

AFD Ep 435 Links and Notes - Telstar [Bill/Rachel] - Recording July 17, 2022

[Special Outtro: "[Telstar](#)" by The Tornados, recorded July 22, 1962 and released in August 1962]

John F. Kennedy Telstar Press Conference (July 23, 1962) Audio & Transcript Available Here:

<https://www.jfklibrary.org/archives/other-resources/john-f-kennedy-press-conferences/news-conference-39>

- Intro: As we briefly mentioned last week in our episode on [Western Union](#), Telstar was a series of communications satellites jointly owned by AT&T, Bell Telephone Laboratories, NASA, GPO (the UK's state communications firm), and the National PTT (France's state communications firm). Telstar 1 and 2, the first-generation Telstar satellites, had a great deal of significance at the time, not just culturally but politically and economically, even if they were short-lived. It's the space race era equivalent of the short-lived first [transatlantic telegraph cable](#) in 1858, which sputtered out after 3 weeks. Kind of a proof-of-concept over a few brief months for changing the time-space relationship of certain economic communications – not because there wasn't already reliable live communications access across the Atlantic, but because this allowed for live television broadcasts across the ocean, including perhaps most significantly live broadcasts from the American Presidency to other parts of the world.
- https://en.wikipedia.org/wiki/Telstar#In_service
- https://en.wikipedia.org/wiki/Telstar_1
- https://en.wikipedia.org/wiki/Telstar_2
 - Telstar wasn't the first communications satellite. That distinction belongs to the US Army satellite, SCORE (Signal Communications by Orbiting Relay Equipment), which launched December 18, 1958. It transmitted a Christmas message from President Eisenhower via shortwave radio through an on-board tape recorder, the first transmission of a human voice from space.
 - Telstar 1 launched July 10, 1962. It had the capability to transmit live television signals between the United States and Europe. The first image - the flag flying at Andover Earth Station, in Andover, Maine - was transmitted to Pleumeur-Bodou (the French station) just one day after launch. This footage was not transmitted to the general public.
 - Data transmissions were restricted to 30 minutes, since Telstar 1's medium earth orbit limited simultaneous visibility of the ground stations on either side of the Atlantic Ocean.
 - *Almost two weeks later, on July 23, at 3:00 p.m. EDT, it relayed the first publicly available live transatlantic television signal. The broadcast was shown in Europe by Eurovision and in North America by NBC, CBS, ABC, and the CBC. The first public broadcast featured CBS's Walter Cronkite and NBC's Chet Huntley in New York, and the BBC's Richard Dimbleby in Brussels. The first pictures were the Statue of Liberty in New York and the Eiffel Tower in Paris. The first broadcast was to have been remarks by President John F. Kennedy, but the signal was acquired before the president was ready, so engineers filled the lead-in time with a short segment of a televised game between the Philadelphia Phillies and the Chicago Cubs at Wrigley Field. The batter, Tony Taylor, was seen hitting a ball pitched by Cal Koonce to the right fielder George Altman. From there, the video switched first to Washington, DC; then to Cape Canaveral, Florida; to the Seattle World's Fair; then to Quebec and finally to Stratford, Ontario. The Washington segment included remarks by President Kennedy talking about the price of the*

American dollar, which was causing concern in Europe. When Kennedy denied that the United States would devalue the dollar it immediately strengthened on world markets; Cronkite later said that "we all glimpsed something of the true power of the instrument we had wrought."

- That evening, Telstar 1 also relayed the first satellite telephone call, between U.S. vice-president Lyndon Johnson and the chairman of AT&T, Frederick Kappel. It successfully transmitted faxes, data, and both live and taped television, including the first live transmission of television across an ocean from Andover, Maine, US, to Goonhilly Downs, England, and Pleumeur-Bodou, France. (An experimental passive satellite, Echo 1, had been used to reflect and redirect communications signals two years earlier, in 1960.) In August 1962, Telstar 1 became the first satellite used to synchronize time between two continents, bringing the United Kingdom and the United States to within 1 microsecond of each other (previous efforts were accurate to only 2,000 microseconds).
- The Telstar 1 satellite also relayed computer data between two IBM 1401 computers. The test, performed on October 25, 1962, sent a message from a transmitting computer in Endicott, New York, to the earth station in Andover, Maine. The message was relayed to the earth station in France, where it was decoded by a second IBM 1401 in La Gaude, France.
- Telstar 1, which had ushered in a new age of the commercial use of technology, became a victim of the military technology of the Cold War era. The day before Telstar 1 launched, a U.S. high-altitude nuclear bomb (called Starfish Prime) had energized the Earth's Van Allen Belt where Telstar 1 went into orbit. This vast increase in a radiation belt, combined with subsequent high-altitude blasts, including a Soviet test in October, overwhelmed Telstar's fragile transistors. It went out of service in November 1962, after handling over 400 telephone, telegraph, facsimile, and television transmissions. It was restarted by a workaround in early January 1963. The additional radiation associated with its return to full sunlight once again caused a transistor failure, this time irreparably, and Telstar 1 went back out of service on February 21, 1963.
- Telstar 2 was virtually identical to Telstar 1. The main difference was that Telstar 2 also carried scientific equipment to measure the proton and electron distribution of Earth's Van Allen belts. These data were transmitted via its microwave telemetry system; this system stayed active after Telstar 2's VHF transmitter was turned off after 2 years of service, in 1965. Much like Telstar 1, Telstar 2's transmissions were limited to the 30 minutes of its 3:45 period when both the receiving and transmitting ground stations were visible.
- Experiments continued, and by 1964, two Telstars, two Relay units (from RCA [see Episode 356 from Mar. 2021 for more discussion on RCA]), and two Syncom units (from the Hughes Aircraft Company) had operated successfully in space. Syncom 2 was the first geosynchronous satellite and its successor, Syncom 3, broadcast pictures from the 1964 Summer Olympics in Tokyo. The first commercial geosynchronous satellite was Intelsat I ("Early Bird") launched in 1965.
- Subsequent waves of Telstar satellites were launched starting two decades later in 1983. They were far more advanced commercial geosynchronous satellites, and shared little in common with the first generation of Telstar other than the name. The most recent Telstar satellite, Telstar 19V, was launched July 22, 2018, on a SpaceX Falcon 9 rocket.
- https://airandspace.si.edu/collection-objects/communications-satellite-telstar/nasm_A20070113000 [pictures included]

- <https://www.intelsat.com/about-us/our-story/>
 - Implications of Telstar: *Telstar was one of the most significant communications satellites of the early space age. It raised an important policy question: Should communications satellites be operated and controlled by private corporations or under government auspices? The United States chose government direction and created two new institutions, COMSAT and INTELSAT, to develop satellite communications, an arrangement that lasted for more than two decades.*
 - Today COMSAT/INTELSAT is a private company headquartered in Herndon, VA, owned by Satcom Direct. It was privatized in 2001, after 37 years as an intergovernmental organization.