NASA Langley Research Center's Boeing 737 research aircraft flies home after penetrating a wind shear over Orlando, Florida, during flight-testing of three advance-warning sensors. The sensors are designed to tell pilots when they are approaching a dangerous weather condition known as a microburst wind shear. A team of researchers from Langley Research Center, in Hampton, Virginia, conducted these demanding flight tests at Orlando International Airport in Florida, August 10th through 27th, 1992. The crews regarded these tests as the most intense and stressful flying of their careers. The flights included operations at very low altitudes (less than 1,000 feet) in severe weather conditions marked by frequent lightning, hail, heavy rains, turbulence and very limited visibility. Rapid maneuvering and real time reactions were required to measure and penetrate microburst phenomena that developed and disappeared in as little as ten minutes. Similar flights were also made from Denver's Stapleton Airport from July 13 to 24, 1992.

These successful flight tests ended in 1992, two years ahead of schedule. In the very near future, all airline passengers will travel with the threat of aviation's largest weather hazard effectively removed.

Because of rapid technology transfer from NASA's wind shear research flights to industry, dramatic improvements in flight safety are now resulting from new commercial airborne sensor systems. These systems detect hazardous wind changes miles ahead of an aircraft, allowing pilots to avoid the deadly threat. Airborne wind shear detection devices did not exist as little as a year ago - dramatic testimony to the effectiveness of the technology transfer effort. Prior to this work, wind shear was an invisible, lethal threat, contributing to 26 civil aircraft crashes and 500 deaths since 1964.

The windshear program is a joint NASA-Federal Aviation Administration research program to develop technology for the airborne detection of microburst windshear. A microburst is a localized, strong downdraft of air that can produce large and rapid wind speed and direction changes. These wind changes can result in a sudden loss of aircraft airspeed or altitude and are especially dangerous during takeoff and landing. The NASA effort is led by Langley Research Center.
NASA DEVELOPS WIND SHEAR SENSORS (continued)

Suggested 2-line Abbreviated Caption:

NASA Langley Research Center's Boeing 737 research aircraft flies home after penetrating a wind shear over Orlando, Florida, during flight-testing of three advance-warning sensors. As a result of this research, in the very near future, all airline passengers will travel with the threat of aviation's largest weather hazard effectively removed.

Caption provided by NASA Langley Office of Public Affairs
(804) 864-6124
FAX (804) 864-6333