TOPIC NUMBER: N161-007 | **SBIR INVESTMENT:** $900,620 | **PHASE III FUNDING:** $575,000

DEPARTMENT OF THE NAVY

NAVY SBIR/STTR SUCCESS STORY

SKYFALL

Immersive Parachute Descent Procedure, Malfunction, & Decision-Making Training System

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THE CHALLENGE

Current Parachute Descent Procedure (PDP) training systems are based on technology that limits training effectiveness and realism based on student critique feedback and instructor observations. These limitations include an inability to view the harness and gear while wearing the included head-mounted display, incompatibility with standard flight equipment, and low quality visual system. Additionally, existing training capabilities provide limited debrief capabilities to aid instructors in standardization of feedback during training.

THE TECHNOLOGY

Skyfall is a replacement training system for the PDP. It is unique in that it provides a reconfigurable connection for a variety of aircrew equipment and seat kits, which differ by platform, and addresses the three capabilities gaps of training quality and effectiveness, supportability, and training realism. Skyfall features multiple displays, which include a touchscreen trainer configuration panel, support for multiple aircraft flight gear and parachute configurations, offering more realistic training than current technology. It has the capability to assess crew performance on procedures and decision-making, and automatically generates after-action review information based on student performance.

THE TRANSITION

During the Phase II award in April 2018, a prototype system was delivered to the Aviation Survival Training Center (ASTC) at Naval Air Station (NAS) Pensacola. Efforts are underway to conduct formal evaluations of the training system effectiveness during FY19-20 to provide the program office with quantitative data on training improvements. Software updates made to the system in February, March, and June 2019 were to address iterative feedback provided by the instructors.

THE NAVAL BENEFIT

Development of a single, reconfigurable device will allow the survival training community to deliver cross-platform training without the need for multiple training systems (variations by platform), while also limiting nonrecurring engineering and recurring peripheral costs of a system designed with simulated/replicated equipment. These cost saving factors increase affordability of the system, while also increasing the fidelity for delivering a critical safety-training curriculum. Further, the system provides tools to assist instructors with the standardization of feedback and techniques to reinforce critical learning objectives via the system's automated after action review capability.

THE FUTURE

Discussions have taken place with Naval Aviation Survival Training Program (NASTP) procurement team, in order to define requirements for further system refinement with specific attention to logistics and maintenance items, in preparation for a potential Phase II.5 award with PMA-205 General Training endorsed Technology Transition Agreement. Current transition is on the PMA-205 NASTP roadmap for an FY22 procurement.

"SKYFALL IS AN EXCELLENT EXAMPLE OF A SYSTEM THAT FOCUSES ON TRAINING OUTCOMES THROUGH THE CONSIDERATION OF THE USERS, THE LEARNING OBJECTIVES, AND AN APPROPRIATE APPLICATION OF TECHNOLOGY. THE DESIGN OF THE TRAINEE INTERFACE AND THE INSTRUCTOR STATION SUPPORTS EFFICIENT AND EFFECTIVE TRAINING, TRAINING ASSESSMENT, AND POST-TRAINING REVIEW. THE SKYFALL SYSTEM HAS BEEN VERY WELL RECEIVED BY NAVAL AVIATION SURVIVAL TRAINING CENTER TRAINEES AND INSTRUCTORS ALIKE."

LCDR Lee Sciarini
Director, Training Technologies
Naval Survival Training Institute

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