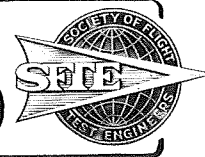


Flight Test NEWS



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AUSTRALIAN SEARCHMASTER II DELIVERED TO UNITED STATES

By Vilem Gottlieb, Member-At-Large

In a program that began as a "back of an envelope" concept in late 1984 and was demonstrated in prototype form in 1985 has finally reached active service with U.S. Customs in their drug interdiction activities.

The Nomad aircraft, designed initially as a STOL Utility for the Australian Army, has seen a wide range of uses. Searchmaster I first flew in 1978 and is used by Australian Customs, Coastal Surveillance and the Indonesian Navy. It is equipped with a 360 deg. Litton AN/APS 504(V)2 Search Radar and a comprehensive communication and navigation package.

To make it efficient as a drug interdiction fighter, a fully retractable FLIR Systems Inc. night vision system was installed and slaved to the radar. Searchmaster II takes the concept a step further with the later Litton AN/APS 504(V)5 Radar, FSI Model 2000G night vision system, a Litton LTN-92 Inertial Navigation system and much more in the way of sophisticated communications.

Although the first unit was handed over to USCS on the 24th April '89 at Opa Locka Airport, Miami, FL, another unit was involved in a real mission (with the author at the Sensor Operator's console) in the Gulf of Mexico on 5/6th April that netted 20,000 lbs. of marijuana, a mother ship and three high speed sports boats. The crews, of course, have all been successfully prosecuted.

The author has been involved in flight testing Nomads since emigrating to Australia in 1978, but this program was particularly rewarding as it went from aerodynamic qualifications through FAA Certification to system testing and development and finally to training the USCS crews and participating in their operations in the campaign against illegal drug importation.



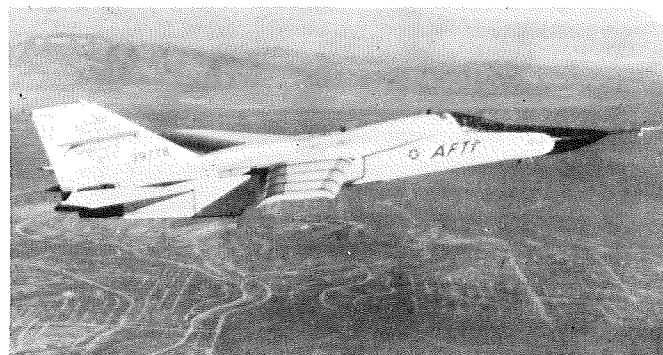
Member Vilem Gottlieb poses beside his test aircraft, the Australian Nomad Searchmaster II surveillance airplane.

GE Awarded Advanced Technology Contract

GE Aircraft Engines has been awarded a contract for the U.S. Army portion of the Joint Turbine Advanced Gas Generator (JTAGG) program. GE is teamed on the JTAGG program with Garrett Engine Division of Allied-Signal Aerospace Company, Phoenix, AZ. Total value of the 56-month cost sharing contract is \$26,118,000.

The JTAGG contract, one of the two similar but non-matching contracts, was issued by the Army at Fort Eustis, VA. It represents the first phase of an ongoing DOD/NASA Integrated High Performance Turbine Technology initiative designed to double propulsion capability by the turn of the century. The program's specific objective is the development of gas generator technologies for future Army/Navy/Air Force turboshaft engines in the 10-30 pound/second air-flow class and turbofan/turbojet engines of up to 15,000 pounds of thrust.

Each contractor's JTAGG development effort will be conducted under a tri-service agreement with individual contracts from the Army, Navy and Air Force so that service identity and responsibility can be maintained. Navy and Air Force contracts are pending award. Once all contracts are awarded, a joint management team will direct the project.



The Advanced Fighter Technology Integration (AFTI) F-111 with the Mission Adaptive Wing (MAW) is headed for retirement in the Air Force Flight Test Center Museum at Edwards AFB. In a joint USAF/NASA flight test program that ran from October 1985 to December 1988, ten pilots flew the aircraft on 59 flights totaling 143 hours.

NORTHROP TO ENHANCE PERFORMANCE OF BQM-74C

The U.S. Navy plans to upgrade Northrop Corporation's BQM-74C subsonic, jet-powered aerial training target with a higher-thrust turbojet engine.

The 240 lb. thrust engine will increase the newly designated BQM-74E's maximum speed to 530 knots from 475 knots and maximum operating altitude to 40,000 feet from 35,000 feet, while allowing higher "G" maneuvers.

Under a recent contract modification, Northrop will convert 21 targets to the BQM-74E configuration, with deliveries to begin in June 1990. The vehicles will undergo Navy technical evaluation at the Pacific Missile Test Center at Point Mugu, California.

Known as the Navy's target training workhorse, the BQM-74C can simulate a variety of high-speed threat aircraft and sea-skimming antiship missiles during training exercises involving a number of Navy surface ships and aircraft. Northrop has produced more than 1,000 BQM-74C's since 1978, flying more than 75 percent of the service's powered target training missions.

The international version of the BQM-74C, known as the Chukar III, is already equipped with the 240-lb. engine. The Chukar III has been used by a number of NATO nations since its first European deployment in 1984.

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Calendar of Events

January 1990

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Final date for abstract submittal for
1990 SFTE Symposium

February 1990

7

SFTE Board of Directors Meeting
5:00 PM SFTE Office, Lancaster

March 1990

7

SFTE Board of Directors Meeting
5:00 PM SFTE Office, Lancaster
Technical Council Meeting
Dayton, OH

15-16

May 1990

21-25

AIAA 5th Flight Test Conference
Red Lion Inn, Ontario CA
Info: Dr. Patricia Sanders
(202) 697-3895

June 1990

15

Deadline for submittal of final manu-
script for 1990 SFTE Symposium

PRATT & WHITNEY AND NORDAM TO DEVELOP HUSHKIT

Pratt & Whitney of East Hartford, and NORDAM of Tulsa, Oklahoma have announced a preliminary agreement to develop, manufacture and sell a hushkit system to reduce noise in Boeing 737-200 aircraft powered by Pratt & Whitney's JT8D engines. The noise reduction effort will bring 737-200 sound levels within Federal Aviation Administration Stage 3 standards. The program could be worth more than \$2 billion to Pratt & Whitney and NORDAM over the next ten years.

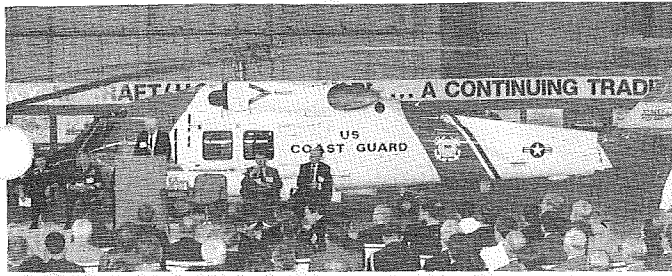
Pratt & Whitney selected NORDAM because of the company's demonstrated technical ability in the design of noise suppression systems, as well as its manufacturing capability. NORDAM will develop and test several hushkit options designed to quiet the JT8D-powered 737s.

The potential market for the JT8D/737 hushkit system includes approximately 900 twin-engine aircraft--about 90 percent of those in service. Incorporation of the noise reduction kit would enable them to meet Stage 3 requirements, continuing operating life into the next century. A final design will be selected in May 1990, with certification anticipated in late 1991.

Pratt & Whitney will be the program's technical director. NORDAM will hold the Supplemental Type Certificate and related Parts Manufacturing Authority for the system. The Boeing Company is providing technical advice and support concerning hushkit installation on the 737s.

Will this be your final FLIGHT TEST NEWS? If you haven't renewed your SFTE membership it may well be. RENEW TODAY!

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An audience of 1,500 participated in the rollout at Sikorsky's Stratford facility of the Coast Guard's newest helicopter, the HH-60J JAYHAWK (above). Delivery to the Coast Guard of the first JAYHAWK is scheduled for March 1990.

BEHIND EVERY OPTIMIST, THERE IS A PESSIMIST

By J. Paul, Member-At-Large, Toronto, Canada

Most of us have to wear it; most of us know how to use it, but we hope to never have to do so...There is no flight testing without a parachute!

Leonardo Da Vinci was the first to scientifically conceive a "parachute"...his technical concept was the result of many calculations which were likely verified by several tests, based on a manuscript dated 1502.

Reconsidered by Fausto Veranzio some 93 years later, the concept of the parachute piqued the curiosity of both Blanchard and Joseph Montgolfier...In 1793, Sebastien Lenormand jumped off the top of a tree, helping his rapid descent with two large umbrellas. Using a more conservative approach, Blanchard's specialty was to launch hot air balloons with animals onboard. His first "parachuted" guinea pig was his own dog.

The Frenchman Garnerin must be considered a pioneer. Suspended to a hot air balloon, he flew over the Monceau Park, in Paris, 1,000 ft. above ground. After cutting off the rope holding him to the balloon, he became the first man subjected to a parachute-assisted descent. This first jump was a success, despite some dramatic oscillations of the chute due to the absence of a central air outlet. The astronomer Lalande quickly offered this modification following Garnerin's landing.

Just like hot air balloons, the parachute became a popular attraction during fairs and celebrations of all kinds. The first controlled jumps from an airplane were made by Captain Berry in Saint Louis, MO, in March of 1912.

The first aviator to survive a true emergency bail out was a young and truly unknown French pilot named Pegoud.

Mrs. Cayat de Castellat became the first woman to jump out of a flying aircraft. She loved it, and gave several public demonstrations. She died in 1914 while performing a jump during an airshow in Brussels.

The parachute became widely used during the Second World War: particularly following a series of tactical experiments in the Soviet Union, in 1935. In the United States, the use of parachutes for flight crew members became compulsory as early as 1924

Brilliant visionary and born optimist, Leonardo Da Vinci started the history of the most extraordinary human technological marvel: the airplane. Also a sophisticated pessimist, he gave us a plane.....with a parachute.

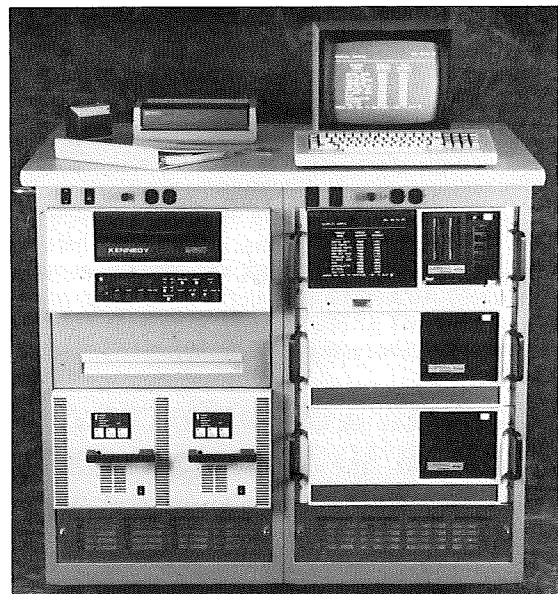
Vilem Gottlieb's article on the Nomad Searchmaster II and J. Paul's little history of the parachute are good examples of the sort of material the editor has been seeking from the membership. An excellent history piece on the XB-36 will appear in one of the next few issues of FLIGHT TEST NEWS. Keep it up! If you don't have the time to write an article, just send the photos and information and the editor will put it together into an article. Thanks.

New Portable Loral Telemetry System

Loral Instrumentation has introduced a telemetry system in a rolling cart for aerospace and military applications requiring a portable telemetry system to acquire, analyze, and store real-time data. The portable system features a distributed architecture and dedicated processors that do not "bog down" a central CPU, thus eliminating the risk of lost data.

Loral's new portable system consists of single or multiple Advanced Decommutation Systems (ADS100s), custom-configured from more than 50 off-the-shelf application modules; a Kennedy 9610 Digital Tape Unit; and one or more Fujitsu 1.6 Mbyte removable hard disks, all housed in racks built inside a wheeled cart. A Hewlett Packard Thinkjet printer and a Dotronix monitor sit on top of the cart. The monitor and keyboard, with a 10-foot keyboard cable, can be moved to a nearby flat surface to create data bases and view processed data.

Loral's portable telemetry system decommutates telemetry streams up to 15 Mbits per second; monitors, archives, and simulates data on a MIL-STD-1553 bus, and decommutates the IRIG standard for MIL-STD-1553 data. It processes all data in real time for display and archiving at 540K parameters-per-second processing throughout using 5th-order Engineering Unit conversion as a bench mark. The system time-stamps all or selected data, transfers real-time or archived data to a host computer through a DMA link, and archives raw or processed data to removable hard disks or digital tape. It simulates high-speed telemetry streams with the capability of dynamically changing data in real time.



Beech Awarded (AT³) Design Contract

Beech Aircraft Corporation has been awarded a \$3.6 million contract from the Department of Defense to provide preliminary design information for an Advanced Technology Tactical Transport (AT³). Under the contract, Beech will assess the applicability of a 62-percent Proof of Concept (POC) aircraft configuration that has flown since December 1987. In addition, Beech will develop preliminary designs for a new lightweight military transport production aircraft as well as a low-cost demonstrator aircraft.

A 62-percent POC, built and flown by Scaled Composites, Inc., completed flight tests this summer. The tandem-wing, twin-boom airplane flew a total of 150 flight hours during the test program. A full-scale model of AT³ would weigh about 50,000 pounds and carry 12,000 pounds of payload. The aircraft would have a 2,400 nautical mile range and would be capable of takeoffs and landings within 1,000 feet.



Two new C-130 tankers depart Lockheed Aeronautical Systems Company-Georgia. The new planes were delivered to the Marine Air Reserve operation at Glenview Naval Station, Illinois. Each tanker can refuel two helicopters or two fighters simultaneously. LASC-Georgia has, since 1983, delivered 16 new KC-130 tankers to the Marine Reserves.

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