

BLAST STUDIES OF A COST EFFECTIVE HARDENED TACTICAL SHELTER AND A SIMPLIFIED OUTRIGGER DESIGN FOR TRUCK/SHELTER OVERTURNING

BELLIVEAU,L.J.;SCHUMAN,W.J.;ZARTARIAN,G.;YEGHIAYAN,R.

An improved version of the S-658 Hardened Tactical Shelter and a simplified outrigger design for truck/shelter overturning were tested on DIRECT COURSE, a large HE test at White Sands Missile Range. The improved S-658 (Model A-5), mounted on a 5-ton truck, was also exposed to the thermal loading from a Thermal Radiation Simulator. A second S-658 (Model A-4) was mounted on a 2.5-ton truck that was equipped with outriggers to prevent overturning. The outrigger was designed to be simple and easily deployed. The legs are hinged and connected with a flexible tension member, Nomex rope. Both A-5 and A-4 shelters were exposed to a 71 kPa (10.3 psi) blast and A-5 was also exposed to a peak thermal radiation of 105 cal/cm².

Shelter A-5 survived the thermal/blast with an acceptable degree of structural response. Details of response are given and compared with previous data from tests at MILL RACE and in the large blast simulator at Gramat, France. The outriggers on the 2.5-Ton truck with shelter A-4 were effective, limiting the truck/shelter to a rotation of approximately 30 degrees and a translation of less than 6 ft. Details of the test are given.