

# **THE AIRBLAST AND SONIC BOOM SECOND SHOCK REVELATION**

Lippe D. Sadwin<sup>1</sup> and Michael M. Swisdak, Jr.<sup>2</sup>

<sup>1</sup> Sadwin Engineering Consultancy, Kefar Pines, 37920 Israel

<sup>2</sup> APT Research, Inc., Huntsville, AL 35805 USA

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The phenomenon of the Second Shock has been observed from explosions in air and sonic booms for many decades. We have accumulated numerous "pressure versus time" recordings which clearly show Second Shock wave behavior. The Second Shock we consider always occurs during the negative phase of the air blast wave and also at the end of the negative phase of the "N" wave Sonic Boom signature.

For multi-ton explosions, the time separation between the Main Shock and the Second Shock enables the observer to detect both shock waves. In fact, similar Second Shocks appears on "pressure versus time" recordings for small explosions as well. Since these shock waves are so close in time, the human ear cannot discern the presence of a distinct Second Shock. The first and second shock waves typical of Sonic Booms are also quite audible since they are sufficiently separated in the time domain.

We present a definite, proven and demonstrable explanation for the Second Shock phenomenon. The concept is based on basic shock wave behavior principles.