

Abstract Submitted
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Gun Testing Ballistics Issues for Insensitive Munitions Fragment Impact Testing ERNEST BAKER, EMMANUEL SCHULTZ, NATO Munitions Safety Information Analysis Centre, NATO MUNITIONS SAFETY INFORMATION ANALYSIS CENTRE TEAM — The STANAG 4496 Ed. 1 Fragment Impact, Munitions Test Procedure is normally conducted by gun launching a projectile for attack against a munition. The purpose of this test is to assess the reaction of a munition impacted by a fragment. The test specifies a standardized projectile (fragment) with a standard test velocity of 253090 m/s, or an alternate test velocity of 183060 m/s. The standard test velocity can be challenging to achieve and has several loosely defined and undefined characteristics that can affect the test item response. This publication documents the results of an international review of the STANAG 4496 related to the fragment impact test. To perform the review, MSIAC created a questionnaire in conjunction with the custodian of this STANAG and sent it to test centers. Fragment velocity variation, projectile tilt upon impact and aim point variation were identified as observed gun testing issues. Achieving 2530 m/s consistently and cost effectively can be challenging. The aim point of impact of the fragment is chosen with the objective of obtaining the most violent reaction. No tolerance for aim point is specified, although aim point variation can be a source for IM response variation. Fragment tilt on impact is also unspecified. The standard fragment fabricated from a variety of different steels which have a significant margin for mechanical properties. These, as well as other gun testing issues, have significant implications to resulting IM response.

Ernest Baker
NATO Munitions Safety Information Analysis Centre

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