FAA News

Federal Aviation Administration, Washington, DC 20591

FOR IMMEDIATE RELEASE
APA 50-00
Mon., July 3, 2000
Contact: Paul Takemoto
Phone: 202-267-3462

FAA Gives Costa Rica IASA Rating of Category 1

WASHINGTON, D.C. – The Federal Aviation Administration (FAA) today announced that Costa Rica complies with international safety standards set by the International Civil Aviation Organization (ICAO), giving the country a Category 1 rating following a reassessment of the country's civil aviation authority on May 23-25. Costa Rica previously did not comply with ICAO standards.

This announcement is part of the FAA's International Aviation Safety Assessment (IASA) program, under which the agency assesses the civil aviation authorities of all countries with air carriers that operate to the U.S., and makes that information available to the public.

The assessments are not an indication of whether individual foreign carriers are safe or unsafe; rather, they determine whether or not foreign civil aviation authorities are meeting ICAO safety standards, not FAA regulations.

Travelers may call 1-800-FAA-SURE (1-800-322-7873) to obtain a summary statement about whether a foreign civil aviation authority has been assessed and the results, if available.

Countries with air carriers that fly to the U.S. must adhere to the safety standards of ICAO, the United Nations' technical agency for aviation that establishes international standards and recommended practices for aircraft operations and maintenance.

The FAA, with the cooperation of the host civil aviation authority, assesses countries with airlines that have operating rights to or from the United States, or have requested such rights.

- more -

Specifically, the FAA determines whether a foreign civil aviation authority has an adequate infrastructure for international aviation safety oversight as defined by ICAO standards. The basic elements that the FAA considers necessary include: 1) laws enabling the appropriate government office to adopt regulations necessary to meet the minimum requirements of ICAO; 2) current regulations that meet those requirements; 3) procedures to carry out the regulatory requirements; 4) air carrier certification, routine inspection, and surveillance programs; and 5) organizational and personnel resources to implement and enforce the above.

The FAA has established two ratings for the status of these civil aviation authorities at the time of the assessment: (1) does comply with ICAO standards, (2) does not comply with ICAO standards.

- **Category 1, Does Comply with ICAO Standards:** A civil aviation authority has been assessed by FAA inspectors and has been found to license and oversee air carriers in accordance with ICAO aviation safety standards.

- **Category 2. Does Not Comply with ICAO Standards:** The Federal Aviation Administration assessed this country's civil aviation authority (CAA) and determined that it does not provide safety oversight of its air carrier operators in accordance with the minimum safety oversight standards established by the International Civil Aviation Organization (ICAO). This rating is applied if one or more of the following deficiencies are identified: (1) the country lacks laws or regulations necessary to support the certification and oversight of air carriers in accordance with minimum international standards; (2) the CAA lacks the technical expertise, resources, and organization to license or oversee air carrier operations; (3) the CAA does not have adequately trained and qualified technical personnel; (4) the CAA does not provide adequate inspector guidance to ensure enforcement of, and compliance with, minimum international standards; and (5) the CAA has insufficient documentation and records of certification and inadequate continuing oversight and surveillance of air carrier operations. This category consists of two groups of countries.
    - One group is countries that have air carriers with existing operations to the United States at the time of the assessment. While in Category 2 status, carriers from these countries will be permitted to continue operations at current levels under heightened FAA surveillance. Expansion or changes in services to the United States by such carriers are not permitted while in category 2, although new services will be permitted if operated using aircraft wet-leased from a duly authorized and properly supervised U.S. carrier or a foreign air carrier from a category 1 country that is authorized to serve the United States using its own aircraft.

- The second group is countries that do not have air carriers with existing operations to the United States at the time of the assessment. Carriers from these countries will not be permitted to commence service to the United States while in Category 2 status, although they may conduct services if operated using aircraft wet-leased from a duly authorized and properly supervised U.S. carrier or a foreign air carrier from a Category 1 country that is authorized to serve the United States with its own aircraft.

No other difference is made between these two groups of countries while in a category 2 status.

The FAA has assisted civil aviation authorities with less than acceptable ratings by providing technical expertise, assistance with inspections, and training courses. The FAA hopes to work with other countries through ICAO to address non-compliance with international aviation safety oversight standards.

The FAA will continue to release the results of safety assessments to the public as they are completed. First announced in September 1994, the ratings are part of an ongoing FAA program to assess all countries with air carriers that operate to the United States.

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An electronic version of this news release is available via the World Wide Web at: http://www.faa.gov

FAA News

Federal Aviation Administration, Washington, DC 20591

FOR IMMEDIATE RELEASE
APA 53-00
Thursday, July 13, 2000
Contact: Paul Turk
Phone: 202-267-3883

Media Advisory

FAA Dedicates New Display System Replacement at Washington Air Route Traffic Control Center

Secretary of Transportation Rodney Slater and FAA Administration Jane Garvey will dedicate the 20th and final Display System Replacement (DSR) at Washington Air Route Traffic Control Center tomorrow.

The $1 billion DSR program modernizes the FAA Enroute air traffic control system's computer and display equipment. DSR provides high reliability and availability through hardware redundancy, fault-tolerant software design, and primary and backup networks. It replaces aging equipment and serves as a platform for future ATC systems upgrades. Washington Center was the last of FAA's 20 enroute centers to bring the new equipment on line.

Who: Secretary of Transportation Rodney Slater and FAA Administrator Jane Garvey

What: Dedication

Where: ARTCC, 825 East Market Street, Leesburg, VA

When: July 14, 2000

Noon: Media Facility Tour and B-roll opportunity – Press should meet in training rooms 245 and 246.

1:30 p.m.: Dedication Ceremony – Immediately following the dedication ceremony the Secretary, the Administrator and others will be available for brief media interviews.

Note: Map and directions are attached.

DIRECTION TO FAA WASHINGTON CENTER:

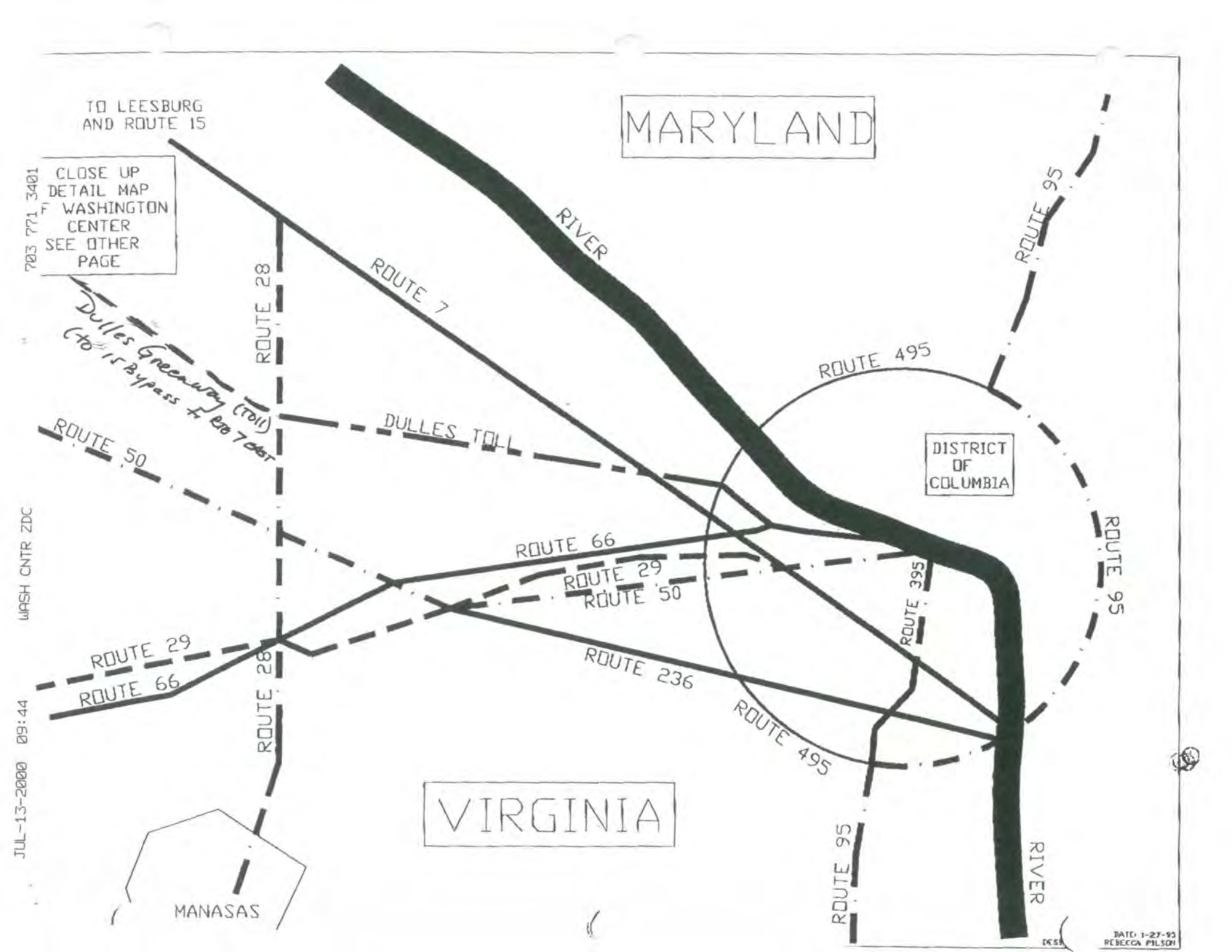
Federal Aviation Administration
Washington Center
825 East Market Street
Leesburg, Virginia 22024

Take Route 15 south from Fredrick and go to Route 7 East exit and go overpass when you see two big antenna towers and make right turn to FAA Washington Center.

In Virginia:

Routes 50----------|
66 |____ Go to Route 28 north then go to route 7 west to
29 | Leesburg. See direction to Washington Center above.
Dulles Toll----|- Or continue on Dulles Greenway (toll) to US 15 Bypass to VA 7 East.

From Route 95 --- Go to route 495 (northwest), go to route 7 west. See direction above. (or the toll road.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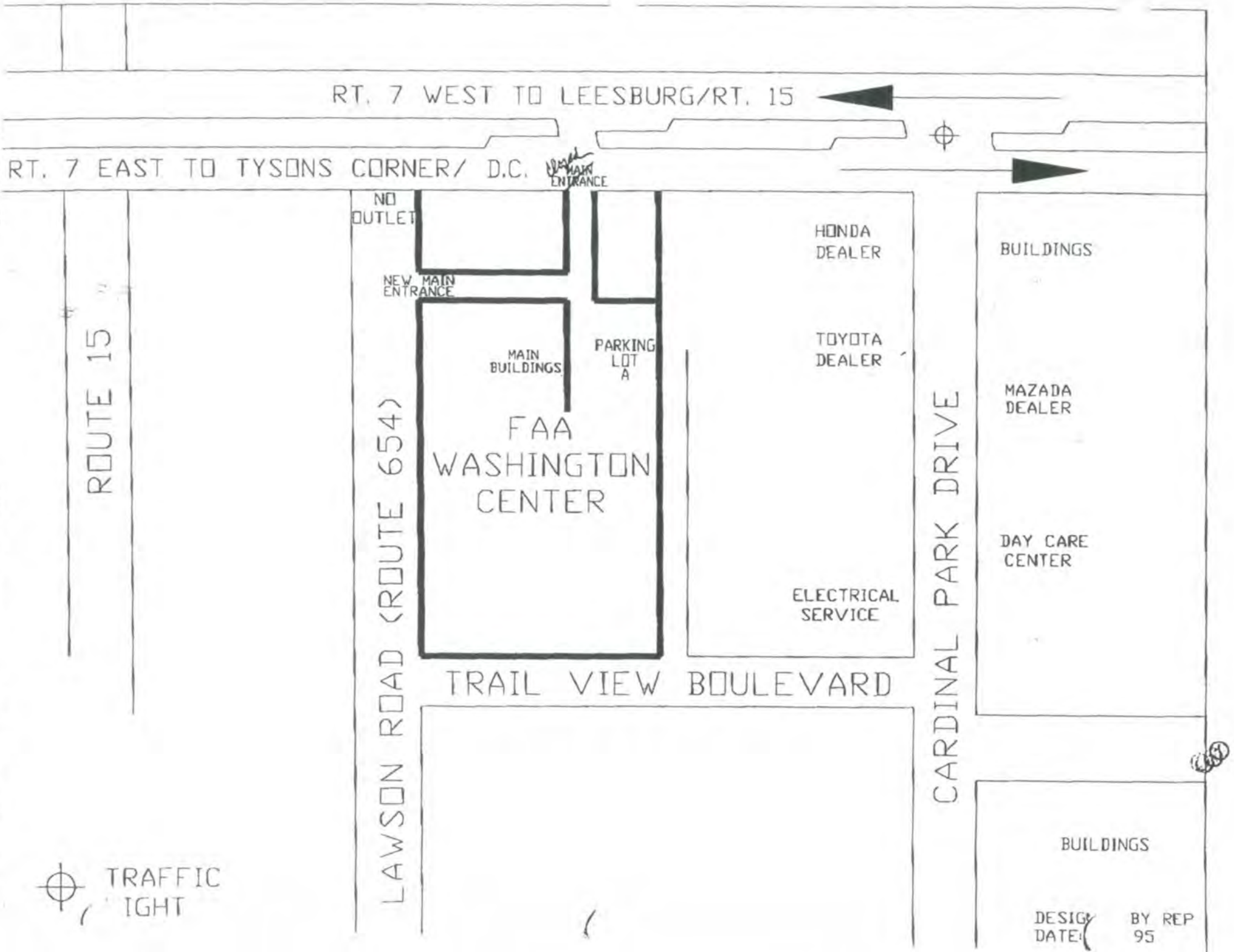
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MAIN BUILDINGS
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DAY CARE CENTER
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FAA News

Federal Aviation Administration, Washington, DC 20591

FOR IMMEDIATE RELEASE
APA 54-00
Friday, July 14, 2000
Contact: William Shumann
Phone: 202-267-3883

Statement on Land and Hold Short Operations

WASHINGTON – The Federal Aviation Administration (FAA) is pleased that the airlines, airline pilot groups and others in the aviation industry have reached agreement on continuing Land and Hold Short Operations (LAHSO). As a result, the FAA will shortly issue an order implementing changes to LAHSO. The order, which goes into effect August 14, will permit expanded use of LAHSO and thereby increase the capacity and efficiency of the air traffic system.

LAHSO is an aviation procedure that has been used safely since 1968. It increases capacity at airports with intersecting runways by allowing aircraft to land and stop on long runways before an intersection with another runway. Stopping short allows the air traffic controller to have another aircraft take off or land on the intersecting runway. LAHSO have been refined through years of operational experience and cooperation among the FAA, airlines, pilots and controllers.

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An electronic version of this news release is available via the World Wide Web at http://www.faa.gov/apa/pr/index.cfm

FAA News

Federal Aviation Administration, Washington, DC 20591

FOR IMMEDIATE RELEASE
APA 55-00
Tuesday, July 18, 2000
Contact: Kathryn B. Creedy
Phone: 202-267-3462

MEDIA ADVISORY

The Federal Aviation Administration (FAA), Alaska's Industry Council and the University of Alaska will hold a Capstone Technology Open House on August 23-24, 2000 at the University of Alaska and at Bethel, AK.

The Capstone Program demonstrates advanced technologies and avionics that will dramatically improve aviation safety in Alaska and provide data for ultimate application in improving the National Airspace System.

HIGHLIGHTS:
The University of Alaska is conducting the training for Capstone as well as conducting an in-depth safety study and assessment of the Capstone program. Demonstrations will include:

- The university's training program.
- Live ADS-B traffic on controller displays and Capstone avionics
- Automated Weather Observation System (AWOS) capabilities
- GPS approach development
- Flight Information Services transmitted via data link to pilots.
- Flight following capabilities for dispatchers.

BACKGROUND:
The Capstone Program equips 150 aircraft used by commercial operators in Alaska with a combined data link and Global Positioning System (GPS)-based avionics package designed to increase the situational awareness of pilots in averting mid-air collisions and controlled flight into terrain. A simple, high capacity, multifunction broadcast data link known as the Universal Access Transceiver (UAT) supports all air-air, air-ground and ground-air data link in Capstone. Capstone will:

- Enable pilots to perform GPS approaches at airports in the rugged Yukon-Kuskokwim area.
- Afford pilots ability to see Automatic Dependent Surveillance-Broadcast)ADS-B) traffic via a cockpit display.
- Deliver weather information to the cockpit.

- more -

- Interface ADS-B-based surveillance with existing ATC automation system to provide radar-like ATC services to participants in the Capstone area. Future enhancements will allow pilots of Capstone-equipped aircraft to see radar targets via Traffic Information Service-Broadcast (TIS-B) for all nearby aircraft.

The airborne avionics are complemented by ground-based infrastructure providing weather, data link communications, surveillance and Flight Information Services. Avionics capabilities include:

- An IFR-certified GPS navigation receiver
- Broadcast data link transmitter/receiver (UAT).
- A multi-function display with traffic and terrain advisories.
- Weather information (text and graphics) directly to the cockpit.
- TIS-B providing radar traffic information.
- Terrain database
- IFR database

Rooms have been set aside at the Sheraton Anchorage and Regal Alaskan hotels and must be booked immediately as the block of rooms will expire shortly. Mention you are attending the Capstone open house.
Sheraton: 1-800-478-8700 Regal: 1-800- 800-544-0553

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An electronic version of this news release is available via the World Wide Web at http://www.faa.gov/apa/pr/index.cfm

FAA News

Federal Aviation Administration, Washington, DC 20591

FOR IMMEDIATE RELEASE
APA 56-00
Friday, July 27, 2000
Contact: Kathryn B. Creedy
Phone: 202-267-3462

FAA FLIGHT DATA LINK BECOMES OPERATIONAL AT OSHKOSH

WASHINGTON, DC – For the first time, general aviation aircraft will be able to get cockpit displays of digital weather graphics and text through a service sponsored by the U.S. Department of Transportation's Federal Aviation Administration. The agency's Flight Information Service Data Link (FISDL) becomes operational during the Experimental Aircraft Association's (EAA) Air Venture 2000.

"Weather is one of the leading factors cited in aviation accidents with over one third of all fatal accidents in all sectors of aviation involving weather," said FAA Administrator Jane Garvey. "FISDL will enhance situational awareness and improve safety-related information to the pilot, both critical to preventing accidents."

FISDL will provide basic text weather information directly to general aviation pilots at no cost after meeting the additional avionics requirements. Using a small display in the cockpit, flight crews will be able to receive the basic text messages including Aviation Routine Weather Reports, Special Aviation Reports, Terminal Area Forecasts, Significant Meteorological Information, Convective Sigmets, Airman's Meteorological Information, Pilot Reports and Severe Weather Forecast Alerts issued by FAA or the National Weather Service.

There will also be graphical products such as NEXRAD maps and other text products such as Special Use Airspace and Notices to Airmen available through a subscription service. The FISDL service is designed to provide coverage throughout the National Airspace System.

FISDL is a government-industry partnership with Arnav Systems and Honeywell International, both of which will act as service providers for FAA's information. Under the five-year agreements signed during the 1999 Experimental Aircraft Association's AirVenture, both Arnav and Honeywell Bendix/King will receive two nationwide data link frequencies for the broadcast of basic aviation weather reports as well as additional

information they provide by subscription. The Arnav system will be available at the 2000 EAA AirVenture, while the Honeywell Bendix/King system comes on line in the Fall.

Avionics requirements include a VHF data radio and a multifunction display unit capable of displaying digital graphic and text messages.

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An electronic version of this news release is available via the World Wide Web at: http://www.faa.gov

FAA News

Federal Aviation Administration, Washington, DC 20591

FOR IMMEDIATE RELEASE
Friday, August 4, 2000
Contact: Paul Takemoto/Les Dorr, Jr.
Phone: 202-267-3883

FAA Statement on Alaska Airlines MD-80 Inspections

Alaska Airlines has notified the Federal Aviation Administration (FAA) that it is grounding as many as 18 MD-80 aircraft for further checks of the jackscrew tolerances. The airline is acting after learning some tools used for previous tests might not have met the manufacturer's design specifications.

Alaska Airlines has done the right thing by deciding to double-check the jackscrew tolerances of the remainder of its MD-80s. The FAA is directing other airlines with MD-80s and DC-9s (which also are affected) to double-check which tools were used in the jackscrew endplay checks and make certain there are no problems related to those aircraft and to tools that do not properly measure end-play tolerances.

The FAA learned Thursday from Alaska Airlines that tools used to check Alaska's MD-80s might not have produced the proper readings. The FAA moved within hours to address the issue.

There is no indication of other problems, but in the interest of safety, the FAA is directing that other carriers move quickly to make certain that is the case. The FAA is beginning to work with other carriers to ensure there is no question about the safety of these parts on other MD-80s and DC-9s. Foreign operators of both the MD-80 and DC-9 series are being notified.

The FAA will have no further comment until more information is known. The National Transportation Safety Board (NTSB) has been notified and is looking into the issue; the FAA will assist the board with its checks.

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An electronic version of this statement is available via the World Wide Web at http://www.faa.gov/apa/pr/index.cfm

FAA News

Federal Aviation Administration, Washington, DC 20591

FOR IMMEDIATE RELEASE
APA 58-00
Thursday, August 17, 2000
Contact: Tammy L. Jones
Phone: 202-267-3462

FAA AWARDS SETA-II FOLLOW-ON CONTRACT TO BAE

WASHINGTON – The U.S. Department of Transportation's Federal Aviation Administration (FAA) today awarded the System Engineering and Technical Assistance (SETA-II) follow-on contract with a value of $450 million to BAE Systems Applied Technologies, Inc., of Rockville, Md. The BAE SETA-II contract will provide system engineering and technical assistance for the FAA's Office of Research and Acquisitions and other FAA lines of business.

The follow-on SETA-II contract will provide support for various FAA organizations and activities involved with projects and programs designed to maintain and modernize the National Airspace System (NAS) architecture and execute the Capital Investment Plan.

BAE will furnish and make available all of the necessary professional, technical, administrative and management services, as well as the requisite material, computer equipment, office equipment, data and facilities to accomplish the SETA-II requirements in the following functional work areas:

- NAS Architecture/System Engineering
- NAS Configuration Management
- NAS Planning and Scheduling, Cost and Financial Management
- Investment Analysis/Operations Research
- Acquisition Policy & Guidance
- Information Systems Engineering Improvement Policy and Processes
- Program Management System Tools Information Systems Engineering

This is a cost-plus-award fee contract, with a 10-year maximum performance period.

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An electronic version of this news release is available via the World Wide Web at: http://www.faa.gov/apa/pr/index.cfm

FAA News

Federal Aviation Administration, Washington, DC 20591

FOR IMMEDIATE RELEASE
APA 59-00
Friday, August 18, 2000
Contact: Kathryn B. Creedy
Phone: 202-267-3462

FAA RELEASES CD-ROM ON AIR TRAFFIC CONTROL SYSTEM

WASHINGTON, DC -- The Federal Aviation Administration (FAA) and National Aeronautics and Space Administration (NASA) today announced release of a jointly produced educational CD-ROM, *Gate to Gate*, which offers a unique trip through the nation's busy air traffic control system.

"With this software, you can take an amazing virtual flight," said FAA Administrator Jane Garvey. "From pre-flight planning to arrival, you will see how the air traffic control system handles your flight as you fly through it. You meet some of the people who help ensure the safety of your flight and get a unique behind-the-scenes look at the tools used to manage today's busy air traffic control system. You can even see a few of the new technologies being deployed to handle the projected growth in the future."

Gate to Gate includes separate learning modules on the pre-flight, takeoff, departure, en route, descent, approach, and landing phases of a flight to explain how the air traffic control system works. This self-paced software uses lively animations, Quicktime Virtual Reality video clips, and a host of interactive learning activities and can be used on most Macintosh and IBM-compatible personal computers.

Reporters may obtain a copy by calling the number listed above.

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An electronic version of this news release is available via the World Wide Web at: http://www.faa.gov

FAA News

Federal Aviation Administration, Washington, DC 20591

FOR IMMEDIATE RELEASE
APA 60-00
Monday, August 21, 2000
Contact: Les Dorr, Jr.
Phone: 202-267-3462

FAA Modifies Inspection Times for GE CF6 Engines

WASHINGTON -- The Federal Aviation Administration (FAA) today issued an airworthiness directive (AD) making the time required for previously ordered inspections of General Electric (GE) CF-6 engines more restrictive.

The inspections are being done to detect cracking in the high-pressure compressor stage (3-9 spool) that could cause an uncontained engine failure. The compressor in an aircraft engine compresses the incoming air and speeds it up before it enters the combustion chamber to mix with fuel.

The FAA had previously ordered operators of aircraft with CF6 engines to begin inspections effective Jan. 28, 2000. After analyzing an uncontained engine failure experienced by a Varig Brasil Airlines Boeing 767 on June 7, 2000, the agency now believes the compliance time before the initial inspection was not restrictive enough. Today's order changes the time before these initial inspections must be done, depending upon the number of start-and-stop cycles the engine has gone through.

Under today's order, engines with more than 10,499 cycles must be inspected within 500 more cycles, by the next visit to an engine shop or by May 31, 2001, whichever occurs first. Engines that have between 7,000 and 10,499 cycles must be inspected within another 1000 cycles, the next shop visit or by July 29, 2001 which ever occurs first.

The engines affected are CF6-45, -50, -80A, -80C2 and -80E1 models. Aircraft with these engines include Boeing 747s, 767s, DC-10s and MD-11s, and Airbus A300s, A310s and A330s. There are about 1,180 such engines in the U. S. fleet, approximately 1400 worldwide. Total cost to U.S. operators for removal and inspection of the high-compressor parts of these engines is estimated at a maximum of $18,800,000.

The Airworthiness Directive is available at:
http://www.access.gpo.gov/su_docs/aces/aces140.html

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FAA News

Federal Aviation Administration, Washington, DC 20591

FOR IMMEDIATE RELEASE
APA 57-00
Wednesday, August, 23, 2000
Contact: Kathryn B. Creedy
Phone: 202-267-3462

FAA TO DEMONSTRATE AFFORDABLE GPS TECHNOLOGIES

Anchorage, AK – The Federal Aviation Administration (FAA), in conjunction with the University of Alaska Anchorage (UAA) and the Alaska aviation industry, is hosting an open house to view satellite-based technologies that promise to dramatically reduce the number of accidents in Alaska and will ultimately be applied to the National Airspace System throughout the country. The program – known as Capstone – will display various technologies on August 23 and 24 at UAA's Merrill Field Aviation Complex and the Bethel, AK, airport.

"The Capstone project is instrumental in reaching the FAA's goal of reducing the accident rate for all sectors of aviation by 80% by the year 2007," said FAA Administrator Jane Garvey. "These technologies will help us address two key safety priorities at the FAA – controlled flight into terrain and runway safety. Alaska is one of the last great frontiers in aviation safety, and Capstone will go a long way in mitigating the hazards of this challenging environment."

Capstone will equip up to 150 aircraft used in passenger, mail or freight operations with an avionics package designed to improve situational awareness of the pilots by putting weather, terrain and traffic information in the cockpit for the first time. Essentially, pilots will be able to have the same information in the cockpit that air traffic controllers have on the ground. All this information will assist in averting mid-air collisions and controlled flight into terrain.

To complement this operation, the FAA is also publishing non-precision approach procedures and installing the automated weather observation system (AWOS) at 10 village airports in the Yukon-Kuskokwim Delta region of southwest Alaska. The FAA will also install 12 ground broadcast transceivers. The airports in question usually consist of a short gravel-surfaced runway with edge lighting. There are no terminal electronic navigation aids and weather observation stations are generally very far apart. There is little radar coverage in the demonstration area at low altitudes and icing conditions preclude most of the small aircraft from flying in instrument meteorological conditions.

The avionics package consists of a Global Positioning System (GPS) navigation/voice communications unit, a multifunction computer display and a digital datalink radio

operating on the Universal Access Transceiver (UAT) mode. The display includes a GPS-based terrain database of Alaska on a ¼-mile grid accurate to approximately 100-feet of elevation. The display delivers to the pilot airplane-to-airplane Automatic Dependent Surveillance-Broadcast (ADS-B) position reports from other aircraft and eventually will display ground-to-air Traffic Information Service (TIS) aircraft position reports. The display will include both visual flight rules (VFR) and instrument flight rules (IFR) charts, graphic weather and text messages, and moving map capabilities.

ADS-B is a key technology that will both enhance the efficiency of the National Airspace System as well as reduce runway incursions. In Capstone, airport ground vehicles will ultimately be equipped with a GPS/datalink radio to transmit position reports and thus provide a surveillance display capability either in the aircraft, the tower or on the ground thereby increasing runway safety.

The University of Alaska Anchorage will be conducting an in-depth safety study and assessment of the Capstone program. The university has also developed a sophisticated training system for Capstone pilots, which will also be demonstrated during the August open house.

Capstone is part of a joint government-industry partnership known as Safe Flight 21, an initiative designed to demonstrate and validate, in a real-world environment, the capabilities of advanced surveillance systems and air traffic procedures associated with free flight, using ADS-B and TIS as enabling technologies. Free Flight will allow pilots and controllers to work together to manage air traffic and it will permit pilots to fly the most direct, cost-effective routes, saving airlines and passengers time and money.

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An electronic version of this news release is available via the World Wide Web at: http://www.faa.gov/apa/pr/index.cfm

FAA News

Federal Aviation Administration, Washington, DC 20591

FOR IMMEDIATE RELEASE
Wednesday, August 23, 2000
Contact: Kathryn B. Creedy
Phone: 202-267-3462

CAPSTONE FACT SHEET
www.alaska.faa.gov/capstone

The Open House

The Federal Aviation Administration (FAA), the Alaska aviation industry, and the University of Alaska Anchorage will hold a Capstone Informational Open House on August 23-24, 2000 at the University of Alaska Anchorage (UAA) Merrill Field Aviation Complex and the Bethel, AK, airport.

The Capstone Program demonstrates advanced technologies and avionics that will dramatically improve aviation safety in Alaska and provide data for ultimate application in improving safety and efficiency in the National Airspace System.

Highlights
Demonstrations will include:
- Capstone Equipped Aircraft
- ADS-B display
- Capstone avionics
- Synthetic Vision
- Flight Information Service products
- Dispatcher Flight Following
- Safety Study
- Capstone Training Program
- AWOS
- Weather Cameras
- GPS Approaches

The Capstone Program
Capstone is a three-year test and evaluation program for several technologies that will increase the safety and efficiency of Alaska and the National Airspace System (NAS). It is designed to address mid-air collisions and controlled flight into terrain, provide data linking weather and other information into the cockpit, implement air traffic service and improve runway safety. Its goal is to reduce aircraft accidents and injuries while offering efficiencies to operators.

Capstone equips up to 150 commercial aircraft operating in passenger, mail and freight services in the Bethel area with satellite-based technologies that will improve situational awareness of pilots by putting data linked weather, terrain and traffic information to the cockpit for the first time. It affords radar-like coverage where none now exist. Many accidents could be eliminated through improved situational awareness for both pilots and controllers.

Capstone is part of FAA's Safe Flight 21 program (www.faa.gov/safeflight21) and will evaluate seven of nine high priority operational enhancements that will eventually be used in FAA's Free Flight initiative (www.faa.gov/freeflight). These enhancements will allow pilots and controllers to work together to manage air traffic and will permit pilots to fly the most direct, cost-effective routes, saving airlines and passengers time and money. The enhancements include:

- Flight Information Services (FIS)
- Cost Effective Controlled Flight Into Terrain (CFIT) avoidance technology.
- Enhanced See and Avoid
- Enhanced En Route Air-to-Air Operations
- Improved Surface Surveillance and Navigation for Pilots
- ADS-B Surveillance in Non-Radar Airspace
- ADS-B Surveillance in Radar Airspace

Capstone-equipped aircraft will be flown within the Yukon-Kuskokwim delta region of southwest Alaska, an area of approximately 100,000 square miles.

Alaska Aviation Safety Statistics

Alaska is one of the most hostile aviation operating environments. Total aviation accidents in Alaska for the 10-year period of 1990-1999 numbered 1,665, an average of one every other day, according to a study by National Institute for Occupational Safety and Health (NIOSH). Total aviation fatalities during the same period numbered 398, an average of one every nine days.

There were 186 fatal crashes involving 194 aircraft during this period.

- 106 were occupational pilots;
- 86 were non-pilot occupational fatalities (flying on work-related business);
- 206 were non-occupational fatalities;
- There were a total of 271 serious injuries and 448 minor injuries; and
- These accidents included 2.1 fatalities per accident 39.8 per year.
- The average number of fatal accidents for the period was 18.6 per year
    - 173 accidents involved fixed wing aircraft
    - 14 involved helicopters including
    - One involving both fixed wing and helicopter.

The leading cause cited in these accidents was loss of control in flight (28%), followed by in-flight collision with terrain or water or in-flight encounter with weather (15%) and airframe/component/system failure/malfunction (5%).

- In 1999 there were :
  - 155 accidents including 14 fatal accidents (12 fixed wing aircraft and two helicopters)
  - 14 fatal accidents
  - 32 fatalities

Navigation aids, radar and other technologies that are taken for granted in the "lower 48" simply do not exist in Alaska because of the challenging terrain. The advent of satellite-based technologies promises to significantly tame this challenging environment.

A disproportionate number of all U.S. aircraft accidents occur in Alaska. Between 1990-1998 there were 823 commuter and air taxi accidents in the U.S., of which 229 (28%) were fatal, resulting in 653 deaths, according to the National Transportation Safety Board. Alaska accounted for 304 (37%) of total accidents, 49 (21%) of which were fatal resulting in 131 (20%) deaths.

Indeed, aviation accidents are now the leading cause of occupational fatalities in Alaska, according to NIOSH. There were an average of 11 pilot fatalities per year out of a commercial pilot workforce of 1,600 or an annual pilot fatality rate of 430 per 100,000 pilots (0.4%). This equates to a 30-year career fatality risk of 11% for commercial pilots in Alaska compared to a 30-year career fatality risk of 2.5% for pilots in the 49 other states combined. This amounts to a four-fold increase in risk of fatality or an 80-fold increase risk compared to the average U.S. worker. While Alaska has experienced a 52% drop in occupational aviation fatalities (80 in 1990 to 38 in 1999), the number of accidents remains a significant safety issue.

In addition to the human tragedy, the financial costs is estimated to be more than $18 million per year for pilots alone. The combined financial impact of these accidents and the consequent pilot and passenger deaths is estimated at over $53 million annually.

These statistics reflect the challenging nature of Alaskan aviation with its vast size, mountainous terrain and flat marshy tundra. Its northern latitudes, large land mass, and extensive coastline result in diverse climatic zones and associated harsh weather. Often poor visibility contributes to the hazardous nature of Alaskan aviation.

Although more than half the population lives in the state's three major cities – Anchorage, Fairbanks and Juneau – much of the population remains in remote villages not connected by road and accessible only by air. Commuter and air taxi operators serve as the main link between these village and regional hubs, transporting people, cargo and mail. As many as 85% of these aircraft are single-engine aircraft. In 1994, commuter airlines in Alaska served 238 locations, only five of which had road connection to the airline hub, according to a 1995 NTSB report, *Aviation Safety in Alaska*. Alaska has 76 times as many commuter flights per capita as the rest of the U.S. combined.

Congressional initiatives calling for a federal program to reduce aviation-related injuries and fatalities in Alaska resulted in a three-year commitment led by a partnership of four federal agencies who share an interest in aviation safety – the FAA, the NTSB, the

National Weather Service (NWS) and NIOSH.

The Technologies

Capstone is a demonstration of affordable applied GPS technology coupled with digital datalink communications that enables Automatic Dependent Surveillance-Broadcast (ADS-B) service and delivery of text and graphic information to the pilot. It will increase situation awareness and improve safety for pilots of small aircraft that operate, for the most part, in visual meteorological conditions. Capstone will deliver Flight Information Services (FIS) to the pilot including text and graphic weather, notices to airmen, pilot reports, special use airspace status and significant weather.

The Capstone Program equips single, twin, reciprocal and turbine aircraft used by commercial operators in the Bethel area with a combined data link and Global Positioning System (GPS)-based avionics package designed to increase the situational awareness of pilots in averting mid-air collisions and controlled flight into terrain. A simple, high capacity, multifunction broadcast data link known as the Universal Access Transceiver (UAT) supports all air-air, air-ground and ground-air data link. Capstone will:

- Enable pilots to perform GPS approaches at airports in the rugged Yukon-Kuskokwim area.
- Afford pilots ability to see Automatic Dependent Surveillance-Broadcast (ADS-B) traffic via a cockpit display.
- Provide position reports data-linked from the ground.
- Deliver weather information to the cockpit.
- Interface ADS-B-based surveillance with existing ATC automation system to provide radar-like ATC services to participants in the Capstone area. Future enhancements will allow pilots of Capstone-equipped aircraft to see radar targets via Traffic Information Service-Broadcast (TIS-B) for all nearby aircraft.
- Affords a line of sight aircraft-to-aircraft and aircraft-to-ground range of approximately 120 miles.
- Provides a realistic three dimension image of terrain and airports known as Synthetic Vision, now under development at NASA, which a kind of virtual reality display system for cockpits. New technologies being developed by Aviation Safety (AvSP) and its partners could offer pilots a clear, electronic picture of what's ahead outside their windows, no matter what the weather or time of day. (http://avsp.larc.nasa.gov/MOVIES/MOV/SyntheticVisionTestFlight.mov)

The Equipment

The airborne avionics are complemented by ground-based infrastructure providing weather, data link communications, surveillance and Flight Information Services. For more information see www.alaska.faa.gov/capstone/avionics.htm. Avionics capabilities include:

- An IFR-certified GPS navigation receiver
- Broadcast data link transmitter/receiver (Universal Access Tranceiver or UAT)
- A multi-function color display with traffic and terrain advisories.
- Automatic Dependent Surveillance-Broadcast (ADS-B) Ground-based

Transmitter/Receiver.
- FIS-provided weather maps, text and graphics.
- TIS-B provided radar traffic information.
- Terrain database of Alaska on a ¼-mile grid accurate to approximately 100 feet of elevation.
- VFR and IFR databases.
- A moving map display.

The cost of each avionics suite is approximately $14,500 with additional $5,000 for installation. For installation information contact: www.nlavionics.com/capstone.

The equipment is manufactured by UPS Aviation Technologies, a subsidiary of United Parcel Service. For more information contact: www.upsat.com/uatsheet.html

FAA Initiatives
- Equip aircraft with the avionics suite.
- Develop and publish non-precision GPS approach procedures for 10 village airports with minimums of 400 feet and two miles.
- Install an automated weather observation system at these same 10 villages to permit use of the GPS approach procedures.
- Install 12 ground broadcast transceivers (GBTs) to provide data-link messages to and from the ground. Equipment for these dual digital data-link GBT radio stations cost approximately $70,000 plus installation in an existing FAA facility estimated at $30,000.
- Telecommunications to carry the ADS-B signals back to Anchorage will use the FAA's Alaska NAS Interfacility Communications System, a satellite telephone system where ever possible.

The ADS-B data-link aircraft position reports received at the GBTs are delivered to the Anchorage Air Route Traffic Control Center (ARTCC). The display system is driven by the Micro-Enroute Automated Radar Tracking System (M-EARTS) computer, which has been modified to display, simultaneously, other aircraft radar targets and ADS-B position reports from Capstone-equipped aircraft in non-radar airspace. Both radar and ADS-B target types will have alpha-numeric tags for use by controllers including flight number or N-number, altitude and climb or descent indication. When implemented, the M-EARTS will generate the TIS messages for up-link to participating aircraft.

In future, FAA plans to equip aircraft ground vehicles with a GPS/data-link radio to transmit position reports and thus provide a surveillance display capability either in the aircraft, on the ground or both as an aid to runway safety.

University of Alaska Anchorage
The UAA Technology Division will provide training for Capstone participants as well as conduct an in-depth study outlining the results and benefits of the Capstone demonstration. For more information contact: www.uaa.alaska.edu/aviation/.

Training: The Capstone program office has contracted with the University of Alaska

Anchorage to train the initial cadre of instructors necessary to do individual company training in Bethel and Anchorage. This training began in Bethel on February 10. Training programs will continue until all participating company programs are modified to include Capstone modules. The goal is to provide each company with at least one fully trained instructor and one complete set of modules with reference library materials. The initial course includes Capstone avionics simulators enabling pilots to set up and fly air route scenarios that are used during training.

Safety Study: UAA has also been contracted to conduct an independent study addressing the safety and benefits, which result from installation of Capstone avionics in commercial aircraft and the implementation of new flight procedures. UAA will also provide support for data-link evaluation. The study will document a baseline of:

- Carriers, operators and pilots;
- Accidents, incidents, Near Mid Air Collisions (NMACs);
- Airports;
- Approaches;
- Navaids; and
- Facilities including weather, communication and navigation.

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An electronic version of this news release is available via the World Wide Web at: http://www.faa.gov/apa/pr/index.cfm

ALASKAN REGION

Capstone

Investment in Safety

The *Capstone* Program is a joint industry and FAA Alaskan Region effort to improve aviation safety and efficiency by putting cost effective, new technology avionics, equipment into aircraft in the Yukon-Kuskokwim delta region as depicted above. This demonstration area is a non-radar environment with most of the air carriers' operations being limited to Visual Flight Rules. *Capstone* will equip up to 150 of the aircraft used by commercial operators in the area with a government-furnished Global Positioning System (GPS) based avionics package. In addition to the avionics suites, *Capstone* will deploy a ground infrastructure for weather observation, data link communications, surveillance, and Flight Information Services (FIS). *Capstone* will also increase the number of airports served by an non-precision instrument approach.

A significant number of mid-air collisions, controlled flight into terrain, and weather-related accidents can be avoided with new technologies incorporated into the *Capstone* avionics package. The *Capstone* program will provide real world information and experience as well as enhanced safety and operational capabilities that can be used to improve the National Airspace System.

Phased installation of *Capstone* equipment began in December 1999 and will continue through 2000.

Highlights

- The Capstone Program provides weather, (text and graphics) directly to the pilot in the cockpit.
- Installation of new automated weather systems enables commercial operators to perform GPS approaches at airports in the Yukon-Kuskokwim area.
- GPS non-precision instrument approach procedures are being designed and published for 10 additional remote village airports within the Yukon-Kuskokwim area.
- Introduction of a modern data link network allowing participating pilots to see aircraft traffic via a cockpit display to aid in collision avoidance.
- An interface with the existing radar tracking system provides radar like services to participating aircraft in the Yukon-Kuskokwim delta region. Future enhancements will allow pilots of Capstone-equipped aircraft to see ADS-B *and radar* targets via Traffic Information Service-Broadcast (TIS-B), for all nearby aircraft.
- The University of Alaska at Anchorage will develop and conduct training for Capstone participants as well as perform an in-depth safety study and assessment of the Capstone program.
- Aircraft selected for the Capstone Program receive:
  - An IFR-certified GPS navigation receiver.
  - Automatic Dependent Surveillance-Broadcast (ADS-B) Transmitter/Receiver.
  - A multi-function color display with traffic and terrain advisories.
  - Weather information, (text and graphics) directly to the cockpit.
  - TIS-B providing radar traffic information.
  - Terrain Database.
  - IFR Database.

Technical Information

HARDWARE

photo by UPS Aviation Technologies

GPS - The Apollo GX60 navigation system is a non-precision, IFR approach certified GPS receiver meeting the requirements of TSO-C129A Class A1□ The unit features a high definition moving map display on a sun light viewable screen, an 8 channel GPS receiver and an 8 watt, 760 channel, VHF Communications unit to minimize consumption of panel space□

photo by UPS Aviation Technologies

MFD - The daylight visable, multifunction Apollo MX-20 display features a 6" AMLCD display screen and supports 65,536 simultaneous colors at a pixel resolution of 640x480□It contains a Pentium processor for integrating ADS-B, GPS, terrain, weather graphics, and navigation database information□The MFD provides enhanced situational awareness by positioning the aircraft icon over a moving maps depicting terrain, traffic, and weather□

UAT - The **U**niversal **A**ccess **T**ransceiver is a transmitter/receiver combination that communicates the datalink information for the ADS/TIS/FIS services air-to-air between aircraft, as well as between the aircraft and the ground stations□ The robust, 50watt, remotely mounted, UHF transmitter reports the aircraft data at 1 second intervals□A smaller, less powerful version of this unit may be developed for use in airport ground vehicles to alert pilots of their location and avoid incursions□

FUNCTIONS

ADS-B - Automatic Dependent Surveillance-Broadcast is a function that broadcasts position, altitude, vector and other information for use by other aircraft, vehicles, and by ground facilities□ADS-B supports improved use of airspace, improved surface surveillance, and enhanced safety (such as conflict management) for users□

FIS - Flight Information Services function allows an aircraft to receive current and forecasted weather and weather-related information as well at the status of Special Use Airspace (SUA)□The enhanced weather products will be available to the pilots and controllers allowing them to share the same situational awareness□This information will be displayed either in text or graphical form, as selected by the pilot□

TIS-B - Traffic Information System - Broadcast function will provide the capability to determine aircraft position using radar and to broadcast this position information to airborne aircraft that are ADS-B equipped□

Terrain Awareness - The terrain information is depicted relative to the aircraft's position so that bearing and distance may be determined□A flashing terrain advisory flag is displayed whenever the aircraft is within 5(verticle feet of terrain, or when the aircraft is within two minutes, horizontally, of terrain□

For more information visit the *Capstone* website at: www□alaska□faa□gov/capstone

Return to the Capstone Homepage

Capstone Avionics

UPS Aviation Technologies (formerly II Morrow, Inc), an Oregon based subsidiary of United Parcel Service was named by the FAA as the vendor of avionics and ground based transceivers in support of the agency's "Capstone" program currently underway in Alaska.

The aircraft avionics suite consists of:

UAT Datalink

The Universal Access Transceiver (UAT) is a radio datalink system supporting broadcast services - Automatic Dependent Surveillance-Broadcast (ADS-B), Traffic Information Service (TIS-B) and Flight Information Service (FIS-B). The UAT datalink is a remote mounted radio that provides this communication capability between aircraft and the ground.

MX-20

The Capstone MX-20 is a 6" Diagonal, color, Multi-function cockpit display with terrain database.

GX-60

The GX60 is a TSO C129(A1) certified GPS navigation and communication solution in a single two inch package.

UPS Aviation Technologies
A subsidiary of United Parcel Service

Visit the UPS AT website.

FAA News

Federal Aviation Administration, Washington, DC 20591

FOR IMMEDIATE RELEASE
Wednesday, August 23, 2000
Contact: Kathryn B. Creedy
Phone: 202-267-3462

Safe Flight 21 Overview

www.faa.gov/safeflight21/

The Safe Flight 21 program is a three-year joint government/industry initiative designed to demonstrate and validate, in a real-world environment, the capabilities of advanced surveillance systems and air traffic procedures associated with free flight (www.faa.gov/freeflight). Free flight will allow pilots and controllers to work together to manage air traffic and will permit pilots to fly the most direct, cost-effective routes, saving airlines and passengers time and money.

Safe Flight 21 uses Automatic Dependent Surveillance-Broadcast (ADS-B) and Traffic Information Services-Broadcast (TIS-B) as enabling technologies. Safe Flight 21 will demonstrate the following nine free flight operational enhancements selected by RTCA:

- Weather and Other Information in the Cockpit;
- Cost-Effective Controlled Flight Into Terrain (CFIT) Avoidance
- Improved Terminal Operations in Low Visibility
- Enhanced See and Avoid
- Enhanced En Route Air-to-Air Operations
- Improved Surface Navigation for the Pilot
- Enhanced Surface Surveillance for the Controller
- ADS-B Surveillance in Non-Radar Airspace
- ADS-B Separation Standards

Over the course of demonstrating these nine operational enhancements Safe Flight 21 program will address such issues as:

- Safety
- Efficiency
- Capacity
- Certification
- Pilot/controller situational awareness
- Human factors
- Frequency spectrum
- Affordability

The program will also demonstrate and quantify operational benefits, demonstrate capabilities, develop procedures, and collect data on the performance of three types of

digital data links – Mode Select (Mode S) Extended Squitter, Universal Access Transceiver (UAT), and VHF Data Link (VDL) Mode 4.

Enabling Technologies

ADS-B is a key technology that will provide the means for air and ground vehicles to broadcast and receive ADS-B messages via a digital link containing information such as; aircraft or vehicle identification, position, altitude, velocity and direction. ADS-B will be displayed on a multifunction display, such as a Cockpit Display of Traffic Information (CDTI). The intent of broadcasting this information is to increase the pilots' situational awareness of ADS-B equipped aircraft.

ADS-B can also be used to provide air traffic controllers a consolidated picture of the controlled airspace. The information provided to controllers will be more frequently updated than that provided by other surveillance equipment. In addition, TIS-B can be used as the enabling technology for allowing traffic and other data available on the ground to be provided to the cockpit. As a result, enhancements to be demonstrated by the Safe Flight 21 program have the potential to significantly increase flight safety, system capacity, and overall efficiency of flight operations.

Collaboration with Industry

The Safe Flight 21 program is based on the principle that government and industry will share in the development of a global air transportation system as we move into the free flight era.

The FAA is collaborating with RTCA to ensure that the scope, resources, schedule, and execution of the Safe Flight 21 program reflects government/industry consensus. The FAA and the Cargo Airline Association are entering into a partnership to pool their resources to conduct an operational evaluation of ADS-B capabilities in the Ohio Valley. The FAA is working with air carriers in Alaska to improve aviation safety while offering greater efficiencies to operators. The FAA is also seeking to make ADS-B equipment affordable enough to promote widespread voluntary equipage.

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FAA News

Federal Aviation Administration, Washington, DC 20591

CAPSTONE ITINERARY

Wednesday August 23
University of Alaska-Anchorage Auditorium

10:00 Welcome
Pat Poe, Alaska Regional Administrator
Lee Gorsuch, Chancellor, University of Alaska
Richard Harding, Vice President of Operations PenAir, representing the Alaska aviation industry.

10:45 Capstone Impact on Safety – Tom Wardleigh, Alaska Aviation Safety Foundation

11:00 What is Needed to Improve Aviation Safety in Alaska – Felix Maguire, Alaska Airmen Association

11:30 Outline of Capstone Program Status and Demonstration
Leonard Kirk, University of Alaska Anchorage
John Hallinan, Capstone Program Manager

12:00 LUNCH

1:00pm – 5:00pm Exhibits

Capstone equipped aircraft
ADS-B display
Capstone avionics
Capstone Communications Control Server
Flight Information Services products
ANICS
Dispatcher Flight Following
Safety Study
Training
AWOS
Weather Cameras
Architecture Capstone aircraft to Micro-EARTS
WAAS
Synthetic Vision
GPS Approaches

2:30 Capstone Program and Aviation Safety Forum
Christopher Hart, Assistant Administrator-System Safety, FAA
Steve Brown, Associate Administrator-Air Traffic Services, FAA
Mike Biggs, Senior Engineer, Office of Spectrum Policy and Management, Air Traffic Services, FAA
Dan Salvano, Deputy Director-Communications, Navigation & Surveillance Systems, FAA
Doug Helton, Aircraft Owners & Pilots Association

3:30 Tour of Anchorage Air Route Traffic Control Center – Anchorage.

Numbers limited.

6:00-9:00pm UPS-AT has scheduled a hospitality suite at Sheraton Hotel with display of Capstone avionics and presentations by Tom Wiedermeir, CEO of UPS, John Hallinan, Capstone Program Manager and Steve Alterman, President of the Cargo Airlines Association.

Thursday, August 24

Anchorage Activities

10:00am – 4:00pm Continued display of Capstone exhibits at UAA.
Replay of presentations filmed on the 23rd

Capstone equipped aircraft
ADS-B display
Capstone avionics
Capstone Communications Control Server
Flight Information Services products
ANICS
Dispatcher Flight Following
Safety Study

Exhibits
Training
AWOS
Weather Cameras
Architecture Capstone aircraft to Micro-EARTS
WAAS
Synthetic Vision
GPS Approaches

10:30am – 2:30pm - Tour of Anchorage ARTCC
Bus leaves hourly from UAA. Tour size limited in order to minimize impact to ATC

Bethel Activities

9:00am - Tech Center Aircraft departs Anchorage International to perform Bethel flight profiles.

10:15am - Tech Center aircraft arrives at Bethel and proceeds on flight profiles.

11:00am - Up to 17 people in 2 CE-208 aircraft depart for village visit and Capstone avionics orientation. Rest of group meet operators and review Capstone equipment, have lunch.

1:00pm - 2 CE-208 aircraft return, pickup second group for village visit and Capstone avionics orientation. Rest of group meet operators and review Capstone equipment, have lunch.

3:30pm - Tech Center aircraft departs Bethel for Anchorage

4:45pm - Tech Center aircraft arrives in Anchorage

Press contacts for Capstone from industry also include:

Felix Maguire, President of the Alaska Airmen's Association (907) 245-1251
Paul Bowers, Director Alaska Statewide Aviation (airport) (907) 269-0724
Tom Wardleigh, Chair of the Alaskan Aviation Safety Foundation (907) 243-7237
Former FAA Aviation Safety Inspector, a Senator Steven's
float plane instructor
Ginny Hyatt, Alaskan AOPA (907) 243-7237
Secretary of the Alaskan Aviation Safety Foundation
Executive Committee
Gary Bennett, Northern Lights Avionics which (907) 277-4811
Installs Capstone Avionics
Richard Harding, Director of Operations, PenAir (907) 243-2228
Leonard Kirk, University Of Alaska (UAA) (907) 264-7436
Capstone Training
Capstone Evaluation
Terri Smith, Vice President Alaskan Airmen's Association (907) 245-1251
She comes from one of the pioneer aviation families in Southeast Alaska.

Some Capstone operators are willing to take press on demonstration flights. However, reporters must make their own arrangements for these flights.

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Bethel Station Manager
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Arctic Transportation Services
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An electronic version of this news release is available via the World Wide Web at: http://www.faa.gov/apa/pr/index.cfm

Capstone Flight Test Plan
August 22, 23, 24 2000

General: This plan involves validation of previously documented performance of ADS-B to determine and confirm signal coverage for ground installations at Bethel, Cape Newenham, and Romanzof. The test will confirm system interaction performance between ADS-B airborne and ground transceivers and the hard and soft connections to the M-EARTS. Accuracy of the terrain data is also part of the plan.

Objectives: The testing is designed to collect coverage and performance information related to the ADS-B ground station and airborne avionics. Test coverage area integrity and signal availability of ADS-B transmissions at various altitude and specific locations in the Capstone area will be verified. Radar performance at Newenham and Romanzof, and ADS-B ground stations at Bethel, Newenham and Romanzof will be observed and documented while tracking the test aircraft. Completion of at least two of the three flight profiles in the four-day period is the success criteria threshold for testing.

Some portions of the plan require VMC flight. Due the nature of the weather in the lower Kuskokwin Delta, some portion of the profiles may not be accomplished during the demonstration. August 21, 22, 2000 are back up weather days. Weather permitting, all three profiles are planned to be completed. The B-727 crew is the final authority concerning the flight portion of the test. The crew will modify profiles as needed to ensure the safe operation of the aircraft and optimize test results.

Test Method:

Test Item Description: A Boeing 727 will be equipped with Capstone avionics which include an MFD incorporating GPS, ADS-B, and terrain data. Flights will be conducted in the area with the test aircraft operating at a variety of altitudes and routes.

Test Approach: The approach is to operate the B-727 through a series of clearly defined flight profiles a various ranges and altitudes from ADS-B ground stations. A Capstone coordinator at a central site on the ground will report times, locations and altitudes the aircraft enters and leaves ADS-B coverage areas. Observers on the aircraft will record locations, times and altitudes that both terrain and traffic were noted. M-EARTS ADS-B update rates will be recorded during one-half standard rate through one and one-half standard rate turns. Effects of high-speed passes directly over ground stations will be noted for possible future

testing. And flights directly over latitude and longitude lines will help answer accuracy questions.

Test Procedures: The test procedure is included in the flight profiles. During each test the aircraft crew will interact by radio with a Capstone coordinator viewing the aircraft identifier on a ground based display. Some portions of the test require radio contact for the crew to know when to change altitudes etc. The script for interaction between all parties will be provided at the time of the test. The test includes passenger compartment observers noting the location and time terrain and traffic information was observed. This data will be analyzed after the exercise.

Test Schedule: The test schedule is included in the flight profiles.

Airspace: The testing will be conduct with the route structure described in the flight profiles below.

Safety: All flights will be conducted inside the appropriate FAR's. The area involved does not contain a high volume of traffic; approximately 100 aircraft operate daily to 50 plus airports within a 90, 000 square mile area. Some risk is associated with operating a large jet aircraft below 10000 MSL in an area populated primarily by small reciprocating and turbine engine aircraft. Local flight crews are accustom to mixing with large commercial jet traffic which serves the Bethel Airport 3 to 5 time daily. Notam's will be issued to alert aviation operators and pilots of the specific dates, times, routes and altitudes the test will cover. Issuing NOTAMS covering the specific flight profiles will mitigate this risk. Large numbers of migratory waterfowl will be flying in the area during the test. Flight test crew awareness and increased external vigilance will help mitigate this hazard.

Instrumentation: The Capstone avionics suite will be installed in the passenger compartment of the B-727 for use by airborne observers.

Flight Profile 1

Aircraft: B-727
Date: August 21, or 22, 2000
Departure Time: 0900 ADT
Route: ANC J501 BET EHM CZF BET J501 ANC.
Notes: A NOTAM will be issued announcing this profile.

Depart Ted Stevens Anchorage International airport via J-501 to SQA (117.2), descend to 12000 MSL, Maintain 12000 MSL until reported in ADS-B coverage, descend to 10000 MSL until reported into ADS-B coverage, descend to 8000 MSL until reported into ADS-B coverage, cross Scalp intersection at 6000 MSL Maintain 6000 MSL until reported in ADS-B coverage, continue toward the BET VORTAC (114.1), fly to the Bethel airport by executing an instrument approach to a missed approach to allow for observer ADS-B target acquisition. Land at the Bethel airport and shutdown.

Depart Bethel airport, Climb to 4000 MSL (weather permitting) crossing over the BET VORTAC, turn to fly direct headed approximately 200 degrees.

Fly direct to EHM NDB(385), descend, as terrain, traffic and weather permit to 500 AGL (to allow observation and terrain data base accuracy) at a point 60nm south of the BET VORTAC. Climb to cross EHM at 12000 feet MSL to allow radar an ADS-B comparison.

Turn right fly direct to CZF NDB(275), descend, until reported out of ADS-B coverage, and then as terrain, traffic and weather permit to as low as 500 feet AGL (To allow observation and terrain data base accuracy) at a point 110nm Northwest of the EHM NDB. Climb to be level at 12000 feet MSL and denote altitude reported in ADS-B coverage, maintain 12000 MSL until crossing over the CZF NDB to allow radar and ADS-B comparison.

Turn right fly direct BET VORTAC(114.1), descend, as terrain, traffic and weather permit to as low as 500 feet agl at a point 70nm Southwest of the CZF NDB to detect and report the location and altitude of any loss of ADS-B coverage and allow for observation and accuracy of terrain data base. Climb to be level at 12000 feet MSL crossing over the BET VORTAC to allow radar and ADS-B comparison.

Turn left, join V319/J501 maintain 7000 feet until reported out of ADS-B coverage, climb to 9000 MSL until reported out of ADS-B coverage climb to 11000 MSL until reported out of ADS-B coverage cross SQA at or above 12000 MSL, return to Anchorage; weather permitting, during the arrival into the

Anchorage area, observe terrain displayed on the MFD.

Flight Profile 2

Aircraft: B-727
Date: August 22, or 23, 2000
Departure Time: 0900 ADT
Route: ANC J501 BET Bethel airport.
Departure time: 1300 ADT
Route: BET V-453 Altey Intersection, TOG(393) EHM (385) V333 IIK(115.9) J120 BET(114.1) J501 ANC(114.3).
Notes: A NOTAM will be issued announcing this profile.

Depart Ted Stevens Anchorage International airport via J-501 to SQA (117.2), descend to 12000 MSL, Maintain 12000 MSL until reported in ADS-B coverage, descend to 10000 MSL until reported into ADS-B coverage, descend to 8000 MSL until reported into ADS-B coverage, cross Scalp intersection at 6000 MSL Maintain 6000 MSL until reported in ADS-B coverage, continue toward the BET VORTAC (114.1), fly to the Bethel airport by executing an instrument approach to a missed approach to allow for observer ADS-B target acquisition, fly an instrument approach, land and shutdown.

Depart Bethel airport via V453, climb to and level off at 11000 MSL.

At Altey intersection, using one half-standard rate, turn right fly direct Togiak(TOG) NDB(393) to compare turning update rate comparison between ADS-B and radar.

At TOG climb and maintain 12000, using a standard rate turn, fly direct to the Cape Newenham (EHM) NDB(385)) for turning update rate comparison between ADS-B and radar.

Accelerate to maximum safe operating speed and pass over the EHM NDB; decelerate to normal cruising speed to detect any anomalies associated with high speed . Using one and one half times standard rate, turn right intercept V333 to the IIK(115.9)) to compare turning update rate comparison between ADS-B and radar.

AT IIK VOR, using a standard rate turn fly V480 to BET, fly an instrument approach to t the Bethel airport land and shutdown.

Depart Bethel airport, join V319/J501 climb and maintain 7000 feet until reported out of ADS-B coverage, climb to 9000 MSL until reported out of ADS-B coverage climb to 11000 MSL until reported out of ADS-B coverage cross SQA at or above 12000 MSL, climb to cruising altitude and return to Anchorage; weather permitting, during the arrival into the Anchorage area, observe terrain displayed on the MFD.

Flight Profile 3

Aircraft: B-727
Date: August 23, or 24, 2000
Departure Time: 0900 ADT
Route: ANC J501 BET Bethel airport.
Departure time: 1300 ADT
Route: BET to 61degrees N 163 degrees W, to 62 degrees N 163 degrees W to 62 degrees N 160 degrees W to 60 degrees N 160 degrees W to 60 degrees N 163 degrees W to BET J501 ANC
Notes: A NOTAM will be issued announcing this profile.

Depart Ted Stevens Anchorage International airport via J-501 to SQA (117.2), descend to 12000 MSL, Maintain 12000 MSL until reported in ADS-B coverage, descend to 10000 MSL until reported into ADS-B coverage, descend to 8000 MSL until reported into ADS-B coverage, cross Scalp intersection at 6000 MSL Maintain 6000 MSL until reported in ADS-B coverage, continue toward the BET VORTAC (114.1), fly to the Bethel airport by executing an instrument approach to a missed approach to allow for observer ADS-B target acquisition, fly an instrument approach, land and shutdown.

Depart Bethel airport via direct 61N 163 W, climb to 12000 MSL

Turn Northwest and descend to arrive at 62 N 163 W at 500 feet AGL.

Turn east and climb to arrive at 62 N 160 W at 11000 MSL.

Turn Southeast and descend to arrive over 60 N 160 W at 500 AGL.

Turn Southwest and descend to arrive over 60 N 163 W at 12000 MSL.

Fly direct to BET and execute an instrument approach to a missed approach. Land at the Bethel Airport.

Depart Bethel airport, join V319/J501 climb and maintain 7000 feet until reported out of ADS-B coverage, climb to 9000 MSL until reported out of ADS-B coverage climb to 11000 MSL until reported out of ADS-B coverage cross SQA at or above 12000 MSL, climb to cruising altitude and return to Anchorage; weather permitting, during the arrival into the Anchorage area, observe terrain displayed on the MFD.

FAA News

Federal Aviation Administration, Washington, DC 20591

FOR IMMEDIATE RELEASE
Wednesday, August 23, 2000
Contact: Kathryn B. Creedy
Phone: 202-267-3462

Fact Sheet: Safe Flight 21 Overview
www.faa.gov/safeflight21/

The Safe Flight 21 program is a three-year joint government/industry initiative designed to demonstrate and validate, in a real-world environment, the capabilities of advanced surveillance systems and air traffic procedures associated with free flight (www.faa.gov/freeflight). Free flight will allow pilots and controllers to work together to manage air traffic and will permit pilots to fly the most direct, cost-effective routes, saving airlines and passengers time and money.

Safe Flight 21 uses Automatic Dependent Surveillance-Broadcast (ADS-B) and Traffic Information Services-Broadcast (TIS-B) as enabling technologies. Safe Flight 21 will demonstrate the following nine free flight operational enhancements selected by RTCA:

- Weather and Other Information in the Cockpit;
- Cost-Effective Controlled Flight Into Terrain (CFIT) Avoidance
- Improved Terminal Operations in Low Visibility
- Enhanced See and Avoid
- Enhanced En Route Air-to-Air Operations
- Improved Surface Navigation for the Pilot
- Enhanced Surface Surveillance for the Controller
- ADS-B Surveillance in Non-Radar Airspace
- ADS-B Separation Standards

Over the course of demonstrating these nine operational enhancements Safe Flight 21 program will address such issues as:

- Safety
- Efficiency
- Capacity
- Certification
- Pilot/controller situational awareness
- Human factors
- Frequency spectrum
- Affordability

The program will also demonstrate and quantify operational benefits, demonstrate capabilities, develop

procedures, and collect data on the performance of three types of digital data links – Mode Select (Mode S) Extended Squitter, Universal Access Transceiver (UAT), and VHF Data Link (VDL) Mode 4.

Enabling Technologies

ADS-B is a key technology that will provide the means for air and ground vehicles to broadcast and receive ADS-B messages via a digital link containing information such as; aircraft or vehicle identification, position, altitude, velocity and direction. ADS-B will be displayed on a multifunction display, such as a Cockpit Display of Traffic Information (CDTI). The intent of broadcasting this information is to increase the pilots' situational awareness of ADS-B equipped aircraft.

ADS-B can also be used to provide air traffic controllers a consolidated picture of the controlled airspace. The information provided to controllers will be more frequently updated than that provided by other surveillance equipment. In addition, TIS-B can be used as the enabling technology for allowing traffic and other data available on the ground to be provided to the cockpit. As a result, enhancements to be demonstrated by the Safe Flight 21 program have the potential to significantly increase flight safety, system capacity, and overall efficiency of flight operations.

Collaboration with Industry

The Safe Flight 21 program is based on the principle that government and industry will share in the development of a global air transportation system as we move into the free flight era.

The FAA is collaborating with RTCA to ensure that the scope, resources, schedule, and execution of the Safe Flight 21 program reflects government/industry consensus. The FAA and the Cargo Airline Association are entering into a partnership to pool their resources to conduct an operational evaluation of ADS-B capabilities in the Ohio Valley. The FAA is working with air carriers in Alaska to improve aviation safety while offering greater efficiencies to operators. The FAA is also seeking to make ADS-B equipment affordable enough to promote widespread voluntary equipage.

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FAA News

Federal Aviation Administration, Washington, DC 20591

FOR IMMEDIATE RELEASE
August 24, 2000
Contact: Tammy L. Jones
Phone: 202-267-3462

FACT SHEET
NATIONAL AIRSPACE REDESIGN
CHOKE POINTS

The Federal Aviation Administration and the National Air Traffic Controllers Association are working with the airline industry to examine and implement airspace, procedural and operational improvements. Together, they identified the seven top "choke points" or bottlenecks in the airspace system. These all affect the highly traveled airspace east of the Mississippi River.

- Airspace west of the New York/New Jersey area is congested and complex due to the high volume of aircraft departing to the west. To reduce congestion in this airspace, some propeller-engine aircraft departing this area and some aircraft destined for Dulles International Airport are routed to less congested airspace. As a result, there has been a reduction in the amount of departure aircraft being held on the ground at the New York and New Jersey Metropolitan Airports.

- Airspace north of the New York/New Jersey area is congested and complex due to the high volume of aircraft departing to the north. We have reduced the complexity of the airspace in the higher altitudes north and northwest of New York City. This has contributed to a reduction in the amount of departure aircraft being held on the ground and at the New York and New Jersey Metropolitan Airports.

- The FAA will be modifying routes for aircraft flying through high altitudes in the mid-Atlantic region to New York and New Jersey. An additional aircraft arrival route into the New York and New Jersey metropolitan area airports will result in an increase in the efficiency of the flow of aircraft traffic, and reduce the complexity in the high altitude airspace in the mid-Atlantic region.

- The FAA began testing a high altitude route for aircraft flying west from the New England area in June 2000. This route would allow up to 28 flights daily to be routed through Canada.

- The FAA is making wider use of lower altitudes for the area south of the Great Lakes including Chicago, Detroit, Cleveland, Pittsburgh, Cincinnati and Indianapolis. Aircraft flying at lower altitudes (between 21,000 and 27,000 ft.) and structured routings provide more predictable departure times and reduce airspace congestion.

- Aircraft destined for the New York/New Jersey area are sometimes held at high altitudes over 1,000 miles from their destination. Planned spacing of aircraft earlier in the flight will reduce congestion and complexity in high altitudes and will minimize high altitude holding.

- Large numbers of aircraft destined to New York/New Jersey airports create a steady flow in airspace overlying some airports. This results in aircraft closer to the destination waiting on the ground to depart. FAA is working with NavCanada for up to 12 flights daily to be rerouted through Canadian airspace to improve schedule predictability.

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FAA News

Federal Aviation Administration, Washington, DC 20591

FOR IMMEDIATE RELEASE
APA 61-2000
Thursday, August, 24, 2000
Contact: Kathryn B. Creedy/Tammy Jones
Phone: 202-267-3462

WIDE AREA AUGMENTATION SYSTEM SIGNAL NOW AVAILABLE

WASHINGTON – After a successful 21-day stability test of the Wide Area Augmentation System (WAAS) signal in space, the U.S. Department of Transportation's Federal Aviation Administration (FAA) declared that it is now available for some aviation and all non-aviation uses. The test demonstrated required system stability allowing immediate use of the WAAS signal by a broad range of users.

WAAS augments the Global Positioning System (GPS) by improving the GPS position signal. The test demonstrated that the system can operate without interruption, providing a stable and reliable signal to augment GPS. The system demonstrated one to two meters horizontal accuracy and two to three meters vertical accuracy throughout the contiguous United States. Raytheon will operate the system for the FAA on a continuous basis, interrupting it only as necessary to upgrade or test the system. To provide users with information on these outages, the WAAS broadcast schedule is available at gps.faa.gov/Programs/NSTB/Provisions/sis.htm or www.raytheontands.com/waas.

The current WAAS signal is available to aviation users for increasing situational awareness during flight under visual flight rules (VFR) and on the airport surface, among other uses. For non-aviation users, the signal supports a variety of applications in recreation, boating, agriculture and surveying.

WAAS continues to be developed to provide the necessary integrity for the WAAS-required, safety-critical applications. Until the system design is completed and initial operational capability is declared, the WAAS is not an approved source of aircraft navigation under instrument flight rules (IFR).

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An electronic version of this news release is available via the World Wide Web at: http://www.faa.gov

FAA News

Federal Aviation Administration, Washington, DC 20591

FOR IMMEDIATE RELEASE
APA 62-00
Thurs., Aug. 24, 2000
Contact: Rebecca Trexler
Phone: 202-267-3462

Media Advisory: Delta to Donate Airplane to FAA for Security Training

WASHINGTON—Delta and FAA officials will participate in a ceremony to donate a recently retired L-1011 Delta aircraft to the FAA's Federal Air Marshal program for aviation security training. Many of the Federal Air Marshals' missions are flown on wide-body aircraft but, until now, only a narrow-body aircraft has been available at the Technical Center for on-site training. Following a brief ceremony, the Federal Air Marshals will demonstrate responses to simulated hijacking attempts on board the Delta-donated aircraft.

FAA participants:	Cathal L. Flynn, FAA associate administrator for civil aviation security Bruce Butterworth, FAA director of civil aviation security operations
Delta participants:	Mac B. Armstrong, Delta's executive vice president – operations Jack Daulton, Delta's vice president – corporate security
When:	Mon., Aug. 28, 11 a.m.
Where:	FAA William J. Hughes Technical Center Atlantic City, N.J. Note: The ceremony will be held in the Atrium of the Technical Center's main building. Following the brief ceremony, transportation will be provided to the airfield for the Federal Air Marshal demonstrations of responses to attempted hijackings.
Contact:	Rebecca Trexler, FAA public affairs, 202-267-3462 Delta Air Lines Corporate Communications, 404-715-2554

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An electronic version of this media advisory is available via the World Wide Web at http://www.faa.gov/apa/pr/index.cfm

FAA News

Federal Aviation Administration, Washington, DC 20591

FOR IMMEDIATE RELEASE
August 2000
Contact: Rebecca Trexler
Phone: 202-267-3462

Fact Sheet
FAA Federal Air Marshal Program

The Federal Aviation Administration's Federal Air Marshal program is an expansion of the Sky Marshal program of the 1970s designed to stop hijackings to and from Cuba. The current program was created shortly after the hijacking of TWA 847 in June 1985. During that incident, two Lebanese Shiite Moslems hijacked a Boeing 727 departing Athens and diverted it to Beirut where they were joined by additional hijackers. During a two-week confrontation, the hijackers demanded the release of Shiite prisoners held by Israel and murdered Robert Stethem, a U.S. Navy diver who was a passenger on board the plane.

In response to this hostage ordeal and the upsurge in terrorism in the Middle East, then-President Ronald Reagan directed the Secretary of Transportation, in cooperation with the Secretary of State, to explore immediately an expansion of the FAA's armed Sky Marshal program aboard international flights for U.S. air carriers. On August 8, 1985, Congress enacted Public Law 99-83, the International Security and Development Cooperation Act, which established the explicit statutory basis for the Federal Air Marshal program.

Since 1985, the Federal Air Marshal program has provided specially trained, armed teams of FAA civil aviation security specialists for deployment worldwide on anti-hijacking missions. The program is based on minimum use of force, but that force can be lethal. The FAA, therefore, sets a premium on the selection, training and discipline of this elite corps of employees. Those who volunteer for the marshals must first pass initial psychological screening and fitness testing. Those who make the force must then undergo sophisticated, realistic law enforcement training. All Federal Air Marshals must meet stringent physical fitness requirements and firearm proficiency standards. In addition, before every mission they fly, the marshals go through recurrent training and standardized preparation.

The Federal Air Marshal tactical training facility and operational headquarters is located at the William J. Hughes Technical Center in Atlantic City, N.J. The marshals' training

- more -

facilities are extensive and include three different outdoor ranges with moving targets, a 360-degree live-fire shoothouse configured as both a narrow-body and a wide-body aircraft with computer-controlled targets and a bulletproof observation platform, an indoor laser disc "judgement pistol shooting" interactive training room and a close-quarters countermeasures/personal defense training room with protective equipment and dummies. The program also uses an inactive five-story air traffic control tower, a retired B-727 narrow-body aircraft and a retired L-1011 wide-body aircraft for on-board exercises, a modern classroom, a state-of-the-art fitness facility, and an operations center capable of secure communications worldwide.

As with most areas of civil aviation security, only limited information about the Federal Air Marshal program can be made public. The FAA will not reveal the number or identity of the marshals, the details of their training, nor the routes they fly. No one on board a flight will know an air marshal is present except for the pilot and flight crew. What can be said publicly is that the Federal Air Marshals are a full-time dedicated force that continuously deploys throughout the world on all the major U.S. carriers in areas where terrorist activities indicate the highest probability of attacks. Federal Air Marshals fly every day of the year.

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An electronic version of this news release is available via the World Wide Web at http://www.faa.gov

FAA OFFICE OF PUBLIC AFFAIRS
PRESS RELEASES HTTP://WWW.FAA.GOV/APA/PR
800 INDEPENDENCE AVE., WASHINGTON D.C., 20591

FOR IMMEDIATE RELEASE
APA 61-00
August 24, 2000
Contact: Kathryn B. Creedy
Phone: 202-267-3462

AMENDED VERSION: Wide Area Augmentation System Signal Now Available

WASHINGTON - After a successful 21-day stability test of the Wide Area Augmentation System (WAAS) signal in space, the U.S. Department of Transportation's Federal Aviation Administration (FAA) declared that it is now available for some aviation and all non-aviation uses. The test demonstrated required system stability allowing immediate use of the WAAS signal by a broad range of users.

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FAA News

Federal Aviation Administration, Washington, DC 20591

FOR IMMEDIATE RELEASE
APA 63-00
Friday, August 25, 2000
Contact: Les Dorr, Jr.
Phone: 202-267-3462

FAA Orders Inspections of Boeing 767 Elevator Mechanisms

WASHINGTON -- The U.S. Department of Transportation's Federal Aviation Administration (FAA) today ordered an inspection of Boeing 767 aircraft designed to see if any "shear rivets" in the elevator mechanism have broken.

These rivets are designed so that if a jam occurs in one part of the system, the force put in by the pilots can break the rivets and disconnect the jammed part of the system. This lets the pilots use the non-jammed system to continue the flight safely.

Today's airworthiness directive (AD) requires a functional check of the shear rivets on the elevator bellcrank assemblies to detect any problems with the rivets. The bellcrank, attached to a hydraulic power control actuator, is a device that helps move the elevators at the rear of the plane. Failed shear rivets on two or more bellcrank assemblies could produce abnormal elevator movements and consequent reduced controllability or loss of control.

If the inspection uncovers any problems with the shear rivets, operators must rework or replace the bellcrank assembly with a new or serviceable unit.

Operators must perform the bellcrank inspection within 30 days and report the results to the FAA within 10 days after the inspection is done. Approximately 322 U.S.-registered 767s are affected (797 worldwide). The FAA estimates the total cost to inspect the U.S. fleet at $77, 280.

The FAA has received no factual information that this condition is related to the EgyptAir 990 accident that occurred on Oct. 31, 1999. That accident, which involved a Boeing 767, is still under investigation.

The Airworthiness Directive is available at:
http://www.access.gpo.gov/su_docs/aces/aces140.html

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