Expeditionary Basecamp Passive Protection

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Report Documentation Page

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Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std Z39-18
The Problem

Warfighters in highly mobile forward units have no inherent ballistic protection in shelters and no time/manpower to install traditional ballistic protection (sandbags, concrete barriers). Multiple requests for ballistic protection for shelters have been received from theater.

Creating a low cost ballistic solution requires advancing current material technology, systems integration, and manufacturing processes.

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The Solution: Modular Ballistic Protection System (MBPS)

- Rapidly deployable ballistic protection
- Expeditionary protection from multiple ballistic threats
- Lightweight, Low Cost
- Redeployable (install around 32’ x 21’/4 man-hours)
- No Material Handling Equipment or special tools
- Immediate protection in all battlefield environments
- Withstands high impulse blast overpressures

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MBPS has evolved into a stand-alone ballistic protection system.

- Universal protection for shelters, equipment, supplies, or personnel.
- Can provide a quickly deployed protective fighting position.
- Effectively withstands blast loads in a multitude of soil conditions.

Current Prototypes:
- Weight: 3.8 lbs/sq.ft.
- Thickness: 0.4 inches
- Cost: $20 per sq.ft.
- Protection: Fragmentation & Ballistic.

Protection levels can be tailored to need.
Higher levels of protection have been requested, multiple uparmor solutions possible:
  • Metallic strike face add-on
  • System layering approach
  • Higher cost materials

Second generation MBPS concepts are in development:
  • Anchorless design
  • Two layer design, ability to fill if possible/needed.
Flexible Ballistic Solution

Flexible Solution for Air-supported Shelters

Through the Small Business Innovative Research (SBIR) program, a flexible ballistic solution was sought for an approach to protect shelters with unique arc shapes of non-traditional frame shelters.

**NSRDEC Objectives:**
- Provide a level of protection against small arms and fragmenting munitions.
- Low volume pack.
- Utilize unique blast response over rigid solutions.

**Phase II SBIR:**
The task of developing an Overhead Threat Protection (OTP) system for direct hit survivability is also being pursued through the Small Business Innovative Research (SBIR) program.

NSRDEC Objectives:
• Quickly set up/deployed
• Reusable/redeployable
• Support the weight of ballistic paneling and pre-detonation layer at a stand-off
• Withstand large dynamic (impulse) loading
• Minimal deflection into the covered volume.

Phase II SBIR:
**Ballistic Requirement**
- Meets requirement document specified fragmentation protection capability (Note: Can be tailored to need and utilize same system)
- Performs well against relevant munitions in arena testing and modeling

**General Performance Requirements**
- Man-portable, No Heavy Equipment, No Special Tools
- Transportability: Tricon or 463L pallet (10,000 lb limit)
- Deployment / Strike times: 1 hour / 4 warfighters / 32’x21’ shelter
- Extreme Climates: Temperature, Snow, Wind.
Program Status

- REF 10 liner
  - 2 MBPS SA systems in theater
- Tech Transition
  - Transition partner PM Force Sustainment Systems (PM FSS)
  - Moving forward with Stand Alone design only
  - Milestone A signed in 1QFY11
  - Milestone B tied to requirements document, awaiting Force Provider Expeditionary (FPE) CPD signature.
- Test community IPT established
- NSN and Interim Tech Manual established with NSRDEC Quick Reaction Cell (QRC) funding
- Sponsoring Threat Summit
  - Participants: ARL, NGIC, ATEC, AWG, NSRDEC, PM FSS
Partnerships

- Product Manager Force Sustainment Systems (PM FSS)
- AEWC Advanced Structures and Composites Center at the University of Maine - Orono
- National Ground Intelligence Command (NGIC)
- Army Test and Evaluation Command (ATEC)
- NSRDEC - Quick Reaction Cell (QRC)
- Army Corps of Engineers (ERDC)
- Air Force Research Lab (AFRL)
- Army Research Lab (ARL)
- NSRDEC - Ballistic Technology Team (WARPAD Directorate)
- Technical Products Inc. (TPI)
- Tex Tech Industries
Questions?

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