

## 717 TEST SQUADRON



### **MISSION**

717th Test Squadron is responsible for propulsion testing in the Engine Test Facility test cells, which are used for development and evaluation testing of turbine-based propulsion systems for advanced aircraft. These test cells provide test and evaluation services in support of DoD, U.S. industry and international programs.

### **LINEAGE**

717 Test Squadron constituted, 2 May 2006

Activated, 1 Jun 2006

Inactivated, 30 Jun 2010

Activated, 2 May 2022

### **STATIONS**

Arnold AFB, TN, 1 Jun 2006-30 Jun 2010

Arnold AFB, TN, 2 May 2022

### **ASSIGNMENTS**

704 Test Group, 1 Jun 2006-30 Jun 2010

804 Test Group, 2 May 2022

### **COMMANDERS**

### **HONORS**

**Service Streamers**

## Campaign Streamers

### Armed Forces Expeditionary Streamers

### Decorations

#### EMBLEM

On a disc Azure, a 21-bladed fan representative of an engine fan Argent flanked by two wings of fire Gules and fimbriated Or, all within a narrow border Blue. Attached above the disc, a Blue scroll edged with a narrow Yellow border and inscribed "TRIAL BY FIRE" in Yellow letters. Attached below the disc, a Blue scroll edged with a narrow Yellow border and inscribed "717TH TEST SQ" in Yellow letters. **SIGNIFICANCE:** Ultramarine blue and Air Force yellow are the Air Force colors. Blue alludes to the sky, the primary theater of Air Force operations. Yellow refers to the sun and the excellence required of Air Force personnel. The wings are symbolic of the fire produced by an engine. The wings surrounding the fan blades of an engine are similar to those found on the patch of AFMC, the parent MAJCOM of the Squadron. (Approved, 28 Oct 2007)

#### MOTTO

#### OPERATIONS

The 717th TS generated \$56.9 million of aeropropulsion systems test revenue in fiscal year 2008, accounting for more than 60 percent of AEDC's total reimbursement revenue. The primary customers were the Air Force, the F-35 Lightning II Joint Strike Fighter (JSF) Program Office and the Japan Ministry of Defense (MOD).

Air Force tests were funded by the engine Component Improvement Program (CIP) and the Alternate Fuels Certification program. Air Force CIP funded testing of the Pratt & Whitney (P&W) F119 engine for the F-22A Raptor, the P&W FIDO engine for the F-15 Eagle and F-16 Fighting Falcon

The Air Force Alternate Fuels Certification program funded testing of synthetic fuel (synfuel) on both the GE F101 and P&W FIDO engines. These tests consisted of back-to-back comparisons of engine performance and oper-ability using 100 percent JP8 fuel and a 50/50 blend of synfuel/JP8 fuel.

The JSF Program Office funded testing in support of the Systems Development and Demonstration phase of both the P&W F135 primary engine and the GE/Rolls-Royce F136 alternate engine.

The Japanese MOD funded qualification testing of their XF7-10 engine for the Kawasaki P-1 maritime patrol aircraft. The P-1 is the first Japanese domestically designed and built combat aircraft since World War II.

A factor impacting engine testing during the fiscal year was the replacement of cooling coils in the Aero propulsion Systems Test Facility's (ASTF) RC1 cooler. The cooler is the largest of the facility's three pressurized air supply units that dry and cool air, which provide the required conditions to simulate flight at altitude and sea level conditions in the jet engine test cells. Engine testing was suspended for several months during the project.

#### Fiscal Year 2009 Forecast

The 717th TS projects a decrease in aero-propulsion systems test revenue in fiscal year 2009 due to a lower projected test workload.

Primary customers will again be the Air Force, the JSF Program Office and the Japanese MOD. Additionally, we will resume commercial testing at the request of Rolls-Royce Germany.

Air Force CIP will fund testing of the P&W F119 engine in test cells C-1 and SL-2; the P&W F107 engine in test cells SL-2, J-1, and SL-3; and the GE F110 engine in test cell J-1.

The Air Force Alternate Fuels Certification program will fund testing of the GE F110 engine to certify it for operation on a 50/50 blend of synfuel/JP8 fuel. The Air Force Research Laboratory (AFRL), along with the Defense Advanced Research Projects Agency (DARPA) will jointly fund testing of the Williams International (WI) XTE88 High Speed Turbine Engine Demonstrator (HiSTED) engine in test cell T-3. Operation of the XTE88 engine will be demonstrated at Mach 4+ test conditions. The Air Force Reconnaissance Systems Wing will also fund reactivation of test cell T-4 in preparation for early fiscal year 2010 testing of the Rolls-Royce F137 engine used in the Northrop-Grumman RQ-4 Global Hawk.

The JSF Program Office will fund testing of the P&W F135 engine in test cells C-1, J-2, and SL-3 as well as testing of the Fighter Engine Team (FET) GE/Rolls-Royce F136 engine in test cell J-2. The JSF Program Office is also investing more than \$16 million to upgrade and prepare test cell SL-3 to perform corrosion testing of both the primary and alternate engines. Corrosion testing of the F135 and F136 engines is planned for fiscal years 2011 and 2012, respectively.

Following completion of the Japanese MOD-funded qualification test of their XF7-10 engine in test cell C-2, certification testing of the Rolls-Royce Germany-funded BR725 engine will begin in test cell C-2.

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USAF UNIT HISTORIES

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#### Sources

Air Force Historical Research Agency. U.S. Air Force. Maxwell AFB, AL.

The Institute of Heraldry. U.S. Army. Fort Belvoir, VA.