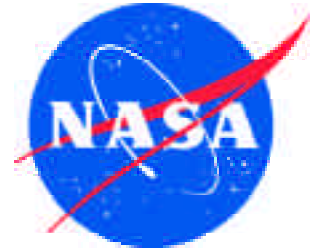


NASA Facts

National Aeronautics and
Space Administration



Dryden Flight Research Center

P.O. Box 273
Edwards, California 93523
Voice 661-276-3449
FAX 661-276-3566
pao@dfrc.nasa.gov

FS-2005-08-088 DFRC

Test Range Support for Space Shuttle

The Western Aeronautical Test Range (WATR) at NASA's Dryden Flight Research Center re-sides on the Edward Air Force Base complex and supports all segments of the Space Shuttle program, including launch, on-orbit, and landing phases of each mission.

The WATR Aeronautical Tracking Facility (ATF) provides telemetry, radar, voice communication, and video support of Shuttle and International Space Station (ISS) activities to NASA's Johnson Space Center (JSC).

The radar systems track every Shuttle orbit above five degrees in our airspace from launch to landing, relaying time-space positioning information. The radar systems also track the ISS from the day prior to the launch and throughout the Shuttle mission to provide critical docking and un-docking information.

The WATR telemetry systems provide downlinked orbiter health and status information to JSC and, when available, the pilot's point of view (PPOV) video that is sent to the NASA network via satellite. When required, the telemetry systems also have the capability to provide uplinked com-mand data to the orbiter.

The WATR communications facility provides voice communication circuits between the various NASA centers and DOD facilities throughout each mission. While the NASA Tracking and Data Relay Satellite System (TDRSS) provides the orbiter's primary voice communication link, the WATR facility provides backup support for TDRSS should a failure occur during the Shuttle mission. In addition, the WATR communications facility becomes the primary means of communication support should the Shuttle be diverted to Edwards for a landing.

Additional WATR support provided during an Edwards landing include long-range optical cameras and video vans for video coverage and the Mission Control Center (MCC) that offers key support personnel a location in which to coordinate and monitor landing activities. All crucial WATR areas have incorporated uninterrupted power systems (UPS) as well as backup generator services should Dryden experience a commercial power failure during Shuttle activities. In addition, contractor maintenance personnel are on sight to monitor the backup power systems and provide any emergency services required during critical shuttle operations.