

“Ways and Means of Blast Protection” INTERNATIONAL WORKSHOP

The international workshop “**Ways and Means of Blast Protection**” were held by Special Materials Ltd. and Russian Academy of Artillery and Missile engineering on January 15-16, 2002 in St. Petersburg, Russia.

In view of increasing terrorist activity and criminal bomb threat, theoretical and experimental researches in the field of blast suppression, design and production of blast attenuation devices have become very urgent. The main objective of the WMBP workshop is to discuss achievements, lines of possible further investigation, and practical use of obtained results.

We are focusing on the following topics:

- Scientific and practical aspects of blast protection devices
- Efficient ways of shock wave attenuation
- Ways of suppression the damage effect from blast fragments
- Practical application of blast protection devices by Interior Ministry structure.

Organizing Committee

M.V. Silnikov (Special Materials, Ltd.) – chairman

B.E. Gelfand (Semenov Institute of Chemical-Physics RAS)- co-chairman

A.I. Mikhailin (Special Materials, Ltd.) – scientific secretary

V.V. Krilov (Military History Museum of Artillery, Engineering and Communication troops) – scientific secretary

V.V. Selivanov (Moscow State Technical University)

More than 70 participants from 30 different universities, scientific research centers, industrial and military institutions of the Ministry of Defense and the Interior Ministry, the Federal Security Service took part in the WMBP seminar. Most of participants had applied attenuation devices in their everyday practice.

Eighteen reports were made in the first day of the seminar. The second day was devoted to the field testing of ‘Fountain’ devices in St. Petersburg suburbs. The testing was aimed to estimate blast and fragmentation suppression effects.

Piezoelectric sensors were used in two tests for measuring blast overpressure resulted from an explosion of 600g TNT charge covered by “Fountain 2M” device (photo). To examine the measuring conduit, an “open” HE charge was detonated during the first test. Pressure sensors were placed within 1.2, 1.3, 1.5, 2.5 m from the charge set on an armor plate. During the second test, a similar charge under similar testing conditions was covered by “Fountain 2M”. Recordings obtained are presented in Fig.1. It is seen than the resulted overpressure is reduced several times when the inhibition device is applied. The degree of reduction is growing with approaching to

the blast epicenter, i.e. the most dangerous area (from 3 times at 2.5 m to 8 times at 1.2 m).

RGO grenade fragmentation reduction resulted from ‘Fountain1M’ application was estimated with the help of three 1500 x 1500 x 5 mm veneer sheets (photo). Comparison of the number of damages on the witness-sheets caused by fragmentation from the “open” grenade denotation and covered by the blast inhibition device demonstrated that “Fountain” devices reduced fragmentation effect 16 times.

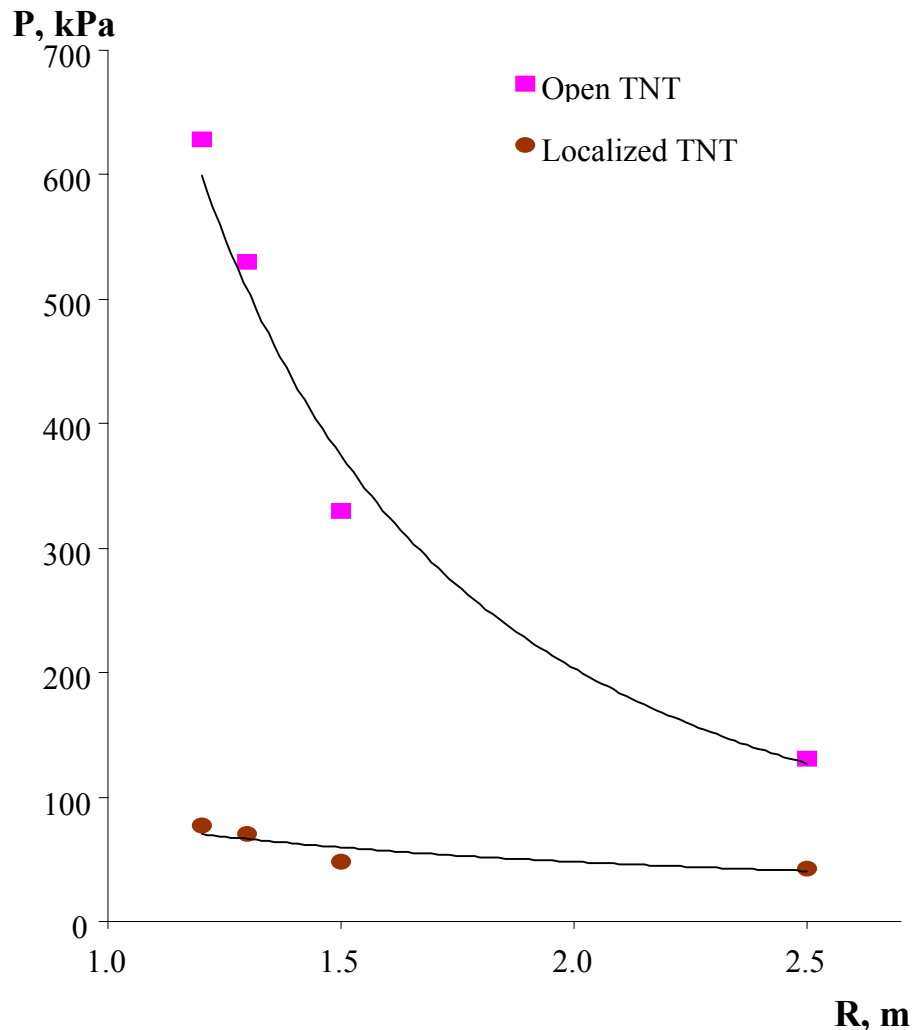


Fig.1. 600g TNT explosion, open and with blast inhibitor “Fountain-2M” applied.

THE NEXT WORKSHOP

For any additional information on the next workshop please contact us :

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