

The Sea Range is the world's largest instrumented over-water range encompassing up to 36,000–220,000 square miles. It provides extensive test and training capabilities for the U.S. Navy and allied forces. The range is uniquely situated with a highly instrumented coastline and off-shore islands, full-service military airfields, target and missile launch facilities, data collection and surveillance aircraft, and an experienced staff of technical personnel. The Sea Range is capable of complex, multi-participant, multi-target operations in dense electronic-combat environments with multi-service, multi-national forces.

Program Support

- From small-scale static tests to complex multi-participant environments
- Coordinated air, surface, and submarine operations including carrier strike group exercises
- Submarine-, surface-, and air-launched cruise weapons (ship and land-attack)
- Long-range, large hazard pattern weapons and experimental vehicle testing
- Intercontinental ballistic missile (ICBM), missile defense, and polar-orbit satellite launch
- Littoral operations
- Joint engagement zone scenarios
- Multi-service, multinational T&E and training exercises
- Directed energy testing
- Threat and target operations provide T&E for literally all Navy targets
- Unmanned systems



Unique Features

- Enormous geographic diversity includes the ocean, deep water ports, and protected islands all within the W-289 warning area
- Point Mugu's targets complex is the only facility to provide full life cycle support for all Navy aerial and surface targets
- A unique IR-200 Federal Aviation Administration (FAA)-approved flight route for cruise missiles joins the Sea Range with the 20,000-square-mile Joint Service Restricted Airspace Complex, R-2508, located at China Lake
- The Sea Range enjoys excellent weather for year-round testing



- Port Hueneme, five miles northwest of Point Mugu, is the only deep-water harbor between Los Angeles and San Francisco
- San Nicolas Island (SNI), 60 miles off the shore, is highly instrumented, owned by the Navy, and has a 10,000-foot runway, ordnance and launch capabilities, and is ideal for littoral warfare training
- The combination of location, extensive instrumentation capacity, over-the-horizon command and control (C²), unique test capabilities, and a highly skilled, experienced technical work force provides a realistic sea / air environment for conducting large, integrated joint test and evaluation and training exercises with integrated subsurface, surface, and air coverage
- Laguna Peak supports command and destruct capabilities for ICBM and Polar satellite launches

Size / Description / Scope. The shoreline area extends from Big Sur south to the United States / Mexico border. The main base at Point Mugu consists of 4,500 acres, support facilities, and instrumentation. Point Mugu is located on the Southern California coast, approximately 65 miles northwest of Los Angeles. It is in the southeastern corner of the Oxnard Plain in Ventura County, where the plain, the sea, and the Santa Monica Mountains meet. Point Mugu facilities are hosted by the Naval Base Ventura County (NBVC).
Annual Test Events: 1,500. **Annual Training Sorties:** 29,000+.

Facilities

A few major facilities include the Sea Range Operations Center, Interoperability Test and Experimentation Center (ITEC), Airborne Electronic Attack Facilities, Electronic Combat Simulation and Evaluation Laboratory, Radar Reflectivity Laboratories, Port Hueneme, Threat and Targets, SNI, and extensive facilities for advanced EW T&E. (See individual Quick Facts on each facility.)



Sea Range Operations Center. The Operations Center includes reconfigurable control rooms for live assets and simulations and new unmanned aerial vehicle (UAV) / targets control and air space surveillance facilities. The Operations Center is the hub of Sea Range test activities. It houses the test management staff that serves as the customer's single point of contact for planning and scheduling any test or training event on the Sea Range. The Center encompasses 30,000 square feet (SF) at Point Mugu for testing, training, and experimentation.



Interoperability Test and Experimentation Complex (ITEC). ITEC serves as a primary test control center for distributed live / virtual / constructive (LVC) test events in addition to supporting command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) system tests on the Sea Range. ITEC provides a collection of hardware and software tools, skilled operators, and network connectivity in support of mission-level testing involving tactical data links, digital C² messages, and digital intelligence.

ITEC conducts test and training events across Army, Navy, Marines, Air Force, and Joint Interoperability Test Command (JITC) facilities for the purpose of interoperability evaluation. ITEC identifies battlespace interoperability problems before a new system or system-of-systems is introduced to the joint battlespace. This 2,100-SF control room links command, control, communications, computers, and intelligence (C⁴I) systems during live-fire and simulated test events in a controlled, monitored range environment. ITEC consists of a fixed-site facility at Point Mugu as well as the network infrastructure necessary to coordinate and execute large-scale exercises at the Sea Range and across distributed sites. The facility opened in 1984.

Equipment / Instrumentation / Data Products

The Sea Range provides a full suite of instrumentation, including radar; telemetry; photo-optics; and video, sea, and air surveillance; voice communications; data processing; and displays. TSPI, telemetry, communications, and geophysics support are available. All data entering the range data system are available for real-time display and can be recorded for post-mission use. An extensive library of data products is available on almost any digital media.



Overlapping instrumentation coverage is accomplished from sites located at Point Mugu, Laguna Peak, SNI, Santa Cruz Island (SCI), Vandenberg Air Force Base (VAFB), and Pillar Point. Ground-based assets are augmented by airborne instrumentation on NP-3D Orion aircraft to ensure effective data collection. Dedicated high-speed data links enable real-time data transfer between Point Mugu and ranges and laboratories at China Lake, VAFB, and Edwards Air Force Base. Real-time data transfer between almost any other facilities may also be established.

Airfields. The primary runway is 11,000 feet by 200 feet. The secondary runway is 5,500 feet by 200 feet. A third runway, at SNI, is 10,000 feet by 200 feet. All runways are lighted and equipped with arresting gear and have ground control approach instrumented landing systems (ILSs). Aircraft parking with tie down capability is also available. The runways and taxiways safely handle most operational models of military aircraft. (See separate Airfield Facilities Quick Facts.)

San Nicolas Island (SNI). SNI serves as a cornerstone supporting a wide variety of T&E and training operations, including surface-to-air, surface-to-surface, air-to-air, air-to-surface, missile defense, fleet training, and large-scale complex warfare exercises. SNI is located in the Pacific Ocean off the coast of Southern California, 60 miles south of Point Mugu. Approximately 9 miles long and 3 miles wide, the 14,562-acre island has been owned by the Navy since 1933.



Frequent T&E Interaction with Other Commands and Facilities

Laguna Peak. Laguna Peak provides optics coverage, telemetry, airborne and surface target control, radio communication and data transmission, surveillance radar, and Command Transmitter System (CTS) for command and destruct. It provides elevated line-of-sight location for overlapping coverage of the entire Sea Range. Laguna Peak is a primary CTS site for all ballistic missile launches from VAFB and supports command / destruct capabilities for ICBM and Polar satellite launches.

Port Hueneme (PH). The Point Mugu Seaborne Targets Team is located at PH, and this function supports approximately 3,000 operations annually including more than 6,000 actual target presentations or sorties. Port facilities provide surface craft used as seaborne targets, boats used for aerial target recovery, vessels to enforce security and safety zones, and other specialized functions. In addition, PH facilitates Point Mugu testing regarding the Self-Defense Test Ship, Aegis Combat Systems, and the Surface Warfare Engineering Facility (SWEF). PH also hosts commercial shipping activities available for program logistics and to supply offshore islands. The port falls under the cognizance of the NBVC Naval Surface Warfare Center.



Santa Cruz Island (SCI). SCI is located within the Sea Range, 25 miles west of Point Mugu. The Navy leases a mountain top for an instrumentation complex, which is housed on a 10-acre parcel and includes barracks, a power plant, a fire station, and a heliport. Instrumentation includes surface surveillance radar, meteorological equipment, and secure radio communications. There is a microwave relay to and from VAFB, Laguna Peak, and SNI. Most of the island is owned by the Nature Conservancy and the National Park Service.