

# Status & Results of Flight Testing HVOF Components

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# HVOF as a Hard Chrome Replacement

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## P-3 MLG Piston

**6,378 Total Landings on HVOF coated strut  
over a seven (7) year period as of 15 January 2006  
when strut was removed & turned in  
to Supply IAW AFB 383**

**Strut Assy S/N C30-1252**

**P/N 937958-103**

**R/H MLG**



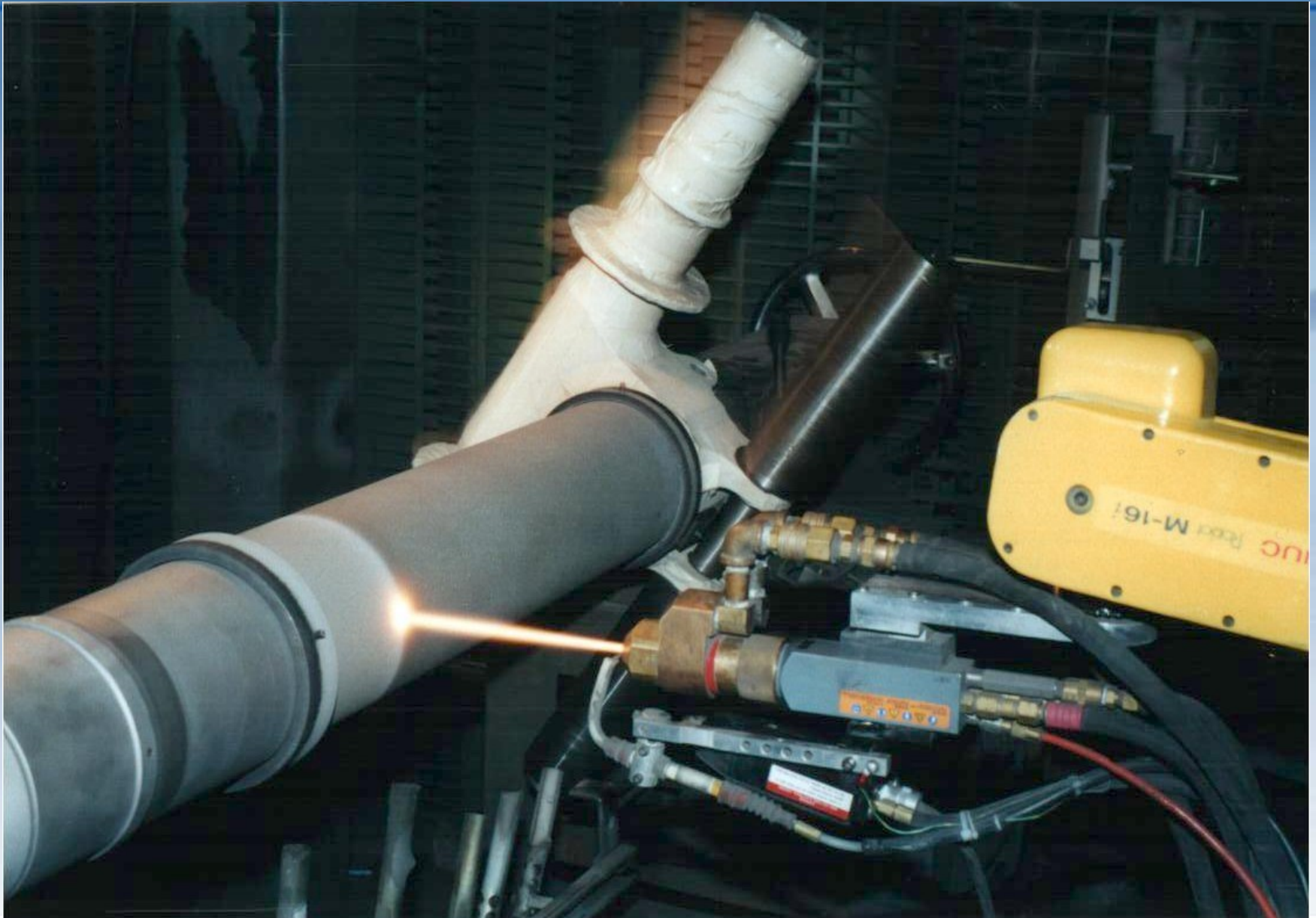


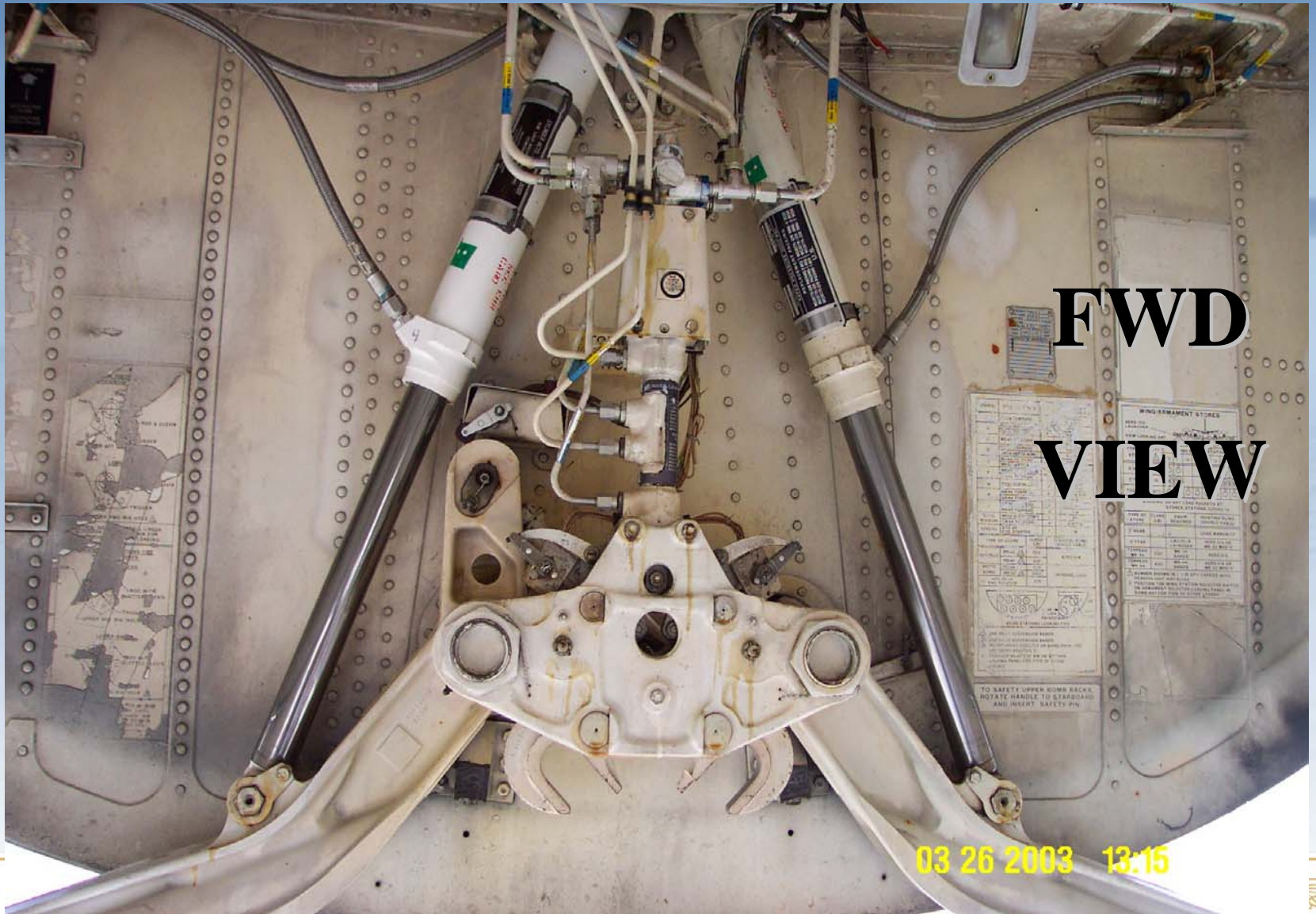
Photo courtesy of Bill Emery, Southwest United



- **P-3 Bomb Bay Door Actuator Pistons coated, ground, & superfinished**
- **Four HVOF coated P-3 Bomb Bay Door Actuator Assemblies RFI and installed on VP-30 Aircraft BuNo 156510 July 2001**
- **156510 at Greenville, SC for 13 months (maintenance)**
- **Wing spar replacement on TLI bird (Time Life Indexed)**
- **Undergoing PDM & ESSI (started Sept. 05)**
- **Aircraft due back at VP-30 on 29 April 06; A/C actually returned to Squadron on 5 October 06**
- **1,378 Flight Hours on HVOF coated actuators (17 Jan 07)**
- **No signs of leakage or coating problems**



# HVOF as a Hard Chrome Replacement



# EA-6B HVOF coated MLG Piston



US Navy Photo by Photographer's Mate 3rd Class Milosz Reterski

## **EA-6B HVOF coated MLG Piston**

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**Current Status of HVOF Coated  
EA-6B Main Landing Gear - 2 year Op/Eval**

**MLG Piston coated Oct. 99**

**Components completed depot processing Dec. 99**

**Flight clearance requested Jan 00**

**Flight Clearance issued 10 DEC 03**

**First Flight July 13, 2004**

**Aircraft delivered to Whidbey Is. 20 July 2004**



## **EA-6B HVOF coated MLG Piston**

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**First Carrier Landing on USS Carl Vinson  
September 14, 2004**

**Deployed again to USS Carl Vinson 1-20-2005**

**Successfully completed World Cruise 8-8-2005**

**Aircraft transferred to VAQ-209 on 19 December 2005**

**Aircraft deployed to Al Asad, Iraq June – Sept 2006**



**Upon successful completion of this world cruise and deployment to Iraq, the HVOF coated MLG Strut Assy has now accumulated:**

**TOTAL of 633 Landings  
including 176 Traps (arrested landings)  
and 172 Cat Shots (catapult launches)  
as of 17 January 2007.**

**Aircraft currently assigned to VAQ-209**



**The HVOF coated MLG Strut Assy has now undergone the severest operational in-service testing during this world cruise aboard a carrier and subsequent deployment to Iraq, both of which included combat operations in an active zone.**

**This strut continues to gather valuable dem/val data for this technology insertion effort.**





**HVOF coated R/H EA-6B MLG Strut Assy.**

**P/N 1707B00-02 S/N BFG 5008**

# HVOF as a Hard Chrome Replacement



**EA-6B**  
**FIRST FLIGHT**  
**w/ HVOF**  
**Coated MLG**  
**Strut**  
**July 13, 2004**  
**09:34 a.m.**



VAQ-138 EA-6B A/C 502

First carrier landing with HVOF coated  
MLG Strut Assy installed at NADEP JAX

USS Carl Vinson 9-14-04







## Specs & Standards

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**AMS 2448 - HVOF Coating Application Specification**  
**Published by SAE in October 2004**

**AMS 2449 – HVOF Grinding Specification**  
**Published by SAE in August 2004**

**AMS 7881 – Tungsten Carbide-Cobalt Powder**  
**Spec published by SAE in April 2003**

**AMS 7882 – Tungsten Carbide-Cobalt Chrome Powder**  
**Spec published by SAE in April 2003**



## Specs & Standards

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**AMS 7881 & AMS 7882 – Powder Specifications  
Revision A has been drafted to include changes that will  
accommodate Praxair/Tafa, Stellite, & other powders**

**Revision A to each powder spec was presented to AMEC for  
balloting by Don Parker at AMEC mtg 1 – 3 Feb 2006**

**All changes are complete and the document is with Committee  
B for approval & release.**

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NAV  AIR

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**Rowan Technology continues to expand services  
With latest addition of a “large” Machine Shop  
Specializing in manufacture of Test Specimens  
Includes 24-hr. Delivery Service . . .**





**Big Bars To Go**

**Big Bars To Go** machine shop now has delivery service