User-Centered Approaches Maximize Mission Success

"Written in Blood: Case Studies of Systems Engineering Failure" focuses on fatal incidents where engineering design and human-systems integration decisions were contributing factors. The loss of life, while extremely tragic, is just the tip of the iceberg; the takeaway from these cases extends far beyond safety to impacts on mission effectiveness, readiness, and lifecycle cost.

Military systems with advanced technologies often have more capability and functionality than users can extract. This leads to extremely capable systems that do not live up to their potential in practice. Human engineering is the key that unlocks this value, a force multiplier for system design and development.

System Performance = **Human Performance** × **Technology Performance**

The agile, user-centered systems engineering approach maximizes mission success. Key tenets of this approach include:

- ✓ Considering the needs of all stakeholders and fully understanding the problem space
- ✓ Experimenting with innovative solutions that take advantage of state-of-the-art technological capabilities and human factors research through rapid prototyping, learning, and adapting quickly
- ✓ Emphasizing delivering value iteratively and often; minimizing non-value-added effort
- ✓ Empowering collaborative, cross-functional teams with shared decision-making and problem-solving
- ✓ Incorporating technical and non-technical solutions for an impactful, total system approach meeting stakeholder and business needs across the lifecycle
- ✓ Continuously learning about stakeholders, problems, and solutions, and applying that knowledge to strategically shape solution roadmaps to deliver long-term and short-term value

Monterey Technologies, Inc. (MTI) applies this holistic approach across the system development lifecycle from concept creation to solution validation. It relies on proven practices from across DoD and commercial industry to uncover stakeholder needs, deliver highly usable solutions, and validate mission effectiveness iteratively and often. We incorporate digital engineering including modeling integrated human-system performance, reducing risk and enhancing design processes. To learn more about these capabilities, contact Benjamin Schwartz, bschwartz@mti-inc.com, 256-542-1236.