Blast-Resistant Vehicle Seat

The Blast-Resistant Vehicle Seat offers new applications of fluidized bed technologies and is ideal for use in military vehicles [such as the Mine Resistant Ambush Protected (MRAP)]. The seat consists of a rigid bed affixed to the vehicle with sand-filled polymer channels on top of the seat frame. When the seat is occupied, gas is directed into the channels to fluidize the sand, conforming perfectly to the shape of the occupant.

The Blast-Resistant Vehicle Seat couples the occupant to the vehicle, conforms to the passenger, is easily configurable to a wide variety of occupants and body types, and can help in environments where thermal management is a consideration. The seat can be custom fit for any vehicle.

SECURITY

Features

- Conforms to the each person's body with no pressure points and is ergonomically sound
- Allows the occupant to control heating and cooling, especially advantageous in harsh environments
- Controls stiffness of seat by absorbing some of the force/impact during an accident

Benefits

- Protects the warfighter from impact trauma from improvised explosive devices
- Fits all body sizes and forms a comfortable, solid seat bed
- Protects the body, shoulders, neck and back in a blast
- Can be reconfigured any time the occupant needs to change position

Applications

- Homeland Security
- Military
- Law Enforcement
- General Automotive
- Racing
- Aircraft

Patents & Awards

U.S. Patent No. 8,371,647

Developer

Edward B. Ripley

Technology Readiness Level (1–9)

3

Analytical and experimental critical and/or characteristic proof of concept.

Partnering Opportunities

Y-12 is seeking an industry partner to fully commercialize this technology.

If you would like more information, please contact the Office of Technology Commercialization and Partnerships:
OTCP@y12.doe.gov
(865) 241-5981
http://www.y12.doe.gov/technologies