

Abstract
Diversionsary Device History and Revolutionary Advancements

By
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Diversionsary devices also known as flash bangs or stun grenades were first employed about three decades ago. These devices produce a loud bang accompanied by a brilliant flash of light and are employed to temporarily distract or disorient an adversary by overwhelming their visual and auditory senses in order to gain a tactical advantage. Early devices that were employed had numerous shortcomings. Over time, many of these deficiencies were identified and corrected. This evolutionary process led to today's modern diversionsary devices. These present-day conventional diversionsary devices have undergone evolutionary changes but operate in the same manner as their predecessors. In order to produce the loud bang and brilliant flash of light, a flash powder mixture, usually a combination of potassium perchlorate and aluminum powder is ignited to produce an explosion. In essence these diversionsary devices are small pyrotechnic bombs that produce a high point-source pressure in order to achieve the desired far-field effect. This high point-source pressure can make these devices a hazard to the operator, adversaries and hostages even though they are intended for "less than lethal" roles. A revolutionary diversionsary device has been developed that eliminates this high point-source pressure problem and eliminates the need for the hazardous pyrotechnic flash powder composition. This new diversionsary device employs a fuel charge that is expelled and ignited in the atmosphere. This process is similar to a fuel air or thermobaric explosion, except that it is a deflagration, not a detonation, thereby reducing the overpressure hazard. This technology reduces the hazard associated with diversionsary devices to all involved with their manufacture, transport and use. An overview of the history of diversionsary device development and developments at Sandia National Laboratories will be presented.

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