CASE STUDY

COC AEROSPACE

PLATFORM: Northrop F-5 E / F

PROGRAM: Landing Gear Reconstruction

PRODUCT: Nose and Main Landing Gear

PART NUMBERS: 14-40600 Main Gear & 14-41600 (7829186 to 7829194) Nose Gear
TECH PUBLICATIONS: T.O. 1F5E-2-7 Series
TECHNOLOGIES: COLD SPRAY to MIL-STD-3021

PROBLEM:

Replacement costs and manufacturing time for new production landing gear components.

SOLUTION:

Cold Spray is the application of supersonic particle deposition (SPD) for repairing and enhancing the airworthiness and integrity of aging aircraft structures. With Cold Spray, there is no degradation of material heat treat temper because it utilizes kinetic rather than thermal energy. This additive process, in which metal particles entrained in a supersonic jet of an expanded gas, impact a solid surface with sufficient energy to cause plastic deformation and bonding with the surface so that the powder is reconstituted into a metal without the creation of a heat affected zone. Moreover, the deleterious effects of deposit oxidation, evaporation, and residual stresses are avoided.

Using Cold Spray, COC Aerospace re-applies material back into the damaged landing gear parts. The parts are re-machined to original dimensions, then final processing is performed including chrome, grind, anodize, etc.

All Cold Spray is performed through COC's Partner **MOOG** at their ***Cold Spray Center of Excellence***. COC Aerospace landing gear reconstruction is certified to MIL-STD-3012 and AS9100 Rev 'C'.
Landing gear components that are the best candidates for Cold Spray repair and reconstruction include:

- MAIN LANDING GEAR PISTONS & CYLINDERS
- NOSE LANDING GEAR MAIN HOUSINGS & CYLINDERS

Cost saving is normally over 60% of new parts. Cycle time to return parts to service is 5 times faster.

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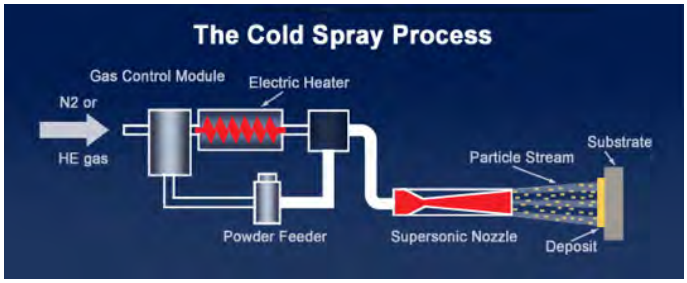

After Cold Spray, parts can be returned to their original state

Significant amounts of materials can be reapplied to heavly damaged parts

Damaged part is 'cleaned up', then Cold Sprayed and remachined

COC Aerospace Partner