

An Overview of Blast and Its Effect on Combat Systems

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The use of large explosive charges—whether in the form of military mines or improvised explosive devices (IEDs)—detonated under ground combat systems has long been a source of concern for those responsible for developing, analyzing, and improving these systems. And this concern has only increased in recent years as the use and size of these charges have markedly increased in modern combat zones. Unfortunately, while attempts to mitigate the effects of these charges on combat systems and their occupants have been widely reported in the media and elsewhere, the reports have often misrepresented the true physics and mechanics of the mitigation mechanisms. Thus, this monograph is intended to provide survivability analysts, designers, testers, and field assessors with a more complete understanding of the subject by defining pertinent terminology, describing the fundamental physics of blast and other detonation products, examining various aspects of mitigation, and dispelling certain myths that surround these phenomena.

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