ANOMALIES IN PPRESSURE-TIME RECORDINGS CAUSED BY A WATER DROPS ON A PENCIL BLAST PRESSURE PROBE

MEDIN,A.M.; AXELSSON,H.

Blast Pressures around firing weapons can be a hazardous auditory risk for the gunner and loader. In assessing that risk, damage-risk criteria are used where the peak overpressure is a limiting parameter and an accurate measurement of it is requested. In a rainy environment, water drops on the blast pressure probe can cause anomalies in the recorded pressure-time history.

Limited experiments have been performed with a pencil shaped blast pressure probe in a small shock tube at 44 kPa side-on overpressure level. The water drops (10 - 40 microliter) were applied close to or on the pressure sensitive diaphragm of the transducer.

With the drop on the diaphragm the rise time is increased from 5 microsec to 40 microsec and the recorded overpressure is decreased 10 %. A drop just behind the diaphragm decreases the rise time very little but the peak overpressure is 30% higher.