Air Systems

Delivering solutions that improve sustainability, mission performance, and system integration. Our goal is decreased maintenance with increased flight time of your aircraft.

Our team designed the U.S. Navy Carriage, Stream, Tow, and Recovery System (CSTRS) for the MH-60S helicopter. CSTRS mounts to the MH-60S helicopter and enables the U.S. Navy’s new littoral combat ships to readily respond to mine threats, providing an extra measure of safety for crew and ships. CSTRS’s unique modular design is capable of supporting the deployment requirement of multiple mine sensors that provide a range of mine countermeasures objectives.

Concurrent Technologies Corporation (CTC) is an independent, nonprofit, applied scientific research and development organization. As a nonprofit, CTC partners with clients to provide the best possible advanced engineering & manufacturing solutions. We offer extensive air systems expertise, including:

- Engineering Solutions for Maintenance & Sustainment
- Mission Kits
- Air Worthiness & Validation
- Tooling Solutions

CTC’s quality management system is certified to the ISO 9001:2015 and AS9100D:2016; CTC’s environmental management system is certified to 14001:2015.
CTC subject matter experts partner with clients to develop and evaluate solutions that balance mission and performance requirements with life-cycle cost consideration. Through innovative engineering designs, we integrate multiple single-system mission solutions while minimizing weight, space, and power.

Beginning with initial concept and design, CTC provides advanced technology products and solutions for the aerospace industry. We then develop, test, and evaluate the designs prior to initial production. In addition, CTC also has the expertise to provide ongoing life-cycle support.

CTC’s engineering efforts—including design, analysis, computer-aided design, and manufacturing support—provide increased maintainability, corrosion prevention, tooling design, mission kit support, and improved manufacturing of air systems.

Through the utilization of advanced metalworking technologies, CTC is leading an Integrated Project Team to reduce weight and cost of airframe components. By doing so, these advanced manufacturing concepts have the potential to greatly reduce not only the weight of affected parts, but also the associated fuel costs.

**Core Capabilities**

- **Engineering Solutions for Maintenance & Sustainment**
  - *Electrically conducted gasket kit provides $1.8 million cost avoidance annually*
    Developed a gasket kit that provides corrosion prevention to nose bay avionics while allowing electrical conductivity. This kit significantly inhibits saltwater corrosion while reducing total ownership costs of the H-60 platform. To put savings into perspective, addressing nose bay corrosion damage requires approximately 350-400 labor hours and 9-10 weeks of down time per helicopter for a cost of $1.8 million annually.

- **Mission Kits**
  - *Redesigned legacy mission kit provides interchangeability, weight reduction, and flight worthiness*
    Redesigned the legacy MH-60R Sonobuoy Launcher and Support Stand mission kit for improved maintainability, aircraft interchangeability, and approximately 10% weight reduction, while meeting all structural analysis requirements for flight and crash conditions. In addition, a corresponding production drawing package for the redesigned mission kit was developed.

- **Air Worthiness & Validation**
  - *Upgraded avionics equipment increases warfighter safety while meeting flight worthiness requirements*
    Performed a complete stress analysis on aircraft structure, attaching structure, and installation surfaces affected by legacy equipment upgrades for the C-130 aircraft. A full analysis report documenting traditional calculations, free body diagrams, and margin of safety for all locations was developed to obtain DoD flight certification and design traceability.

- **Tooling Solutions**
  - *Specialty tool kit provides $2.5 million cost avoidance annually*
    Developed an enhanced tool kit to maintain H-60 aircraft. With the kit, maintenance specialists can remove dynamic components (forward bridge tie rods and eccentric bushings), which are particularly susceptible to maintenance-induced damage during corrosion inspection. Such damage in critical areas requires aircraft to be removed from service for more maintenance, which decreases aircraft availability, generates scrapped parts, and increases ownership costs.

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