

# Flight dynamics, hypersonics create major increase in workload at AEDC

*By Kathy Gattis, AEDC/PA / Published July 18, 2016*

**ARNOLD AIR FORCE BASE, TENN.** -- AEDC could see record-breaking increases in testing for some of its facilities over the next several years as a result of Air Force plans to recapitalize large portions of its aircraft fleet.

Col. Timothy West, who oversees the AEDC Test Operations Division, predicts challenging times ahead - but a good kind of challenge.

"Our FY17 [Fiscal Year 2017] wind tunnel workload projections are more than double this year's user occupancy hours, with additional growth projected in subsequent years," he said. "That means the workload in the tunnel could reach a historical high, exceeding levels seen during the Apollo era.

"The top priority for each of the CTFs [Combined Test Forces] will be getting all the work done - including the needed maintenance - in a safe, effective and technically rigorous manner. This will be the graduation exercise of the CTF construct and its newest members, NAS [National Aerospace Solutions] and Quantitech. AEDC will have to think and operate differently, and the fresh perspective these companies bring will be key in helping us identify new ways to maximize our test efficiency and minimize the downtime between tests."

West said AEDC is relying on several initiatives proposed by NAS to succeed. NAS became the largest contractor at the Complex on July 1, employing close to 1,400 people. NAS and Quantitech are the testing contractors and the final two of the six contracts implemented.

"I am confident that our new contractor partners will continue to build upon the Sverdrup/Jacobs/ATA legacy to make AEDC even more mission effective than we are today."

The potential rise in testing at AEDC came as no surprise to the Complex's Flight Systems CTF, and West says the team will be ready to ground test the nation's top aerospace systems.

"Even as the F-35 prepares to replace the F-16, F-18 and various other fighter aircraft, the Air Force is considering what it should do to replace the F-22," West said.

He notes the aging Minuteman III Intercontinental Ballistic Missile (ICBM) system is being replaced by a new ICBM currently called the "Ground Based Strategic Deterrent." The airborne leg of the strategic triad is also expanding to include the new B-21 Long Range Strategic Bomber as well as a nuclear-capable Long Range Standoff missile to replace the aging AGM-88 Air Launched Cruise Missile. The CTF will have to balance those requirements with a \$110 million Service Life Extension Program (SLEP) that will require a variety of facility outages.

Although forecasts in the Aeropropulsion CTF are not projected to break any records at this point, the engine test workload remains healthy. West foresees additional growth in this area as some of the same programs they are testing in the wind tunnels will need engine testing as well. The Aeropropulsion facilities will also receive a larger \$190 million SLEP in the same timeframe.

If that wasn't impressive enough, several hypersonic facilities will also receive major upgrades in this timeframe.

"AEDC is projecting to receive an additional \$350 million investment to create a true 'fly the mission' capability for scramjet-based systems. All of this and the \$300 million SLEP investment should keep AEDC facilities healthy for another 65 years."

-AEDC-



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David Anderson, ATA test project engineer, inspects the 1/20-scale models of an F-15E Strike Eagle aircraft and a sting-mounted Small Diameter Bomb (SDB II), during a break in the ongoing store separation test for the new weapon's development phase trials in the aerodynamic wind tunnel 4T of the Propulsion Wind Tunnel (PWT) facility. The test marks the second time the SDB II has been tested at Arnold. (Photo by Rick Goodfriend)