NAVY TEST & EVALUATION RANGES

for
Ship Air Defense System Testing:
An OT&E Perspective

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OPERATIONAL TESTING requires

• End-to-end testing (detection through kill),

• With system operated by fleet users,

• Against threat-representative targets,

• In realistic environments.
SO WHAT DO WE LOOK FOR WHEN SELECTING A RANGE?

TESTING

End-to-end:
• Enough surface and air space to simulate mission execution
• Infrastructure to support realistic threat representation

Threat representation:
• Capability to represent the spectrum of threats

Realistic environment:
• Distance from commercial corridors and shipping lanes
• Range clearance capability
• Flexibility to relocate operations rapidly

EVALUATION

• Time Space Position Information
• Weapon system data collection
• Target system data collection
US NAVY RANGES FOR OT&E OF NAVY AIR DEFENSE SYSTEMS

East Coast

- Atlantic Fleet Weapons Training Facility (AFWTF), Roosevelt Roads, Puerto Rico

West Coast

- Naval Air Warfare Center/Weapons Division Sea Range Point Mugu, California
- Pacific Missile Range Facility (PMRF), Barking Sands, Kekaha, Hawaii
ATLANTIC FLEET WEAPONS TRAINING FACILITY (AFWTF)
ATLANTIC FLEET WEAPONS TRAINING FACILITY (AFWTF)

Pro:
• Adequate air and sea space
• Effective range clearance capability
• Adequate target launch/control capability
• Excellent missile and target telemetry data collection
• Flexibility and space to relocate operations

Con:
• Can’t test short range air defense systems
• Limited fidelity and availability of ASCM surrogates
• No supersonic, sea-skimming target launch capability
• Not close to a home port
• Future uncertain
NAWC/WEAPONS DIVISION
SEA RANGE (POINT MUGU)
NAWC/WEAPONS DIVISION
SEA RANGE (POINT MUGU)

**Pro:**
- Adequate air and sea space
- Adequate range clearance capability
- Adequate target launch/control capability
- Missile and target telemetry data collection
- Self Defense Test Ship (SDTS) available for short range air defense T&E
- Proximity to San Diego

**Con:**
- Projects have to contend with other range users
- Limited fidelity and availability of ASCM surrogates
- Surface craft traffic cause occasional delays
- Occasional weather-induced delays
SELF DEFENSE TEST SHIP (SDTS)
Hawaiian Operational Areas

W-186/188 are the two WARNING AREAS assigned to PMRF. Total of 42,000 square nautical miles.

FACSFAC Controlled
PACIFIC MISSILE RANGE FACILITY (PMRF)  
BARKING SANDS, HAWAII

**Pro:**
- Adequate air and sea space
- Adequate range clearance capability
- Adequate target launch/control capability
- Good missile and target telemetry data collection
- Proximity to Pearl Harbor

**Con:**
- Projects have to contend with other range users
- Can’t test short range air defense systems
- Limited fidelity and availability of ASCM surrogates
- Airfield runway cannot accommodate full-scale QF-4 targets
“Limited Fidelity and Availability of ASCM Surrogates”
– Supersonic, Sea-Skimmer Example

■ Critical Shortage of VANDAL Assets
  – Inventory: 14 EERs; FY03 depletion projected
  – Both fleet training and T&E requirements

■ Critical Shortage of MA-31 Assets
  – Inventory: 3
  – Availability of additional MA-31s uncertain
  – Both fleet training and T&E requirements

■ GQM-163A development program
  – FY04 delivery projected
  – Threat representation to be demonstrated
SUMMARY

• Point Mugu, PMRF, and AFWTF can support adequate OT&E of medium/long range air defense systems.

• Point Mugu is only Navy range capable of supporting adequate OT&E of short range air defense systems.

• If AFWTF becomes unavailable, the only ranges capable of supporting OT&E of ship air defense systems will be west coast ranges: Point Mugu and PMRF.

• Aerial target representation of threat-ASCMs, especially supersonic sea-skimmers, needs improvement.
  - More targets
  - Higher fidelity targets