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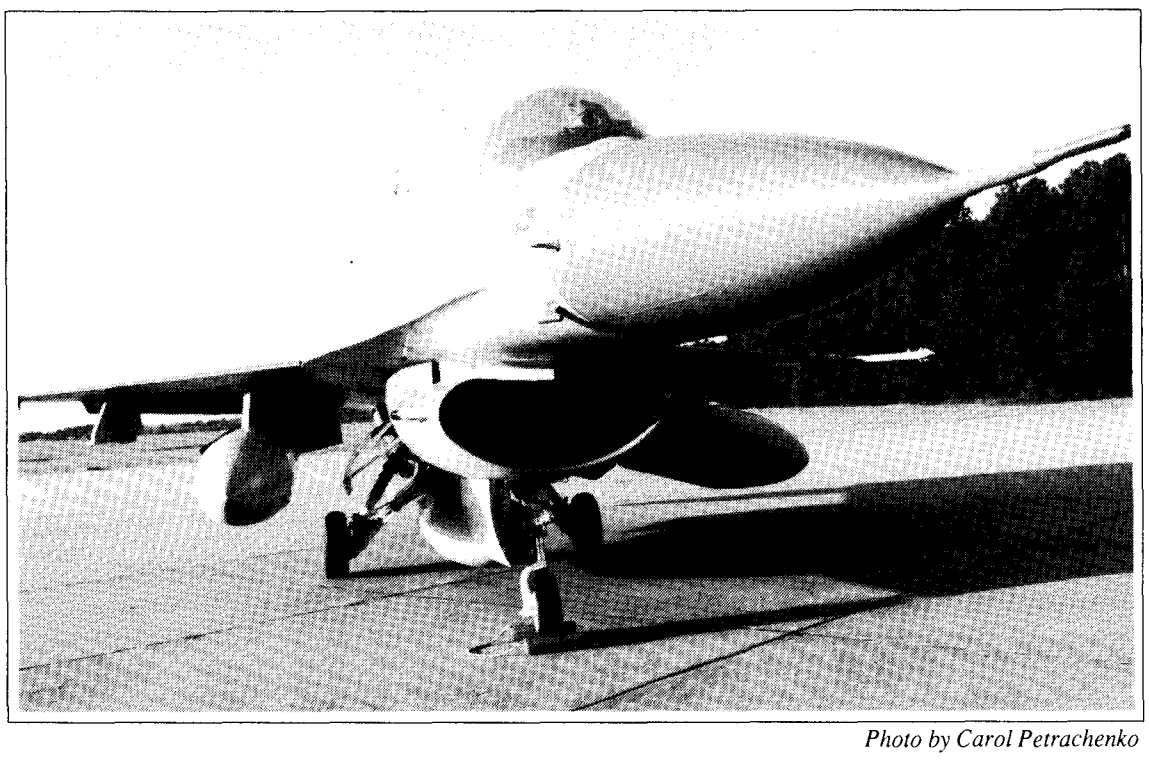

Photo by Carol Petrachenko

The state-of-the-art "Fighting Falcon" is the newest addition to the Center's support fleet.

Langley Readies F-16A for Support Role

By Craig Murden

A new plateau of pilot proficiency to complement Langley's role in providing design innovations for fighter aircraft will soon exist as the Flight Applications Division prepares to place its newly acquired F-16A in service.

This state-of-the-art vehicle has a special connection to Langley because the General Dynamics airplane incorporates three major elements developed by the Center's aeronautical engineers -- the vortex lift strake, the basic wing airfoil, and the flight control logic for high-angle-of-attack conditions.

The F-16 "Fighting Falcon" evolved from the YF-16 Lightweight Fighter Prototype in 1974 and joined U.S. Air Force operational combat squadrons in 1980.

Originally designed for an air superiority role, the F-16 has shown its versatility by also handling air-to-surface combat missions, and was one of the stars of Desert Storm with its surgically precise placement of bombs and missiles. Fifteen other countries fly the F-16,

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■ Project pilot profile

making it the most popular U.S. fighter in the Western world.

Joseph R. Chambers, chief of the division, emphasizes the important support role the new Langley F-16A will play. He points out that Langley pilots are constantly involved in research programs that focus on the design of the next generation of U.S. fighters.

"We rely heavily on the Differential Maneuvering Simulator in our work to assess the effectiveness of Langley-developed concepts on advanced fighter designs," he said. "But to continue to expand the cutting-edge technology required for success in such projects, it is critical that our pilots be proficient in modern fighter aircraft and the relevant technology."

Chambers named several areas where pilot currency in the latest fighters is crucial, including: head-up displays, flight controls, contemporary radars and life-support systems.

Chambers points to another aspect of the need for Langley pilots to fly the latest airplanes. He says that many of the fighter innovations under study in NASA originated at Langley in terms of concept exploration and detailed assessment.

Then, as they mature, the innovations are implemented in high performance research aircraft at the NASA Dryden Flight Research Facility at Edwards Air Force Base in California for testing and implementation.

The current NASA thrust vectoring work, using the Dryden F-18 High Angle of Attack Research Vehicle, is a case in point. In the transition period between Langley and Dryden, there is a critical need for constant dialog and actual flying exchanges for pilots and engineers of both centers.

But, says Chambers, unless both groups have very similar experience in state-of-the-art aircraft, common perspectives on the value of innovative concepts are difficult.

Petersen Named to Head Agency's Aeronautics and Space Technology Programs

Center Director Richard H. "Pete" Petersen has been appointed associate administrator for the Office of Aeronautics and Space Technology (OAST) at NASA Headquarters.

OAST was formerly the Office of Aeronautics, Exploration and Technology.

"NASA is extremely fortunate to have such an outstanding senior executive ready to take on a challenging new responsibility," NASA Administrator Richard H. Truly said in announcing the appointment October 3.

"This management change will ensure a strong future in NASA's aeronautics research and space technology."

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Director Since 1985

Petersen has been Center director since January 1985. As the senior management official at Langley, Petersen has been responsible for the Center's aeronautical and space research programs, as well as facilities, personnel and administration.

He also served as an advisor to the NASA administrator on NASA programs. The Center employs about 3,000 civil servant personnel and another 2,200 support service contract personnel.

Petersen was deputy director at Langley from 1980 before becoming Center director.

Prior to coming to Langley, he was chief of the Aerodynamics Division at NASA's Ames Research Center in California.

He joined the National Advisory Committee for Aeronautics, NASA's predecessor agency, at Ames in 1957.

His initial work was in theoretical and experimental aerodynamics, particularly in the supersonic and hypersonic speed ranges.

Subsequently he directed computer studies of advanced aircraft including hypersonic transports, airbreathing launch vehicles, short takeoff and landing transports and general aviation aircraft.

A native of Quincy, Ill., Petersen graduated with highest distinction from Purdue University in 1956 with a bachelor of science degree in aeronautical engineering.

He earned a master of science degree in aeronautics from the California Institute of Technology in 1957.

He was a Sloan Executive Fellow at the Stanford Graduate School of Business from 1972 to 1973.

Among Petersen's many honors are the Reed Aeronautics Award from the American Institute of Aeronautics and Astronautics (AIAA), a Distinguished Presidential Rank Award, a NASA Outstanding Leadership Medal, and honorary doctorates from Purdue University and George Washington University.

HALOE Team 'Elated' as Telescope Door is Successfully Opened

The telescope door on Langley's Halogen Occultation Experiment (HALOE) opened successfully October 2.

"We have fired the pyro that kept the door closed to the telescope," said Thomas C. Jones, deputy project manager, shortly after the 1 p.m. event.

"We're certainly in high cotton. We're very, very happy and elated," Jones said.

"If the doors didn't open, we're out of business and we have to come back to Langley hat in hand."

The door opening took place 20 days after the launch of the Space Shuttle Discovery on September 12.

Jones said that before data-gathering began, the solar tracking instrument would undergo out-gassing in the stow position to eliminate contaminants that would cloud the optics.

Data Gathering to Start

"We will gradually get into a science-taking mode in about 10 days," he said.

HALOE is one of 10 experiments deployed September 15 on NASA's Upper Atmosphere Research Satellite (UARS), whose main focuses are the processes involved in ozone depletion.

HALOE is expected to provide important data for studying the effects of chlorine, nitrogen, chlorofluoromethane, and hydrogen-related compounds on the ozone layer.

The experiment will monitor the vertical distributions of temperature, and of the key upper atmosphere trace gases such as ozone, hydrogen chloride, hydrogen fluoride, nitric oxide, methane, water vapor and nitrogen dioxide.

Measurements will be made at sunrise and sunset of each orbit, providing semi-continuous observations and nearly global coverage.

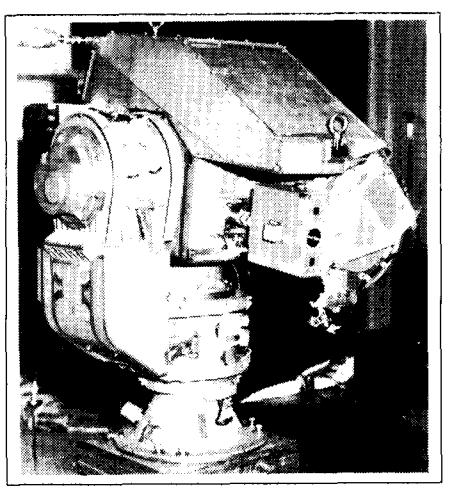

Photo by Fred Jones and Don Ward

HALOE was launched September 12.