



At this moment, no requirement exists to upgrade the three Talons to Comodel, as this modification would result in losing the pilots and thus pod capability. The electronics of the Comodel would occupy valuable space currently storing test equipment and there would be no place to put FINS back in. Moreover, the accuracy of navigation would be downgraded, as FINS is a more sophisticated and precise navigation system than that installed in the Comodel.

However, due to the many modifications made to the aircraft, the test Talon are approximately 300 lbs (136 kg) heavier than a standard T-38, which increases the landing speed by about 3 kt (9 km/h). Therefore, to have the aircraft undergo the engine modification similar to that of the Comodel is an option currently being studied.

Right now the aircraft continue to be supportable in the sense that maintenance and spare parts are readily available, and in the short term there are no concerns over having to replace the Talons. However, the unit is keeping an eye on what the next aircraft could be for the time when the Talons become unsupportable. The difficulty here is to find an aircraft that would meet all the existing and foreseeable mission requirements, but also has the capability to chase slow assets, something

problematic to accomplish with the Talons as well. Last year, a total of some 400 flight hours were accumulated by the AT-38Bs.

Beech 1900

The squadron also owns and operates a highly modified C-12J (Beech 1900 Airliner) with multiple antenna and receiver modifications for a variety of guidance/navigation, avionics and electronic countermeasures tests. This is the only C-12J in US military service used for test purposes, and many of its missions are flown to provide test support for the 746th Test Squadron, which is the GPS & Navigation test squadron at Holloman.

With a maximum gross weight of 16,600 lb (7,500 kg), the C-12J can accommodate a maximum of four test stations or equipment pallets in its spacious cabin. As the aircraft acts as a host platform, no development is done for the aircraft type itself. Missions include tests for GPS jamming environment characterization, for GPS development, for non-GPS systems development, and many other - mostly classified - projects.

Other test projects involving the C-12J are LADAR, the laser equivalent of radar, in which the aircraft is targeted by the LADAR tracking

Formerly an Edwards machine, this F-15D was assigned to the 586th until August 2005. It is now part of the 46th Test Wing's 46th FLTS at Eglin AFB, but remains available to the Holloman unit for its requirements. A key programme it has been involved in is infra-red measurements using the ATMS podded sensors.

system and Joint Precision Approach and Landing System (JPALS). In the latter project, a next-generation landing system is being developed and tested to facilitate pilots on their approach to aircraft-carriers, fixed bases, tactical airfields and forward operating bases.

JPALS is considered a key system for US military forces and will contribute to increasing mobility and rapid response capability on a global basis. JPALS is similar in concept to the civilian Local Area Augmentation System (LAAS) and is based on differential Global Positioning System (GPS) technology. It consists of modular avionics and ground/shipboard components to provide a range of landing minima and system configurations. As well as coping with the weak signal power from GPS satellites, JPALS-equipped aircraft are expected to operate in the presence of significant radio frequency interference (RFI), and one of the studies is focussing on the use of Geometric Reception Pattern Antenna (CRPA) technology.

UAV Systems Operations and Validation programme

From November 2005 the 586th will also be involved with UAV flight testing. As the US government recognises that actually no rules and regulations exist for flying UAVs in commercial airspace, the Air Warfare Office of the Under Secretary of Defense (Acquisition, Technology & Logistics) signed a Memorandum of Understanding with the 46th Test Group to support See and Avoid Technology for Unmanned Aerial Vehicles (UAVs). Also involved is the Unmanned Aircraft System Program, Task Force, Defense Systems. This see-and-avoid system is required to meet the Federal Aviation Administration (FAA) equivalent level of safety requirement to integrate UAV operations in the National Airspace System (NAS).

As none has been fully integrated or approved, the FAA is not accepting the use of these air vehicles by, for example, law enforcement agencies. Called the UAV Systems Operations and Validation Program (USOV), this new test programme started in November 2005 and will evaluate a 'see' sensor developed by Air Force Research Lab Sensors Directorate for Unmanned Aircraft Systems (UAS). This will be the first 'see' sensor tested on a UAS and is to prove to the FAA that a UAS equipped with a see-and-avoid system can fly throughout the NAS demonstrating the equivalent safety of a manned aircraft, able to 'see and fly' a flight plan within 24 hours like a manned aircraft.

Being a commercial venture, the New Mexico State University, Physical Science Laboratory (NMSU PSL) in Las Cruces, New Mexico, is the prime contractor for this programme and, based on an in-house market analysis, NMSU PSL selected the Israeli designed and built Aerostar UAV - a commercially available off-the-shelf tactical UAV made by Aeronautics Defense Systems - to meet the programme's objectives.

Having a strategic alliance with Aeronautics Defense for the duration of the programme, General Dynamics Information Systems (GDIS) will lease two

Aerostar Tactical UAVs to NMSU PSL in support of UAV operations, training/qualification and sensor technology development, and the UAVs will be deployed at Las Cruces. In addition, General Dynamics Ordnance and Tactical Systems (GDOTS) was awarded a contract by NMSU PSL for a UAV Ground Control System.

NMSU PSL, the 46th Test Group at Holloman Air Force Base, and White Sands Missile Range have combined their UAV efforts to produce a joint regional UAV Test and Evaluation Center (UTEC) to help develop a 'see and fly' capability for UAVs. Over the coming months, while the UAVs are operated by the NMSU PSL, the 586th Test Squadron is to maintain the overall safety and risk management oversight, as well as being responsible for the test plan and how the users develop that. At the same time, the squadron plans to test the 'sense and avoid' system as developed by the Air Force Research Laboratory from the WSMR Station Army Airfield in the north-west corner of the range. The programme provides the DoD with a unique short- and long-range UAV operations capability to support testing of UAV platforms and systems in civil airspace on a routine basis.

In addition to testing UAV components, the 46th Test Group hopes to purchase the two Aerostars in 2008 under the UAV Systems Operations and Validation Program follow-on contract.

With the UAV's payload capability, the Test Group will be able to test airborne jammers, sensors, and other equipment at a fraction of the normal cost. The 46th Test Group is already working with the Edwards AFB Flight Test Center on developing the procedures to fly the Boeing X-45C, and Northrop Grumman X-47B Joint Unmanned Combat Air System II UCAS development aircraft in the NAS from Edwards AFB to Holloman.