

Intelsat ocean,
permitting access by
a wide



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INTELSAT was the first truly global effort at uniting the world via communications from space. In 1964, 14 nations belonged to INTELSAT. The United States owned 53 percent of the corporation and the remaining participating countries owned 47 percent.

By 1975, the United States ownership dropped to 33.5 percent as additional countries saw the advantage of participating in the international venture and bought shares of the organization. By 1980, 105 countries held shares in INTELSAT.

The first satellite launched by this unique corporative venture was INTELSAT-1, better known as Early Bird. On April 16, 1965, it was placed into orbit, carrying 240 circuits for continuous telephone service between Europe and North America. Early Bird was cylindrical in shape, measuring 0.72 meter width into 0.59 meter height with a mass of 39 kg and utilized solar cells wrapped around its exterior to generate 40 watts of electrical power. Early Bird was designed to have an operational life of 18 months although it remained in service for about four years. On October 27, 1966, INTELSAT-2, a larger and more powerful version of its predecessor, was launched. It weighed 86 kg, generated 75 watts of solar power, its price per circuit came down from \$30,000 to \$10,000, making it a much more feasible venture in which even the poorest Third World countries could participate.

INTELSAT-2 was the first commercial communication satellite employed over the Pacific Ocean, permitting access by a wide range of stations in the Northern and the Southern hemispheres rather than only the two Northern hemispheres linked by the Early Bird. The international communication

satellite is really international, “ It knows no geographical boundary, is dependent on no cable, and knows allegiance to no single language or political philosophy. Man now has it within his power to speak directly to his fellowmen in all nations.” With the launching of INTELSAT-3 in 1968, satellite communication capacity jumped to 1, 500 telephone circuits and up to four television channels. The power increased to 120 watts and the cost per circuit dropped to \$2, 000. While previous satellites in the series used an omni-directional antenna, which misdirected much of their power into space, INTELSAT-3 relied on a mechanically despond horn antenna, which pointed upward into elliptical reflector mounted on a movable turntable so that it radiated information only toward the earth. That was a major breakthrough in increasing satellite longevity, a necessity required to meet the satellite’s proposed five-year long life span. The unique design worked so well that in 1969, INTELSAT- 3 was to relay data from trekking stations on earth when man landed on the moon.

Next in the INTELSAT series was the 1971 launching of INTELSAT-4 with 4, 000 telephone circuits or two colour television circuits (or a combination of the two). The drum like body of the satellite measured 2. 38 m by 2. 38 m. The antenna raised another 2. 46 m and like that on fINTELSAT-3 was despond. INTELSAT-4 with a design life of seven years, weighed a whopping 719 kg and was upgraded by INTELSAT-4A four years later.

The 4A had an increased capacity of six thousand telephone circuits or two television channels white holding the cost per circuit to one thousand dollars. Both the 4 and 4A were the first INTELSAT satellites to be lifted into the orbit on the larger and more capable Atlas- Centaur launch rockets, instead of the <https://assignbuster.com/intelsat-ocean-permitting-access-by-a-wide/>

Thor- delta family of launch vehicles used with earlier satellites. In 1980, the first of the INTELSAT series was launched. It broke with tradition by utilizing a three-axis stabilized construction rather than the spin-stabilized system of earlier INTELSAT. While that meant the use of more complex altitude controls, the payoff came with the requirement for fewer than half the solar cells. The reason is that fewer than half the cells on drum-type collectors receive the sun's illumination at any given time. The first panels on INTELSAT-3 were constructed to be repositionable so that they always faced the sun.

INTELSAT was unique, also, in that it had 12, 000 circuits and two colour television channels aboard. It weighed more than one ton at 1. 000 kg and was launched into orbit by an Atlas-Centuar rocket. While later satellites in the five series were scheduled to be launched space by the space shuttle.

By fall of 1977, 27INTELSAT satellites had been launched, 21 of which achieved operational status, with the rest falling victim to various launch vehicles or stage malfunctions. While INTELSAT was enjoying enormous success in the field of communication satellites, it was by no means the only satellite system in operation.