

## **AN INTEGRATED HOB BLAST WAVE DATA BASE**

DEWEY,J.M.;MCMILLIN,D.J.

The blast wave data base which provides all the physical properties of blast waves from surface burst and free-air explosions, and which was described at MABS-11, has been extended to include the properties of the blast waves along the ground surface produced by height-of-burst (HOB) explosions. The data are based on experimental measurements made on tests, primarily with 500 kg charges, detonated at heights up to 45m, which corresponds approximately to 5.5m for a 1 kg charge or 1500 ft for a 1 kt nuclear explosion. The blast wave properties were determined from experimental observations of explosions, with charges at ten different heights within that range, and an algorithm has been developed to interpolate the properties at any intermediate height of burst.

The physical properties of the blast waves from HOB explosions made available by this analysis include hydrostatic, dynamic and total pressures, density, particle velocity, temperature, sound speed, specific energy and available energy. These properties may be output as time histories at specified distances from GZ or as distance profiles at specified times after detonation. The outputs, in the form of data files or graphical displays, are presented by user-friendly menu-driven interface that was demonstrated at MABS 11.