The High Velocity Oxygen Fuel (HVOF) coating process has been developed and qualified by the Hard Chrome Alternatives Team (HCAT), a DoD/Industry consortium, to apply thermal spray coatings to landing gear components made of high strength steels. This process is used typically to provide coatings of lower porosity and higher adhesive/cohesive strength than generally attainable with conventional plasma spray. This process is particularly suited for applications requiring wear, heat, and corrosion resistance or dimensional restoration that were traditionally hard-chrome plated. HVOF capability has been developed primarily to address USAF-adopted environmental restrictions associated with hexavalent chrome waste streams.

The HVOF effort at Hill Air Force Base (AFB) focuses on defining component-specific parameters and procedures for applying environmentally benign structural coatings to repairable landing gear components. This project concentrates on qualifying the process on over 400 specific parts and features.

The presentation will discuss progress made on this program in the areas of component identification and approval, part conversion, finishing methods, stripping methods, technical documentation, engineering, and other services.

The implementation of HVOF tungsten carbide-cobalt (WC/Co) coatings and conversion from Electrolytic Hard Chrome (EHC) is now in its final stage at Hill AFB. When completed, over 400 components, many with four or more surfaces, will be affected. The impact of this effort will greatly reduce the hexavalent chrome waste stream both at Hill AFB and across the country as new vendors become qualified to service this market.