US Department of Defense

Manufacturing Technology Program

2013 Achievement Award Winners

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Restoration of Aerospace Parts by Cold Spray

Several flight critical aerospace components made from of aluminum, titanium or magnesium alloys cannot be repaired using convention repair processes and must be removed from service, costing the DoD several million dollars in replacement parts. Many of these components have long lead times and in some cases, there are no replacement parts in inventory. Working in concert, the Navy, Army, and the OEMs (Applied Research Laboratory/Penn State (ARL/PSU), the Army Research Laboratory (Army ARL) and NAVAIR's Pax River, FRC East, FRC South West) developed test protocols, validation and acceptance requirements, process procedures, and inspection requirements. The Cold Spray process has been implemented in Army, Navy, and Commercial facilities. Several aerospace components are currently being repaired include the B-1 FEB Panel, B-1hydraulic Lines, F/18 AMAD Transmission housing and the UH-60 magnesium gear box sump. Several other repairs are being developed transitioned upon validation.

- Dr. Timothy Eden - Applied Research Laboratory, Penn State
- Frederick Lancaster - Naval Air Systems Command (NAVAIR)
- Luc Doan - US Navy, FRC-SW North Island
- Conrad Macy - US Navy, FRC-SW North Island
- Robert Kestler - US Navy, FRC East
- Victor Champagne - US Army Research Laboratory
- Michael J. Kane - US Army AMRDEC
- Fernando R. Merritt - US Army AMRDEC
- William C. Harris Jr. – Sikorsky
- Bob Bierk - Moog Inc.