Concurrent Technologies Corporation (CTC), an independent, nonprofit applied research and development professional services organization was awarded a contract by the Naval Air Warfare Center Training Systems Division (NAWCTSD) to design, construct, test and deploy a Carriage, Stream, Tow, and Recovery System Trainer (CSTRS-T) for the MH-60S Helicopter. The award of this contract signifies the continuing relationship between CTC and the United States Navy’s surface and air warfare centers.

The Trainer is a simulator used to train naval personnel who operate the mine counter measure configured MH-60S Helicopter to tow electronic arrays through the sea to detect underwater mines. The Trainer supports training for Carriage, Stream, Tow, and Recovery System (CSTRS) winch operator skill acquisition and refresher training on normal, emergency, and degraded procedures.

CTC has designed and fabricated a high fidelity cabin mockup of the MH-60S, which is mounted on top of a 30 foot tower. A functional CSTRS unit is mounted within the mockup. An instructor/operator station (IOS) is integrated within the mockup and with the CSTRS unit to facilitate the training operations and to record the trainee’s actions. The IOS design utilizes a modified common console that serves as the Instructor Interface Assembly (IIA). The IIA provides the instructor a graphical user interface for viewing system status and initiating and removing CSTRS malfunctions. A moveable subfloor was designed and built to facilitate Trainer maintenance. Ground support equipment, including a take up reel with closed loop control, tow body, hydraulic power system, and electrical conversion equipment for the CSTRS have been designed, built, and tested. Additionally, a two-ton hoist is located atop the Trainer tower to allow for raising and lowering of CSTRS equipment.

After building and testing the Trainer in Johnstown, Pennsylvania, CTC will dismantle, ship, and install the Trainer at the Norfolk Naval Station training site. CTC will provide operation and maintenance documentation, operator and maintenance training materials, and training to instructors and maintainers of the Trainer.
Successful Integration Efforts

The CSTRS-T program is an integrated effort encompassing many disciplines across CTC. Across the lifecycle of the program, CTC has managed the successful integration of the following disciplines ensuring a fully-functional training device.

• Program Management
  - Integration and Management of all Program Elements
  - Configuration Management (CM)
  - Quality Management and Quality Assurance
  - Subcontractor Management
  - Procurement/Hardware Acquisition
  - Expansion of Supply Chain

• Systems Engineering
  - Requirements Development and Management
  - Systems Design and Analysis
  - Specialty Engineering and Integration
  - Hardware Fabrication and Assembly
  - Software Development and Information Assurance (IA)
  - Test and Evaluation

• Logistics
  - Development of Life Cycle Solution
  - Production of Integrated Logistics Support (ILS) Products
  - Design and Conduct Classroom and Hands-On Training
  - Inventory Management

• Safety
  - Comprehensive Safety Assessment
  - Hazard Identification and Control
  - Development of Standard Operating Procedures (SOP’s)
  - Recognized as an OSHA Voluntary Protection Programs Star Site

• Facility Management
  - Facility Design and Alterations
  - Construction Management

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