OVERPRESSURED LLC

CAPABILITIES STATEMENT | DEFENSE BLAST-EXPOSURE MITIGATION

Reduce Exposure. Train the Same.

Company Overview

OverPressured LLC is a disabled veteran-founded small business developing engineering-based solutions to reduce occupational blast-overpressure exposure during military training and operations. Its technologies address two complementary exposure pathways: helmet-mounted protection for personnel and modular environmental treatments for blast-reflective training spaces. The company emphasizes operationally practical mitigation that preserves realistic training.

The company's approach prioritizes practical exposure reduction at the point of contact with the blast environment. Rather than requiring changes to mission-essential weapons or training objectives, OverPressured develops protective solutions intended to integrate with existing operational equipment and facilities. Its current product portfolio addresses both individual and environmental exposure pathways.

Core Capabilities

Product focus: Individual protection and training-environment mitigation are complementary, not interchangeable. Pelta-6 addresses a defined exposure geometry around the rear of the helmet; HIVE^6 addresses reflected energy from surrounding surfaces. Both products are intended to support realistic training while reducing avoidable occupational exposure.

Pelta-6 shield design considerations include helmet rail compatibility, rearward coverage at the skull base, and operational use in mortar and breaching contexts where the wearer may face away from the blast source.

HIVE^6 blast panels employ an interlocking, three-dimensional hexagonal surface backed by a continuous viscoelastic material layer. The modular format is intended for wall coverage in blast-reflective rooms and for site-specific retrofit planning. Evaluation is directed at measured pressure-wave behavior and potentially associated acoustic effects, including reverberation; acoustic and overpressure outcomes are assessed separately.

- **Pelta-6™ | Helmet-mounted blast shield.** A rail-mounted protective shield positioned at the rear of compatible combat helmets to mitigate blast exposure at the cranio-cervical junction, particularly when personnel face away from the blast source, as commonly occurs during mortar and breaching activities. Designed for integration with existing helmet systems; performance depends on exposure orientation and configuration.
- **HIVE^6 | Modular blast-mitigation wall panels.** Interlocking viscoelastic panels featuring a three-dimensional hexagonal surface, intended to attenuate reflected blast effects in enclosed training environments. Designed for retrofit installation in shoot houses and breaching facilities. Full-room comparative instrumented testing was conducted in November 2026; quantitative results are pending review.

Military Research, Evaluation & Demonstrations

OverPressured's products have entered multiple military and research evaluation settings. The following activities are presented as documented research participation, prototype procurement, or instrumented testing, not as qualification or adoption.

The 2026 IFBIC program provided three distinct perspectives: operational safety and PPE feasibility from SOCOM Safety; cranio-cervical junction pressure measurements from TBICoE; and biofidelic headform and helmet-response investigation from Vanderbilt University on behalf of the 75th Ranger Regiment. Vanderbilt subsequently presented related work at MHSRS 2026. These are separate research activities with different measurement objectives.

For the HIVE^6 shoot-house comparison, panels were installed over much of the concrete wall area while the floor and ceiling remained untreated. Instrumented blast events were conducted with treated walls and then with bare walls; the sensor positions were held constant between conditions. This test design is intended to support direct comparison, but numerical performance claims await formal analysis and release of results.

- **2026 IFBIC: three separate presentations.** SOCOM Safety discussed Pelta-6 as a potential blast-mitigation PPE option for mortar crews; Vanderbilt University presented biofidelic headform research undertaken on behalf of the 75th Ranger Regiment; and the Defense Health Agency's Traumatic Brain Injury Center of Excellence (TBICoE) presented an instrumented Pelta-6 research poster.
- **TBICoE.** The IFBIC poster reported 30.1% lower median peak overpressure outdoors and 37.2% lower indoors for rear-facing test conditions with Pelta-6. Forward-facing comparisons did not show statistically significant reductions. These results are specific to the tested configurations and are not evidence of clinical injury prevention.
- **2026 MHSRS.** Vanderbilt University also presented its Pelta-6-related biofidelic headform research at the Military Health System Research Symposium.

- **Aberdeen Test Center.** The U.S. Army Aberdeen Test Center acquired 12 Pelta-6 prototypes for evaluation. Evaluation outcomes have not yet been reported.
- **SOCOM / USASOC HIVE[6] evaluation.** Approximately 700 square feet of HIVE[6] panels were produced for a military shoot-house evaluation. Treated and bare-wall configurations were instrumented and tested in November 2026; comparative performance data have not yet been released.

Manufacturing & Delivery Approach

OverPressured's delivery model separates product ownership and technical direction from outsourced fabrication capacity. The company coordinates product requirements, manufacturing specifications, production planning, and delivery expectations with its manufacturing partners. For HIVE[6], AirBoss Defense Group produced the approximately 700-square-foot panel order supplied for the 2026 military evaluation.

For government requirements, OverPressured can develop project-specific responses addressing panel quantities and coverage, proposed configurations, manufacturing schedules, packaging, and applicable installation considerations. Final scope, pricing, acceptance criteria, and delivery terms are established through the quotation and contracting process; no unsupported production capacity or lead-time guarantees are implied.

OverPressured manages product design, technical coordination, and customer engagement, supported by qualified external manufacturing partners. Production quantities, lead times, installation scope, and pricing are established by project-specific quotation.

Veteran-Led Origins

OverPressured LLC was founded from firsthand military experience and a commitment to reducing occupational blast-overpressure exposure among service members.

What began as an awareness effort, C3M - Cohort of Chronically Concussed Mortarmen evolved into the broader Cohort of OverPressured Warfighters. It provides an online forum for people with firsthand occupational blast-exposure experience to share observations and identify operational concerns. That history informs OverPressured's user-centered engineering perspective.

The company's guiding pillars are Awareness – Community – Engagement. Awareness means recognizing occupational exposure; Community means learning from the people who encounter it; Engagement means directly developing prevention-oriented engineering countermeasures. In acquisition settings, these principles translate into an emphasis on operational relevance, measurable testing, and field-practical design.

Intellectual Property & Supporting Publication

U.S. published patent application US 2026/0287312 A1, "Blast Overpressure Mitigation". Pelta-6 research is also discussed in the Spring 2026 U.S. Army Infantry article "Innovation at the Speed of Relevance: Fielding Blast Overpressure Solutions Now," by the 75th Ranger Regiment's Brain Protection Task Force.

Company & Procurement Contact

Company	OverPressured LLC, a Service-Disabled Veteran-Owned Small Business (SDVOSB).
Founder/Sole Member	Todd Strader
Location	Apex, North Carolina
Email	todd.strader@overpressured.com
Phone	(919) 924-5746
Website	https://www.overpressured.com

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UEI: SCPWJNSG7E81
CAGE: 9XGC8
NAICS: 339999

Technical note: Research and evaluation references describe specific tests and do not imply government endorsement, certification, fielding approval, or validated prevention of neurological injury.