



US DEPARTMENT OF DEFENSE

BLAST INJURY RESEARCH PROGRAM COORDINATING OFFICE

Threat Analysis

Vehicle Modernization

JTAPIC provided answers to 13 RFIs in support of vehicle-upgrade programs. In FY15, the Army and other DoD agencies made significant decisions on the strategies for upgrading their vehicle fleets, including the US Army's Combat Vehicle Modernization Study. The Combat Vehicle Modernization Study was the number one priority for the US Army Training and Doctrine Command, and while not complete, the results from FY15 have laid the foundation and direction for this effort. Though the Combat Vehicle Modernization Study looks to the future, a critical aspect was identifying different threat environments and how well existing vehicles performed in them. As an example, the weapons used in an insurgency are very different from the ones that US Services would face in a maneuver warfare environment against a near peer opponent. While JTAPIC has been able to quantify the threat and effects posed to US Services over the last seven years, there are serious gaps in its understanding of different types of operations across the full spectrum of warfare. To rectify this, JTAPIC began a major legacy data program to quantify different threat environments, including reaching out to allies who have operated against potential US enemies. In FY15, this effort added over 1,000 incidents and almost 3,000 casualties into the JTAPIC database. One example of this effort was a series of products in support of Stryker modernization, and in particular, how many Stryker Brigades would use the original Flat Bottom Hull design versus the Double V Hull developed to counter IEDs. This effort added an additional 89 events and 150 casualties to the joint database. Upgrading a brigade can potentially cost hundreds of millions of dollars, hence the customer needs to know not only what threat environments use IEDs and how likely the US would face them, but also the nature and severity of injuries that may result. Information was provided to the ASA(ALT), who decided on the final fleet mix. A similar project is underway for the Bradley Fighting Vehicle program office.

JTAPIC is supporting an ongoing effort to supply the WIAMan program with analytical products to aid in focusing the funding and biomedical research necessary to produce a manikin for ground vehicle testing. These RFIs aided WIAMan's ability to determine prevalent injuries and injury distribution analysis in blast events by providing number of injuries, location, severity, CT/X-ray images, and context. By identifying the mechanism of injury and providing associated radiology that is compared to the post-test manikin to verify similar fracture patterns, these RFIs have enabled WIAMan testing to better simulate real-life events.



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The NGIC identified the specific events to support JTAPIC's summary of the most frequent visceral and skeletal injuries from underbody blast events in theater. The MOMRP was interested in these injuries for understanding the importance of developing non-bony tissue injury models versus strictly skeletal injury models.

NGIC aided in and led JTAPIC RFIs that addressed training effectiveness in regard to IED and other threat encounters for the Maneuver Center of Excellence and the Communications-Electronics Research, Development and Engineering Center. Maneuver Center of Excellence was interested in attacks by threat in order to evaluate the effectiveness of the Advanced Situational Awareness Training Course. The Communications-Electronics Research, Development and Engineering Center was looking for information to confirm or deny that there was a problem with the IED-detection capability gap (high IED casualty rate) with infantry and armor units conducting mounted patrols. The information helped to scope current science and technology initiatives.