

CALCULATION OF ROCK MOTION DURING BENCH BLASTING*

Elaine Gorham-Bergeron
Sandia National Laboratories
Albuquerque, New Mexico 87185

*This work done by Sandia National Laboratories supported by the Department of energy under Contract No. DE-AC04-76DP00789.

Note: The term blastwell used in the text is more commonly known as blasthole.

ABSTRACT

CAROM is a distinct element, dynamic code developed at Sandia National Laboratories to calculate the motion of rock fragments during blasting.[1] It has recently been improved to incorporate a mechanism for its elements to mimic non-circular rock fragments. With this option, elements stack and move in ways that are characteristic of irregular boulders of blasted rock. In bench geometry, CAROM has been used to examine the possibility of producing variations in muckpile shape due to variations in detonation-time delays between rows. Surprisingly, the shape of the muckpile was predicted to be insensitive to time delays between detonation of rows of explosive, except where the rock fracturing was affected by the time delays.