



TACSAT-3



WALLOPS FLIGHT FACILITY

Wallops Research Range is America's oldest continuously operating rocket launch range and has been in service for more than 60 years. Through its history, the Range has supported more than 16,000 flight events. Initially established to support the Langley Aeronautical Laboratory for missile research, NASA's only launch range is a unique and valuable asset that provides services to all of NASA's Mission Directorates, the Department of Defense, and other agencies such as the Aerospace Industry and Academia. For the TacSat-3 launch, the Range will provide a full suite of launch support services to protect the public and meet Air Force requirements for data, logistics, safety, and ground support services.

Range Control Center

The Range Control Center is the heart of launch operations. The NASA Test Director, Project Manager, and Range Safety Officer, as well as the rest of the joint operations team, use a full suite of data and display systems to monitor and control all launch activities



Payload Processing Facility

The Range has a variety of payload and vehicle integration and processing facilities located on Wallops Island and the Wallops Main Base. These facilities enable final launch site assembly and checkout of the spacecraft and vehicle motors prior to staging on the wide variety of launchers and launch pads.



Surveillance

Surveillance of land, sea, air, and Radio Frequency (RF) is achieved through the use of special aircraft, radars, video cameras, visual spotters, and frequency spectrum monitors. Prior to launch, Range safety zones must be cleared. RF monitoring is necessary to ensure communications with the vehicle are reliable.



Vehicle Tracking and Communications

High performance radar and telemetry systems support the launch and tracks the position of the vehicle from liftoff until orbit insertion. The precision radar systems track the position of the vehicle down to the meter accuracy. The telemetry systems also provide data communications necessary to monitor the health and status of the vehicle and spacecraft.





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Command Systems

Command destruct systems are utilized as part of Range Safety. The Range Safety Officer (RSO) operating from the Range Control Center, ensures all safety criteria are met prior to and during the launch. Through these systems, the RSO has the capability of destroying the vehicle if necessary.



Meteorological Services

Wallops meteorological systems will provide atmospheric monitoring for the TacSat-3 launch. Highly sophisticated radars, sensors, and forecasting systems enable the local meteorologists to report current conditions and report when conditions exceed launch constraints.



Down Range Sites

Two down-range tracking sites are supporting the TacSat-3 launch — Coquina and Antigua. At Coquina, located on the Outer Banks of North Carolina, Wallops deployed mobile radar, telemetry, and command systems. The Coquina location provides an alternative look angle at the vehicle during flight. This angle is necessary when plume attenuates the RF signal necessary to track the vehicle. Radar and telemetry systems at Antigua will also track the vehicle as the spacecraft achieves orbit.



Optical & Photo Systems

High speed camera and optical tracking systems capture the vehicle at liftoff and during flight. Video and pictures from these systems are analyzed post launch if an anomaly occurs.

