Boeing Satellite Pioneer Harold Rosen Inducted to National Inventors Hall of Fame

Dr. Harold Rosen, a consultant and former 37-year Boeing [NYSE: BA] employee, is among 17 aviation and aerospace inventors being inducted into the National Inventors Hall of Fame on May 3 in Akron, Ohio.

Rosen was selected for his pioneering work developing the world's first 24-hour commercial communications satellite and his subsequent contributions to satellite communications. As a founder of the modern communications satellite industry, Rosen lead the team at Boeing Satellite Systems in El Segundo, Calif. that developed Syncom, the world's first synchronous communications satellite.

"Today's satellites that deliver video, voice and data communications to an information-hungry world are all descendants of Syncom, which Harold Rosen and his teammates built in 1963," said David Ryan, BSS vice president and general manager. "When Harold Rosen and his colleagues launched Syncom, they launched a revolution and changed the world."

From the early 20th century, theories held that an object placed over the equator at a height of 22,238 miles and a speed of 6,878 mph would match, or synchronize with, Earth's daily rotation. To a ground observer, an object in this orbit would seem to stand still, thus the term "geostationary."

In 1959 at BSS, Rosen and his team of Donald D. Williams and Thomas Hudspeth began work on a geostationary communications satellite. At that time, communications satellites used low orbits and huge swiveling ground antennas. Expensive tracking computers were needed to stay in contact with them during the brief time they raced overhead. In contrast, a synchronous satellite could communicate directly and continuously with any ground station in its line of sight, using fixed antennas.

While the first Syncom was destroyed shortly after launch, Syncom 2 successfully reached synchronous orbit over the Atlantic Ocean on July 26, 1963, and later that year relayed a live phone call between President John F. Kennedy in Washington, D.C., and Nigerian Prime Minister Abubaker Balewa in Africa. This was the first live two-way call between heads of state by satellite relay.

A third Syncom satellite brought U.S. viewers live coverage of the 1964 Tokyo Olympics. The Syncom satellites remained active through 1966, far exceeding their one-year design life. As more-capable successors joined them in space, they were decommissioned and retired in April 1969.

Reflecting on the significance of Syncom and the communications technologies it spawned, Rosen says he is proud to have played a role in creating the "global village."

"The whole world is much better connected now than ever before, and the effect has been to bring people closer together," said Rosen. "With hundreds of communications satellites orbiting the earth today, satellite communications is deeply woven into the fabric of modern life.

A unit of The Boeing Company, Boeing Integrated Defense Systems is one of the world's largest space and defense businesses. Headquartered in St. Louis, Boeing Integrated Defense Systems is a $25 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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