



GROUND VEHICLE SURVIVABILITY & PROTECTION (GVSP)

CREW COMPARTMENT UNDERBODY BLAST SIMULATOR (CCUBS)

The Crew Compartment Underbody Blast Simulator (CCUBS) is a pneumatically-actuated test device made up of a large platform capable of holding up to four seated occupants and used to evaluate vehicle crew compartments in simulated underbody blast events or material equipment drops. Testing is performed on system and subsystem items such as energy attenuating (EA) seats, bench seats, restraints, EA floors, floor mats, cargo retention devices, and any item that requires dynamic impact testing. CCUBS simulates the independent local and global forces that occur from an underbody explosive event (initial vertical and drop-down forces). This test device evaluates the occupants, occupant protection technologies, and components in a controlled, repeatable, and reproducible environment.

CCUBS is located within the Occupant Protection Laboratory (OPL), a full-service test facility with the resources, capabilities, equipment, and partnerships needed to perform dynamic impact/impulse testing on components, subsystems, or systems within six distinct testing capabilities. CCUBS can utilize Anthropomorphic Test Devices (ATDs), which are certified, repaired, and maintained within the OPL.



Programmers on Bullet Mass

CAPABILITIES

 Testing impulses up to 350g - 5ms on a global level with slam down impulses up to 90g - 20ms

- Total payload is 2,200 lbs
- Platform size 8' x 8' (Warrior Injury Assessment Manikin)
- Accelerometers: 7264 style, 2K range or other upon request
- · Load Cells: Compression load cells
- High Speed Video: 5,000 fps upon request

AVAILABLE INSTRUMENTATION

- 5th, 50th, 95th Hybrid III ATD
- Sample Rate: 10,000 20,000/sec
- Accelerometers: 7264 style, 2K range or other upon request
- Load Cells: lightweight seatbelt load cells
- High Speed Video: 5,000 fps



Readying ATDs on the CCUBS Platform in Preparation for a Test



Nitrogen-charged actuators accelerate the mass on the test fixture to induce the required impulse to simulate an IED