Electronic Combat Range

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History

The Electronic Combat Range (ECR) was established in 1967 and originally known as the Electronic Warfare Threat Environment Simulation (EWTES). It was established in a response to an urgent Vietnam wartime need for realistic pilot training.

Electronic Combat Range

ECR is the Navy's principle open-air range for the test and evaluation of airborne electronic combat systems. ECR supports a combination of land and naval systems (littoral threat). The ECR provides engineering support, developmental and operational testing, analysis and training resources for users of systems that counter or penetrate air defenses.

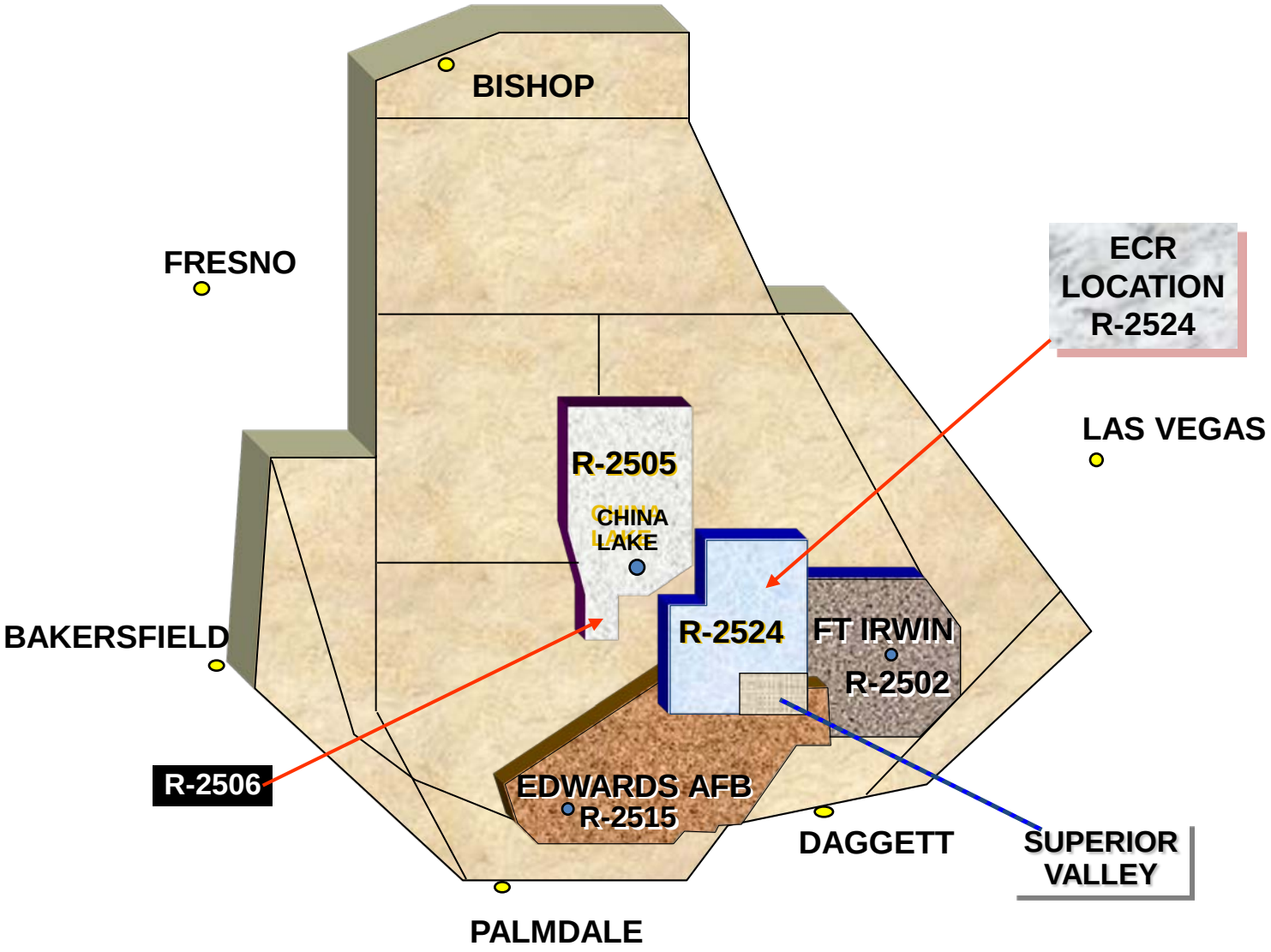
ECR has the capability to support Top secret and special-access level security missions with minimum electromagnetic interference.

Location

ECR is part of the NAVAIR Land Ranges and is physically located in California at China Lake's South Range.

It is comprised of 1,200 square miles of restricted airspace overlying 900 square miles of Navy land which offers ample room for either single or multiplatform events.

R-2508 Airspace



Mission

Provide a realistic electronic combat environment including threat systems; operations and range control; instrumentation; Time, Space, Position Information (TSPI), telemetry, optical and communications; data processing and display systems; signal monitoring, calibration of systems and threat assessment.

Developmental Test & Evaluation

ECR offers a wide variety of threats, to include simulators, surrogates and actual systems all providing a threat-rich environment. Open-air hardware-in-the-loop testing at the ECR helps bridge the gap between laboratory and open-air testing.

A broad range of EW technologies are offered: pulse, continuous wave, Doppler and multispectral. Test emitter spectrums include infrared, radio frequency, electro-optical, and millimeter wave.

Types Of Testing

Electronic countermeasures (ECM) effectiveness, Radar Warning Receiver (RWR), Unmanned Aerial Systems (UAS), expendables – chaff and flare effectiveness, towed and air launch decoy testing, Anti-radiation missile (ARM) flight testing to evaluate seekers and avionics, tactics development, training.

Equipment / Instrumentation / Data

Scope video, boresight video, display video, radio recordings, crew hot mike recordings, digital data, raw unprocessed data, sorted corrected data (wild point flags and sorted by time).

Slate Range Facility (SRF)

Located on the Slate mountain range overlooking most ECR sites at 4,700 feet. The site aligns threat radars to a single point, and is an important element in the certification of ECR systems. SRF includes a static target performance exerciser (STARPEX), which provides beacon and radar calibration support for daily operational readiness exercises in test preparation. SRF also provides moving targets that simulates aircraft motion for electronic countermeasure devices.

UAS Facility

Working towards bringing more UAS work to ECR with a new facility and adding the capability of launch and recovery. Concurrent operations are possible with other Electronic Warfare (EW) missions via altitude separation.

Test Management Function

- Initial contact with the range
- Help design Test Plan if unknown
- Set up test and introduce you to the range and how it works to include data products
- Help put together runsheets
- With you until completion of your program

Planning Time Line

- -6-12 Months
  - Customer/ECR Planning
    - Radar/System Requirements, SRF (Slate Range Facility) Requirements, Data Requirements, Number of Flights and Flight hours
    - Network Connectivity Issues, IT Assets require planning
    - Ordnance: Chaff, Flares, Weapons, etc.
  - Long Range Schedule Input
- -3 Months
  - Formal Estimate
    - Current Year $$$
  - Frequency Authorization Submittal (if required)
    - New emitters
    - Telemetry Frequencies
    - Change in the EA Approval
- -3 Weeks
  - Funding on Station
  - Test Plan on Station
    - 3960.4B if Developmental Testing
    - Operational Testing does not require test plan
    - ROEs (Rules of Engagement) established for radars

Time Line (continued)

- -2 Weeks or more
  - Test Plan Approval
- -1 Week
  - Firm Schedule
- -2 Days
  - Run Sheets / Scripts
- 0 Day
  - Test Conduct
  - DVD Videos available 15 minutes after completion of test
- +1 Working Days (Dependent on Amount of Data)
  - Quick Look Data (Non QA'd) may help make decisions for customers flying more then once a week
- +5 Working Days (As Negotiated)
  - QA'd Data Products Delivery

Questions?