

IMPULSIVE NOISE MEASUREMENTS IN A FOREST DURING SUMMER AND WINTER CONDITIONS

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A series of nearly 500 tests were conducted in the past two years to investigate the propagation of blast waves from explosive charges over forested regions. These tests were conducted in two seasons, at the same location, to experience "summer" and "winter" (snow covered) conditions. The purpose of the tests were to record the noise (sound) at various locations in the forest to aid in the development of predictive methodologies for determining noise levels around forested test and bombing/firing areas. This information is valuable to various test organizations and military units to determine if certain tests can be conducted without affecting the neighboring communities.

Pressure/noise and ground motion measurements were made by agencies from five different countries at distances from 1 to 23 km from an explosive source. At these locations, measurements were also made at various heights up to 30 m. The source size was varied in yield and the location of the source was moved from test to test. Extensive weather measurements were also made within the array from ground based systems and using radiosondes reaching up to several hundreds of meters. In addition to the aforementioned measurements, several measurements were taken which measured the impedance of the ground cover and snow covered ground, density of the foliage, and radar images of the snow cover (depending on the winter or summer conditions). Currently, the data from the measurements (numbering nearly 80,000 separate recordings) are being stored in a database which is available for analysis and use by interested agencies.

This paper provides an over-view of this test series, the measurements made. the current status of the project, and the plans for the future.