

Barber's Point



Mission

Provide electromagnetic systems test and evaluation services to afloat and shore commands:

- For the development of new and upgraded systems
- To validate system performance following new construction and overhaul
- To provide real-time assessment of material readiness in an operational environment



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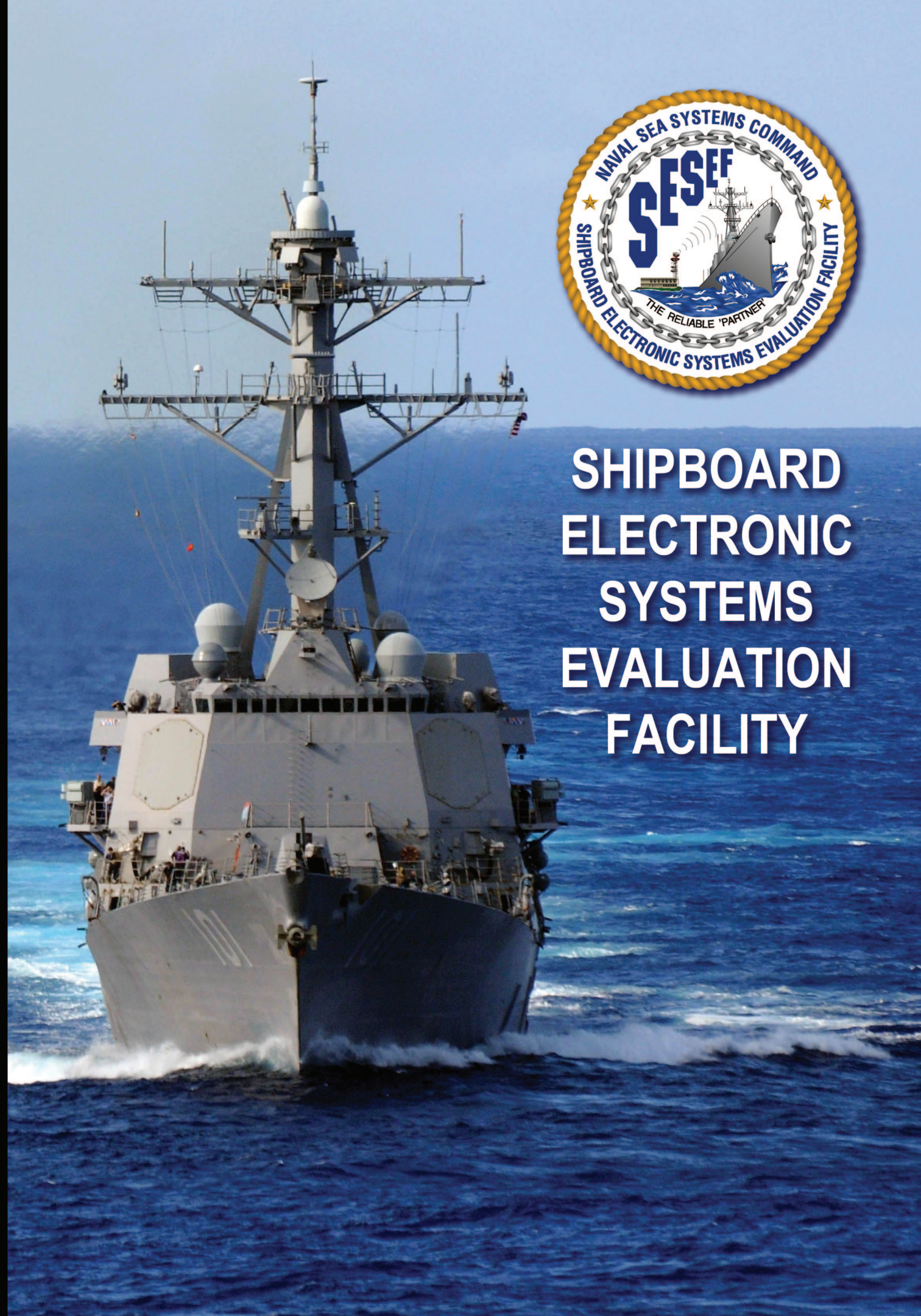
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NAVAL UNDERSEA WARFARE CENTER DIVISION NEWPORT



**SHIPBOARD
ELECTRONIC
SYSTEMS
EVALUATION
FACILITY**

Background

The Shipboard Electronic Systems Evaluation Facilities (SESEFs) are land based test sites established to facilitate testing of ship's electromagnetic transmitting and receiving equipment. The SESEFs provide test and evaluation services to U.S. Navy, U.S. Coast Guard and Military Sealift Command activities as well as allied foreign navies. SESEF is the Navy's most efficient, cost effective "reliable partner" for development and operational testing of shipboard electromagnetic systems, including:

- Search and Fire Control Radars
- Identification Friend or Foe (IFF) Systems
- Navy Data Link Systems
- Communication Systems
- Electronic Warfare Systems
- Combat Direction Funding (DF) Systems

The SESEF sites were established in the 1950's to provide naval shipyards with the means to assess the material readiness of shipboard systems following post-industrial availabilities. The role was expanded to include equipment/system engineering and development support and Fleet operational readiness evaluations, now the major emphasis of the current workload. With a focus on keeping pace with the evolving electronics technology of shipboard equipments, a formal upgrade program was established in 1987. As a result, the improved SESEF test capabilities have significantly reduced the required test time for ships on-station, and greatly increased the diversity and scope of systems which can be tested.

Objectives

The overall mission is to provide Navy and DoD engineering activities and the Fleet with a dependable and technically capable source for real-time comparative signal analysis in an operational environment. Specific objectives of the SESEF Program include:

- Validating engineering designs by verifying conformance of ship test results to engineering design and model range data for new and upgraded systems.
- Determining system operational performance and material readiness following new construction and overhaul.
- Supporting INSURV testing during Acceptance Trials, Final Contract Trials, and Material Inspections.
- Identifying and assisting in correction of deficiencies in the ship's Combat Systems electronic suite to optimize material readiness.
- Providing electromagnetic signature engineering data for the analysis of shipboard systems.

Capabilities

As directed by NAVSEA and with the strong support of various Fleet commands, a complete array of electromagnetic testing capabilities is available at the SESEFs. Emphasis is placed on providing real-time data analysis while reducing on-station testing time for Fleet units. SESEF sites are manned as required to support Fleet and testing schedules with on-call operations available. Testing is scheduled by the engineering activity, ship or Fleet command with the desired SESEF location. Current SESEF capabilities can be categorized in the following groups:

- Quick-Look Operability Tests
- System Performance Testing

Quick-Look Operability Tests

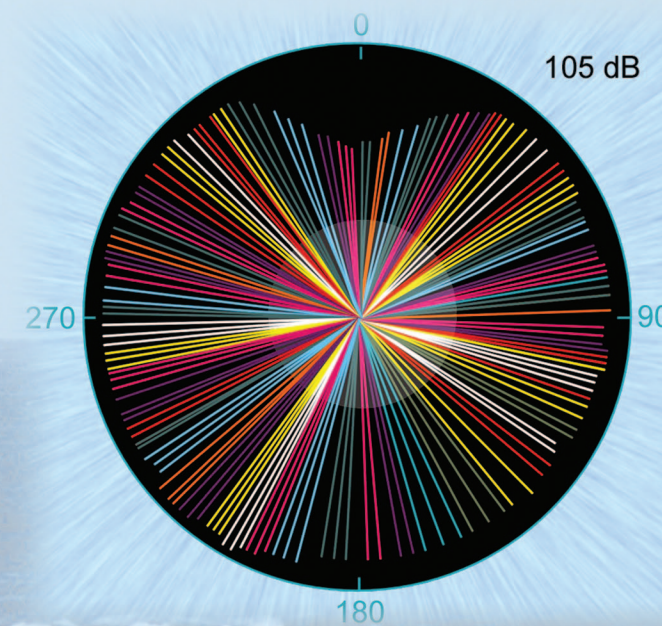
Quick-Look tests are conducted on ship's systems where no prior scheduling, advance notification or special ship maneuvering is required. These tests evaluate operability and measure signal quality and parameter conformance to prescribed specifications and can be conducted on range or in port. Tests may be combined to provide the ship with a full-up Combat Systems "Quick-Look" evaluation. Test duration is variable and dependent upon the number of systems to be tested, and the depth of testing required. Quick-Look testing can be performed on the following systems:

- Communications (Plain and Secure)
- Identification Friend or Foe (IFF)
- TACAN
- DF Systems
- ESM/ECM Systems
- NTDS Link 11 / Link 16
- Link 4A Aircraft Intercept Control

Systems Performance Testing

Performance testing provides the ship with a detailed analysis and evaluation of the system(s) under test. System performance testing determines a unit's combat system material readiness prior to deployment or after the completion of a recent availability period. Specific performance tests are designed to require the ship to circle an assigned geographical reference point or designated buoy. These tests include:

- Antenna Radiation Patterns
- AN/UML-4 EW Testing
- TACAN Certification
- Outboard/COMBAT DF/RDF Calibration
- Advanced ESM Simulation



Staff

The SESEF staff is comprised of a team of engineers and technicians dedicated to their commitment of T&E excellence. As a result of their testing experience and corporate knowledge, SESEF personnel can analyze test data and shipboard problems quickly and accurately, and provide real-time solutions. The engineering staff has the skills necessary to employ state-of-the-art test methodologies in developing new and enhanced automated test equipment. This ability provides our customers with cost-effective testing that optimizes test range time, data acquisition, and analysis. Our staff continually strives to exceed customer requirements and to meet the challenges of future test implementation.