AIRBLAST OVERPRESSURE FROM A SHALLOW UNDERGROUND MUNITIONS STORAGE MAGAZINE DETONATION

JOACHIM,C.E.

The Shallow Underground Tunnel/Chamber Explosion Test Program provided a test bed to determine the safety hazard from accidental detonations of shallow underground magazines in rock. The test involved the detonation of 20,000 kg of explosives inside a tunnel/chamber system constructed in weathered granitic rock. The chamber loading density (60 kg/m3) was sufficient to produce venting through the shallow overburden. External airblast overpressure time-histories were measured along the extended tunnel/chamber centerline and on lines 30, 45, 60, 90, and 180 degrees to this line.

Comparisons are shown between the measured data and physical model, em-pirical, and hydrocode predictions. These data demonstrate the strong directional effects of external overpressures emanating from the access tunnel. Although the chamber cover rock was breached, it did not significantly influence the measured external overpressures.