of accuracy in

« No common assessment »

test procedures described by STANAG 4439 means there is no common assessment and it is impossible to benchmark the precise IM signature of various munitions.

IMEMG suggests that stimuli must be defined in order to avoid different procedures in different countries to test identical munitions. Costly, unrealistic

« What is a true IM? »

or unnecessary stimuli should be avoided.

IMEMG finds that the architecture of the munitions is not clearly taken into account for IM assessment. For example, fragmentation analysis is

defined only for steel cases. What of aluminium or composite cases? IMEMG also suggests the test arrangement should be described precisely in the test report to avoid results being misinterpreted.

In addition, it is feared that some unrealistic criteria which have been introduced would end up eliminating some real IM from the benefits of UN HD1.6 (e.g. the new Fragment Impact - 18.6g @ 2530 m/s with a Type V reaction – is far too stringent, particularly when compared to Sympathetic Reaction where only a type III reaction is required).

At the IMEMTS' 2006 IMEMG presented a paper focusing on the need for a clear link to be established between the definition of an IM and the response levels to the various threats. This would put an end to the confusion on what is a true IM. That still stands today, five years later.



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Working Groups Deliver

All three IMEMG Technical Working Groups delivered their outputs in the form of presentations to the recent IMEMTS conference in Munich. The Test Procedures Working Group and a joint paper on behalf of the Hazard Assessment and Classification and the Cost Benefit Analysis Working Groups.

'Are There Different Test Methods for IM based on STANAG 4439?' National variances were explored in the application and interpretation of the STANAG test procedures and criteria. The conclusion was that there were differences that could affect the 'cross-border' transfer of data, which is undesirable. Recommendations were made that there should be a coordinated effort to share test procedures and in resolving the differences in procedures. An effort that IMEMG would be well positioned to support.

'How to get Insensitive Munitions Benefits according to Hazard Classification?' The presentation identified opportunities to derive benefits through the classification of munitions in SSD 1.2.3 and HD 1.6. The changes to the classification requirements for HD 1.6 and the continuing problems with classification into HD1.6 were explored. The paper also looked at the use of the IMEMG Cost Benefit Tool as a route to the quantification of the 'cradle to grave' financial advantages of IM products.

These presentations represent a significant output from the Working Groups. Their quality and associated papers reflect not just on the presenters but on all of the individuals and companies that have contributed to them, the Working Groups. Copies of the presentations are available on: www.imemg.org