

Final

TESTIMONY

SECRETARY OF TRANSPORTATION
FEDERICO PEÑA
HOUSE PUBLIC WORKS AND TRANSPORTATION COMMITTEE
SUBCOMMITTEE ON AVIATION

I am pleased to appear before this committee today to provide my vision of a truly revolutionary technological achievement which I believe will produce major benefits for the industry and commerce of the United States. As civil use experience with this technology develops, these benefits may extend to mass consumer markets affecting a large portion of U.S. households. Because of the nature of this technology, benefits have already been extended to the far corners of the world, extending the good will of the people of the United States in a way that was never before possible.

With me today to present detailed information on FAA's planning, research, and development for aviation use of the Global Positioning System (GPS) are Martin Pozeski, Associate Administrator for System Engineering and Development and Anthony Broderick, Associate Administrator for Regulation and Certification in the Federal Aviation Administration.

GPS, begun in the early 1970s, is a space-based positioning and navigation system. GPS signals are continuously available on a worldwide basis in any weather. The satellites are located 11,000 nautical miles above the earth. To access the system,

users have only to turn on a GPS receiver, like a normal radio, with the antenna exposed to the sky.

GPS provides the greatest opportunity to enhance the air navigation system since the introduction of radio-based navigation more than 50 years ago. The impact of satellite based navigation represents an enormous potential economic benefit to the U.S. aviation industry--perhaps billions of dollars a year. The civil use of GPS for oceanic and domestic en route flight offers significantly better navigation accuracy than previously possible. When combined with other systems, it will allow a pilot to fly an optimum route to a destination, subject only to weather and the presence of other aircraft. This optimum routing will provide considerable time and fuel savings in managing the rapidly expanding oceanic and domestic en route air traffic.

GPS has a wide range of applications in other transportation sectors. In the space program and the growing commercial space industry, GPS is used to satisfy positioning and timing requirements for earth-orbiting space systems, including Space Shuttle operations.

GPS will provide marine navigators with the first precise, worldwide, continuous positioning and timing service. As a result, commercial shipping will be safer, more efficient, reliable, and economical. GPS, augmented with differential signals, will satisfy the stringent marine accuracy requirements

for harbor and harbor approach navigation, that have previously been unattainable with other radionavigation systems:

Land applications of GPS are expected to comprise the largest category of GPS users. Although not traditional radionavigation system users, they are expected to employ various systems being developed to enhance the economic efficiency and safety of all land modes of transportation. Examples of applications are:

- Intelligent Vehicle Highway Systems (IVHS), will combine GPS with communications, controls, navigation, and information systems to improve highway safety, ease traffic congestion, and reduce harmful environmental effects.
- Vehicle tracking systems will use GPS for commercial and transit fleet management, hazardous material monitoring, tracking and controlling movements of railroad equipment, and automated dispatch of fire, paramedic and police units.
- GPS is also used in surveying, telecommunications and electric power synchronization, agriculture and forestry, census taking, meteorological radiosondes, and backpacking.

It is too early to say whether consumer markets will develop to the point where a GPS receiver is as common place as the radio receiver is now in private automobiles. However, it is clear that if such a market does develop, we are looking at very large numbers of installed units and individual users.

The U.S. Coast Guard has established a unit to provide support and assistance to civil users of GPS, including both transportation and non-transportation applications. The Coast Guard is also proceeding with research and development of implementation of GPS for marine users. The Coast Guard's efforts, along with those of FAA, are providing the leadership necessary to promote the full civilian use of this existing technology.

GPS was developed by the Defense Department at a cost approaching \$10 billion. Even before becoming operational, GPS proved its worth to the national defense in the Desert Storm operation. However, because of its potential value to civil users, and in recognition of the significant national security implications that may be associated with its widespread civilian availability, Secretary Aspin and I have formed a joint task force to investigate options for the future management of GPS. We want to ensure that the full potential civil benefits are, in fact, made available to the public, while preserving the national security advantages of GPS for military uses. I expect to receive the Task Force's recommendations this Fall.

I commend your interest in this important subject, Mr. Chairman, and we look forward to working with you to assure that the full benefits of GPS are rapidly made available to civil aviation and the entire transportation industry.