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'Flying Simulator' Tested Windowless Cockpit Technology

If you thought you noticed an airplane with two noses flying around Wallops main base last month you were right. An extensively modified Air Force research aircraft was doing simulated flight scenarios in the local area.



The Air Force Total In-Flight Simulator (TIFS), a converted Convair NC-131H, heads for the skies. (NASA Langley Photo)

The aircraft, which was at NASA Langley Research Center testing a "windowless cockpit" that used a camera system to see what's outside, made daily flights to Wallops. Wallops range support included the ASR7 Radar; the Control Tower; Crash, Fire and Rescue standby and ground support.

The Air Force Total In-Flight Simulator (TIFS) is a Convair NC-131H with a research cockpit grafted to its nose. Using on-board computers running simulation models of the aircraft researchers want to test, the Convair can be made to actually handle like that airplane.

"The simulation computers directly control the aircraft's control surfaces to produce the 'look' and 'feel' of the aircraft being simulated," said Lou Glaab, of Langley's Flight Dynamics and Control Division.

National Engineers Week -- February 21-27

National Engineers Week is celebrated each year at the time of George Washington's birthday (Feb. 22). Our nation's first president was a military engineer and a land surveyor.

Washington's agricultural, military and land surveying skills led to him being named our nation's first engineer. As a general, he issued an order on June 9, 1778 calling for engineers and education for engineers. He was instrumental in directing a growing society toward technical advancements, invention and education.

Today's engineers turn ideas into reality. They are problem solvers — people who make things work better, more efficiently, quicker and less

The 90-foot Convair was programmed to behave like a 300-foot supersonic airliner, the High-Speed Civil Transport (HSCT) being developed by NASA and the aerospace industry. The HSCT program was discontinued in the fiscal 2000 budget.

The Convair simulated the concept plane's flying qualities during low-speed approaches and landings.

The flight test "represents an extremely high-fidelity simulation of the conceptual High-Speed Civil Transport," said Glaab.

One aspect of the test evaluated an external visibility system that would allow an airplane to be flown "windowless" using electronic displays. That work will continue in the Aviation Safety Program.

The Air Force Convair was extensively modified to accommodate the test flights, receiving a new cockpit canopy and nose cap; instrument panel; side and center consoles; rudder pedal and throttle feel systems; and various sensors, displays and instrumentation, including a Silicon Graphics computer and high-definition TV camera and displays.

NASA Langley's B-200 King Air airplane provided air traffic for the Convair flight tests. Calspan Corp. of Buffalo operates the Convair for the Air Force.

expensive. They serve humanity with skill and dedication and search for better ways to solve problems. Engineers, scientists, technologists and technicians often work together as an engineering team on projects. The engineer has a strong science, mathematics and technology background and is a team leader. They plan, design and supervise engineering projects from concept to completion.

The purpose of National Engineers Week is to increase the public's awareness and appreciation of the engineering profession. During the week, Wallops engineers, technicians, and scientists will be participating in a variety of activities at local schools to help create an interest in engineering, math and science.

NASA Features Women on the Internet

The Female Frontiers project combines the resources of the NASA Quest projects Women of NASA, Space Team Online and Learning Technology Channel, all of which are devoted to bringing the people and science of NASA into the classroom.

From Sally Ride, the first American woman to walk in space, to Shirley Temple Black, the first female chief protocol and the first child actress to win an Academy Award, female pioneers in their fields will participate in NASA internet "chats" and other activities for students.

The events will continue through Women's History Month in March and beyond with the list of "female firsts" growing.

Female Frontiers allows students to correspond live with interesting professionals via the Internet. The web address is <http://quest.arc.nasa.gov/frontiers>.

Female mentors representing diverse careers that are scheduled for March



Astronaut Sally Ride

include Kate Mulgrew, the first female starship captain in the history of prime-time; Julie Mikula, first woman manager of NASA's Simulation Laboratories;

Mae Jemison, first African-American woman to fly in space; Congresswoman Ellen Tauscher, the first woman to hold a seat on the New York Stock Exchange; Kathryn Sullivan, the first American woman to walk in space; and Dee O'Hara, the first nurse to NASA astronauts.

"The Female Frontiers project is just one of many Internet projects that we conduct to benefit students," said Karen Traicoff, manager of NASA Quest. "Quest hosts interactive Internet activities year round that connect students with interesting people and their work. Research has shown that students learn better by real-life experiences," she said. The Quest web site is: <http://quest.arc.nasa.gov>

For a complete schedule of events and instructions for registering, see: <http://quest.arc.nasa.gov/space/frontiers/schedule.html>



February is Heart Month

Coronary heart disease is America's number one killer. Stroke is number three and the leading cause of serious, long-term disability.

What is a heart attack?

Heart attacks result from heart disease — blood vessel disease in the heart.

What causes a heart attack?

A heart attack occurs when the blood supply to part of the heart muscle itself is severely reduced or stopped. This happens when one of the arteries that supply blood to the heart muscle is blocked by an obstruction. The blockage is sometimes from the buildup of plaque (deposits of fat-like substances).

A heart attack also can be caused by a blood clot lodged in a coronary artery. Such an event is sometimes called a coronary thrombosis or coronary occlusion. A myocardial infarction is the damaging or death of an area of the heart muscle resulting from a reduced blood supply to that area.

If the blood supply is cut off severely or for a long time, muscle cells suffer irreversible injury and die. Disability or death can result, depending on how much heart muscle is damaged.

Sometimes a coronary artery temporarily contracts or goes into spasm. When this occurs, the artery narrows and blood flow to part of the heart muscle decreases or even stops. What causes a spasm is unclear, but it can occur in normal-appearing blood vessels as well as partly blocked vessels. If a spasm is severe, a heart attack may result.

The American Heart Association says the body usually will send one or more of these warning signals of a heart attack.

- Uncomfortable pressure, fullness, squeezing or pain in the center of the chest lasting more than a few minutes.

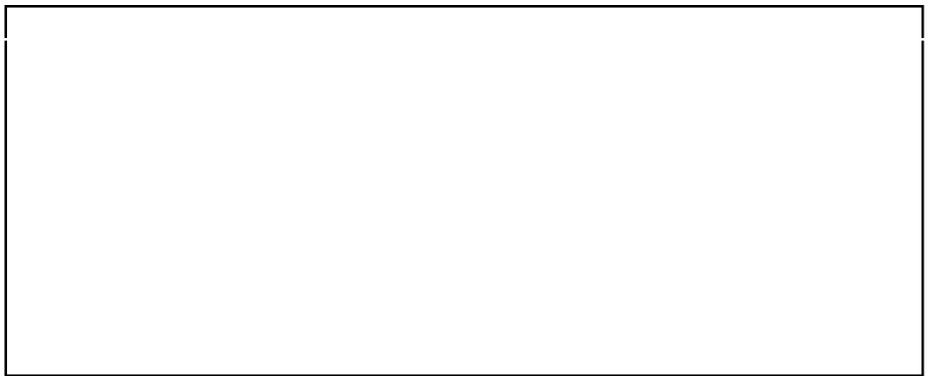
- Pain spreading to the shoulders, neck or arms.

- Chest discomfort with light-headedness, fainting, sweating, nausea or shortness of breath.

Call 911 if you notice one or more of these signs in another person or have any of these symptoms yourself.

Treatment can be more effective if given quickly. Not all of these signs occur in every heart attack. Sometimes they go away and return. If some return, get help FAST.

For more information, call the Health Unit, x1766.



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Upcoming Courses Scheduled for Wallops

For information on the courses contact Matt Jarvis at x 66-3061 or by e-mail: mjarvis@pop100.gsfc.nasa.gov or Sherry Kleckner, x1204.

- * E-Mail for Maximum Impact March 17
- * Building Morale in Changing Times March 18-19
- * Oral Presentation Strategies April 19, 20 and 21
- * The 3 Habits of Effective Communicators April 22

Red Cross Blood Drive March 4

Call the Health Unit, x1766 for an appointment.



Wallops Shorts.....

Fire Department

Wallops Fire Department Emergency Medical Technicians responded to a medical emergency in Atlantic. The mutual aid request was from Accomack County 911.

At the request of Accomack County 911, the Wallops Fire Department responded with a tanker to the scene of a structure fire on Feb. 16.

School Visit

Barbara Justis, Carrier Systems Branch, visited Central Middle School on Feb. 17 and spoke to an 8th grade Career Orientation class.

Life Insurance Open Season from the Feb. 17 issue of FEDweek

Federal and postal employees will have the opportunity from April 24 though June 30 to choose new life insurance coverage under the Federal Employees Group Life Insurance (FEGLI) program. OPM also is changing the rules on when and how individuals move from one FEGLI insurance age bracket to another.

Information on the FEGLI open season has been posted on the FEDweek website at: <http://www.fedweek.com> Included are all the new premium rates and age groups for the basic insurance and Options A, B and C. A detailed explanation of the FEGLI changes as well as a special question and answer section also is included. This is information every federal and postal employee and retiree should know.

Published weekly, FEDweek is posted on the web: <http://www.fedweek.com>

The Wallops newsletter is posted weekly on the Wallops homepage at: <http://www.wff.nasa.gov>

Select *Public and Education Outreach*, scroll down and select *Recent Newsletters* for those posted during the current month or *Older Newsletters* to see 1997, 1998 or previous 1999 editions.



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