



2018 ANTELOPE VALLEY BOARD OF TRADE

F-18F Chase Aircraft for NASA Armstrong Flight Research Center

High speed chase aircraft industrial base investment strategies

Issue:

The current Low Boom Flight Demonstrator supersonic program, and the renewed emphasis on hypersonic research is increasing the demands on NASA's chase aircraft. NASA Armstrong Flight Research Center's aging fleet of chase aircraft are hard pressed to meet present demands.

The current Defense Authorization bill requires the Navy to identify older F-18F aircraft for loan to NASA. The Navy has indicated it has no suitable aircraft available and is unable to comply.

Background:

At NASA, legacy F/A-18 research aircraft are used in support of the nation's aviation, space, and science communities. The purpose of chase missions is to maintain total flight safety during specific tests and maneuvers. Because of NASA Armstrong Flight Research Center's proximity to Edwards AFB, China Lake Naval Air Weapons Station, and Marine Corps Air Station 29 Palms and the associated desert and offshore test ranges, the Center has regularly provided and continues to provide F/A-18 mission services to Air Force, Navy, Marine Corps and DARPA test missions such as F-22, F-35, X-45 UCAV, F-15SA, and B-52/X-51 hypersonic flights, etc. As new programs and missions are realized, there will be an increasing demand for these services.

F/A-18s provide safety and photo chase during research missions, and maintain overall pilot proficiency in high performance aircraft.

Chase pilots are in constant radio contact with research pilots and serve as an "extra set of eyes" to help maintain total flight safety during specific tests and maneuvers.

Chase aircraft also are used as camera platforms for research missions that must be photographed or videotaped. Aerospace engineers use photos, motion pictures, and videotape extensively to monitor and verify various aspects of research projects. For space-launch programs, and planetary missions with an entry, descent and landing phase, chase assets are key to improving the confidence level for the ascent, in-flight, and descent phases through the atmosphere. The F/A-18 can fly for extended periods, and serve as robust high-speed test bed platforms, allowing low-cost, quick-schedule tests to be conducted back-to-back, making small changes between each one to compare the results.

The current fleet of aging legacy NASA F/A-18 A&B airframes, which were built in the late 1970s, require depot level maintenance no longer available anywhere in the United States. NASA is sending its F-18s to Canada for required repairs. The U.S. Navy is no longer supporting its F/A-18A and F/A-18B airframes. It presently is mothballing a number of its legacy two-seat F-18D airframes. It is not clear how much longer parts and depot support will be available for these model jets.

F/A-18F Model requirements

Goal:

Obtain flyable, supportable F/A-18F assets to do research flight test, test support & chase for 20 years.

- 2000 hours minimum useful life on major components
- Minimum of 4 airframes with associated working pylons and tanks
- Dual Controlled F models (stick/throttles in both cockpits)
- Production F models (**not pre-production** as these are too hard to maintain)
- Aircraft could initially be bailed / loaned if this expedites transfer. May improve access to parts, support, Technical Directives (TDs), etc.
- Require working RADAR
- Require working Stores Management System (Bus info and functionality) to the Centerline and Wing Stations

- Require access to Navy engine run facilities.
- Require any E/F model-specific ground support equipment (GSE)
- Strongly desire one (1) Buddy Store for Air Refueling
- Strongly desire two (2) Advanced Tactical Forward Looking Infrared (ATFLIR) Pods
- Can use modified aircraft (i.e. Test Jets) incorporating special instrumentation as is No need to de-mod them. Require accompanying documentation and any spares for aircraft with special instrumentation. Maintaining special instrumentation could allow modified jets to assist in future Navy/Marine Corps or NRL test projects.

Recommended Language:

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The committee notes that the Antelope Valley Board of Trade has assessed the region's aerospace infrastructure assets and has reported that four (4) F/A-18F jet aircraft are required to properly modernize and sustain safe, long term high speed flight operations at the NASA Armstrong Flight Research Center, located at Edwards, California. The committee is concerned about this discrepancy between documented need and planned investment. Therefore, the committee encourages the Department of the Navy to identify and transfer four (4) F/A-18F aircraft with a useful life of 2000 hours or greater, suitable for performing the research and high-speed chase mission to the NASA Armstrong Flight Research Center in FY18.