

# SATELLITE MISSION CONTROL CENTER



Boeing's Space and Intelligence Systems opened the doors to its new, state-of-the-art Mission Control Center (MCC) in August 2008. Built within walking distance to Boeing's satellite factory, known as the Satellite Development Center in El Segundo, Calif. the MCC is an integral part of Boeing's partnership with its satellite customers and its continuing commitment to mission support for every satellite designed and delivered by Boeing.

The MCC is where Boeing's satellite flight operations are conducted. Starting with launch, the MCC supports the customer through on-orbit satellite system deployments, on-orbit check out, testing, customer handover, and post hand-over customer support. The MCC is the epicenter of satellite operations in support of customers throughout the world.

Beginning with the 1963 launch of Syncom-2, the world's first geosynchronous communications satellite, Boeing has consistently expanded its product offerings, satellite capabilities, and service to customers. Boeing specializes in geosynchronous satellite systems, which include spacecraft positioned 22,300 miles above the equator.

Built at a cost of \$10 million, the 20,500 square-foot MCC consists of four control suites, three named in honor of the satellite pioneers who designed the Syncom satellites, Thomas Hudspeth, Dr. Harold Rosen, and Donald D. Williams. The suites enable Boeing to conduct four satellite missions simultaneously. Approximately 120 engineering workstations support satellite operations in the following areas:

- Monitoring satellite health and safety
- Conducting orbital maneuvers to place the satellite in its final orbital position
- Delivery of all commands sent from the ground to the satellite
- Linkage to ground stations that support the satellite mission
- Verification and validation of all satellite systems
  - Bus
  - Payload
- Placing the satellite into its final configuration for customer operations
- Providing on-orbit station keeping control

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Boeing first provided mission control services in 1982, and since then more than 120 satellite missions have been conducted by Boeing's highly experienced fleet personnel. Designed to support both government and commercial satellite missions, Boeing's MCC provides program support to systems such as NASA and NOAA's Geostationary Operational Environmental Satellites, DIRECTV, SES-Americom, XM Satellite Radio, Thuraya, NASA's Tracking and Data Relay Satellites, and JCSAT --- systems that supply services such as weather tracking and prediction, direct-to-home television broadcasts, mobile telephony, and a variety of business applications.



Hubbed through new network and communication rooms, the Boeing MCC is capable of connecting ground stations around the globe for use in post-

launch operations. Seamless communication to and from a variety of ground stations, located in the United States, Italy, South Africa, Canada, Indonesia and Australia support monitoring satellite health and conducting spacecraft operations from the Boeing MCC to the satellites in orbit.

Boeing's commitment to customers is 24-7. At any time, Boeing satellite experts are available for mission support to any owner or operator of a Boeing satellite. As the command center, the MCC provides vital system data and status so that Boeing can assist customers with analyzing and interpreting the status of the spacecraft.



From satellite design, manufacturing, delivery and operation, Boeing provides a vital communications link to customers around the world. A state-of-the-art factory, coupled with one of the

most capable MCCs ever built, enables Boeing to meet its commitment to customers by providing satellite-based services that entertain, protect, and inform.

