

Abstract Submitted
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The Cause of Lost Time in an Exploding Bridgewire Detonator

ELIZABETH LEE, ROD DRAKE, Atomic Weapons Establishment — The initiation mechanism and functioning of exploding bridgewire (EBW) detonators has been the subject of investigation and debate since their first use in the 1940s. One aspect of their initiation for which a definitive cause has never been identified is the lost time i.e. the difference between the ideal explosive transit time and the experimentally measured explosive transit time. In this paper the various theories and available data are discussed and assessed in light of more recent findings. In addition to which they are related to the known physical processes occurring during the functioning of an EBW detonator. Finally, an explanation for the lost time and why it differs so greatly from that in a high density exploding foil initiator (EFI) is proposed. ©British Crown Owned Copyright / 2019.

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