

SEA SYSTEMS

(FORMERLY TRIANGLE RESEARCH AND DEVELOPMENT CORPORATION)

DEVELOPMENT OF HELICOPTER CUSHIONS TO INCREASE SURVIVABILITY (MITIGATOR TECHNOLOGY)



The MitiGator energy dissipating technology

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Topic Number: N92-152
(NAVAIR)

SBIR Investment: \$857K
Project Revenue: \$28M

SEA Systems

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About the Technology

For naval personnel who work on air, land or sea vehicles, constant or single impact, shock, or vibration can cause fatigue, pain, injuries, reduce proficiency, and even death. SEA Systems' MitiGator Technology™ is a smart, passive engineered cushioning material (utilizing one or more layers) that reduces or eliminates damage or injury caused by collision, repeated shock, shaking, and explosions. The MitiGator™ uses patented air control technology to dissipate energy before it is transmitted to the body, thus reducing the level of injury sustained.

The MitiGator has been validated through intensive in-house testing as well as by independent testing by the Navy and Air Force. The MitiGator is currently being used in over five thousand Army Humvees in Iraq to protect against injury or death by landmine or improvised explosive device blasts, with eleven thousand more to be deployed in 2007. Small quantities have begun to reach Iraq for several Marine Corp (MARCOR) and Army helicopters to protect against crash landings and hard contacts. Navy, MARCOR, and Army have all provided acquisition or research dollars to transfer the MitiGator to various platforms.

Military and Commercial Significance

The MitiGator advanced cushioning methodology is certified for flight by the Navy. The cushions use internally molded air passages and interconnecting orifices that employ airflow to redirect impact energy laterally, to maximize energy absorption and lower vibration transmission. The cushioning technology reduces whole body motion by an average of 36% and as much as 75%, thus reducing fatigue during long missions. The system is as effective against repeated impacts (high speed boats or ground vehicles) as it is against one-time events (crash landings), and returns to its original configuration after hard contact, making it suitable for reoccurring impacts.

About the Company

In August 2006, SEA Systems Group, Inc. (SEAS) obtained a certificate of registration as an ISO 9001:2000 facility. In October 2004, SEAS received the prestigious Outstanding Phase III Transition Award from the Navy and Dawnbreaker. The company was also included in the 2004 edition of Profiles In Success, Navy Transition Assistance Program. In November 2004, SEAS received The Leader in Science and Technology Award from the Southern Piedmont Technology council at the Institute for Advanced Learning and Research.

APPLICATIONS

- ▶ MitiGator™ seat cushion: crash landings and hard impacts protection
 - NAVAIR, MARCOR: AH-1W/UH-1 Helicopters ; Coast Guard: MH-68A Helicopters; Army AH-64, OH-58 and OH-6 Helicopters
 - MARCOR: Expeditionary Fighting Vehicles, Growler Expeditionary Fire Support System
- ▶ Army HMMWV for Up Armor Applications
 - MitiGator™ seat cushions: protects during blasts from landmines and IEDs