Boeing Celebrates 10th Anniversary of the World's Best-Selling Satellite Model

The Boeing Company [NYSE: BA] marks the 10th anniversary today of the Boeing 601, the best-selling geosynchronous communications satellite model that has powered revolutionary changes in the way people around the world communicate.

From providing the platforms that launched DIRECTV and the satellite television broadcast industry in 1994 to Navy UHF satellites that support military operations in Afghanistan today, Boeing 601s have proven their remarkable versatility again and again. Seventeen customers in nine countries have ordered a total of 84 Boeing 601s built by Boeing Satellite Systems, the satellite design and manufacturing arm of Boeing Integrated Defense Systems, and they continue to leave an enduring mark on the shape of today's world.

The first Boeing 601 communication satellite, Optus - B, rocketed into orbit on Aug. 14, 1992. This spacecraft owned by Optus Communications Pty., Ltd., provided the far-flung Australian community with a range of services that included direct broadcast television, voice communications, digital data transmission, high-quality television relays and centralized air traffic control services. In addition, Optus B introduced the first domestic, mobile satellite communications network to Australia.

Since then, customers around the world have depended on Boeing 601 spacecraft to deliver a similarly diverse array of commercial, civil and government satellite services for them.

"The 601 satellite line's flexibility and power give our customers the solutions they need to meet their individual requirements," said Randy Brinkley, president of Boeing Satellite Systems. "We designed and built the 601 spacecraft with close attention to the long-term strategic needs of customers in both the commercial and military worlds and they continue to evolve and perform to keep pace with those demands."

The Boeing 601 was introduced in 1987 to meet anticipated requirements for high-power, multiple-payload satellites for such applications as direct television broadcasting to small receiving antennas, very small aperture terminals for private business networks, and mobile communications. The basic configuration features as many as 48 transponders and offers up to 4,800 watts.

A more powerful version, the Boeing 601HP, made its debut in 1995. The Higher Power, or HP, versions can carry payloads twice as powerful as the classic Boeing 601 models and incorporate innovations such as gallium arsenide solar cells, and advanced battery technology. The 601HP features as many as 60 transponders and provides up to 10,000 watts of power.

The Boeing 601 satellite is a remarkably adaptable platform that can be configured with several types of antenna configurations that range from very simple reflectors systems to very complex, systems, such as the 15-foot diameter springback antenna aboard the NASA Tracking Data and Relay Satellite (TDRS) spacecraft. These steerable antennas can simultaneously transmit and receive in two different radio frequency bands, supporting dual independent two-way communication with the space shuttle, the International Space Station and dozens of unmanned scientific satellites in low earth orbit.

"The Boeing 601 satellite's biggest feature is its flexibility in support of multiple applications," said Art Rosales, Boeing 601 product manager for BSS. "For example, TDRS is a complex satellite with its large steerable antennas, which creates a very high demand on the control system to keep the spacecraft stable. Another example is the DIRECTV-4S spot beam antennas that enable local, customizable broadcasting. These antennas are fixed, but you have to have great pointing capability to keep the beams accurately pointed at all times."

Customers -- past and present

The Boeing 601 satellite continues to shape the world's communications environment for customers. The following is a partial list of Boeing 601 satellite customers and how their satellites have made history:

- Asia Satellite Telecommunications Company, Hong Kong SAR, China has acquired three AsiaSat satellites since 1996. AsiaSat 4 is currently being built at BSS and will be launched in 2003. The AsiaSat satellites are designed to provide broadcast, telecommunications and broadband multimedia services to the Asia Pacific region, and direct-to-home broadcast services to Hong Kong.
- SES ASTRA, Luxembourg has acquired eight ASTRA satellites since 1990. The Astra satellites provide direct-to-home reception, transmitting analog and digital TV and radio services as well as multimedia and Internet content to the Asia/Pacific region.
- DIRECTV, United States has acquired five DIRECTV satellites since 1994. DIRECTV-4S was launched in November 2001, making it Boeing's 200th commercial satellite launch.
- JSAT Corporation, Japan, has acquired five JCSAT satellites since 1993. The latest JSAT satellite, JCSAT-8, will provide coverage to Japan, East Asia, Australia and Hawaii. The satellite was launched on March 28, 2002 aboard an Ariane 4 rocket.
- ICO Global Communications, United Kingdom has acquired 15 ICO satellites since 1995. The satellites will be used in a

global satellite-based mobile communications system that will offer digital data and voice services as well as the satellite equivalent of third-generation (3G) wireless services, including wireless Internet and other packet-data services.

- Satmex, Mexico acquired one SATMEX satellite and two SOLIDARIDAD satellites since 1991. SATMEX 5, a Boeing 601HP body-stabilized satellite, was successfully launched on an Ariane rocket on Dec. 5, 1998. SATMEX provides fixed satellite services, and its satellite fleet includes Solidaridad 2 and Morelos II.
- PT Satelit Palapa Indonesia (SATELINDO), Indonesia acquired two Palapa-C satellites in 1993. The Indonesian satellites carry the name "Palapa," a word that signifies unity. The country has more than 13,000 islands, and satellites are the most efficient and effective way of uniting them with communications services. The coverage area includes not only Indonesia, but also Southeast Asia and parts of China, India, Japan, and Australia.
- PanAmSat Corporation, United States has acquired 17 Galaxy and PAS satellites since 1991. The PanAmSat satellites provide global video and data broadcasting services via satellite. PAS-5 was launched in August 1997, making it the first in the Boeing 601HP series to be launched. It is the first Boeing 601 with high-efficiency gallium arsenide solar cells.
- Space Communications Corp. (SCC), Japan has acquired three SUPERBIRD satellites since 1995. SUPERBIRD-6 is scheduled to launch in 2003. The SUPERBIRD satellites provide business telecommunication services in Japan.
- NASA, United States acquired three TDRS satellites in 1995 with the last in the series. TDRS-J scheduled to launch this Fall.
- U.S. Navy acquired 11 UHF Follow-On satellites since 1988. UHF-11 is scheduled to launch in 2003.
- NOAA/NASA, United States ordered up to four Geostationary Operational Environmental Satellites in 1998. This new generation of GOES satellites will provide more accurate location of severe storms and other weather phenomena, resulting in more precise warnings to the public. Atmospheric phenomena can be tracked, ensuring real-time coverage of short-lived dynamic events, such as severe local storms and tropical hurricanes and cyclones, two types of meteorological events that directly affect public safety, property, and ultimately, economic health and development. The GOES N and O satellites are currently being manufactured and will be available for launch in 2003 and 2004.
- Boeing Satellite Systems and Spar Aerospace Ltd. of Canada were selected in December 1990 to build two satellites for mobile communications services throughout North America. Boeing Satellite Systems provided the Boeing 601 spacecraft buses, and Spar was responsible for the communications payloads. American Mobile Satellite Corporation (now known as Motient Corporation) and TMI Communications and Co. Ltd. of Ottawa, Ontario, made the purchase jointly, though with separate contracts.
- In November 1993, APT Satellite Company, China, chose the Boeing 601 as its second satellite, APSTAR II, designed to bring television to nearly two-thirds of the world's population. The satellite had 26 active transponders of 52 watts in C-band, plus six 50-watt Ku-band transponders and two 120-watt Ku-band transponders. APSTAR II and its Long March 2E booster were destroyed during launch from China in January 1995.
- Hughes Global Services (HGS), a subsidiary of Hughes Electronics, made history in 1998 when it sent a stranded communications satellite around the moon. The spacecraft, originally called AsiaSat 3, was left in a lower-than-planned orbit because of a malfunctioning launch vehicle in December 1997. It was acquired by HGS and was renamed HGS-1.
- A Boeing 601HP satellite, Orion 3, was ordered in January 1997. Orion 3 was intended to expand Loral's fleet and be its first satellite to serve the Asia-Pacific region. The satellite was launched on a Delta III rocket in May 1999, but was stranded in an incorrect, low orbit.

A unit of The Boeing Company, Boeing Integrated Defense Systems, or IDS, is one of the world's largest space and defense businesses. Headquartered in St. Louis, Boeing Integrated Defense Systems is a $23 billion business. It provides systems solutions to its global military, government and commercial customers. It is a leading provider of intelligence, surveillance and reconnaissance; the world's largest military aircraft manufacturer; the world's largest satellite manufacturer and a leading provider of space-based communications; the primary systems integrator for U.S. missile defense; NASA's largest contractor; and a global leader in launch services.

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NOTE TO EDITORS: Photos for this news release are available upon request.

For further information:
Ronea Alger
office: (310) 364-7575
ronea.l.alger@boeing.com
Ann Beach
mobile: (562) 797-4222
ann.m.beach@boeing.com