

P43 Assessing the Capabilities to Predict Combined Blast and Fragment Effects

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Abstract:

Traditional techniques treat the load cases of blast and fragmentation separately. Although the synergetic effects of both blast and fragmentation loadings are acknowledged, the combined effects are difficult to properly develop, model, and implement. This paper presents currently available software and techniques to develop the combined load case and compares the combined loads to historical experimental test data. The current techniques and available test data have several limitations when predicting the actual response of both the blast only and blast/fragmentation combination. For the purpose of comparison, simulation of a previous test program was attempted by use of ConWep, Air 3D and several numerical techniques. This comparison investigated the structural response of a five layer composite target when subjected to a steel cased charge with varying thicknesses. This paper presents several limitations and recommendations for future work in this area to further refine the development of a combined blast and fragment loading scheme to be used in the analysis and design of protective structural systems subjected to this environment.

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