Weapon Systems

Providing our clients with sustainable ways to produce and evaluate ammunition and gun systems for optimal manufacturing.

Flowforming is a cost-effective solution for manufacturing mortar tubes—reducing production costs by 90%, reducing the weight of the weapon by 10%, and increasing the weapon’s strength. Warfighters benefit from stronger and lighter mortar tubes when it matters most.

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 weapon systems expertise, including:

- Product & Process Enhancement
- Cost Reduction
- Weight Reduction
- Product Transition

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.
Our clients consider us engineering experts who provide support in conceptual and detailed design, material selection, analysis, meeting performance requirements, and transitioning from prototyping to full scale manufacturing of their weapon systems.

CTC enhances our clients’ weapon systems through identifying and improving the critical technologies needed to support advancement in technology readiness level (TRL), providing documentation through technical data packages.

CTC supports the U.S. military’s efforts to sustain production capabilities within the industrial base and incorporate next-generation technologies at lower cost, reduced energy consumption, and minimized environmental impacts.

New circular crimp process reduces costs and scrap rates at ammunition plant

The CTC-developed modified circular crimp process is able to meet production rates, reduce scrap rates, and provide cost savings for the production of all 5.56mm ammunition manufactured at Lake City Army Ammunition Plant. CTC modeled, simulated, and performed physical lab testing to verify the results.

Novel manufacturing approaches provide more than $40 million cost savings

CTC improved the affordability of the 155MM howitzer by converting multi-part components to single-piece titanium investment castings, including the 60-part saddle to one-part. The casting process and other innovative production processes reduced costs by $40 million for the initial-rate and full-rate production of nearly 590 guns, with proportional cost avoidance for subsequent orders.

Updated design process reduced labor by 75% and weight of entry edge by 30%

CTC used advanced manufacturing techniques to develop a near net-shape cast tunnel entry edge for the waterjet inlets on the Freedom Class Littoral Combat Ship (LCS). The new design reduced production hours by 75%, including reducing labor needed for fit-up and improving accessibility for welding and inspection. The cast entry edge solution also reduced the weight by 30% over the legacy entry edge.

Production line successfully transitioned to client facility, allowing client to meet deliverable schedule

CTC developed the M-72 FFE production line to assist our client with meeting their deliverable schedule for qualification units. CTC built jigs/fixtures and quality test equipment in addition to setting up a production line for preproduction/debug and LRIP/qualification. The production line was transitioned to the client facility, and CTC provided setup and training to client employees.

Core Capabilities

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