Internet Applications for Predicting Blast Damage
Barrier Damage Assessment Module

The Barrier Damage Assessment Module (BDAM) is an application that allows deployed forces to estimate the effects of Vehicle-born Improvised Explosive Devices on common base camp perimeter barriers (Figure 1). The application provides immediate prediction of breach width for a given barrier configuration, explosive threat, and standoff distance. BDAM provides rapid analysis of explosive effects on typical soil-filled Expedient Barrier System/HESCO barrier and concrete barrier configurations indicating whether or not the barrier is breached, and breach width, if applicable. BDAM allows base camp planners to evaluate multiple options and tailor perimeter protection for specific design threats (Figure 2).

BDAM was developed by Army Engineer Research and Development Center (Vicksburg, Mississippi) under the Force Protection Basing Science and Technology Objective-Demonstration. A multifaceted approach combining full-scale experimentation, scaled experimentation in the U.S. Army Centrifuge (Vicksburg, Mississippi), and computational modeling allowed the development and validation of fast-running engineering models within BDAM. BDAM allows base camp planners to evaluate multiple design options and tailor perimeter protection for specific threats to mitigate those effects on the Service member.

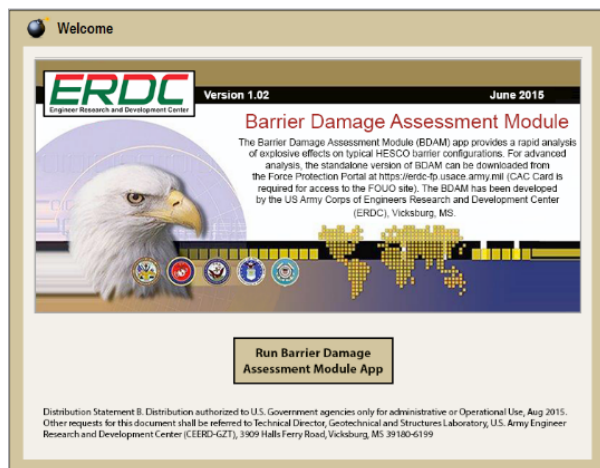*This work was funded by Assistant Secretary of the Army for Acquisition, Logistics, and Technology.*

FIGURE 1: BDAM application welcome page (Figure used with permission from the authors)
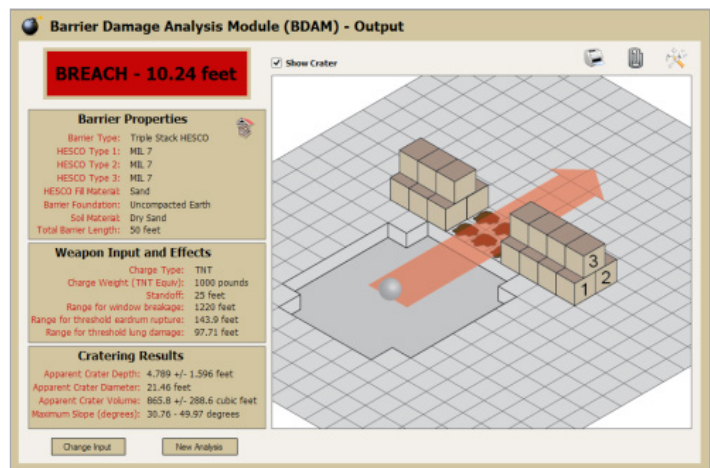

FIGURE 2: Example of BDAM application output (Figure used with permission from the authors)