



Rapid Tooling Solutions for Heat Sinks used on Military Tracked Vehicles



David Schwam,
Case Western Reserve
University

US military operations overseas have put pressure on the DLA supply chain to provide large numbers of spare parts for weapon systems. Gen. Paul Kern, the Army's chief logistician, stated that tank tread usage is five to ten times as high as in peacetime (MSNBC, May 14, 2004). The Army is relying on their suppliers to help them rebuild tank treads that are rapidly wearing out in Iraq and Afghanistan. Case Western Reserve University is working with St. Clair Die Casting, a supplier of tank track inserts, to ensure supply chain reliability of these parts. Tank track inserts are a die cast aluminum heat sink inserted between the rubber tread and the steel track to prevent overheating and spalling of the rubber. In the past, St. Clair Die Casting would replace the steel dies after casting 30,000 inserts. A new rapid tooling solution utilizing a different steel was developed to fabricate these inserts. The new inserts are capable of die casting over 180,000 parts, and the new tooling can be manufactured 80% faster. St. Clair can keep up with the increased demand for aluminum heat sinks with no downtime to replace tooling.

"Die steels we implemented in collaboration with Case Western Reserve University on the AMC Program have produced five to six times more parts without cracking, enabling us to keep up with the increased demand and tight delivery schedules."

**Don Cherry, Director of Engineering,
St. Clair Die Casting**



Tank track inserts