3.2.3 Navy Assessment Results[11]

Navy Training Range Capability Assessment Analysis Results

The Range Capability Assessment data from 21 Navy range complexes are summarized and presented in Table 3-8.

The Navy Range Capability Chart and Scores are presented in Figure 3-20 and assessments by Range, Attributes, and Mission Areas are shown in Figures 3-22, 3-24, and 3-26.

The Navy's 21 individual range capability assessments along with comments for red and yellow ratings are included at the end of this section (Figure 3-28).

Navy Training Range Encroachment Assessment Analysis Results

Navy Range Encroachment Assessment data from the 21 Navy ranges complexes are summarized in Table 3-9.

The Navy Range Encroachment Chart and Scores are presented in Figure 3-21 and assessments by Range, Factors, and Mission Areas are shown in Figures 3-23, 3-25, and 3-27.

The Navy's 21 individual encroachment assessments along with comments for red and yellow ratings are included at the end of this section (Figure 3-28).

The Navy Range Capability and Encroachment assessment comparisons are presented in Table 3-10.

11 Of the 23 Navy Range Complexes identified in the 2012 Sustainable Ranges Report inventory in Appendix C, the Guantanamo and Diego Garcia Range Complexes were not assessed. The decision to exclude the range complexes from reporting is based on the Navy's near-term fleet training patterns, which no longer include either geographic location, as well as a lack of permanent training range infrastructure supporting these complexes. The limited utilization and capability of the range space associated with these complexes is in no way related to the role of their associated installations for supporting naval operations. As a part of ongoing reviews, the Navy will re-evaluate potential reinstitution of capability and encroachment assessments for both range complexes.

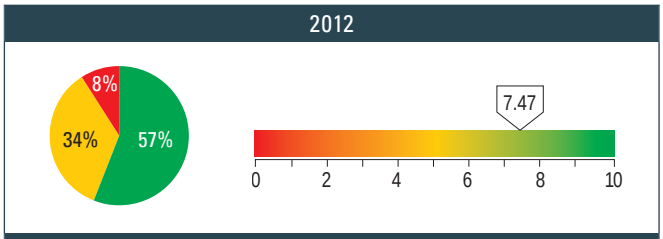
Table 3-8 Navy Capability Assessment Data Summary

Range	NMC	PMC	FMC	Capability Scores
Atlantic City	0	1	6	9.29
Atlantic Test Ranges	0	17	24	7.93
Atlantic Undersea Test and Evaluation Center (AUTEC)	0	1	35	9.86
Boston	0	2	12	9.29
China Lake	0	1	27	9.82
El Centro	0	1	4	9.00
Fallon Range Training Complex	0	14	9	6.96
Gulf of Mexico (GOMEX)	0	4	25	9.31
Hawaii	1	21	36	8.02
Jacksonville	1	17	24	7.74
Japan	9	22	13	5.45
Key West	0	3	4	7.86
Mariana Islands	32	14	13	3.39
Narragansett Bay	0	3	4	7.86
Navy Cherry Point	1	22	28	7.65
Northern California (NOCAL)	3	7	20	7.83
Northwest Training Range Complex	1	22	29	7.69
Okinawa	9	31	10	5.10
Point Mugu Sea Range	0	4	47	9.61
Southern California (SOCAL)	2	28	30	7.33
Virginia Capes (VACAPES)	1	22	28	7.65
HQ Navy	**60**	**257**	**428**	**7.47**

Table 3-9 Navy Encroachment Assessment Data Summary

Range	Severe	Moderate	Minimal	Encroachment Scores
Atlantic City	0	2	4	8.33
Atlantic Test Ranges	0	20	40	8.33
Atlantic Undersea Test and Evaluation Center (AUTEC)	0	9	18	8.33
Boston	0	4	6	8.00
China Lake	0	15	25	8.13
El Centro	0	0	11	10.00
Fallon Range Training Complex	0	14	25	8.21
Gulf of Mexico (GOMEX)	0	7	18	8.60
Hawaii	1	20	41	8.23
Jacksonville	0	18	22	7.75
Japan	2	7	20	8.10
Key West	0	2	4	8.33
Mariana Islands	1	29	33	7.54
Narragansett Bay	0	2	3	8.00
Navy Cherry Point	0	11	25	8.47
Northern California (NOCAL)	0	2	22	9.58
Northwest Training Range Complex	4	12	36	8.08
Okinawa	2	14	33	8.16
Point Mugu Sea Range	0	18	56	8.78
Southern California (SOCAL)	2	32	32	7.27
Virginia Capes (VACAPES)	0	26	18	7.05
HQ Navy	**12**	**264**	**492**	**8.13**

Figure 3-20 Navy Capability Chart and Scores



Summary Observations

The Navy's overall capability score increased from 7.35 in 2011 to 7.47 in 2012.

- The Navy's Fully Mission Capable (FMC) assessments (green) increased from 56% to 57%
- Partially Mission Capable (PMC) assessments (yellow) decreased from 35% to 34%
- Not Mission Capable (NMC) assessments (red) decreased from 9% to 8%

Historical Information, Results, and Future Projections

Calendar Year	2008	2009	2010	2011
Capability Scores	7.37	7.28	7.37	7.35

The top three capability attributes with the maximum number of red and yellow assessments are (Figure 3-24):

- Range Support (0+73)
- Threats (14+45)
- Scoring & Feedback Systems (18+36)

The top three mission areas with the maximum number of red and yellow assessment are (Figure 3-26):

- Strike Warfare (14+52)
- Anti-Air Warfare (7+48)
- Electronic Combat (14+29)

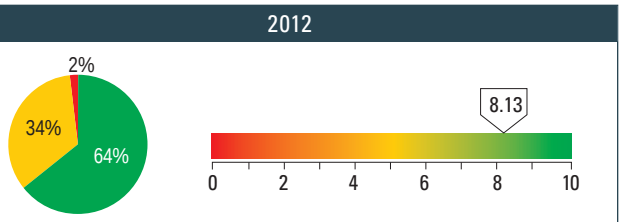
Training to threat representative scenarios with ground truth recording and instructor feedback supports a quality of readiness training that ultimately improves the survivability of our forces. Degraded range capabilities cause operators to adapt and innovate to maintain proficiency. This often causes readiness to remain high, despite degradations at one specific location.

While these training adaptations are unlikely to erode overall unit readiness in the short-term, the slow erosion of capability across a system of ranges will degrade readiness as alternative training solutions do not meet the necessary quality levels.

For the period of this report, the top three capability limitations are: Mariana Islands training range infrastructure, Southern California (SOCAL) for targets in Naval Special Warfare (NSW) and land-space for Amphibious Warfare (AMW), and Scoring & Feedback Systems for ASW at Virginia Capes (VACAPES), Jacksonville, and Navy Cherry Point. These specific range equities compete for the same limited resources, which ultimately erodes the quality of training support provided to the Fleet.

Refer to the Navy's 21 individual range assessments for comments and additional information (Figure 3-28).

Figure 3-21 Navy Encroachment Chart and Scores



Summary Observations

The Navy's overall encroachment score decreased from 8.23 in 2011 to 8.13 in 2012.

- The Navy's minimal risk assessments (green) decreased from 66% to 64%
- Moderate risk assessment (yellow) increased from 32% to 34%
- Severe risk assessments (red) remained constant at 2%

Historical Information, Results, and Future Projections

Calendar Year	2008	2009	2010	2011
Encroachment Scores	9.08	8.49	8.41	8.23

The three encroachment factors with the maximum number of red and yelloww assessment are (Figure 3-25):

- Spectrum (4+64)
- Maritime Sustainability (1+43)
- Range Transients (0+42)

The top three mission areas with maximum number of red and yellow assessments are (Figure 3-27):

- Strike Warfare (2+50)
- Anti-surface Warfare (0+42)
- Anti-air Warfare (4+35)

Encroachment has remained relatively constant for the period of this report and as assessed in the 2011 SRR. The Special Interest section of this report emphasizes the potential impact from energy development, frequency spectrum competition, and maritime sustainability issues as well as including discussions of airspace and adjacent land use, and cultural resources.

Restrictions resulting from electromagnetic spectrum encroachment include prohibitions from performing GPS jamming, authorization to radiate VHF early warning threat radar system, and restricted use of the Track While Scan Simulator (TWSS).

Maritime protective and mitigation measures undertaken in compliance with regulatory requirements have resulted in training restrictions that reduce training flexibility, force segmented training, and ultimately reduce training realism.

A preponderance of potential archaeological sites identified on San Clemente Island (SCI) that lack definitive eligibility determination has decremented SOCAL's Cultural Resources encroachment assessment from minimal to severe.

Refer to the Navy's 21 individual range assessments for comments and additional information (Figure 3-28).

Figure 3-22 Navy Capability Assessments by Range

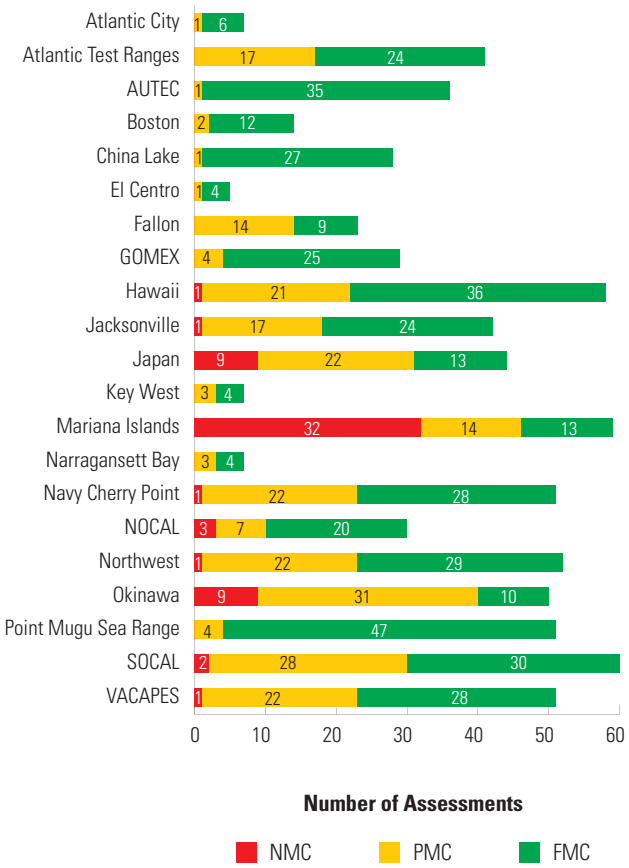


Figure 3-23 Navy Encroachment Assessments by Range

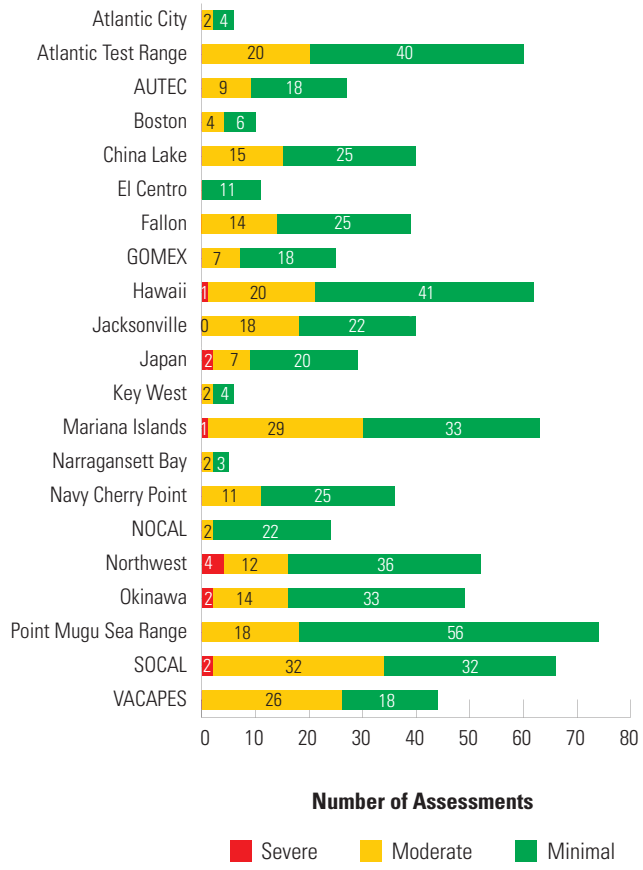


Figure 3-24 Navy Capability Assessment by Attributes

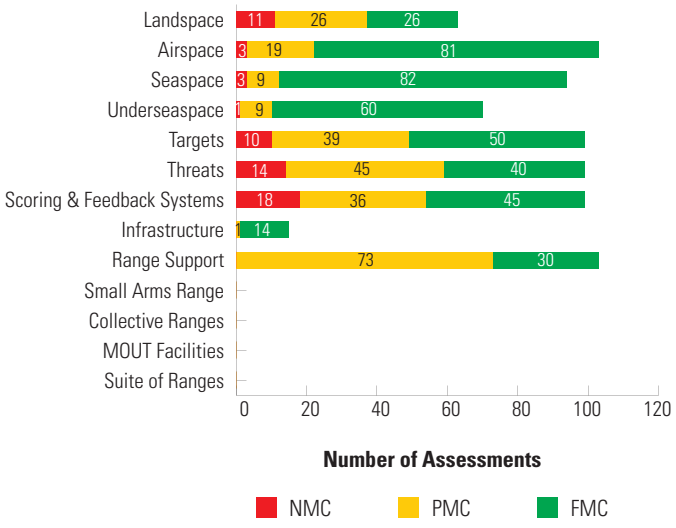


Figure 3-25 Navy Encroachment Assessment by Factors

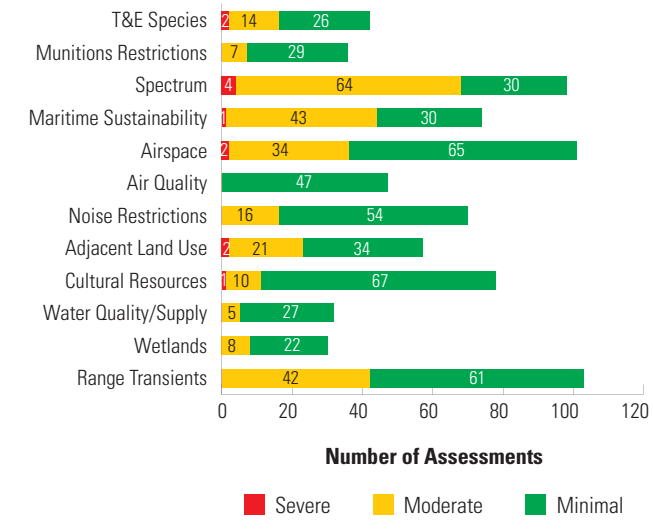


Figure 3-26 Navy Capability Assessment by Mission Areas

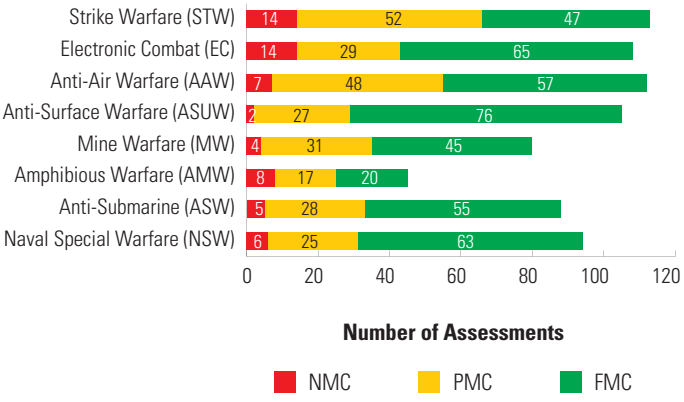
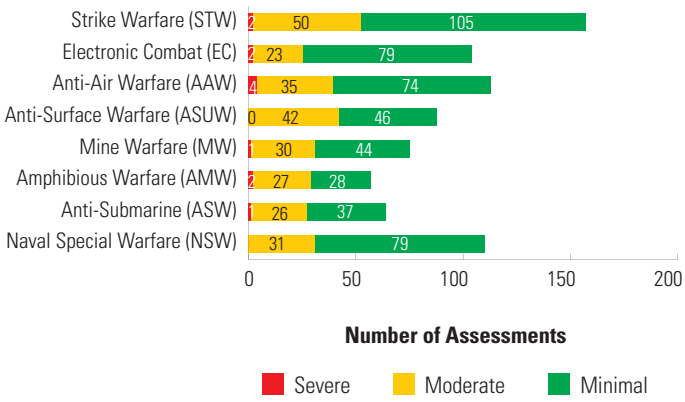


Figure 3-27 Navy Encroachment Assessment by Mission Areas



Navy Special Interest Section

General Issues

Since publication of the 2011 SRR, Navy training range management efforts have focused on mitigating energy development issues with the potential to impact range sustainment. While the Navy is committed to the Nation's energy goals, conventional and renewable energy development projects have increased pressure on future training space availability. Separately, Federal Communication Commission (FCC) initiatives to re-allocate military frequency bands for civilian and commercial use in support of the National Broadband Plan directly restrict the Navy's use of the frequency spectrum to test, train, and operate. When these forms of encroachment prevent or degrade training, weapon system operators are at risk for "negative-training"—operating restrictions that drive training practices away from tactics to be employed in combat. As training mitigations drive threat scenarios away from combat realism, military forces become increasingly vulnerable to reduced combat effectiveness.

The remainder of the Special Interest Section discusses off-range encroachment issues, specifically world-wide proliferation of ocean observing systems that, if employed in the absence of Navy engagement, may adversely impact how the Fleet operates. Additionally, significant range capability shortfalls and range impacts from encroachment factors are addressed. Most frequently these external influences result in a more controlled, restrained, or restrictive training environment and shape how the Navy trains to achieve combat readiness. When appropriate, each issue will be assessed in the POM-14 budget planning cycle.

Alternative Energy Development, Wind Farms

The Navy's energy strategy is centered on mission assurance, energy security, energy efficiency, and environmental stewardship, while retaining the ability to sustain military readiness and remain the pre-eminent maritime power. The Department of Navy (DoN) supports the Office of the Secretary of Defense (OSD) efforts to analyze, assess, and communicate potential impacts to naval training. The Navy participates in current OSD initiatives, such as the DoD Siting Clearinghouse, to establish a single DoD point of contact for all civil or non-governmental entities to determine renewable energy project impacts to service interests. In the case of offshore wind energy project proposals, close coordination with DUSD(P&R) and the Department of the Interior's Bureau of Ocean Energy Management (BOEM) remains critical to the preservation of range space and maneuver areas that support essential fleet training operations and present minimal impact to stringent test events. To date, the Navy has participated in or provided compatibility assessments to nine coastal state BOEM Renewable Energy Task Forces responsible for commercial development lease areas in federal waters.

A win-win situation for DoD and civil/commercial interests relies upon detailed proposal descriptions and open discussions of specific military operational limitations in an iterative process with energy stakeholders so actionable feedback is generated for both claimants. This dependency is interrelated. The more detailed and complete the energy proposal from commercial developers, the more accurate and comprehensive the Navy's impact assessment on service interests, such as installations, ranges, and specific capabilities, will be. For example, it is impracticable to discuss measurable impacts to training in the absence of planning details, such as turbine height and placement density of wind farm projects. In locations near surface ship training and aviation-related operations, wind farms can interfere with Doppler-based ground, shipboard, and airborne weapon system radars. Demanding flight operations, such as low altitude terrain clearance training or precision weapon delivery events, require unfettered safety-of-flight radar support to minimize hazards to civilian personnel.

Adverse weather and/or a high volume of commercial aviation exacerbates the tracking challenges posed to older, less capable military air traffic control systems where wind towers populate airspace inside the radar's field of view. Additionally, the electromagnetic effects of a single wind turbine upon legacy radars are far less than that of a dense wind farm grid. As the number of wind farms increases within military airspace, the radar controlled range space for supporting precision aerial weapon test events or high-volume, low altitude training events, such as student pilot instrument approach training, diminishes measurably. Naval Air Warfare Center (NAWC) China Lake and NAS Kingsville are actively engaged with local government and regional leaders to effectively site wind farms near military airspace in ways that mitigate the adverse effects upon safety-of-flight radars.

Shipboard radars can also be affected during key training events, such as airborne target tracking and engagement. The Navy awaits the results of ongoing studies to assess potential electromagnetic interference impacts to shipboard radars during training and testing evolutions. If impacts are measured or observed, these studies may further identify technical mitigations to reduce any adverse effect.

Frequency Spectrum Use Competition—The National Broadband Plan

Demand for use of the electromagnetic spectrum is increasing, both commercially and within DoD. In the spring of 2010, the National Telecommunications and Information Administration (NTIA) introduced specific sharing and reallocation proposals for eleven specific frequency bands to support the FCC plan to connect 100 million homes in the next 10 years with broadband, the National Broadband Plan. It is imperative that the Navy remain fully engaged in the military spectrum reallocation discussions.

A critical Navy range capability directly challenged by the broadband initiative is the employment of modern combat weapon systems within an electronic warfare (EW) threat representative environment. Today's military frequency band allocation supports training with weapon sensors and targeting systems, instrumented range monitoring and recording systems, and threat replicated EW defense systems (i.e. surface-to-air missile radars, communication jammers). Training within a robust electronic environment saturated with offensive and defensive weapons systems pose unique weapon system deconfliction challenges similar to what is experienced in modern conflicts and ensures the greatest fidelity for realistic training. These systems require DoD-managed, commercially- exclusive frequency bands to support military units during live training. Numerous spectrum bands, utilized by the Navy and other defense agencies, are increasingly encroached upon for use by non-DoD organizations. Of specific concern to instrumented training range complexes is the proposed loss of spectrum that supports employment of the Tactical Combat Training System (TCTS), an instrumented aerial and surface tracking system needed for minute-by-minute playback and assessment of recorded multi-participant training evolutions. Under review is the reallocation of the TCTS frequency band (1755-1780 MHz) to the 10-year assessment plan that supports the National Broadband Plan. If this band is not protected or economically replaced by technically feasible spectrum, existing capabilities as well as emerging capabilities such as secure LVC (sensor stimulation) enablers will be lost, seriously impacting the training superiority established through instrumented training.

Proliferation of Ocean Observing Systems

An increasingly wider variety and greater number of government, academic and commercial entities are fielding a new generation of Ocean Observing Systems (OOSs) to monitor and study the world's oceans. The motivation for the majority of OOS is marine mammal and weather research, weather and climate interests, tsunami warning/verification, and seismic/earthquake monitoring. OOS located on or near Navy training ranges pose a threat to Navy national security interests. There are three training ranges of immediate concern.

- The Northwest Training Range Complex is impacted by the Canadian Northeast Pacific Time-Series Undersea Networked Experiments (NEPTUNE). Operated by the University of Victoria, NEPTUNE is a cabled system of seismometers, hydrophones and other sensors that provide real-time data via the internet. Also of interest is Cascadia, a field of approximately 210 Ocean Bottom Seismometers (OBSs) scheduled for phased deployment in the vicinity of the Northwest Training Range Complex between August 2011 and August 2013.
- The SOCAL training range area was impacted by ALBACORE, a field of over 30 OBSs deployed for a year with retrieval in September 2011 and also by a field of 27 High Frequency Acoustic Recording Package (HARP) buoys sponsored by the Navy and National Oceanographic and Atmospheric Administration (NOAA). HARP buoys are used to routinely locate and monitor marine mammal activity. Neither the ALBACORE OBS nor the HARP buoys provide real-time acoustic data.
- The Hawaiian Islands Complex is impacted by the Aloha Cabled Observatory OOS operated by the University of Hawaii. The Aloha OOS re-uses an abandoned telecommunications cable to gather acoustic data from two hydrophones and provide real-time data *via* the internet.

Legitimate protection of all Navy national security interests would require controlling access to all marine monitoring, the majority of which is funded by non-DoD or international entities. This universal approach is not practicable. However, the Navy continues to consider means of protecting sensitive information, which requires improving the Navy's awareness of when and where sensors are placed in operation. Given the significance of placing OOSs in the vicinity of Navy training ranges, a process of notifying the Navy of planned OOS placement would assist in the continuing effort to balance national security concerns with academic and commercial interests. The Navy will continue cooperation and consultation with civilian agencies, foreign navies, academic institutions, and industry to build on current agreements and allow for additional negotiated agreements as appropriate on the placement of sensors and shared data management.

Critical Issues: Range Capability

While the Navy strives to model resource-aligned range capabilities versus combat readiness, an exact tipping point between "combat ready" and "not combat ready" assessments is difficult to predictably measure. However, live training in a threat representative scenario with ground truth recording and instructor feedback contributes to a quality of readiness that improves combat mission success and warrior survivability. Quite often, combat operators meet fleet requirements supported by range instrumentation restrictions, threat scenario artificialities, and/or modified mission profiles to fit within range restrictions. For example, fleet EW operators build scenarios where the operator reacts to a "notional threat" that is derived from an FCC compliant blue-force signal or from the narrow transmission of a simulated threat system.

Three capability attributes assessed as NMC impact training range support to the fleet in varying degrees. For the period of this report, the top three capability limitations are: Mariana Islands training range infrastructure, SOCAL for targets in

Naval Special Warfare (NSW) and land-space for Amphibious Warfare (AMW), and Scoring & Feedback for ASW at Virginia Capes (VACAPES), Jacksonville, and Navy Cherry Point. These specific range equities compete for the same limited resources which ultimately erodes the quality of training support provided to the fleet.

- Mariana Islands Training Space, Targets, Threats, Scoring & Feedback—The Navy is committed to sustainable development and improvement of training range capabilities in the Marianas. As the regional joint force presence increases, the overall naval and joint force demand for training range capability will continue to be a critical issue. While a slight improvement in range capability has been achieved since the 2011 SRR, the approval of National Environmental Policy Act-related documentation has paved the way for further near-term improvements. In July 2010, the Marianas Islands Final Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS) was signed. Range enhancements to increase existing training capabilities (especially in undersea and air warfare areas) are necessary to maintain a state of military readiness commensurate with national defense requirements. The pending delivery of a Multi-Purpose Range Craft (MPRC) to support target services will continue to increase the capability of this range complex. Multiple range support challenges remain unresolved—the most significant being expanding special use airspace, installing scoring & feedback systems, procuring a portable undersea warfare training range, and procuring threat systems and opposition forces for air, surface, and subsurface users. A comprehensive, DoD-led approach to resourcing joint requirements in the Marianas is required for this complex to support joint training. Component Commands, along with U.S. Pacific Command, are actively engaged in this process and in developing a training range planning strategy.
- Jacksonville ASW Scoring & Feedback—Program management of the East Coast Undersea Warfare Training Range (USWTR) marked a new milestone of progress toward construction of this important Anti-Submarine Warfare (ASW) training capability. In FY2011, the request for proposal (RFP) was released for solicitation of bids; source selection was made in the fourth quarter. As the contract nears awarding, sea floor installation is expected to commence in FY2013. The USWTR will initially be capable of supporting limited fleet training at the close of CY2017. When complete, the USWTR will cover approximately 500-square-nautical miles (nm) within the water space commonly referred to as the Jacksonville OPAREA. This new capability will add value to combat readiness training for surface, subsurface, and air units preparing for anti-submarine warfare operations. In the absence of an underwater training range, VACAPES and Cherry Point will remain NMC in ASW Scoring & Feedback in the foreseeable future.
- SOCAL NSW Targets and AMW Landspace—Target sets that support NSW fire-and-maneuver requirements fail to replicate threat objectives, support simplistic vice challenging target training scenarios, and inhibit new tactics development. The Naval Special Warfare Command is reviewing SEAL training requirements on San Clemente Island. As a result of this review, target-sets are being assessed for upgrades to increase threat realism. SOCAL is also challenged with insufficient landspace to support Amphibious Warfare training at San Clemente Island and the Silver Strand training complex. Current training is limited to amphibious landings using smaller footprints that support only basic level training; larger amphibious events are not approved at these sites.

Critical Issues: Encroachment Factors

The situation regarding encroachment remains essentially unchanged in this report as it existed and was described in the 2011 SRR. Four encroachment factors received severe or moderate ratings that adversely impact or have potential to impact training range support to the fleet. They are Frequency Spectrum Competition, Airspace, Adjacent Land Use, and Cultural Resources.

- Spectrum Restrictions (Severe/Moderate)—Restrictions resulting from electromagnetic spectrum encroachment include prohibitions from performing Global Positioning System (GPS) jamming, authorization to radiate VHF early warning threat radar system, and restricted use of the Track While Scan Simulator (TWSS). Electronic combat attack platforms, such as the EA-18G and EA-6B, and electronic defense systems onboard other Naval platforms, are constrained by numerous frequency emission limitations. Additionally, employment of the SPY-1 and SPS-49 radars, IFF jamming, and the Link 16 data link are severely restricted within narrow frequency bands. Electromagnetic spectrum constraints reduce combat realism by the introduction of training artificialities, segment aviation training between live systems restrictions and full-spectrum cockpit simulators, limit application of emergent weapon technologies, and inhibit new tactics development. Located in electronically dense environments, ranges such as Point Mugu, SOCAL, and VACAPES have extremely limited abilities to support electronic combat testing and training. The Navy continues to coordinate with appropriate frequency allocation and oversight agencies to seek spectrum relief and develop encroachment strategies to reduce frequency interference to optimize use of competing spectrum technologies. Proposed frequency spectrum reallocation

initiatives add increased pressure on current military bandwidth use.

- Restricted Airspace, Ground Training and Adjacent Land Use (Severe)—Ongoing and proposed wind farm power generation projects pose an encroachment threat to established training requirements and installations. Both training space, such as the Boardman target complex in Oregon, and military installations, such as Naval Air Station Kingsville, Texas, are impacted by wind farm development. Encroachment is characterized as physical obstruction of large groupings of turbines or the electromagnetic interference created from moving turbine blades. Mitigation of these impacts requires sufficient time to engage commercial developers to identify alternative low impact wind farm locations and to develop and integrate technical mitigation solutions to military electronic systems. Considerable funding resources are also required that would otherwise be invested on readiness training. Additionally, wind farm proposals differ subject to space availability requiring site specific analysis often supported by technical studies to ensure a proper balance between the Navy's readiness requirements and overall energy generation objectives.

  Similarly, geothermal exploitation and development or other forms of energies on adjacent federal lands to installations could have impacts to land space set aside to support ground training. Navy SEALs conduct land warfare training at both NAS Fallon in Nevada, and the Chocolate Mountain Aerial Gunnery Range (CMAGR) in California. The Navy must balance fulfilling maritime national security readiness requirements with contributing to national energy security solutions that guard local/regional economies. The Military Services could benefit from establishing an automated system to input projected commercial and private projects along with subsequent training and testing impact analyses. Such a system would be an effective planning tool that could be made visible to leadership and decision makers. This process would enhance energy project development while simultaneously avoiding an adverse impact on combat readiness.

- SOCAL Cultural Resources (Severe/Moderate)—A preponderance of potential archaeological sites identified on SOCAL's San Clemente Island (SCI) that lack definitive eligibility determination has decremented SOCAL's Cultural Resources encroachment assessment from minimal to severe. In the absence of eligibility determination, over 7,000 potential sites are treated as if eligible under the National Historic Preservation Act (NHPA), creating a considerable number of avoidance areas throughout range maneuver space designated in the SOCAL EIS/OEIS as the USMC Assault Vehicle Maneuver Area, Artillery Firing Positions, and Assault Maneuver Positions. SCI is the sole maritime training area that supports both MEF Battalion Landings and Artillery/Small Arms live fire targeting. This range also constitutes the major West Coast training site in support of Navy SEAL Unit Level Training for Military Operations in Urban Terrain. The thirty-five building, live fire complex adjacent to a littoral environment allows Navy SEALs and Special Warfare Combatant Crewman (SWCC) to conduct over-the-beach interoperability for both surface and land SPECOPS Force capabilities. The presence of an overwhelming number of un-assessed archaeological sites restricts Naval Special Warfare tactical training. SCI also supports the only location for Basic Underwater Demolition/SEAL (BUD/S) live underwater and land demolitions training. To avoid further adverse impact to SEAL and SWCC training, the potential archaeological sites near-term adjudication of eligibility determination is required. The presence of numerous informally established potential cultural sites constitutes a major impediment to training.

Figure 3-28 Navy Capability and Encroachment Assessment Detail

Atlantic City Assessment Details

Range Mission Description

The Atlantic City Range Complex supports Anti-surface Warfare (ASUW) training. The Atlantic City Complex is located in the waters adjacent to the coasts of New Jersey and New York. The AEGIS Combat Systems Center (ACSC) conducts operations in this area. It is controlled by the Fleet Area Control and Surveillance Facility Virginia Capes, (FACSFAC VACAPES). The complex is composed of the surface and subsurface areas of the Atlantic City Operating Area (OPAREA).

Capability Data

Mission Areas	Landspace	Airspace	Seaspace	Underseaspace	Targets	Threats	Scoring & Feedback System	Infrastructure	Range Support	Small Arms Ranges	Collective Ranges	MOUT Facilities	Suite of Ranges
Strike Warfare													
Electronic Combat													
Anti-Air Warfare													
Anti-Surface Warfare		●	●	●	●	●	●		●				
Mine Warfare													
Amphibious Warfare													
Anti-Submarine													
Naval Special Warfare													

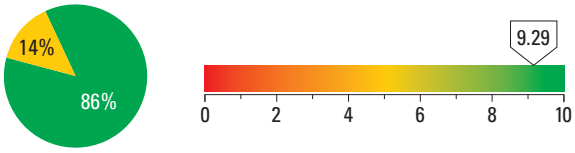
Legend: FMC ● PMC ● NMC ●

Encroachment Data

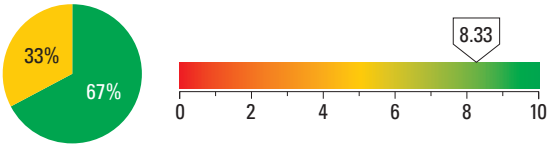
Mission Areas	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strike Warfare												
Electronic Combat												
Anti-Air Warfare												
Anti-Surface Warfare			●	●	●		●		●			●
Mine Warfare												
Amphibious Warfare												
Anti-Submarine												
Naval Special Warfare												

Legend: Minimal ● Moderate ● Severe ●

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

1. Capability attribute most impacting range mission performance: Range Support.
2. Mission area most severely impacted: ASUW.
3. Projected Status: No change.

Summary Observations

1. Spectrum and maritime sustainability are the encroachment factors that most impact the range's ability to perform its assigned mission the most.
2. ASUW is the only assigned mission area.

Atlantic City Assessment Details

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Capability Scores	8.93	8.93	8.93	8.93

1. The capability assessment has been stable from CY2008 to CY2011. CY2012: Anti-Air Warfare mission area deleted by United States Fleet Forces (USFF).

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Encroachment Scores	8.75	8.33	8.33	8.33

1. Encroachment assessments for CY2008 were different than those for CY2009 to CY2011. The algorithm for the overall assessment score for CY2009 to CY2011 was revised from the original algorithm used in CY2008 to provide greater fidelity and consistency across all range complexes. Based on an improved review process and revised algorithms, the assessments for CY2009 to CY2011 provide a more accurate assessment of encroachment. The assessments for the latter three years reveal there has been little encroachment change from year to year, with relatively constant overall scores for CY2009 to CY2011.
2. The VACAPES-Northeast RCMP update is currently underway.
3. Attention from the Department of Interior (DOI) and private energy interests in the Outer Continental Shelf (OCS) is increasing as domestic energy demand builds. Naval offshore operating areas and training events may be affected. High priority areas include training ranges and sea space in and adjacent to all Navy OPAREAs. OASN (E,I&E), as DoD spokesman for military offshore use, continues to work closely with the Fleet's & DOI's Bureau of Ocean Energy Management (BOEM) to resolve issues of combined use of the OCS important to both agencies. Fleet review and analysis of impacts from both oil/gas and wind energy "lease sale" areas (i.e., Mission Critical Areas-[MCAs]) have been reviewed and forwarded to OSD. DoD and DOI coordination continues.
4. Atlantic City had no emerging encroachment issues during CY2012 that affect its operations. The CY2012 Atlantic City encroachment assessment has removed AAW as a mission area per USFF direction. All other CY2012 assessment data remain the same as CY2011.
5. The Northeast Encroachment Action Plan, including Atlantic City, is programmed for FY2013.

Atlantic City Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Range Support	Anti-Surface Warfare (ASUW)		Lack of a web-based scheduling system with pre-event, real-time, and post-event modules precludes most efficient scheduling and documenting of range usage. Post-event reporting is particularly critical for ordnance expenditures or active sonar usage in at-sea OPAREAs, since the Marine Mammal Protection Act (MMPA) permits require the Navy to periodically report these values. Non-compliance or inaccurately reporting post-event values to regulators risks range access or prohibitions on training events that involve active sonar or high explosives at-sea. PACFLT is developing a Data Collection and Scheduling Tool (DCAST) that includes a post-event module to mitigate the issues outlined above. If successful, the Navy could consider adopting it for use at all range scheduling facilities.

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Spectrum	Anti-Surface Warfare (ASUW)		Employment of Link 16, SPY-1 radar, SPS 49 radar, and IFF are restricted. Restrictions limit spectrum operations and prohibit certain training events, segment training/reduce realism, reduce training days, limit application of new weapons technologies, and inhibit new tactics development. The Navy continues to coordinate with appropriate frequency allocation and oversight agencies to seek spectrum relief, and to develop encroachment strategies that will reduce encroachment while ensuring pending use of emerging spectrum technologies. Competition for frequency spectrum will add increased pressure on available bandwidth for Naval operations.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Atlantic City Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Maritime Sustainability	Anti-Surface Warfare (ASUW)		Maritime protective and mitigation measures undertaken in compliance with regulatory requirements have resulted in training restrictions that reduce training flexibility, force segmented training, and ultimately reduce training realism. All at-sea training is impacted to some degree; impacts are most significant to integrated warfare training using active underwater acoustic sources or in-water explosive ordnance. The Navy and National Marine Fisheries Service (NMFS) have developed science based protective and mitigation measures that adequately protect marine species while accommodating military readiness activities. The Navy continues to develop Environmental Impact Statements, and obtain permits and authorizations for its range complexes to ensure military training complies with applicable laws and regulations. Litigation risks remain a concern, entailing the potential to delay or further restrict training, despite the protective and mitigation measures applied by the Navy in compliance with the MMPA and the Endangered Species Act (ESA). Endangered species encroachment from the North Atlantic Right Whale has created avoidance areas that have resulted in some reduction of training days and prohibits certain training events. This area is relatively small in scope; however, if these types of restrictions were applied to other species/areas, there would be significant impacts to readiness through reduction in range access, segmentation of training/reduction in realism, limits on the application of new technologies, raised flight altitudes, reduced live fire proficiency, increased personnel tempo, and increased O&M costs. The Navy will continue to invest in marine mammal research, rely on scientifically valid empirical data results as the basis of marine mammal mitigation development, factor mitigation effectiveness into permit requests, and continue education of Fleet units to adhere to the maritime protective and mitigation measures and public education outreach efforts. The Navy's authorizations under the MMPA and ESA include an adaptive management approach that includes continually evaluating existing mitigation measures for their potential impacts on training. If impacts on training from mitigation measures are identified and documented, the Navy will raise these impacts with the NMFS for resolution during an annual adaptive management review process. The Navy is currently preparing environmental compliance documentation to renew its MMPA and ESA authorizations by January 2014, which will consider any impacts on training stemming from existing mitigations measures and propose changes as warranted.

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Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Atlantic Test Ranges Assessment Details

Range Mission Description

The Atlantic Test Ranges (ATR) is the Navy's principal RDT&E, engineering, and Fleet support center for manned and unmanned aircraft, engines, avionics, aircraft support systems, and ship/shore/air operations. Various Fleet squadrons, primarily from the East Coast, come to ATR to train when airspace or test assets are available.

Capability Data

Mission Areas	Capability Attributes												
	Landspace	Airspace	Seaspace	Underseaspace	Targets	Threats	Scoring & Feedback System	Infrastructure	Range Support	Small Arms Ranges	Collective Ranges	MOUT Facilities	Suite of Ranges
Strike Warfare	PMC	PMC	PMC		PMC	PMC	FMC	FMC	FMC				
Electronic Combat	PMC	PMC	PMC		FMC	FMC	FMC	FMC	FMC				
Anti-Air Warfare	FMC	PMC	FMC		FMC	FMC	FMC	FMC	FMC				
Anti-Surface Warfare													
Mine Warfare		PMC	PMC	PMC	PMC	PMC	FMC	FMC	FMC				
Amphibious Warfare													
Anti-Submarine													
Naval Special Warfare	PMC	FMC	FMC	PMC	FMC	PMC	FMC	FMC	FMC				

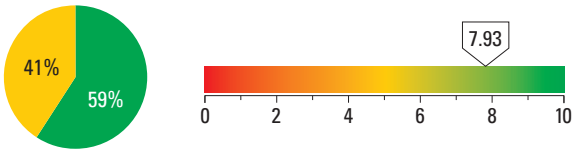
Legend: FMC PMC NMC

Encroachment Data

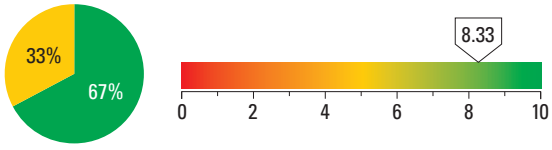
Mission Areas	Encroachment Factors											
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strike Warfare	Minimal	Minimal	Moderate	Minimal	Moderate	Minimal	Moderate	Moderate	Minimal	Minimal	Minimal	Minimal
Electronic Combat	Minimal	Minimal	Moderate	Minimal	Moderate	Minimal	Moderate	Moderate	Minimal	Minimal	Minimal	Minimal
Anti-Air Warfare	Minimal	Minimal	Moderate	Minimal	Moderate	Minimal	Moderate	Moderate	Minimal	Minimal	Minimal	Minimal
Anti-Surface Warfare												
Mine Warfare	Minimal	Minimal	Moderate	Minimal	Moderate	Minimal	Moderate	Moderate	Minimal	Minimal	Minimal	Minimal
Amphibious Warfare												
Anti-Submarine												
Naval Special Warfare	Minimal	Minimal	Moderate	Minimal	Moderate	Minimal	Moderate	Moderate	Minimal	Minimal	Minimal	Minimal

Legend: Minimal Moderate Severe

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

1. Airspace is the capability attribute that most impacts the range's ability to perform its assigned mission.
2. Strike Warfare and Mine Warfare are the mission areas that are impacted the most.
3. No change in capability is anticipated for the future.

Note: Assessments of Navy Special Warfare training are based on actual demand and use of training range capability and space. Actual training range capability and space requirements are based on Fleet Readiness Training Plan (FRTP) demands for conventional warfare areas.

Summary Observations

1. Spectrum, Airspace, Noise Restrictions, and Adjacent Land Use are the encroachment factors that impact the range's ability to perform its assigned mission.
2. STW, EC, AAW, MW, and NSW are the mission areas that are impacted the most.
3. Increased population growth and increased desire for more commercially assigned spectrum will lead to additional encroachment pressures. These encroachment impacts will only improve with continued national attention bringing about increased spectrum for military use and more efficient use of the spectrum currently available.

Note: Assessments of Navy Special Warfare training are based on actual demand and use of training range capability and space. Actual training range capability and space requirements are based on FRTP demands for conventional warfare areas.

Atlantic Test Ranges Assessment Details

Historical Information, Results, and Future Projections			
Calendar Year	2008	2009	2010
Capability Scores	7.17	7.93	7.93

1. Capability at ATR has remained steady since CY2008. It is anticipated capability will remain steady in the future.

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Encroachment Scores	8.33	8.33	8.33	8.33

1. Encroachment pressures have remained constant at ATR since CY2008. It is anticipated that they will remain stable in the future.

Atlantic Test Ranges Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Strike Warfare (STW)	●	ATR provides the resources and capabilities to support a subset (typically limited to unit [basic] and intermediate level or phases of training) of the total Navy mission warfare requirements, even though units are no longer able to use Bloodsworth Island for impact operations. The range offers land-based targets, but units are limited to no-drop training. This limits realistic training. There is no planned remedy at this time.
	Electronic Combat (EC)	●	ATR provides the resources and capabilities to support a subset (typically limited to unit [basic] and intermediate level or phases of training) of the total Navy mission warfare requirements, often with limited realistic training. The Navy plans to continue to provide the resources and capabilities to support this subset of the total Navy mission warfare requirements.
	Naval Special Warfare (NSW)	●	Same as above.
Airspace	Strike Warfare (STW)	●	ATR and the associated SUA provide the resources and capabilities to support a subset (typically limited to unit [basic] and intermediate level or phases of training) of the total Navy mission warfare requirements, often with limited realistic training. The Navy plans to continue to provide the resources and capabilities to support this subset of the total Navy mission warfare requirements.
	Electronic Combat (EC)	●	Same as above.
	Anti-Air Warfare (AAW)	●	Same as above.
	Mine Warfare (MW)	●	ATR and the associated SUA provide the resources and capabilities to support a subset (typically limited to unit [basic] and intermediate level or phases of training) of the total Navy mission warfare requirements. Aerial Mining exercises (supported by F/A-18, P-3, and B-52 aircraft) have been supported and mine shapes have been provided to support mine detection events, often with limited realistic training. The Navy plans to continue to provide the resources and this subset of the total Navy mission warfare requirements.
Seaspace	Strike Warfare (STW)	●	ATR provide the resources and capabilities to support a subset (typically limited to unit [basic] and intermediate level or phases of training) of the total Navy mission warfare requirements. It offers sea-based targets but is limited to no-drop and or limited "blue bomb" training operations, which leads to limited realistic training. The Navy plans to continue to provide the resources and capabilities to support this subset of the total Navy mission warfare requirements.
	Electronic Combat (EC)	●	ATR provides the resources and capabilities to support a subset (typically limited to unit [basic] and intermediate level or phases of training) of the total Navy mission warfare requirements. The Chesapeake Bay OPAREAs limit the size of operations and limit realistic training. The Navy will continue to provide the resources and capabilities to support this subset of the total Navy mission warfare requirements.
	Mine Warfare (MW)	●	ATR and the associated SUA provide the resources and capabilities to support a subset (typically limited to unit [basic] and intermediate level or phases of training) of the total Navy mission warfare requirements. Aerial Mining exercises (supported by F/A-18, P-3, and B-52 aircraft) have been supported and mine shapes have been provided to support mine detection events. The Chesapeake Bay also has water depth limitations. This leads to limited realistic training. The Navy plans to continue to provide the resources and capabilities to support this subset of the total Navy mission warfare requirements.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Atlantic Test Ranges Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Undersea Space	Mine Warfare (MW)	●	ATR and the associated SUA provide the resources and capabilities to support a subset (typically limited to unit [basic)] and intermediate level or phases of training) of the total Navy mission warfare requirements. Aerial Mining exercises (supported by F/A-18, P-3, and B-52 aircraft) have been supported and mine shapes have been provided to support mine detection events. The Chesapeake Bay also has water depth limitations. This leads to limited realistic training. The Navy plans to continue to provide the resources and capabilities to support this subset of the total Navy mission warfare requirements.
	Naval Special Warfare (NSW)	●	ATR provides the resources and capabilities to support a subset (typically limited to unit [basic] and intermediate level or phases of training) of the total Navy mission warfare requirements, often with limited realistic training. The Navy plans to continue to provide the resources and capabilities to support this subset of the total Navy mission warfare requirements.
Targets	Strike Warfare (STW)	●	ATR provides the resources and capabilities to support a subset (typically limited to unit [basic] and intermediate level or phases of training) of the total Navy mission warfare requirements. It offers sea-based targets but is limited to no-drop and or limited "blue bomb" training operations. This leads to limited realistic training. The Navy plans to continue to provide the resources and capabilities to support this subset of the total Navy mission warfare requirements.
	Mine Warfare (MW)	●	ATR and the associated SUA provide the resources and capabilities to support a subset (typically limited to unit (basic) and intermediate level or phases of training) of the total Navy mission warfare requirements. Aerial Mining exercises (F/A-18, P-3, and B-52) have been supported and mine shapes have been provided to support mine detection events. The Chesapeake Bay also has water depth limitations. This leads to limited realistic training. The Navy plans to continue to provide the resources and capabilities to support a subset (typically limited to unit (basic) and intermediate level or phases of training) of the total Navy mission warfare requirements.
Threats	Strike Warfare (STW)	●	ATR provides the resources and capabilities to support a subset (typically limited to unit (basic) and intermediate level or phases of training) of the total Navy mission warfare requirements. We offer sea-based targets but are limited to no-drop and or limited "blue bomb" training operations. This leads to limited realistic training. The Navy plans to continue to provide the resources and capabilities to support a subset (typically limited to unit (basic) and intermediate level or phases of training) of the total Navy mission warfare requirements.
	Mine Warfare (MW)	●	ATR and the associated SUA provide the resources and capabilities to support a subset (typically limited to unit (basic) and intermediate level or phases of training) of the total Navy mission warfare requirements. Aerial Mining exercises (F/A-18, P-3, and B-52) have been supported and mine shapes have been provided to support mine detection events. The Chesapeake Bay also has water depth limitations. This leads to limited realistic training. The Navy plans to continue to provide the resources and capabilities to support a subset (typically limited to unit (basic) and intermediate level or phases of training) of the total Navy mission warfare requirements.
	Naval Special Warfare (NSW)	●	ATR provides the resources and capabilities to support a subset (typically limited to unit (basic) and intermediate level or phases of training) of the total Navy mission warfare requirements, often with limited realistic training. The Navy plans to continue to provide the resources and capabilities to support a subset (typically limited to unit (basic) and intermediate level or phases of training) of the total Navy mission warfare requirements.

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Spectrum	Strike Warfare (STW)	●	The reduction of available spectrum, coupled with the increase in spectrum requirements, limits ability to schedule certain types of events and many concurrent activities. The Navy plans to work through the Range Commanders Council to address spectrum requirements at the national level, as well as continue to pressure the availability of spectrum for use by both the community and the Navy.
	Electronic Combat (EC)	●	Same as above.
	Anti-Air Warfare (AAW)	●	Same as above.
	Mine Warfare (MW)	●	Same as above.
	Naval Special Warfare (NSW)	●	Same as above.

Atlantic Test Ranges Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Airspace	Strike Warfare (STW)	●	Pressure from the Federal Aviation Administration (FAA) to route civil air traffic into operational areas can impact flight operations during normal periods. Private and commercial flights increase the volume of traffic and spill in to the Special Use Airspace (SUA). There is currently a proposed expansion of Washington Air Defense Identification Zone (ADIZ) under review. Traffic spilling into the SUA can limit or change flight operations. The proposed expansion of Washington ADIZ would force workarounds or negative impacts to operations. The Navy plans to continue coordination with airport planning agencies and the FAA to mitigate impacts.
	Electronic Combat (EC)	●	Same as above.
	Anti-Air Warfare (AAW)	●	Same as above.
	Mine Warfare (MW)	●	Same as above.
	Naval Special Warfare (NSW)	●	Same as above.
Noise Restrictions	Strike Warfare (STW)	●	Operations pose noise impacts on communities. Sonic booms are problematic over shoreline communities, and daily operations are troublesome near Outlying Field (OLF) Webster. Although noise complaints are generated around both airfields, they are primarily linked to operations at NAS Patuxent River. NAS Patuxent River is currently modifying operations to reduce noise. Increased noise complaints could compromise operations through pressure to modify or discontinue specific ops. The Navy plans to continue to respond to community concerns via the noise hotline, mitigate sonic boom impacts via the sonic boom monitors and sonic boom prediction tool model, issue press releases for noisy operations, conduct awareness regarding noise issues to squadrons, and convey to the importance of the Navy's mission to the public.
	Electronic Combat (EC)	●	Same as above.
	Anti-Air Warfare (AAW)	●	Same as above.
	Mine Warfare (MW)	●	Same as above.
	Naval Special Warfare (NSW)	●	Same as above.
Adjacent Land Use	Strike Warfare (STW)	●	Development on the Eastern Shore can result in reduced access to land based targets and surface operating areas at the Bloodsworth Island Range (BIR). Development in Lexington Park has the potential to impact preferred flight paths, especially in the vicinity of Great Mills Road. This can lead to modifications to some operations and flight paths. The Navy plans to continue its effort to monitor planned and proposed development, and will provide feedback to community planners and developers.
	Electronic Combat (EC)	●	Same as above.
	Anti-Air Warfare (AAW)	●	Same as above.
	Mine Warfare (MW)	●	Same as above.
	Naval Special Warfare (NSW)	●	Same as above.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Atlantic Undersea Test and Evaluation Center (AUTEC) Assessment Details

Range Mission Description

The AUTEC mission is to provide instrumented operational capabilities in a real world environment to satisfy research, development, test and evaluation requirements and operational performance assessment of warfighter readiness in support of the full spectrum of maritime warfare. The range's primary training support mission is Anti-Submarine Warfare (ASW) across all levels of training.

Capability Data

Mission Areas	Landspace	Airspace	Seaspace	Underseaspace	Targets	Threats	Scoring & Feedback System	Infrastructure	Range Support	Small Arms Ranges	Collective Ranges	MOUT Facilities	Suite of Ranges
	Capability Attributes												
Strike Warfare													
Electronic Combat	●	●	●	●	●	●	●		●				
Anti-Air Warfare													
Anti-Surface Warfare		●	●	●	●	●	●		●				
Mine Warfare		●	●	●	●		●		●				
Amphibious Warfare													
Anti-Submarine		●	●	●	●	●	●		●				
Naval Special Warfare	●	●	●	●	●	●	●		●				

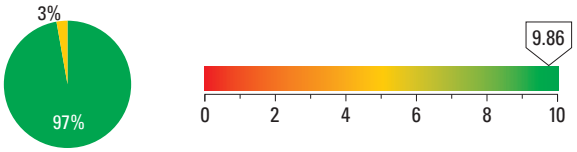
Legend: FMC ● PMC ● NMC ●

Encroachment Data

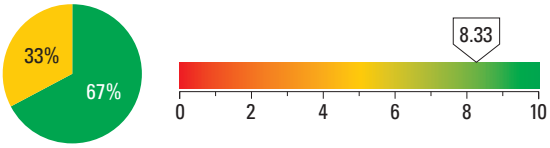
Mission Areas	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
	Encroachment Factors											
Strike Warfare												
Electronic Combat			●		●		●					●
Anti-Air Warfare												
Anti-Surface Warfare			●	●	●		●		●			●
Mine Warfare			●	●	●		●		●			●
Amphibious Warfare												
Anti-Submarine			●	●	●				●			●
Naval Special Warfare			●	●	●		●		●			●

Legend: Minimal ● Moderate ● Severe ●

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

1. Capability attribute most impacting range mission performance: Targets.
2. Mission area most severely impacted: ASUW.
3. Projected Status: No change.

Note: Assessments of Navy Special Warfare (NSW) training are based on actual NSW demand and use of training range capability and space. Actual training range capability and space requirements are based on Fleet Readiness Training Plan (FRTP) demands for conventional warfare areas.

Summary Observations

1. Maritime Sustainability and Range Transients are the encroachment factors that have greatest impact on AUTEC training.
2. ASUW, MW, and ASW are the mission areas most affected by encroachment.
3. The Navy continues to educate Fleet units to adhere to the maritime protective and mitigation measures. Continuing dialogue with the FAA may help to ameliorate the airspace restrictions. The Navy continues to improve its procedures to advise transient stakeholders of training activities.

Note: Assessments of NSW training are based on actual NSW demand and use of training range capability and space. Actual training range capability and space requirements are based on FRTP demands for conventional warfare areas.

Atlantic Undersea Test and Evaluation Center (AUTEC) Assessment Details

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Capability Scores	9.86	9.86	9.86	9.86

1. The AUTEC capability assessment has been stable from year to year, with relatively constant overall scores for CY2010 and CY2011.

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Encroachment Scores	9.25	8.33	8.33	8.33

1. Encroachment assessments for CY2008 were different than for CY2009, CY2010, and CY2011. The algorithm for the overall assessment score for CY2009 through CY2011 was revised from the original algorithm used in CY2008 to provide greater fidelity and consistency across all range complexes. Based on an improved review process and revised algorithms, the assessments for CY2009, CY2010, and CY2011 provide a more accurate assessment of encroachment. The assessments for the latter three years reveal there has been little encroachment change from year to year, with relatively constant overall scores for CY2009, CY2010, and CY2011.
2. The RCMP update is scheduled to begin in August 2011; no EAP is planned at this time.
3. Department of Interior (DOI) and private energy interests in the Outer Continental Shelf (OCS) are increasing as domestic energy demand builds. Naval offshore operating areas and training events may be affected. High priority areas include training ranges and seaspace in and adjacent to all Navy OPAREAs. OASN (E,I&E), as DoD spokesman for military offshore use, continues to work closely with the Fleets and DOI's Bureau of Ocean Energy Management (BOEM) to resolve issues of combined use of the OCS important to both agencies. Fleet review and analysis of impacts from both oil/gas and wind energy "lease sale" areas (Mission Critical Areas [MCAs]) have been reviewed and forwarded to OSD. DoD and DOI coordination continues.
4. AUTEC had no emerging encroachment issues during CY2011 that affect its operations. The CY2012 AUTEC encroachment assessment remains the same as in CY2011.

Atlantic Undersea Test and Evaluation Center (AUTEC) Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Targets	Anti-Surface Warfare (ASUW)		Targets lack the required spectral threat signature and may not be engaged with live ordnance (e.g., Hellfire Missiles) due to net explosive weight (NEW) limits. This reduces realism and limits tactics. The Navy recommends investing in spectral augmentation and investigating options to obtain inert Hellfire assets. No completion date has been identified.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Atlantic Undersea Test and Evaluation Center (AUTEC) Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Maritime Sustainability	Anti-Surface Warfare (ASUW)	●	The Navy uses the Protective Measures Assessment Protocol (PMAP) to assess range specific marine mammal encroachment issues and to identify specific protection measures. PMAP provides a fleet-wide set of protective measures for particular maritime activities and for designated geographic areas of interest. PMAP procedures have resulted in some training restrictions that reduce training flexibility, force segmented training, and ultimately reduce training realism. All at-sea training is impacted to some degree; impacts are most significant to integrated warfare training using active underwater acoustic sources or in-water explosive ordnance. This existing encroachment is relatively small in scope. Should the encroachment become more pervasive across additional species and locations, there could be other training and readiness impacts through reduced range access, segmented training, reduced realism, limited application of new technologies, raised flight altitudes, reduced live fire proficiency, increased personnel tempo, and increased O&M costs. The Navy continues to invest in marine mammal research; to rely on scientifically valid empirical data results as basis of marine mammal mitigation development; and to factor mitigation effectiveness into maritime operations. All Navy units are expected to adhere to PMAP. The Navy continually evaluates existing PMAP measures for their potential encroachment and impacts on training. If impacts on training from PMAP are identified and documented, the Navy will address impact resolution during management review processes.
	Mine Warfare (MW)	●	Same as above.
	Anti-Submarine (ASW)	●	Same as above.
Airspace	Anti-Surface Warfare (ASUW)	●	Miami Center may decline Notices to Airmen (NOTAMs) and not release airspace in a timely manner over the Bahamas. Airspace restrictions segment training and/or reduce realism, reduce range access, and increase O&M costs. Operations may be delayed until the SUA is released. The Navy is engaging in continuing dialogue with the FAA to help ameliorate the airspace restrictions.
	Anti-Submarine (ASW)	●	Same as above.
Range Transients	Anti-Surface Warfare (ASUW)	●	Range transients, involving commercial shipping, commercial fishing, and private pleasure boating encroach on training, either by delaying events or forcing relocation to less than optimum locations. Commercial vessel and recreational vessel encroachment creates avoidance areas and segments training/reduces realism. The Navy will continue to pursue opportunities to inform industry and the public of the impact of range transient encroachment on at-sea OPAREAs and Navy readiness.
	Mine Warfare (MW)	●	Same as above.
	Anti-Submarine (ASW)	●	Same as above.
	Naval Special Warfare (NSW)	●	Same as above.

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Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Boston Assessment Details

Range Mission Description

The Boston Range Complex has a mission to support Antisurface Warfare (ASUW) and Antisubmarine Warfare (ASW) training. The Boston OPAREA is a surface and subsurface operating area off the coast of Maine, New Hampshire, and Massachusetts.

Capability Data

Mission Areas	Landspace	Airspace	Seaspace	Underseaspace	Targets	Threats	Scoring & Feedback System	Infrastructure	Range Support	Small Arms Ranges	Collective Ranges	MOUT Facilities	Suite of Ranges
	Capability Attributes												
Strike Warfare													
Electronic Combat													
Anti-Air Warfare													
Anti-Surface Warfare		●	●	●	●	●	●		●				
Mine Warfare													
Amphibious Warfare													
Anti-Submarine		●	●	●	●	●	●		●				
Naval Special Warfare													

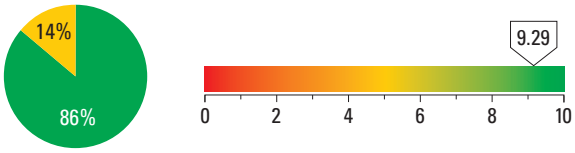
Legend: FMC ● PMC ● NMC ●

Encroachment Data

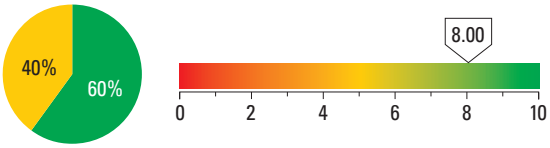
Mission Areas	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
	Encroachment Factors											
Strike Warfare												
Electronic Combat												
Anti-Air Warfare												
Anti-Surface Warfare			●	●	●				●			●
Mine Warfare												
Amphibious Warfare												
Anti-Submarine			●	●	●				●			●
Naval Special Warfare												

Legend: Minimal ● Moderate ● Severe ●

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

1. Capability attribute most impacting range mission performance: Range Support.
2. Mission area most severely impacted: ASUW, ASW.
3. Projected Status: No change.
4. A web-based scheduling system with pre-event, real-time, and post-event modules could enhance the interaction between ranges for better usage of range assets and availability of moveable targets and OPFOR systems, thereby improving the overall system of ranges.

Summary Observations

1. Spectrum and Maritime Sustainability are the encroachment factors having the greatest impact on training.
2. ASUW and ASW are equally encroached.
3. The Navy continues to coordinate with appropriate frequency allocation and oversight agencies to seek spectrum relief. Competition for frequency spectrum will add increased pressure on available bandwidth for Naval operations. The Navy continues to educate Fleet units to adhere to the maritime protective and mitigation measures.

Boston Assessment Details

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Capability Scores	8.93	9.29	9.29	9.29

1. The ASW threat requirement was re-evaluated after the CY2008 report from yellow to green due to changes in training to be supported by the range.

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Encroachment Scores	9.17	8.00	8.00	8.00

1. Encroachment assessments for CY2008 were different than for CY2009, CY2010, and CY2011. The algorithm for the overall assessment score for CY2009 through CY2011 was revised from the original algorithm used in CY2008 to provide greater fidelity and consistency across all range complexes. Based on an improved review process and revised algorithms, the assessments for CY2009, CY2010, and CY2011 provide a more accurate assessment of encroachment. The assessments for the latter three years reveal there has been little encroachment change from year to year, with relatively constant overall scores for CY2009, CY2010, and CY2011.
2. The Virginia Capes VACAPES-Northeast RCMP (which includes Boston) is currently being updated.
3. Department of Interior (DOI) and private energy interests in the Outer Continental Shelf (OCS) are increasing as domestic energy demand builds. Naval offshore operating areas and training events may be affected. High priority areas include training ranges and sea space in and adjacent to all Navy OPAREAs. OASN (E,I&E), as DoD spokesman for military offshore use, continues to work closely with the Fleets and DOI's Bureau of Ocean Energy Management (BOEM) to resolve issues of combined use of the OCS important to both agencies. Fleet review and analysis of impacts from both oil, gas and wind energy "lease sale" areas (i.e., Mission Critical Areas [MCAs]) have been reviewed and forwarded to OSD. DoD and DOI coordination continues.
4. Massachusetts and Federal officials designated a 3,000 square mile area of ocean south of Cape Cod available to lease to developers of commercial scale offshore wind farms. Future wind farms have the potential to affect military operations in the Boston training areas.

Boston Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Range Support	Anti-Surface Warfare (ASUW)		The lack of web-based scheduling system with pre-event, real-time, and post-event modules precludes most efficient scheduling and documenting of range usage. Post-event reporting is particularly critical for ordnance expenditures or active sonar usage in at-sea OPAREAs, since the MMPA permits require the Navy to periodically report these values. Non-compliance or inaccurately reporting post-event values to regulators risks range access or prohibitions on training events that involve active sonar or high explosives at-sea. Pacific Fleet (PACFLT) is developing a Data Collection and Scheduling Tool (DCAST) that includes a post-event module to mitigate issues outlined above. If successful, the Navy could consider adopting it at all range scheduling facilities.
	Anti-Submarine (ASW)		Same as above.

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Spectrum	Anti-Surface Warfare (ASUW)		Employment of Link 16, SPY-1 radar, SPS 49 radar, and IFF are restricted. Restrictions limit spectrum operations and prohibit certain training events, segment training/reduce realism, reduce training days, limit application of new weapons technologies, and inhibit new tactics development. The Navy continues to coordinate with appropriate frequency allocation and oversight agencies to seek spectrum relief, and to develop encroachment strategies that will reduce encroachment while ensuring pending use of emerging spectrum technologies. Competition for frequency spectrum will add increased pressure on available bandwidth for Naval operations.
	Anti-Submarine (ASW)		Same as above.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Boston Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Maritime Sustainability	Anti-Surface Warfare (ASUW)	●	Maritime protective and mitigation measures undertaken in compliance with regulatory requirements have resulted in training restrictions that reduce training flexibility, force segmented training, and ultimately reduce training realism. All at-sea training is impacted to some degree; impacts are most significant to integrated warfare training using active underwater acoustic sources or in-water explosive ordnance. The Navy and the National Marine Fisheries Service (NMFS) have developed science based protective and mitigation measures that adequately protect marine species while accommodating military readiness activities. The Navy continues to develop EISs and obtain permits and authorizations for its range complexes to ensure military training complies with applicable laws and regulations. Litigation risks remain a concern, entailing the potential to delay or further restrict training, despite the protective and mitigation measures applied by the Navy in compliance with the MMPA and the Endangered Species Act (ESA). Endangered species encroachment from the North Atlantic Right Whale has created avoidance areas that have resulted in some reduction of training days and prohibits certain training events. This area is relatively small in scope; however, if these types of restrictions were applied to other species/areas, there would be significant impacts to readiness through reduction in range access, segmentation of training/reduction in realism, limits on the application of new technologies, raised flight altitudes, reduced live fire proficiency, increased personnel tempo, and increased O&M costs. The Navy will continue to invest in marine mammal research; rely on scientifically valid empirical data results as basis of marine mammal mitigation development; factor mitigation effectiveness into permit requests; and continue education of Fleet units to adhere to the maritime protective and mitigation measures and public education outreach efforts. The Navy's authorizations under the MMPA and ESA include an adaptive management approach that includes continually evaluating existing mitigation measures for their potential impacts on training. If impacts on training from mitigation measures are identified and documented, the Navy will raise these impacts with the NMFS for resolution during an annual adaptive management review process. The Navy is currently preparing environmental compliance documentation to renew its MMPA and ESA authorizations by January 2014, which will consider any impacts on training stemming from existing mitigations measures and propose changes as warranted.
	Anti-Submarine (ASW)	●	Same as above.

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Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

China Lake Assessment Details

Range Mission Description

China Lake Range is the premier land ranges and weapons development laboratory for the Department of the Navy. The ranges also support PACFLT training before squadrons deploy. Most training is EW. Squadrons from Nellis AFB also use the ranges to train.

Capability Data

Mission Areas	Capability Attributes												
	Landspace	Airspace	Seaspace	Underseaspace	Targets	Threats	Scoring & Feedback System	Infrastructure	Range Support	Small Arms Ranges	Collective Ranges	MOUT Facilities	Suite of Ranges
Strike Warfare	●	●			●	●	●	●	●				
Electronic Combat	●	●			●	●	●	●	●				
Anti-Air Warfare	●	●			●	●	●	●	●				
Anti-Surface Warfare													
Mine Warfare													
Amphibious Warfare													
Anti-Submarine													
Naval Special Warfare	●	●			●	●	●	●	●				

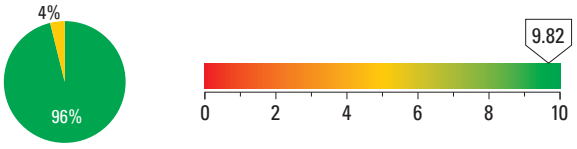
Legend: FMC ● PMC ● NMC ●

Encroachment Data

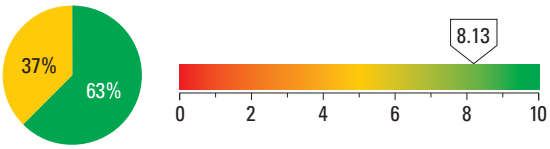
Mission Areas	Encroachment Factors												
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strike Warfare	●	●	●		●	●	●	●	●	●		●
Electronic Combat	●	●	●		●	●	●	●	●	●		●
Anti-Air Warfare	●	●	●		●	●	●	●	●	●		●
Anti-Surface Warfare												
Mine Warfare												
Amphibious Warfare												
Anti-Submarine												
Naval Special Warfare	●	●	●		●	●	●	●	●	●		●

Legend: Minimal ● Moderate ● Severe ●

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

1. Infrastructure is the capability attribute that most impacts the range's ability to perform its assigned mission.
2. Electronic Combat is the mission area that is impacted the most.
3. No change in capability is anticipated for the future.

Note: Assessments of Navy Special Warfare (NSW) training are based on actual NSW demand and use of training range capability and space. Actual training range capability and space requirements are based on Fleet Readiness Training Plan (FRTP) demands for conventional warfare areas.

Summary Observations

1. Frequency Spectrum and Cultural Resources are the encroachment factors that most impact the range's ability to perform its assigned mission.
2. Strike Warfare is the mission area that is impacted the most.
3. Increased desire for additional spectrum for commercial use will lead to additional encroachment pressures. The impacts of frequency spectrum encroachment will improve only with continued national attention to increase spectrum for military use and more efficiently use the available spectrum. The impacts from cultural resources will require several actions described below and significant investment in cultural resource surveys and evaluation.

Note: Assessments of Navy Special Warfare (NSW)training are based on actual NSW demand and use of training range capability and space. Actual training range capability and space requirements are based on FRTP demands for conventional warfare areas.

China Lake Assessment Details

Historical Information, Results, and Future Projections					Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011	**Calendar Year**	2008	2009	2010	2011
Capability Scores	9.88	9.82	9.82	9.82	**Encroachment Scores**	9.20	8.50	8.13	8.13
1. Capability at the China Lake Range has remained steady since CY2008. Its anticipated capability will remain stable in the future.					1. Encroachment pressures have increased at the China Lake Range since CY2008. However, they have remained constant in CY2011. Frequency spectrum and cultural resources management are the primary drivers for increased encroachment pressures. It is anticipated that encroachment pressures will remain stable in the future.				

China Lake Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Infrastructure	Electronic Combat (EC)	●	There is a lack of improved sites on the Electronic Combat Range for threat emitters. This reduces "time to target" realism achieved with diversity and quick placement of the emitters, a key element of fleet training. The Navy plans to implement MILCON P-513.

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Threatened & Endangered Species	Strike Warfare (STW)	●	The presence of threatened and endangered (T&E) species at China Lake has an impact on training. It requires significant mitigation efforts to support training activities. The Navy plans to update its latest INRMP (In progress; estimated completion date: CY2012), continue mitigations, and update EIS (estimated completion date: January 2014).
Spectrum	Strike Warfare (STW)	●	A reduction of available spectrum has been coupled with an increase in spectrum requirements. The Navy has limited ability to schedule certain types of events and many concurrent activities. The Navy recognizes the need for coordination at the local level to deconflict when possible, and will work through the chain of command and the Range Commanders Council to address spectrum requirements at the national level.
	Electronic Combat (EC)	●	Same as above.
	Anti-Air Warfare (AAW)	●	Same as above.
	Naval Special Warfare (NSW)	●	Same as above.
Airspace	Strike Warfare (STW)	●	There is significant competition for the airspace that overlies the China Lake ranges and the R-2508 Complex. Commercial and general aviation is a major concern, particularly with the increasing urbanization of the Mojave Desert region and growth of the Las Vegas metropolitan area. There are three proposals for expansion of existing airports, all of which would potentially have significant impacts. Crowded airspace near China lake and the R-2508 airspace affects ingress/egress and Military Operating and Restricted Areas. The Navy will continue coordination with airport planning agencies and the FAA to mitigate impacts.
	Electronic Combat (EC)	●	Same as above.
	Anti-Air Warfare (AAW)	●	Same as above.
Adjacent Land Use	Strike Warfare (STW)	●	Although China Lake is relatively isolated, urban growth is becoming a concern. In particular, growth in the Indian Wells Valley, if not managed correctly, has the potential to impact the range mission. Growth in other areas further removed from China Lake, but still within the R-2508 Complex, also negatively impacts the mission. In addition, there is significant pressure for renewable energy development in the region, including wind and solar energy. Wind turbines can significantly impact training and reduce access to low-level airspace. Some types of solar energy facilities can reduce access to low-level airspace. Development reduces access to low-level airspace. The Navy will continue its efforts to monitor planned and proposed development, and to provide feedback to community planners and developers.
	Electronic Combat (EC)	●	Same as above.
	Anti-Air Warfare (AAW)	●	Same as above.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

China Lake Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Cultural Resources	Strike Warfare (STW)	●	China Lake contains a vast number of archeological sites, significant range areas that have not been surveyed/evaluated for cultural resources, coupled with a lack of a programmatic agreement with the State Historic Preservation Office (SHPO). Local Native American tribes maintain keen interest. This requires significant mitigation and long planning lead time that, in some cases, means the Navy can't meet training schedules. The Navy will perform cultural resource surveys for large portions of the ranges, negotiate a Programmatic Agreement with the SHPO, and update the China Lake EIS.
	Electronic Combat (EC)	●	Same as above.
	Anti-Air Warfare (AAW)	●	Same as above.
	Naval Special Warfare (NSW)	●	Same as above.

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Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

El Centro Assessment Details

Range Mission Description

Aircrews use the four air-to-ground ordnance delivery target areas, one parachute drop target area, and associated Restricted Airspace at El Centro to develop their skills. The desert range is used for air-to-ground bombing, rocket firing, strafing, dummy drops, and mobile land target training while the airspace is also used for air combat maneuvering, low altitude tactics training, parachute jump and cargo drop training, and unmanned aerial systems flights. The ranges are a major training resource for Navy and Marine Corps aviation units. In conjunction with use of Naval Air Facility El Centro, the ranges primarily support F/A-18 and AV-8B Fleet Replacement Squadron (FRS) and Chief of Naval Air Training (CNATRA) T-45 air-to-ground weapons delivery training syllabus events. The ranges are also utilized by other Fleet and Marine Air Wing fixed wing and rotary wing units for training, as well as for the conduct of exercises in support of the Navy's FRTP and USMC Predeployment Training Plan (PTP). The El Centro ranges also support other U.S. and foreign/allied Services on an as available basis.

Capability Data

Mission Areas	Capability Attributes												
	Landspace	Airspace	Seaspace	Underseaspace	Targets	Threats	Scoring & Feedback System	Infrastructure	Range Support	Small Arms Ranges	Collective Ranges	MOUT Facilities	Suite of Ranges
Strike Warfare	●	●			●		●		●				
Electronic Combat													
Anti-Air Warfare													
Anti-Surface Warfare													
Mine Warfare													
Amphibious Warfare													
Anti-Submarine													
Naval Special Warfare													

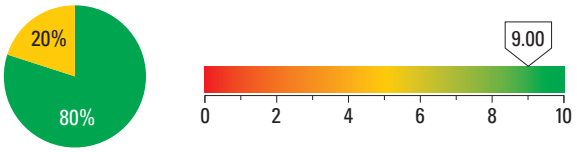
Legend: FMC ● PMC ● NMC ●

Encroachment Data

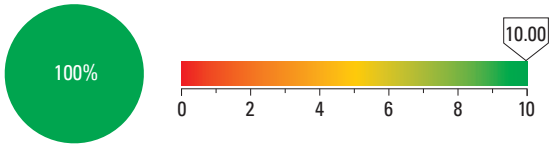
Mission Areas	Encroachment Factors											
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strike Warfare	●	●	●		●	●	●	●	●	●	●	●
Electronic Combat												
Anti-Air Warfare												
Anti-Surface Warfare												
Mine Warfare												
Amphibious Warfare												
Anti-Submarine												
Naval Special Warfare												

Legend: Minimal ● Moderate ● Severe ●

Capability Chart and Scores



Encroachment Chart and Scores



El Centro Assessment Details

Summary Observations	Summary Observations
1. Capability attribute most impacting range mission performance: Range Support. 2. Mission area most severely impacted: Strike Warfare. 3. Projected Status: A new scheduling system, being developed by PACFLT, requires either USMC acceptance for integration into the current Range Facility Management Support System (RFMSS) program, or realignment of scheduling and data collection responsibilities away from MCAS Yuma to a PACFLT organization. 4. Implementation of DCAST at El Centro, with pre-event, real-time, and post-event modules, will facilitate more effective and efficient usage of range assets. It will allow units scheduling the range to maximize training opportunities. Since it will be a fleet-wide system, DCAST will provide comprehensive training and readiness scheduling in support of the Fleet Response Training Plan (FRTP). 5. The establishment of a full-time El Centro Range Manager would ensure more efficient and effective range management, and increased focus on ability to sustain current and plan for future operational capability requirements, while ensuring the safety of personnel and property.	1. For the El Centro ranges and training areas, there is no encroachment that has a negative impact on training.

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Capability Scores	6.39	6.39	9.00	9.00

1. In CY2008 and CY2009, this range was also evaluated for AAW and Electronic Combat. In CY2010, mission areas were revised for the range to support only Strike Warfare.
2. El Centro Range is scheduled via MCAS Yuma Range Schedules, which adopted RFMSS as it's scheduling and range data collection and management tool in FY2010. PACFLT deems RFMSS inadequate for PACFLT purposes, and has been developing a web-enabled tool, DCAST, that includes customizable scheduling, event deconfliction, range map graphics generation, schedule notification, and automatic reports generation modules. The tool is a N433 program of record and has an authority to operate within the DISA Cloud. Methods for implementation of DCAST for use in scheduling and data collection of the El Centro Range have yet to be determined

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Encroachment Scores	9.86	9.80	10.00	10.00

1. Encroachment assessments for CY2008 were different than for CY2009, CY2010, and CY2011. The algorithm for the overall assessment score for CY2009 through CY2011 was revised from the original algorithm used in CY2008 to provide greater fidelity and consistency across all range complexes. Based on an improved review process and revised algorithms, the assessments for CY2009, CY2010, and CY2011 provide a more accurate assessment of encroachment. The assessments for the latter three years reveal there has been little encroachment change from year to year, with relatively constant overall scores for CY2009, CY2010, and CY2011.
2. The U.S. Fish and Wildlife Service (USFWS), ruled on March 15, 2011 that the listing of the Flat-Tailed Horned Lizard (FTHL) as a threatened species under the Endangered Species Act (ESA) of CY1973, is not warranted. This strengthens the range wide management strategy that aids the conservation of the species habitat. Three of the four air-to-ground target areas are contained within the FTHL Management Area (MA) and has potential impact on further growth of Strike Warfare activities. The potential for expansion of military activities within these areas is limited by the level of potential habitat disturbance those activities could cause. The Navy is in consultation with members of the FTHL Interagency Coordinating Committee to further define metrics for application in determining current and future military training activity habit disturbance levels.
3. Although not yet a significant impact, there are potential encroachment pressures (Adjacent Land Use) from alternative energy initiatives on public lands adjacent to the range areas, recreation activities in the vicinity of range boundaries, and incursion of off-road vehicles into the range areas. The El Centro management is currently addressing these issues using public awareness outreach and enhanced warning and control measures.
4. The proposed location for development of Desert Springs Oasis lies partially under R2510, posing a hazard to personnel in the area. Due to its location, Desert Springs Oasis may potentially require aircraft flight path adjustment when transiting between the restricted airspace and Naval Air Field (NAF) El Centro to comply with OPNAVINST 3710 guidelines regarding avoidance of over-flight of populated areas when carrying external stores or by Unmanned Aerial Systems (UAS).

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

El Centro Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Range Support	Strike Warfare (STW)		El Centro ranges are scheduled via the MCAS Yuma Range Scheduling Office. This allows for ease of coordination of concurrent use of contiguous Bob Stump Training Range Complex airspace and training areas for exercises and individual events. MCAS Yuma began using RFMSS for scheduling and data collection in FY2010. RFMSS does not support the PACFLT vision of an integrated fleet wide scheduling and data collection system. PACFLT development and fielding of DCAST for the El Centro ranges will require coordination with USMC, or realignment of scheduling and control responsibilities for the El Centro ranges. No completion date has been identified. There is no funded position for a Range Manager for the El Centro ranges. The duties are currently assigned to the Air Field Manager. The lack of a funded, dedicated position has the potential to comprise sustainment of, or future development of, range capabilities to meet mission requirements, as well as reduces the oversight and development of range operations and safety related programs. Lack of a dedicated Range Manager precludes efficient execution of range management functions. The Navy recommends funding and establishment of a full time Range Manager position for El Centro. No completion date for this action has been identified.

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Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Fallon Range Training Complex Assessment Details

Range Mission Description

The mission of the Fallon Range Complex is to provide Naval Air Forces with airspace and bombing ranges in support of Fleet aviation combat training. Fallon is Naval Aviation's premier training range. All carrier deployed Naval Air Forces (except FDNF) train at the Fallon Range Complex prior to deployment. The specific mission of the Fallon Range Complex is to provide Naval Air Forces with advanced and intermediate levels of training for all over land or land based warfare. The Fallon Range Commander is the Commander, Naval Strike & Air Warfare Center (NSAWC). NSAWC is responsible for all Naval aviation training combat tactics, techniques, and procedures (TTP) for Naval Air Forces at the individual, unit, and integrated airwing levels.

Capability Data

Mission Areas	Capability Attributes												
	Landspace	Airspace	Seaspace	Underseaspace	Targets	Threats	Scoring & Feedback System	Infrastructure	Range Support	Small Arms Ranges	Collective Ranges	MOUT Facilities	Suite of Ranges
Strike Warfare	PMC	PMC			PMC	PMC	PMC		FMC				
Electronic Combat	FMC	PMC			FMC	PMC	PMC		FMC				
Anti-Air Warfare	PMC	PMC				PMC	PMC		FMC				
Anti-Surface Warfare													
Mine Warfare													
Amphibious Warfare													
Anti-Submarine													
Naval Special Warfare	PMC	FMC			FMC	PMC	FMC		FMC				

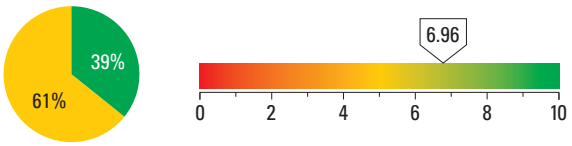
Legend: FMC PMC NMC

Encroachment Data

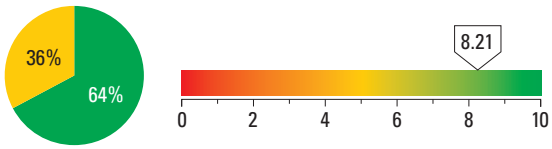
Mission Areas	Encroachment Factors											
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strike Warfare	Minimal	Minimal	Moderate		Moderate	Minimal	Moderate	Moderate	Minimal	Minimal		Moderate
Electronic Combat	Minimal	Minimal	Moderate		Minimal	Minimal	Minimal	Minimal		Minimal		Minimal
Anti-Air Warfare	Minimal	Minimal	Moderate		Moderate	Minimal	Moderate	Minimal	Minimal	Minimal		Minimal
Anti-Surface Warfare												
Mine Warfare												
Amphibious Warfare												
Anti-Submarine												
Naval Special Warfare	Minimal	Moderate	Moderate		Moderate	Minimal	Minimal	Moderate	Minimal	Minimal		Moderate

Legend: Minimal Moderate Severe

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

1. Capability attribute most impacting range mission performance: Threats, Scoring & Feedback Systems in support of EC.
2. Mission area most severely impacted: EC; followed closely by AAW and STW.
3. Range Support capabilities were updated based on the use of the PACFLT developed web-enabled Data Collection and Scheduling Tool (DCAST). DCAST includes customizable scheduling, event deconfliction, range map graphics generation, schedule notification, and automatic reports generation. The tool is an OPNAV N433 program of record that has authority to operate within the DISA Cloud.

Note: Assessments of Navy Special Warfare (NSW) training are based on actual NSW demand and use of training range capability and space. Actual training range capability and space requirements are based on Fleet Readiness Training Plan (FRTP) demands for conventional warfare areas.

Summary Observations

1. Spectrum is the encroachment factor having the greatest impact on training.
2. All assigned Mission Areas have encroachment.
3. The Navy has developed procedures and workarounds to accommodate spectrum encroachment. The Navy continues to discuss the various encroachment issues with Fallon stakeholders with the expectation stakeholders will have a clearer understanding of Navy training requirements and of strategies that can relieve training encroachment restrictions.
4. There are Adjacent Land Use concerns, similar to those affecting NSW, for SW due to inclusion of rotary-wing squadrons (HSM/HSC) detaching to Fallon with airwings for training. Same concerns for low-level flight as NSW.

Note: Assessments of NSW training are based on actual NSW demand and use of training range capability and space. Actual training range capability and space requirements are based on FRTP demands for conventional warfare areas.

Fallon Range Training Complex Assessment Details

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Capability Scores	5.65	5.65	6.09	6.09

1. EC threats improved from red to yellow. The improvement in rating from CY2009 to CY2010 justified by investment in IADS and threats.
2. The NSW landspace training requirement was re-evaluated from red to yellow from CY2009 to CY2010.

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Encroachment Scores	8.96	8.84	8.84	8.33

1. Encroachment assessments for CY2008 were different than for CY2009, CY2010, and CY2011. The algorithm for the overall assessment score for CY2009 through CY2011 was revised from the original algorithm used in CY2008 to provide greater fidelity and consistency across all range complexes. Based on an improved review process and revised algorithms, the assessments for CY2009, CY2010, and CY2011 provide a more accurate assessment of encroachment. The assessments for the latter three years reveal there has been little encroachment change from year to year, with relatively constant overall scores for CY2009, CY2010, and CY2011. The slight decrease in the CY2011 assessment results from green to yellow assessments for NSW in Munitions Restrictions, Spectrum, Airspace, and Adjacent Land Use.
2. CY2012 assessments remain the same with the exception that there are Adjacent Land Use concerns, similar to those affecting NSW, for SW due to inclusion of rotary-wing squadrons (HSM/HSC) detaching to Fallon with airwings for training.
3. There is little indication encroachment pressures will change in the foreseeable future

Fallon Range Training Complex Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Strike Warfare (STW)	●	Landspace area size does not meet requirements; limits weapons type and employment tactics means use of lasers is not allowed in all directions and N.E.W. restricted in some areas. These restrictions reduce realism; inhibit new tactics development and reduce live fire proficiency. There is currently no investment recommendation and no planned action.
	Anti-Air Warfare (AAW)	●	Flare use is restricted for flights below 2,000 ft, which impacts helicopter training. This restriction reduces realism, inhibits new tactics development, and reduces live fire proficiency. There is no investment recommendation or planned action.
	Naval Special Warfare (NSW)	●	Landspace area size does not meet requirements, limits weapons type and employment tactics means use of lasers is not allowed in all directions, and N.E.W. is restricted in some areas. No MOUT facility is available, nor is there sufficient area for ground fire and maneuver training. These restrictions reduce realism, inhibit new tactics development, and reduce live fire proficiency. Range redesign is in progress to remediate small arms range areas; it is expected resolution will be achieved by CY2017.
Airspace	Strike Warfare (STW)	●	Airspace available and altitude restrictions limit tactics that may be employed. Limited supersonic employment is possible, especially in target areas. These factors reduce realism, inhibit new tactics development, limit application of new weapon technologies, and reduce live fire proficiency. There is currently no investment recommendation and no planned action.
	Electronic Combat (EC)	●	The range is assessed as moderate for encroachment factors for helicopters, due to restricted flare use, though encroachment factors are assessed as minimal for fixed-winged aircraft. This restriction reduces realism, inhibits tactics development, and reduces live fire proficiency. There is no investment recommendation and no planned action.
	Anti-Air Warfare (AAW)	●	Limited airspace is available, limiting supersonic employment. Altitude restrictions limit tactics that may be employed, especially in target areas. These restrictions reduce realism, inhibit new tactics development, limit application of new weapon technologies, and reduce live fire proficiency. There is no investment recommendation and no planned action.
Targets	Strike Warfare (STW)	●	There is a limited number of tactically significant targets; no infrared (IR) augmentation; no moving, structural, or urban targets; and no OPNAV funding for Navy Range targets program. This shortfall reduces realism, inhibits new tactics development, limits application of new weapon technologies, and reduces live fire proficiency. The Navy recommends investing in upgraded scoring options, Time Sensitive Target program targets, tactical targets; fixed and mobile EC sites, and urban complex. No completion date for these actions has been identified.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Fallon Range Training Complex Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Threats	Strike Warfare (STW)	●	The range lacks no live helicopter threat capability; the quantity and variety of threats do not meet requirements; and EC threat above level 2 is not available. These shortfalls reduce realism, inhibit new tactics development, limit application of new weapons technologies, and reduce live fire proficiency. The Navy recommends investing in fully mobile threat systems, simulators with TSPI integration, upgraded Integrated Air Defense System; and EC threat systems through level 4. No completion date has been identified.
	Electronic Combat (EC)	●	EC threat level does not meet requirements; and the quantity and variety of the threats do not meet requirements. EC threat above level 2 is not available. This reduces realism, inhibits new tactics development, limits application of new weapons technologies, and reduce live fire proficiency. The Navy recommends investing in fully mobile threat systems, simulators with TSPI integration, an upgraded Integrated Air Defense System, EC threat systems through level 4. No completion date has been identified.
	Anti-Air Warfare (AAW)	●	There is no live helicopter threat capability, the quantity and variety of threats do not meet requirements, and EC threat above level 2 is not available. These shortfalls reduce realism, inhibit new tactics development, limit application of new weapons technologies, and reduce live fire proficiency. The Navy recommends investing in fully mobile threat systems, simulators with TSPI integration, upgraded Integrated Air defense System, and EC threat systems through level. No completion date has been identified.
	Naval Special Warfare (NSW)	●	Threats are not sufficient for training. This reduces realism, inhibits new tactics development, limits application of new weapons technologies, and reduces live fire proficiency. The Navy recommends investment in sufficient threats for mission. No completion date has been identified.
Scoring & Feedback System	Strike Warfare (STW)	●	The capacity of the current Scoring & Feedback system does not meet requirements; it is not JNTC or TENA compliant; and has no automatic RTKN. This inhibits new tactics development and reduces live fire proficiency. The Navy recommends investing in EC systems, range EC&C architecture, and JNTC and TENA compatible systems. No completion date has been identified.
	Electronic Combat (EC)	●	Same as above.
	Anti-Air Warfare (AAW)	●	Same as above.

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Munitions Restrictions	Naval Special Warfare (NSW)	●	Fallon range operations were designed (and are maintained) for aviation air-to-ground missions. All ranges have UXO potential. The introduction of ground training at Fallon ranges increases the risk of a UXO incident. Impacts to training include restricted range access and areas restricted from ground use. No action is planned as no resolution is currently identified.
Spectrum	Strike Warfare (STW)	●	The range maintains radar and frequency band restrictions; E-3 and EA-6B operations restrictions; EC threat emitter bandwidth restrictions; and Link-16 time slot allocations and number of aircraft restrictions, all of which impact FRTC training. Encroachment segments training and reduces realism, limits application of new technologies, and inhibits new tactics development. No resolution is currently identified.
	Electronic Combat (EC)	●	Same as above.
	Anti-Air Warfare (AAW)	●	Same as above.
	Naval Special Warfare (NSW)	●	The range maintains radar and frequency band restrictions, EC threat emitter bandwidth restrictions, and Link-16 time slot allocations, all of which impact NSW training. Encroachment segments training and reduces realism, limits application of new technologies, and inhibits new tactics development. No resolution is currently identified.
Airspace	Strike Warfare (STW)	●	Airspace is encroached upon by FAA altitude caps, supersonic restrictions, VFR corridor interruptions, run-in heading restrictions, and helicopter restrictions. This encroachment prohibits training events, segments training/reduces realism, constrains flight altitudes, inhibits new tactics development, and complicates night/all-weather training. No resolution is currently identified.
	Anti-Air Warfare (AAW)	●	Same as above.
	Naval Special Warfare (NSW)	●	Airspace is used for Fallon's primary air mission. Ground live fire training conflicts with airspace. Ground training priority at Fallon is #13 after aviation units. Airspace encroachment on NSW ground operations prohibits training events, segments training and reduces realism, constrains flight altitudes, inhibits new tactics development, and complicates night/all-weather training. No resolution is currently identified.

Fallon Range Training Complex Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Noise Restrictions	Strike Warfare (STW)	●	Supersonic flight prohibition below 11,000 ft. above MSL impacts tactical training. These restrictions affect training realism, tactics, and night/all-weather operations. No resolution is currently identified.
	Anti-Air Warfare (AAW)	●	Same as above.
Adjacent Land Use	Strike Warfare (STW)	●	Power lines and telecommunications towers impact low altitude helicopter training and tactics. Encroachment prohibits training events, segments training/reduces realism, constrains flight altitudes, inhibits new tactics development, and complicates night/all-weather training. No resolution is currently identified.
	Naval Special Warfare (NSW)	●	Same as above.
Range Transients	Strike Warfare (STW)	●	Range management must provide range clearance for livestock. This livestock encroachment segments training/ reduces realism. No resolution is currently identified.
	Naval Special Warfare (NSW)	●	Same as above.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Gulf of Mexico (GOMEX) Assessment Details

Range Mission Description

The Gulf of Mexico (GOMEX) Range Complex supports training in Anti-air Warfare (AAW), Antisurface Warfare (ASUW), Mine Warfare (MW), and Naval Special Warfare (NSW).

Capability Data

Mission Areas	Landspace	Airspace	Seaspace	Underseaspace	Targets	Threats	Scoring & Feedback System	Infrastructure	Range Support	Small Arms Ranges	Collective Ranges	MOUT Facilities	Suite of Ranges
	Capability Attributes												
Strike Warfare													
Electronic Combat													
Anti-Air Warfare	●	●	●		●	●	●		●				
Anti-Surface Warfare		●	●	●	●	●	●		●				
Mine Warfare		●	●	●	●	●	●		●				
Amphibious Warfare													
Anti-Submarine													
Naval Special Warfare	●	●	●	●	●	●	●		●				

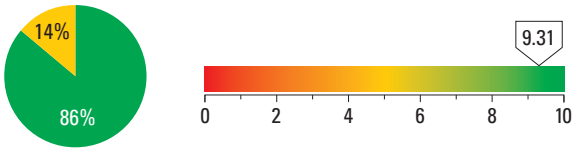
Legend: FMC ● PMC ● NMC ●

Encroachment Data

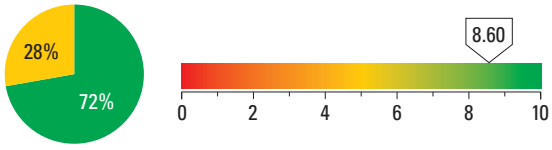
Mission Areas	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
	Encroachment Factors											
Strike Warfare												
Electronic Combat												
Anti-Air Warfare			●		●		●	●				●
Anti-Surface Warfare			●	●	●		●		●			●
Mine Warfare			●	●	●		●	●	●			●
Amphibious Warfare												
Anti-Submarine												
Naval Special Warfare			●	●	●		●	●	●			●

Legend: Minimal ● Moderate ● Severe ●

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

1. Capability attribute most impacting range mission performance: Range Support.
2. Assigned mission areas most severely impacted: All.
3. Projected Status: No immediate change.
4. A web-based scheduling system with pre-event, real-time, and post-event modules could enhance the interaction between ranges for better usage of range assets and availability of moveable targets and OPFOR systems, thereby improving the overall system of ranges.

Note: Assessments of NSW training are based on actual NSW demand and use of training range capability and space. Actual training range capability and space requirements are based on Fleet Readiness Training Plan (FRTP) demands for conventional warfare areas.

Summary Observations

1. Spectrum is the encroachment factor that has greatest impact on training, followed by Maritime Sustainability.
2. AAW and ASUW have moderate encroachment.
3. The Navy continues to coordinate with appropriate frequency allocation and oversight agencies to seek spectrum relief. Competition for frequency spectrum will add increased pressure on available bandwidth for Naval operations. The Navy will continue to educate Fleet units to adhere to the maritime protective and mitigation measures.

Note: Assessments of NSW training are based on actual NSW demand and use of training range capability and space. Actual training range capability and space requirements are based on FRTP demands for conventional warfare areas.

Gulf of Mexico (GOMEX) Assessment Details

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Capability Scores	9.31	9.31	9.31	9.31

1. Capability at the GOMEX Range Complex has remained steady since CY2008. Principal mine warfare forces previously homeported in Texas and supported by the range complex have moved to Norfolk, VA, (helicopters) and San Diego, CA (ships).

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Encroachment Scores	9.27	8.60	8.60	8.60

1. Encroachment assessments for CY2008 were different than for CY2009, CY2010, and CY2011. The algorithm for the overall assessment score for CY2009 through CY2011 was revised from the original algorithm used in CY2008 to provide greater fidelity and consistency across all range complexes. Based on an improved review process and revised algorithms, the assessments for CY2009, CY2010, and CY2011 provide a more accurate assessment of encroachment. The assessments for the latter three years reveal there has been little encroachment change from year to year, with relatively constant overall scores for CY2009, CY2010, and CY2011.
2. RCMP is scheduled for update in July 2011; EAP to be developed during FY2013.
3. Department of Interior (DOI) and private energy interests in the Outer Continental Shelf (OCS) are increasing as domestic energy demand builds. Naval offshore operating areas and training events may be affected. High priority areas include training ranges and sea space in and adjacent to all Navy OPAREAs. (OASN(E, I&E), as DoD spokesman for military offshore use, continues to work closely with the Fleets and DOI's Bureau of Ocean Energy Management (BOEM) to resolve issues of combined use of the OCS important to both agencies. Fleet review and analysis of impacts from both oil/gas and wind energy "lease sale" areas (i.e., Mission Critical Areas [MCAs]) have been reviewed and forwarded to OSD. DoD and DOI coordination continues.
4. The MW Mission Area priority has been reduced by USFF to a basic level due to principal MW forces being moved to Norfolk and San Diego.
5. GOMEX had no emerging encroachment issues during CY2011 that affect its operations. CY2012 encroachment assessment data remain the same as CY2011.

Gulf of Mexico (GOMEX) Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Range Support	Anti-Air Warfare (AAW)	●	A lack of web-based scheduling system with pre-event, real-time, and post-event modules precludes most efficient scheduling and documenting of range usage. Post-event reporting is particularly critical for ordnance expenditures or active sonar usage in at-sea OPAREAs, since MMPA permits require the Navy to periodically report these values. Non-compliance or inaccurately reporting post-event values to regulators risks range access or prohibitions on training events that involve active sonar or high explosives at-sea. PACFLT is developing a Data Collection and Scheduling Tool (DCAST) that includes a post-event module to mitigate issues outlined above. If successful, the Navy could consider adopting it at all range scheduling facilities.
	Anti-Surface Warfare (ASUW)	●	Same as above.
	Mine Warfare (MW)	●	Same as above.
	Naval Special Warfare (NSW)	●	Same as above.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Gulf of Mexico (GOMEX) Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Spectrum	Anti-Air Warfare (AAW)	●	Employment of Link 16 is restricted. These restrictions limit spectrum operations and prohibit certain training events, segment training/reduce realism, reduce training days, limit application of new weapons technologies, and inhibit new tactics development. The Navy continues to coordinate with appropriate frequency allocation and oversight agencies to seek spectrum relief, and to develop encroachment strategies that will reduce encroachment, while ensuring pending use of emerging spectrum technologies. Competition for frequency spectrum will add increased pressure on available bandwidth for Naval operations.
	Anti-Surface Warfare (ASUW)	●	Same as above.
	Mine Warfare (MW)	●	Same as above.
Maritime	Anti-Surface Warfare (ASUW)	●	Maritime protective and mitigation measures undertaken in compliance with regulatory requirements have resulted in training restrictions that reduce training flexibility, force segmented training, and ultimately reduce training realism. All at-sea training is impacted to some degree; impacts are most significant to integrated warfare training using active underwater acoustic sources or in-water explosive ordnance. The Navy and National Marine Fisheries Service (NMFS) have developed science based protective and mitigation measures that adequately protect marine species, while accommodating military readiness activities. The Navy continues to develop EISs, and obtain permits and authorizations for its range complexes to ensure military training complies with applicable laws and regulations. Litigation risks remain a concern, entailing the potential to delay or further restrict training, despite the protective and mitigation measures applied by the Navy in compliance with the Marine Mammal Protection Act (MMPA) and the Endangered Species Act (ESA). Endangered species encroachment has created avoidance areas that have resulted in some reduction of training days and prohibits certain training events. This area is relatively small in scope; however, if these types of restrictions were applied to other species/areas, there would be significant impacts to readiness through reduction in range access, segmentation of training/reduction in realism, limits on the application of new technologies, raised flight altitudes, reduced live fire proficiency, increased personnel tempo, and increased O&M costs. The Navy continues to invest in marine mammal research; rely on scientifically valid empirical data results as basis of marine mammal mitigation development; and factor mitigation effectiveness into permit requests. It will continue education of Fleet units to adhere to the maritime protective and mitigation measures and public education outreach efforts. The Navy's authorizations under the MMPA and ESA include an adaptive management approach that includes continually evaluating existing mitigation measures for their potential impacts on training. If impacts on training from mitigation measures are identified and documented, the Navy will raise these impacts with NMFS for resolution during an annual adaptive management review process. The Navy is currently preparing environmental compliance documentation to renew its MMPA and ESA authorizations, which will consider any impacts on training stemming from existing mitigations measures and propose changes as warranted.
	Mine Warfare (MW)	●	Same as above.
Range Transients	Anti-Surface Warfare (ASUW)	●	Range transients, involving commercial shipping, commercial fishing, and private pleasure boating encroach on training, either by delaying events or forcing relocation to less than optimum locations. Commercial vessel and recreational vessel encroachment creates avoidance areas, segments training, and reduces realism. The Navy will continue to pursue opportunities to inform industry and the public of the impact of range transient encroachment on at-sea OPAREAs and Navy readiness.
	Mine Warfare (MW)	●	Same as above.

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Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Hawaii Assessment Details

Range Mission Description

The Hawaii Range Complex (HRC) consists of expansive ocean operating areas and airspace in the vicinity of the Hawaiian Islands. The complex provides a training capability across all Navy warfare areas as well as the capabilities of the Pacific Missile Range Facility (PMRF) for testing and evaluation.

Capability Data

Mission Areas	Capability Attributes												
	Landspace	Airspace	Seaspace	Underseaspace	Targets	Threats	Scoring & Feedback System	Infrastructure	Range Support	Small Arms Ranges	Collective Ranges	MOUT Facilities	Suite of Ranges
Strike Warfare	PMC	PMC	FMC	FMC	PMC	PMC	NMC		PMC				
Electronic Combat	FMC	FMC	FMC	FMC	FMC	PMC	FMC		PMC				
Anti-Air Warfare	PMC	FMC	FMC		FMC	PMC	PMC		PMC				
Anti-Surface Warfare		FMC	FMC	FMC	PMC	PMC	FMC		PMC				
Mine Warfare		FMC	FMC	FMC	PMC	FMC	FMC		PMC				
Amphibious Warfare	FMC	FMC	FMC	FMC			FMC		PMC				
Anti-Submarine		FMC	FMC	FMC	FMC	FMC	FMC		PMC				
Naval Special Warfare	PMC	FMC	FMC	FMC	PMC	FMC	FMC		PMC				

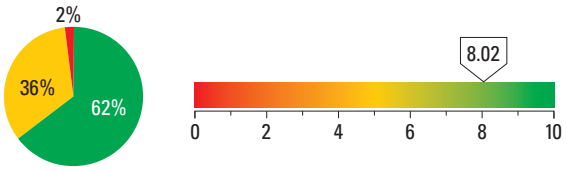
Legend: FMC, PMC, NMC

Encroachment Data

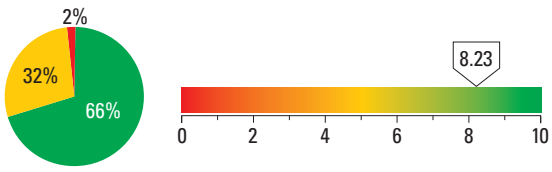
Mission Areas	Encroachment Factors											
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strike Warfare	Moderate	Minimal	Moderate	Moderate	Moderate	Minimal	Minimal	Moderate	Moderate	Minimal	Minimal	Minimal
Electronic Combat	Minimal		Moderate		Minimal	Minimal	Minimal	Minimal				Minimal
Anti-Air Warfare			Moderate	Moderate	Moderate	Minimal	Minimal	Minimal				Minimal
Anti-Surface Warfare			Moderate	Moderate	Minimal				Minimal			Moderate
Mine Warfare			Moderate	Moderate	Minimal				Minimal			Moderate
Amphibious Warfare	Minimal		Moderate	Moderate	Minimal		Minimal	Minimal	Minimal		Minimal	Moderate
Anti-Submarine			Minimal	Severe	Minimal				Minimal			Moderate
Naval Special Warfare	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal

Legend: Minimal, Moderate, Severe

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

1. Capability attribute most impacting range mission performance: Threats and Scoring & Feedback Systems.
2. Mission area most severely impacted: STW.
3. Projected Status: No immediate change.

Note: Assessments of Navy Special Warfare (NSW) training are based on actual NSW demand and use of training range capability and space. Actual training range capability and space requirements are based on Fleet Readiness Training Plan (FRTP) demands for conventional warfare areas.

Summary Observations

1. Spectrum and Maritime Sustainability are the encroachment factors having greatest impact on training.
2. All mission areas, except NSW, have substantial encroachment.
3. Designation of critical habitat for the Hawaiian Monk Seal (E) under the provisions of the Endangered Species Act (ESA), by the U.S. Fish and Wildlife Service (USFWS), for the shorelines of the Main Hawaiian Islands is under consideration. Large acreage in the Kokee areas, primarily State lands, are also being considered for designation of critical habitat for a host of plants, and some birds and insects. Regulatory activities and alternative energy systems in marine environments will compete with training. The Navy continues to coordinate with appropriate frequency allocation and oversight agencies to seek spectrum relief. The Navy will continue to educate Fleet units to adhere to the maritime protective and mitigation measures.

Note: Assessments of NSW training are based on actual NSW demand and use of training range capability and space. Actual training range capability and space requirements are based on FRTP demands for conventional warfare areas.

Hawaii Assessment Details

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Capability Scores	7.59	7.76	7.84	7.84

1. In 2008 Mine Warfare (MIW) Targets and Scoring & Feedback Systems were assessed as red.
2. In 2009, MIW Scoring & Feedback and Targets were assessed as yellow.
3. In 2010, MIW Scoring & Feedback was assessed as green.
4. The above changes were based on range upgrades for MIW identified by PACFLT.
5. Scoring & Feedback Systems for ASW is currently green; however, PMRF Barking Sands Tactical Underwater Range (BARSTUR) underwater cables and hydrophones require funding and scheduling for repairs and replacement to sustain capability to support ASW training.
6. In 2011, threats for ASUW were assessed as red. In 2012, COMPACFLT changed the assessment to yellow, based on PMRF's ability to support unit level training at a "green" level. This mission support area is in flux as new requirements for Fast Attack Craft Fast Inshore Attack Craft (FAC/FIAC) support are being developed. (The new assessment may revert to "red" when the new requirement levels are finalized. This will impact all USN ranges providing ASUW target support.)

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Encroachment Scores	8.96	8.44	8.44	8.36

1. Encroachment assessments for CY2008 were different than for CY2009 through CY2011. The algorithm for the overall assessment score for CY2009 through CY2011 was revised from the original algorithm used in CY2008 to provide greater fidelity and consistency across all range complexes. Based on an improved review process and revised algorithms, the assessments for CY2009 through CY2011 provide a more accurate assessment of encroachment. The assessments for the latter three years reveal there has been little encroachment change from year to year, with relatively constant overall scores for CY2009 through CY2011.
2. Hawaii RCMP update began in October 2010.
3. National Marine Fisheries Service (NMFS) proposal for Hawaiian Monk Seal (E) critical habitat designation has proposed national security exclusions for Hawaiian Range Complex ranges with exception of Kaula, Barbers Point Underwater Range, and Ewa Training Minefield. The Navy continues to request a national security exclusion from critical habitat designation for Kaula, Barbers Point Underwater Range and Ewa Training Minefield. Designation in these areas has the potential to significantly impact the ability of the Pacific Fleet to maintain a high degree of readiness.

Hawaii Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Strike Warfare (STW)	●	Unable to conduct low-level ingress over land to an air-to-ground range area with a realistic strike package. Reduces realism and inhibits tactics development. No solution, due to unavailability of land and airspace.
	Anti-Air Warfare (AAW)	●	There is no land space beneath any AAW training space. Airspace over land is required for Air Combat Maneuver (ACM) training. Reduces realism by preventing detection and targeting of terrain following aircraft. No land space is available to solve this problem.
	Naval Special Warfare (NSW)	●	Lacks maneuver space with a beachfront, live fire areas, and MOUT. This segments training, thereby reducing realism, inhibiting tactics, and reducing live fire proficiency. There is no solution to this shortfall, due to lack of available land.
Airspace	Strike Warfare (STW)	●	Unable to conduct low-level ingress over land to an air-to-ground range area with a realistic strike package. Reduces realism and inhibits tactics development. No solution, due to unavailability of land and airspace.
Targets	Strike Warfare (STW)	●	No raked, strafe, structural, revetted, or moving targets. No urban or moving targets. This does not meet requirements for live fire and realistic strike missions. Reduces realism and live fire proficiency. Recommend upgrade targets to meet training requirements; no completion date has been identified. Note: Does not include assessment of Army Pohakoloa Training Area Range.
	Anti-Surface Warfare (ASUW)	●	Basic level training target requirements are green, but Intermediate level training target requirements are not available in sufficient quantity or variety. This reduces realism. Recommend acquiring additional surface targets; No completion date has been identified.
	Mine Warfare (MW)	●	Existing mine training field does not realistically portray threat environment. This reduces realism, inhibits tactics, and limits application of new weapons technologies. Situation will get worse when organic mine countermeasure (OMCM) systems are deployed if improvements are not made. Anticipated deployment of new training mine fields are to be determined; No completion date has been identified.
	Naval Special Warfare (NSW)	●	Range targets are not available. Units typically create their own targets without the benefit of realism. Reduces realism; inhibits tactics development; reduces live fire proficiency. Fund portable targets to meet NSW training requirements.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Hawaii Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Threats	Strike Warfare (STW)	🟡	Adequate quantity and types of threat opposing forces (OPFOR) are not available, including EC threat levels. Reduces realism; inhibits tactics development. Recommend the Navy acquire EC systems that provide a high density, multi-threat axis capability through level. No completion date has been identified.
	Electronic Combat (EC)	🟡	Same as above.
	Anti-Air Warfare (AAW)	🟡	No dedicated threat OPFOR. There is a shortage of the required number and variety of threat aircraft, which reduces realism. Recommend investigate availability of Hawaii Air National Guard to serve in an OPFOR role. No completion date has been identified.
	Anti-Surface Warfare (ASUW)	🟡	Basic level training threat requirements are green, but Intermediate level training threat requirements are not available in sufficient quantity or variety. This reduces realism. Recommend acquiring additional threat OPFOR. No completion date has been identified.
Scoring & Feedback System	Strike Warfare (STW)	🔴	Instrumented scoring and debriefing capabilities are not available. Performance, scoring, and evaluation of training is required for effective training. This inhibits tactics development and reduces live fire proficiency. Recommend improving Scoring & Feedback capabilities. Recommend adding a scoring capability at Pohakuloa Training Area (PTA) PMRF bombing ranges. No completion date has been identified.
	Anti-Air Warfare (AAW)	🟡	System lacks required capacity and needs upgrades to prevent obsolescence. Lack of adequate instrumentation reduces the overall effectiveness of flights, due to lower quality debrief information. Recommend investment in additional or new equipment to upgrade current systems. No completion date has been identified.
Range Support	Strike Warfare (STW)	🟡	Lack of web-based scheduling system with pre-event, real-time, and post-event modules precludes most efficient scheduling and documenting of range usage. Post-event reporting is particularly critical for ordnance expenditures or active sonar usage in at-sea OPAREAs, since the MMPA permits require the Navy to periodically report these values. Non-compliance or inaccurately reporting post-event values to regulators risks range access or prohibitions on training events that involve active sonar or high explosives at-sea. Existing PMRF ground-based and airborne-based air surveillance coverage radars need replacement to maintain safe and effective training. PMRF communications & network systems need to be upgraded to newer capabilities. PACFLT is developing a Data Collection and Scheduling Tool (DCAST) that includes a post-event module to mitigate the issues outlined above. If successful, the Navy could consider adopting it at all range scheduling facilities. Recommend replacing AN/SPS-48E Air Search Radar and airborne radars for PMRF C-26 aircraft. Control and security of the PMRF range complex requires upgrading communications & network systems for mission requirements and Information Assurance (IA) compliance. DCAST has been developed for PACFLT and is being deployed at various ranges; a deployment date not yet scheduled. No completion date has been identified.
	Electronic Combat (EC)	🟡	Same as above.
	Anti-Air Warfare (AAW)	🟡	Same as above.
	Anti-Surface Warfare (ASUW)	🟡	Same as above.
	Mine Warfare (MW)	🟡	Same as above.
Range Support	Amphibious Warfare (AMW)	🟡	Same as above.
	Anti-Submarine (ASW)	🟡	Same as above.
	Naval Special Warfare (NSW)	🟡	Same as above.

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Threatened & Endangered Species	Strike Warfare (STW)		Restrictions center around the protection of numerous migratory birds on Kaula Rock. Rather than implement costly mitigation measures, operations have been modified to minimize impacts to protected species. These restrictions have been self-imposed by the Navy and without any direction of the regulators. Restrictions create large avoidance areas, reduce training days, prohibit certain training events, and reduce range access. To comply with the MMPA and the ESA, the Record of Decision (ROD) concluded that the Navy "will limit Kaula Rock targeting for air to surface weapons delivery to the southeast tip of the island" and only seasonally when marine mammals are not present. No remedy anticipated or planned. In addition, since finalization of HRC/PMRF FEIS/OEIS, Federal and State environmental regulators and non-governmental organizations (NGOs) are focusing even more on the populations and habitat, both land and marine, on/around Kaula Rock. Sea bird population surveys by vessel were conducted by Navy contractors and staff the week of July 20, 2009. This is the first such survey in more than 10 years, and was required pursuant to the HRC/PMRF FEIS/OEIS. Future potential impacts based on such studies cannot be predicted. Possible efforts to impose further restrictions on usage are uncertain.
Spectrum	Strike Warfare (STW)		Employment of Link 16 is restricted. Restrictions limit spectrum operations and prohibit certain training events, segment training/reduce realism, reduce training days, limit application of new weapons technologies, and inhibit new tactics development. The Navy continues to coordinate with appropriate frequency allocation and oversight agencies to seek spectrum relief, and to develop encroachment strategies that will reduce encroachment, while ensuring pending use of emerging spectrum technologies. Competition for frequency spectrum will add increased pressure on available bandwidth for Naval operations.
	Electronic Combat (EC)		Same as above.
	Anti-Air Warfare (AAW)		Same as above.
	Anti-Surface Warfare (ASUW)		Same as above.
	Mine Warfare (MW)		Same as above.
	Amphibious Warfare (AMW)		Same as above.
Maritime Sustainability	Strike Warfare (STW)		Maritime protective and mitigation measures undertaken in compliance with regulatory requirements have resulted in training restrictions that reduce training flexibility, force segmented training, and ultimately reduce training realism. All at-sea training is impacted to some degree; impacts are most significant to integrated warfare training using active underwater acoustic sources or in-water explosive ordnance. The Navy and National Marine Fisheries Service (NMFS) have developed science based protective and mitigation measures that adequately protect marine species, while accommodating military readiness activities. The Navy continues to develop EISs, and obtain permits and authorizations for its range complexes to ensure military training complies with applicable laws and regulations. Litigation risks remain a concern, entailing the potential to delay or further restrict training, despite the protective and mitigation measures applied by the Navy in compliance with the MMPA and the ESA. Endangered species encroachment has created avoidance areas that have resulted in some reduction of training days and prohibits certain training events. This area is relatively small in scope; however, if these types of restrictions were applied to other species/areas, there would be significant impacts to readiness through reduction in range access, segmentation of training/reduction in realism, limits on the application of new technologies, raised flight altitudes, reduced live fire proficiency, increased personnel tempo, and increased O&M costs. The Navy will continue to invest in marine mammal research, rely on scientifically valid empirical data results as basis of marine mammal mitigation development, and factor mitigation effectiveness into permit requests. It will continue education of Fleet units to adhere to the maritime protective and mitigation measures and public education outreach efforts. The Navy's authorizations under the MMPA and ESA include an adaptive management approach that includes continually evaluating existing mitigation measures for their potential impacts on training. If impacts on training from mitigation measures are identified and documented, the Navy will raise these impacts with the NMFS for resolution during an annual adaptive management review process. The Navy is currently preparing environmental compliance documentation to renew its MMPA and ESA authorizations, which will consider any impacts on training stemming from existing mitigations measures and propose changes as warranted.
	Anti-Air Warfare (AAW)		Same as above.
	Anti-Surface Warfare (ASUW)		Same as above.
	Mine Warfare (MW)		Same as above.
	Amphibious Warfare (AMW)		Same as above.
	Anti-Submarine (ASW)		Same as above.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Hawaii Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Airspace	Strike Warfare (STW)	●	Due to competition for the same airspace and scheduling conflicts, at times, Navy P-3 usage of the airspace is limited and Hawaii Air National Guard (HIANG) flights may be cancelled. In general, commercial and private aviation conflicts with Naval operations throughout the range complex. Conflict encroachment prohibits certain P-3 or HIANG training events in the area. Commercial traffic in the airspace causes delays and segments training. The Navy will coordinate scheduling of airspace with primary range users and the Federal Aviation Administration (FAA).
	Anti-Air Warfare (AAW)	●	Same as above.
Adjacent Land Use	Strike Warfare (STW)	●	The STW range is insufficient in size to support all requirements. Land withdrawal/procurement is problematic, due to development and other factors. The insufficient range size also segments training, reduces realism, prohibits certain training events, and limits use of advanced technologies. These issues are insolvable.
Cultural Resources	Strike Warfare (STW)	●	There are cultural sites and resources throughout the HRC. The presence of cultural resources within the training area creates large avoidance areas, prohibits certain training events, reduces range access, segments training and reduces realism, inhibits new tactics development, and greatly increases O&M costs. The Military Services have implemented training procedures to protect and conserve the cultural resources in the HRC.
Range Transients	Anti-Surface Warfare (ASUW)	●	Range transients, involving commercial shipping, commercial fishing, and private pleasure boating, encroach on training, either by delaying events or forcing relocation to less than optimum locations. Commercial vessel and recreational vessel encroachment creates avoidance areas and segments training/ reduces realism. The Navy will continue to pursue opportunities to inform industry and the public of the impact of range transient encroachment on at-sea OPAREAs and Navy readiness.
	Mine Warfare (MW)	●	Same as above.
	Amphibious Warfare (AMW)	●	Same as above.
	Anti-Submarine (ASW)	●	Same as above.

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Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Jacksonville Assessment Details

Range Mission Description

The Jacksonville (JAX) Range Complex (JPC) supports training in all Navy warfare areas, except Amphibious Warfare (AMW) and Naval Special Warfare (NSW) training. It consists of two surface and subsurface operating areas with supporting airspace, and three land ranges supported by airspace: Pinecastle Impact Range, Rodman Range and Lake George Range. Both local unit level training and large scale Carrier Strike Group exercises are supported.

Capability Data

Mission Areas	Capability Attributes												
	Landspace	Airspace	Seaspace	Underseaspace	Targets	Threats	Scoring & Feedback System	Infrastructure	Range Support	Small Arms Ranges	Collective Ranges	MOUT Facilities	Suite of Ranges
Strike Warfare	PMC	PMC	FMC	FMC	PMC	FMC	PMC		PMC				
Electronic Combat	FMC	FMC	FMC	FMC	FMC	PMC	PMC		PMC				
Anti-Air Warfare	PMC	FMC	FMC		FMC	PMC	PMC		PMC				
Anti-Surface Warfare		FMC	FMC	FMC	FMC	FMC	PMC		PMC				
Mine Warfare		FMC	FMC	FMC		FMC			PMC				
Amphibious Warfare													
Anti-Submarine		FMC	FMC	FMC	FMC	PMC	NMC		PMC				
Naval Special Warfare													

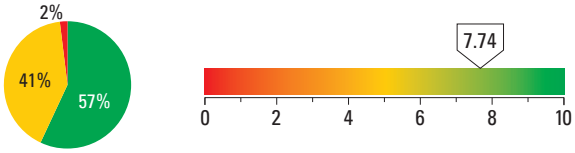
Legend: FMC, PMC, NMC

Encroachment Data

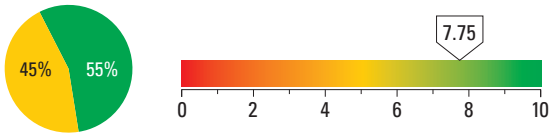
Mission Areas	Encroachment Factors											
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strike Warfare	Severe	Minimal	Severe	Minimal	Severe	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Electronic Combat	Minimal		Severe		Moderate	Moderate	Moderate	Moderate				Moderate
Anti-Air Warfare			Severe		Severe	Moderate	Moderate	Moderate				Moderate
Anti-Surface Warfare			Severe	Severe	Severe				Moderate			Severe
Mine Warfare			Severe	Severe	Severe				Moderate			Severe
Amphibious Warfare												
Anti-Submarine			Severe	Severe	Severe				Moderate			Severe
Naval Special Warfare												

Legend: Minimal, Moderate, Severe

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

1. Capability attribute most impacting range mission performance: Scoring & Feedback Systems.
2. Mission area most severely impacted: ASW.
3. The OEIS/EIS for USWTR was completed on 6/26/2009, and the JAX OPAREA USWTR site was designated as the operationally preferred USWTR site alternative.

Summary Observations

1. Spectrum, Maritime Sustainability, and Airspace are the encroachment factors having greatest impact on training.
2. ASUW, MW, and ASW are the mission areas with the greatest encroachment impacts on training.
3. The Navy continues to coordinate with appropriate frequency allocation and oversight agencies to seek spectrum relief. Competition for frequency spectrum will add increased pressure on available bandwidth for Naval operations. Education of Fleet units to adhere to maritime protective and mitigation measures will continue. The Navy will continue to coordinate with the FAA to minimize space launch impacts on training activities. The Navy will continue to educate Fleet units to adhere to the maritime protective and mitigation measures.

Jacksonville Assessment Details

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Capability Scores	7.73	7.61	7.61	7.74

1. STW airspace re-evaluated from green in CY2008 to yellow in CY2009 and beyond. Its score was changed from green to yellow for consistency in impacts for all Atlantic ranges and was based on a review with USFF and a determination that airspace restrictions to and from JAX were not significantly different than access at VACAPES and Cherry Pt.
2. MW Targets and Scoring & Feedback Systems changed to white based on USFF evaluation that Time, Space, Position Information (TSPI) Instrumented scoring data and dedicated mine target shapes are not required in the JAX OPAREA.

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Encroachment Scores	8.51	7.50	7.50	7.50

1. Encroachment assessments for CY2008 were different than for CY2009, CY2010, and CY2011. The algorithm for the overall assessment score for CY2009 through CY2011 was revised from the original algorithm used in CY2008 to provide greater fidelity and consistency across all range complexes. Based on an improved review process and revised algorithms, the assessments for CY2009, CY2010, and CY2011 provide a more accurate assessment of encroachment. The assessments for the latter three years reveal there has been little encroachment change from year to year, with relatively constant overall scores for CY2009, CY2010, and CY2011.
2. As population growth continues in the Jacksonville areas, there will be increased competition for spectrum bandwidth as G3 and G4 telecommunications increase. Spectrum competition may add increased pressure on the Navy's ability to use radar, communications, EC, and other military systems.
3. JAX RCMP update is underway. The OPAREA EAP was completed in September 2011.
4. Department of Interior (DOI) and private energy interests in the Outer Continental Shelf (OCS) are increasing as domestic energy demand builds. Naval offshore operating areas and training events may be affected. High priority areas include training ranges and sea space in and adjacent to all Navy OPAREAs. OASN (E,I&E), as DoD spokesman for military offshore use, continues to work closely with the Fleets and DOI's Bureau of Ocean Energy Management (BOEM) to resolve issues of combined use of the OCS important to both agencies. Fleet review and analysis of impacts from both oil/gas and wind energy "lease sale" areas (Mission Critical Areas [MCAs]) have been reviewed and forwarded to OSD. DoD and DOI coordination continues.
5. JAX had no emerging encroachment issues during CY2011 that affect JAX operations. The CY2012 JAX encroachment assessment remains the same as CY2011.

Jacksonville Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Strike Warfare (STW)	●	Land space does not fully support size or topography requirements for placement of required number of targets. Use of live ordnance is supported only at Pinecastle; use of Joint, high energy (HE) stand-off munitions is not authorized. Use of flares is restricted. No land area supports Naval Surface Fire Support (NSFS) training, nor standoff precision guided munitions (PGM) delivery. This prohibits certain training events, reduces realism, and increases personnel op-tempo. The Navy recommends identifying East Coast land areas of sufficient size to support standoff weapons training. No completion date has been identified.
	Anti-Air Warfare (AAW)	●	Range land space does not fully support size or topography requirements, or support surface combatant detection of aircraft over land. Use of flares is restricted. This prohibits certain training events, reduces realism, and increases personnel op-tempo. Overland ACM training is conducted at Fallon Range Training Complex. No additional land options are available.
Airspace	Strike Warfare (STW)	●	Range land area and its associated restricted airspace areas are adjacent to JAX at-sea airspace, requiring MOA for transition between the seaspace and landspace areas. This transit reduces realism, inhibits new tactics development, and reduces live fire proficiency. OPAREAs lack characteristics for realistic tactical approaches and do not support the area size to meet minimum training requirements. There are no local options for increasing land availability. The Navy recommends coordination and investment in new MOAs and/or restricted airspace to reduce the impact on flight operations by increasing airspace area and altitudes. No completion date has been identified.
Targets	Strike Warfare (STW)	●	Range urban area is too small, there are no LACM or NSFS land area targets, no moving targets, and targets lack infrared signatures. This prohibits certain training events, reduces realism, limits application of new weapon technologies, inhibits tactics development, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy recommends investment in required targets. No completion date has been identified.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Jacksonville Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Threats	Electronic Combat (EC)		EC threat representation does not fully support EC threat levels 3 or 4 for required mission areas. The existing instrumentation systems are becoming obsolete and unsupportable through the FYDP. This prohibits certain training events; reduces realism; limits application of new weapon technologies; inhibits tactics development; reduces live fire proficiency, increases personnel op-tempo; and increases O&M costs. The Navy recommends updating upgrade schedule to preclude severe degradation of system capability. Completion date has not been identified.
	Anti-Air Warfare (AAW)		Range has no helicopter or supersonic threat OPFOR. This reduces realism; increases personnel op-tempo; and increases O&M costs. The Navy recommends increasing the number and type of commercial air services. No completion date has been identified.
	Anti-Submarine (ASW)		Range has limited dedicated live submarines, surface ships, or aircraft to serve in the OPFOR role. This prohibits certain training events, reduces realism, inhibits tactics, increases personnel op-tempo, and increases O&M costs. The Navy recommends investing in additional threat OPFOR. It recommends increasing availability of submarines through the Diesel Electric Submarine Initiative (DESI) and aircraft through Close Air Support (CAS). No completion date has been identified.
Scoring & Feedback	Strike Warfare (STW)		Range has incomplete TSPI & EC&C OPAREA coverage and is in need of scoring, RTKN and M&S systems. This increases personnel op-tempo and increases O&M costs. The Navy recommends expanding and improving 2-D & 3-D coverage of the op-area, investing in JNTC compliant M&S equipment, and improving debrief capabilities. No completion date has been identified.
	Electronic Combat (EC)		Same as above.
	Anti-Air Warfare (AAW)		OPAREA coverage is not complete; Modeling & Simulation is inadequate; there is no RTKN. Existing instrumentation systems are not supportable through the FYDP. This reduces realism; inhibits tactics; increases personnel op-tempo, and increases O&M costs. The Navy recommends expanding and improving 2-D & 3-D coverage of the op-area, investing in JNTC compliant M&S equipment, and improving debrief capabilities. No completion date has been identified.
	Anti-Surface Warfare (ASUW)		Range has incomplete TSPI & EC&C OPAREA coverage and is in need of scoring, RTKN, and M&S systems. This increases personnel op-tempo and increases O&M costs. The Navy recommends expanding and improving 2-D & 3-D coverage of the op-area, investing in JNTC compliant M&S equipment, and improving debrief capabilities. No completion date has been identified.
	Anti-Submarine (ASW)		There is no underwater tracking range, scoring capability, M&S, or post mission feedback. This prohibits certain training events, reduces realism, limits weapon technologies, inhibits tactics, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. USWTR EIS was completed in CY2009. The Navy recommends expanding and improving 2-D & 3-D coverage of the OPAREA; investing in JNTC compliant M&S; and improving debrief capabilities.
Range Support	Strike Warfare (STW)		Lack of web-based scheduling system with pre-event, real-time, and post-event modules precludes most efficient scheduling and documenting of range usage. Post-event reporting is particularly critical for ordnance expenditures or active sonar usage in at-sea OPAREAs, since the MMPA permits require the Navy to periodically report these values. Non-compliance or inaccurately reporting post-event values to regulators risks range access or prohibitions on training events that involve active sonar or high explosives at-sea. PACFLT is developing a Data Collection and Scheduling Tool (DCAST) that includes a post-event module to mitigate issues outlined above. If successful, the Navy could consider adopting it at all range scheduling facilities.
	Electronic Combat (EC)		Same as above.
	Anti-Air Warfare (AAW)		Same as above.
	Anti-Surface Warfare (ASUW)		Same as above.
	Mine Warfare (MW)		Same as above.
	Anti-Submarine (ASW)		Same as above.

Jacksonville Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Threatened & Endangered Species	Strike Warfare (STW)	●	Scrub Jays, Indigo Snakes, and Gopher Tortoises at Pinecastle and Rodman, and Manatees at Lake George contribute to training restrictions in their affiliated range and training areas. Species habitat encroachment creates avoidance areas and reduces range access, and inhibits new tactics development. The Navy observes species mitigation measures at Pinecastle, Rodman, and Lake George.
Spectrum	Strike Warfare (STW)	●	Employment of Link 16 is restricted. Restrictions limit spectrum operations and prohibit certain training events, segment training/reduce realism, reduce training days, limit application of new weapons technologies, and inhibit new tactics development. The Navy continues to coordinate with appropriate frequency allocation and oversight agencies to seek spectrum relief, and to develop encroachment strategies that will reduce encroachment, while ensuring pending use of emerging spectrum technologies. Competition for frequency spectrum will add increased pressure on available bandwidth for Naval operations.
Spectrum	Electronic Combat (EC)	●	Restrictions resulting from electromagnetic spectrum encroachment include prohibitions from performing GPS jamming, authorization to radiate the Spoon Rest VHF early warning threat radar system and restricted use of the Track While Scan Simulator (ITWSS). Employment of Link 16 is restricted. Restrictions limit spectrum operations and prohibit certain training events, segment training, reduce realism, reduce training days, limit application of new weapons technologies, and inhibit new tactics development. The Navy continues to coordinate with appropriate frequency allocation and oversight agencies to seek spectrum relief, and to develop encroachment strategies that will reduce encroachment while ensuring pending use of emerging spectrum technologies. Competition for frequency spectrum will add increased pressure on available bandwidth for Naval operations.
	Anti-Air Warfare (AAW)	●	Employment of Link 16 is restricted. Restrictions limit spectrum operations and prohibit certain training events, segment training/reduce realism, reduce training days, limit application of new weapons technologies, and inhibit new tactics development. The Navy continues to coordinate with appropriate frequency allocation and oversight agencies to seek spectrum relief, and to develop encroachment strategies that will reduce encroachment while ensuring pending use of emerging spectrum technologies. Competition for frequency spectrum will add increased pressure on available bandwidth for Naval operations.
	Anti-Surface Warfare (ASUW)	●	Employment of Link 16, SPY-1 radar, SPS 49 radar, and Identification Friend or Foe (IFF) are restricted. Restrictions limit spectrum operations and prohibit certain training events, segment training/reduce realism, reduce training days, limit application of new weapons technologies, and inhibit new tactics development. The Navy continues to coordinate with appropriate frequency allocation and oversight agencies to seek spectrum relief, and to develop encroachment strategies that will reduce encroachment while ensuring pending use of emerging spectrum technologies. Competition for frequency spectrum will add increased pressure on available bandwidth for Naval operations.
	Mine Warfare (MW)	●	Same as above.
	Anti-Submarine (ASW)	●	Same as above.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Jacksonville Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Maritime Sustainability	Anti-Surface Warfare (ASUW)	●	Maritime protective and mitigation measures undertaken in compliance with regulatory requirements have resulted in training restrictions that reduce training flexibility, force segmented training, and ultimately reduce training realism. All at-sea training is impacted to some degree; impacts are most significant to integrated warfare training using active underwater acoustic sources or in-water explosive ordnance. The Navy and the National Marine Fisheries Service (NMFS) have developed science-based protective and mitigation measures that adequately protect marine species while accommodating military readiness activities. The Navy continues to develop EISs and obtain permits and authorizations for its range complexes to ensure military training complies with applicable laws and regulations. Litigation risks remain a concern, entailing the potential to delay or further restrict training, despite the protective and mitigation measures applied by the Navy in compliance with the Marine Mammal Protection Act (MMPA) and the Endangered Species Act (ESA). Endangered species encroachment from the North Atlantic Right Whale has created avoidance areas that have resulted in some reduction of training days and prohibit certain training events. This area is relatively small in scope; however, if these types of restrictions were applied to other species/areas, there would be significant impacts to readiness through reduction in range access, segmentation of training/reduction in realism, limits on the application of new technologies, raised flight altitudes, reduced live fire proficiency, increased personnel tempo, and increased O&M costs. The Navy will continue to invest in marine mammal research, rely on scientifically valid empirical data results as basis of marine mammal mitigation development, and factor mitigation effectiveness into permit requests. It will continue education of Fleet units to adhere to the maritime protective and mitigation measures and public education outreach efforts. The Navy's authorizations under the MMPA and ESA include an adaptive management approach that includes continually evaluating existing mitigation measures for their potential impacts on training. If impacts on training from mitigation measures are identified and documented, the Navy will raise these impacts with the NMFS for resolution during an annual adaptive management review process. The Navy is currently preparing environmental compliance documentation to renew the MMPA and ESA authorizations by January 2014, which will consider any impacts on training stemming from existing mitigations measures and propose changes as warranted.
	Mine Warfare (MW)	●	Same as above.
	Anti-Submarine (ASW)	●	Same as above.
Airspace	Strike Warfare (STW)	●	During space launches at Cape Canaveral, the FAA closes southern portions of the JAX OPAREA and associated airspace, depending on launch parameters. Closing portions of the SUA and OPAREA impacts several warfare areas that use the SUA and OPAREAs. Airspace restrictions create avoidance areas, reduce training days, reduce range access, segment training/reduce realism, increase personnel tempo, and increase O&M costs. The Navy will continue to coordinate with the FAA to minimize space launch impacts on training activities.
	Anti-Air Warfare (AAW)	●	Same as above.
	Anti-Surface Warfare (ASUW)	●	Same as above.
	Mine Warfare (MW)	●	Same as above.
	Anti-Submarine (ASW)	●	Same as above.
Range Transients	Anti-Surface Warfare (ASUW)	●	Range transients, involving commercial shipping, commercial fishing, and private pleasure boating, encroach on training, either by delaying events or forcing relocation to less than optimum locations. Commercial vessel and recreational vessel encroachment creates avoidance areas and segments training/reduces realism. The Navy will continue to pursue opportunities to inform industry and the public of the impact of range transient encroachment on at-sea OPAREAs and Navy readiness.
	Mine Warfare (MW)	●	Same as above.
	Anti-Submarine (ASW)	●	Same as above.

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Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Japan Assessment Details

Range Mission Description

Designated ocean areas (sea space and undersea space) and associated airspace in the Western Pacific in the vicinity of Japan support Forward Deployed Naval forces as well as deployers in maintaining training readiness in SW, EW, AAW, ASUW, MW, and ASW.

Capability Data

Mission Areas	Capability Attributes												
	Landspace	Airspace	Seaspace	Underseaspace	Targets	Threats	Scoring & Feedback System	Infrastructure	Range Support	Small Arms Ranges	Collective Ranges	MOUT Facilities	Suite of Ranges
Strike Warfare	R	Y	G	G	R	R	R		Y				
Electronic Combat	R	G	G	G	R	R	R		Y				
Anti-Air Warfare	Y	Y	G		Y	Y	R		Y				
Anti-Surface Warfare		G	G	G	Y	Y	Y		Y				
Mine Warfare		G	Y	Y	Y	Y	Y		Y				
Amphibious Warfare													
Anti-Submarine		G	G	G	Y	Y	Y		Y				
Naval Special Warfare													

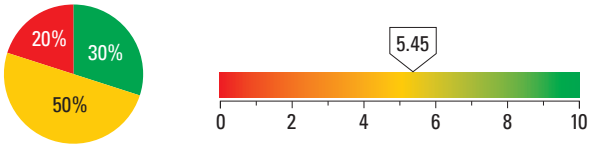
Legend: FMC (G) PMC (Y) NMC (R)

Encroachment Data

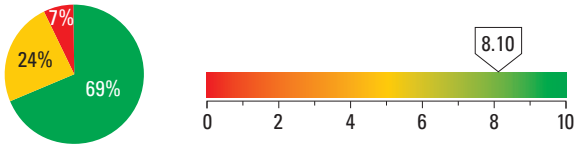
Mission Areas	Encroachment Factors												
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strike Warfare			Y	Y	G		Y		G			G
Electronic Combat			R		G		G					G
Anti-Air Warfare			R		G		Y					G
Anti-Surface Warfare			Y	Y	G				G			G
Mine Warfare			G	G	G				G			G
Amphibious Warfare												
Anti-Submarine			G	Y	G				G			G
Naval Special Warfare												

Legend: Minimal (G) Moderate (Y) Severe (R)

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

1. Capability attribute most impacting range mission performance: Scoring & Feedback Systems.
2. Mission areas most severely impacted: All.
3. Projected Status: TCTS and Portable Undersea Tracking Range (PUTR) deployment are expected to provide a modest improvement. Recommend Theater Support Vessel (TSV) deployment to provide additional improvement.

Summary Observations

1. Spectrum is the encroachment factor having the greatest encroachment impact on training.
2. EC and AAW are the mission areas having the greatest encroachment.
3. The Navy continues to coordinate with Government of Japan (GOJ) agencies to seek encroachment relief, and to develop encroachment strategies that will reduce training restrictions and ensure unfettered use of training ranges and operating areas.

Japan Assessment Details

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Capability Scores	5.45	5.45	5.45	5.45

1. The capability assessment has been stable from year to year, with relatively constant overall scores for CY2010 and 2011.
2. A multi-purpose range craft is being constructed for deployment in Seventh Fleet that will support aerial drone, M-30 (ASW target), and mine shape launch and recovery, deployment and recovery of the portable ASW range, and EW training (limited).
3. The Navy is evaluating various locations for deployment of the portable ASW range.
4. The Navy, in coordination with U.S. Forces Japan, GOJ, and the Japan Civil Aviation Bureau, is pursuing plans for new training airspace to support the United States. The Navy aircraft based in Japan operate primarily from MCAS Iwakuni and NAF Atsugi.

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Encroachment Scores	9.40	8.28	8.28	8.10

1. Encroachment assessments for CY2008 were different than for CY2009, CY2010, and CY2011. The algorithm for the overall assessment score for CY2009 through CY2011 was revised from the original algorithm used in CY2008 to provide greater fidelity and consistency across all range complexes. Based on an improved review process and revised algorithms, the assessments for CY2009, CY2010, and CY2011 provide a more accurate assessment of encroachment. The assessments for the latter three years reveal there has been little encroachment change from year to year, with relatively constant overall scores for CY2009, CY2010, and CY2011. There is little indication encroachment pressures will change in the foreseeable future.
2. There are no emerging encroachment issues that affect Japan operations. The CY2012 assessment remains the same as CY2011.

Japan Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Strike Warfare (STW)	🔴	No Navy-controlled range is available, which prohibits certain training events, reduces realism, limits application of new technologies, inhibits tactics development, increases personnel op-tempo, and increases O&M costs. Pursue opportunities with other Services, countries, and in-theater ranges. R130 (inert A-G range) off Misawa is available, but limited supporting airspace is available for new weapons. USAF initiative to create limited use ALTRV Gaicho may alleviate problem and may allow for JDAM training. No completion date has been identified.
	Electronic Combat (EC)	🔴	No Navy-controlled range is available, which prohibits certain training events, reduces realism, limits application of new technologies, inhibits tactics development, increases personnel op-tempo, and increases O&M costs. Pursue Multi-purpose Range Craft (MPRC) EC capability. No completion date has been identified.
	Anti-Air Warfare (AAW)	🟡	Minimal access to overland airspace impacts AAW training capabilities, which prohibits certain training events, reduces realism, limits application of new technologies, inhibits tactics development, increases personnel op-tempo, and increases O&M costs. Pursue opportunities with other Services, countries, and in-theater ranges. No completion date has been identified.
Airspace	Strike Warfare (STW)	🟡	No Navy-controlled range available, but there is some airspace and are ground targets available. Projected airwing move in CY2014 will downgrade training due to limited airspace at the new area. These deficiencies prohibit certain training events, limit application of new technologies, inhibit new tactics development, increase personnel op-tempo, and increase O&M costs. Pursue access to airspace that will support this training. No completion date has been identified.
	Anti-Air Warfare (AAW)	🟡	No overland airspace supports AAW training. Projected airwing move in CY2014 will downgrade training, due to limited airspace at the new area. Prohibits certain training events, reduces realism, limits application of new technologies, inhibits tactics development, increases personnel op-tempo, and increases O&M costs. Pursue opportunities with other Services, countries, and in-theater ranges. No completion date has been identified.
Seaspace	Mine Warfare (MW)	🟡	Lack of shallow water training areas and geographic references limit Mine Warfare (MW) training. Prohibits certain training; reduces realism, limits application of new technologies, inhibits tactics development, increases personnel op-tempo, and increases O&M costs. Evaluate feasibility of creating an OPAREA adjacent to land to support shallow water and geographic reference points. Joint Committee is working to identify water area near Iwakuni. No completion date has been identified.
Underseaspace	Mine Warfare (MW)	🟡	No dedicated undersea space for Shock Wave Action Generator (SWAG) or mine avoidance training. Sea bottom type does not have required variance, and offers insufficient shallow water. Japan has no permanent USWTR. Prohibits certain training, reduces realism; limits application of new technologies, inhibits new tactics development, increases personnel op-tempo, and increases O&M costs. Evaluate feasibility of installing a mine training range with instrumented mine shapes, false targets, bottom mines, and mines for Special Warfare Group (SWAG) training. Evaluate the feasibility of creating an OPAREA with shallow water. No completion date has been identified.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Japan Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Targets	Strike Warfare (STW)	🔴	No Navy-controlled range is available, which prohibits certain training events, reduces realism, limits application of new technologies, inhibits tactics development, increases personnel op-tempo, and increases O&M costs. Provide A-G targets and establish supporting SUA. No completion date has been identified.
	Electronic Combat (EC)	🔴	No targets exist. Limited land area. Political and frequency spectrum constraints, which prohibits certain training events, reduces realism, limits application of new technologies, inhibits tactics development, increases personnel op-tempo, and increases O&M costs. Pursue MPRC EC Capability. No completion date has been identified.
	Anti-Air Warfare (AAW)	🟡	No supersonic targets available. No dedicated targets available. Reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. Increase availability of commercial air services. Pursue a MPRC with target capabilities. No completion date has been identified.
	Anti-Surface Warfare (ASUW)	🟡	Quantity and types of targets are limited. Prohibits certain training events; reduces realism; reduces live fire proficiency. Increase availability of targets. Pursue MPRC capability. No completion date has been identified.
	Mine Warfare (MW)	🟡	No dedicated or instrumented targets available. Units will typically provide their own targets where feasible. Prohibits certain training events, reduces realism, limits application of new technologies, reduces live fire proficiency, and increases O&M costs. Evaluate feasibility of installing a mine range with instrumented shapes, false targets, bottom mines, and mines approved for SWAG training. No completion date has been identified.
	Anti-Submarine (ASW)	🟡	Live and virtual targets are not available. Expendable targets provided by the unit conducting the training are usually used. Reduces realism, limits application of new technologies, inhibits tactics development, reduces live fire proficiency, and increases O&M costs. Establish an ASW targets unit. No completion date has been identified.
Threats	Strike Warfare (STW)	🔴	No dedicated, but limited, OPFOR is available. Reduces realism, limits application of new technologies, inhibits tactics development. Improve availability of CAS and EC augmentation. MPRC is scheduled for mid-CY2012 arrival, it will provide rudimentary EW training capabilities. Mission area will remain red until an integrated air defense system (IADS) training capability is provided. No completion date has been identified (and no candidate locations available).
	Electronic Combat (EC)	🔴	No dedicated, but limited, OPFOR is available. Reduces realism, limits application of new technologies, and inhibits tactics development. Pursue development of joint EC systems. Improve availability of CAS and EC augmentation. The MPRC is scheduled for mid-2012 arrival, it will provide rudimentary EW training capabilities. No completion date has been identified (significant RF limitations/encroachment inhibit live training support).
	Anti-Air Warfare (AAW)	🟡	No dedicated, but limited, OPFOR is available. Reduces realism, limits application of new technologies, and inhibits tactics development. Improve availability of CAS and EC augmentation. TCTS installation on CVN tentatively scheduled for FY2014. TCTS will significantly enhance AAW training for aviation units. OPFOR will remain limited.
	Anti-Surface Warfare (ASUW)	🟡	No dedicated, but limited, OPFOR is available. Reduces realism, limits application of new technologies, and inhibits tactics development. Improve availability of CAS and EC augmentation. The MPRC is scheduled for mid-2012 arrival. The MPRC will provide rudimentary EW training capability. No completion date has been identified.
	Mine Warfare (MW)	🟡	Same as above.
	Anti-Submarine (ASW)	🟡	Same as above.
Scoring & Feedback	Strike Warfare (STW)	🔴	No permanent instrumentation exists. Reduces realism, limits application of new technologies, inhibits new tactics, and complicates night and all weather training. Continue planned development of the TCTS and evaluate potential to improve training. Evaluate MPRC potential to support training. TCTS installation on CVN estimated in FY2014. No scored air to ground ranges for instrumentation identified.
	Electronic Combat (EC)	🔴	Same as above. While the MPRC will provide some training capability, it will not be capable of providing Scoring & Feedback. No completion date has been identified.
	Anti-Air Warfare (AAW)	🔴	No permanent instrumentation exists. Reduces realism, limits application of new technologies, inhibits new tactics, and complicates night and all weather training. Continue planned development of TCTS and evaluate potential to improve training. Evaluate the MPRC's potential to support training. TCTS installation on CVN is estimated in FY2014. No scored air to ground ranges for instrumentation identified.
	Anti-Surface Warfare (ASUW)	🟡	No permanent instrumentation exists. Reduces realism, limits application of new technologies, inhibits new tactics, and complicates night and all weather training. MPRC introduction (mid-2012) will improve support capability.

Japan Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Scoring & Feedback	Mine Warfare (MW)	🟡	No permanent instrumentation exists. Reduces realism, limits application of new technologies, inhibits new tactics, and complicates night and all weather training. Evaluate feasibility of installing a mine range with instrumented shapes, false targets, bottom mines, and mines approved for SWAG training. Evaluate MPRC potential to support training. No completion date has been identified.
	Anti-Submarine (ASW)	🟡	No permanent instrumentation exists and is not likely in the future. Reduces instrumented range availability. Introduction of MPRC in mid-. should increase availability of Portable Acoustic Range/Portable Undersea Tracking Range (PAR/PUTR) support. Planning underway to support instrumented ASW training in 2102.
Range Support	Strike Warfare (STW)	🟡	Lack of web-based scheduling system with pre-event, real-time, and post-event modules precludes most efficient scheduling and documenting of range usage. Post-event reporting is particularly critical for ordnance expenditures or active sonar usage in at-sea OPAREAs since MMPA permits require the Navy to periodically report these values. Non-compliance or inaccurately reporting post-event values to regulators risks range access or prohibitions on training events that involve active sonar or high explosives at-sea. PACFLT is developing a Data Collection and Scheduling Tool (DCAST) that includes a post-event module to mitigate issues outlined above. If successful, the Navy could consider adopting it at all range scheduling facilities. DCAST development is in progress and deployment has begun in CONUS. Deployment date for WESTPAC will be completed during FY2012.
	Electronic Combat (EC)	🟡	Same as above.
	Anti-Air Warfare (AAW)	🟡	Same as above.
	Anti-Surface Warfare (ASUW)	🟡	Same as above.
	Mine Warfare (MW)	🟡	Same as above.
	Anti-Submarine (ASW)	🟡	Same as above.

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Spectrum	Strike Warfare (STW)	🟡	Restrictions on RF emissions limit the use of the TCTS. Restrictions limit spectrum operations and prohibit certain training events, segment training/reduce realism, reduce training days, limit application of new weapons technologies, and inhibit new tactics development. The Navy continues to coordinate with GOJ agencies to seek spectrum relief, and to develop encroachment strategies that will reduce encroachment, while ensuring pending use of emerging spectrum technologies.
	Electronic Combat (EC)	🔴	No EW training ranges due to RF restrictions. RF restrictions limit spectrum operations and prohibit certain training events, segment training/reduce realism, reduce training days, limit application of new weapons technologies, and inhibit new tactics development. The Navy continues to coordinate with GOJ agencies to seek spectrum relief, and to develop encroachment strategies that will reduce encroachment, while ensuring pending use of emerging spectrum technologies.
	Anti-Air Warfare (AAW)	🔴	Restrictions on RF emissions limit the use of the TCTS. Restrictions limit spectrum operations and prohibit certain training events, segment training/reduce realism, reduce training days, limit application of new weapons technologies, and inhibit new tactics development. The Navy continues to coordinate with GOJ agencies to seek spectrum relief, and to develop encroachment strategies that will reduce encroachment, while ensuring pending use of emerging spectrum technologies.
	Anti-Surface Warfare (ASUW)	🟡	All units operating throughout the JORC are precluded from activating SPS-49/SPS-48E radar equipment for test or operational purposes within 12 nm of land areas of Japan or Okinawa. Presently insolvable. Restrictions limit spectrum operations and prohibit certain training events, segment training/reduce realism, reduce training days, limit application of new weapons technologies, and inhibit new tactics development. The Navy continues to coordinate with GOJ agencies to seek spectrum relief, and to develop encroachment strategies that will reduce encroachment, while ensuring pending use of emerging spectrum technologies.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Japan Detailed Comments

Factors	Assigned Training Mission	Score	Comments
Maritime Sustainability	Strike Warfare (STW)	●	The Navy uses the Protective Measures Assessment Protocol (PMAP) to assess range specific marine mammal encroachment issues and to identify specific protection measures. PMAP provides a fleet-wide set of protective measures for particular maritime activities and for designated geographic areas of interest. PMAP procedures have resulted in some training restrictions that reduce training flexibility, force segmented training, and ultimately reduce training realism. All at-sea training is impacted to some degree; impacts are most significant to integrated warfare training using active underwater acoustic sources or in-water explosive ordnance. This existing encroachment is relatively small in scope. Should the encroachment become more pervasive across additional species and locations, there could be other training and readiness impacts through reduced range access, segmented training, reduced realism, limited application of new technologies, raised flight altitudes, reduced live fire proficiency, increased personnel tempo, and increased O&M costs. The Navy continues to invest in marine mammal research; to rely on scientifically valid empirical data results as basis of marine mammal mitigation development; and to factor mitigation effectiveness into maritime operations. All Navy units are expected to adhere to PMAP. The Navy continually evaluates existing PMAP measures for their potential encroachment and impacts on training. If impacts on training from PMAP are identified and documented, the Navy will address impact resolution during management review processes.
	Anti-Surface Warfare (ASUW)	●	Same as above.
	Anti-Submarine (ASW)	●	Same as above.
Noise Restrictions	Strike Warfare (STW)	●	Unable to conduct night carrier landing practice at home base. Aircraft must travel to remote location for training. Inability to conduct training at home base location reduces air-wing readiness and impacts STW and AAW missions. Noise encroachment at Atsugi prohibits certain training events, segments training/reduces realism, reduces training days, limits application of new weapons technologies, and inhibits new tactics development. The CVW-5 move to Iwakuni moves the noise encroachment at Atsugi to Iwakuni.
	Anti-Air Warfare (AAW)	●	Same as above.

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Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Key West Assessment Details

Range Mission Description

The Key West Range Complex supports training for the Anti-air Warfare (AAW).

Capability Data

Mission Areas	Landspace	Airspace	Seaspace	Underseaspace	Targets	Threats	Scoring & Feedback System	Infrastructure	Range Support	Small Arms Ranges	Collective Ranges	MOUT Facilities	Suite of Ranges
	Capability Attributes												
Strike Warfare													
Electronic Combat													
Anti-Air Warfare	●	●	●		●	●	●		●				
Anti-Surface Warfare													
Mine Warfare													
Amphibious Warfare													
Anti-Submarine													
Naval Special Warfare													

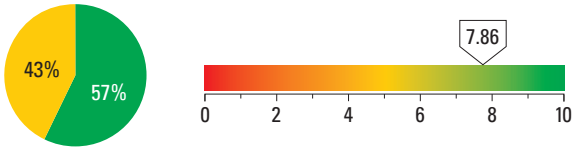
Legend: FMC ● PMC ● NMC ●

Encroachment Data

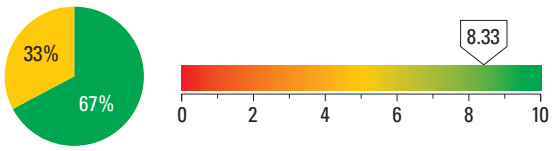
Mission Areas	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
	Encroachment Factors											
Strike Warfare												
Electronic Combat												
Anti-Air Warfare			●		●		●	●			●	●
Anti-Surface Warfare												
Mine Warfare												
Amphibious Warfare												
Anti-Submarine												
Naval Special Warfare												

Legend: Minimal ● Moderate ● Severe ●

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

1. Capability attribute most impacting range mission performance: Scoring & Feedback Systems.
2. Mission area most severely impacted: All.
3. Projected Status: No immediate change.

Summary Observations

1. Noise Restrictions and Wetlands are the encroachment factors having moderate impact on training.
2. AAW is the only mission area with encroachments having impacts on training.
3. The Navy may have to implement actions to restore and enhance airfield clearance safety areas that have been encroached upon by wetland areas.

Key West Assessment Details

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Capability Scores	7.50	7.50	7.50	7.86

1. No change between CY2008, CY2009, and CY2010.
2. The ASUW Range mission area was deleted in CY2011; the assessment score increased because of that change.

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Encroachment Scores	9.86	9.55	9.09	8.33

1. Encroachment assessments for CY2008 were different than for CY2009, CY2010, and CY2011. The algorithm for the overall assessment score for CY2009 through CY2011 was revised from the original algorithm used in CY2008 to provide greater fidelity and consistency across all range complexes. Based on an improved review process and revised algorithms, the assessments for CY2009, CY2010, and CY2011 provide a more accurate assessment of encroachment. The assessments for the latter three years reveal there has been little encroachment change from year to year with the exception of a small decrease in the score from CY2009 to CY2010.
2. The small change in the assessment score from CY2009 to CY2010 is based on increased encroachment from noise regarding AAW activities in the vicinity of the Dry Tortugas and Fort Jefferson.
3. The ASUW mission area for the range complex was deleted for the 2011 assessment; the assessment dropped from 9.09 to 8.33 because the assessment for ASUW was all green.
4. The Key West RCMP update is tentatively scheduled to be completed in FY2013; the Key West EAP is scheduled to be completed in September 2012.
5. Department of Interior (DOI) and private energy interests in the Outer Continental Shelf (OCS) are increasing as domestic energy demand builds. Naval offshore operating areas and training events may be affected. High priority areas include training ranges and sea space in and adjacent to all Navy OPAREAs. OASN (E,I&E), as DoD spokesman for military offshore use, continues to work closely with the Fleets and DOI's Bureau of Ocean Energy Management (BOEM) to resolve issues of combined use of the OCS important to both agencies. Fleet review and analysis of impacts from both oil/ gas and wind energy "lease sale" areas (Mission Critical Areas [MCAs]) have been reviewed and forwarded to OSD. DoD and DOI coordination continues.
6. Key West had no emerging encroachment issues during CY2011 that affect Key West operations. The CY2012 Key West encroachment assessment remains the same as CY2011.

Key West Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Targets	Anti-Air Warfare (AAW)		Ranges have minimal target support. Air targets are not available unless scheduled in advance (with a long lead time). This increases personnel op-tempo and increases O&M costs. The Navy recommends providing targets at the range area. No long term solution date determined. Current workaround solution: if sufficient lead time is available to schedule targets and if the required targets are available, targets may be arranged for training.
Scoring & Feedback System	Anti-Air Warfare (AAW)		EC&C are not available over the entire OPAREA, especially for surface ships; M&S is not available; some scoring is available through TCTS; and RTKN is available by voice only. This prohibits certain training events, reduces realism, increases personnel op-tempo, and increases O&M costs. Recommend investing in systems to support EC&C, M&S and scoring, and debriefing. No completion date has been identified.
Range Support	Anti-Air Warfare (AAW)		A lack of a web-based scheduling system with pre-event, real-time, and post-event modules precludes most efficient scheduling and documenting of range usage. Post-event reporting is particularly critical for ordnance expenditures or active sonar usage in at-sea OPAREAs since the MMPA permits require the Navy to periodically report these values. Non-compliance or inaccurately reporting post-event values to regulators risks range access or prohibitions on training events that involve active sonar or high explosives at-sea. PACFLT is developing a Data Collection and Scheduling Tool (DCAST) that includes a post-event module to mitigate issues outlined above. If successful, the Navy could consider adopting it at all range scheduling facilities.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Key West Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Noise Restrictions	Anti-Air Warfare (AAW)	●	Sonic booms generated by VFA aircraft in the vicinity of the Dry Tortugas reportedly startles visitors and may affect physical deterioration of historic Fort Jefferson. Airspeed limits on Key West Complex participating aircraft prohibit certain training events, segment training, reduce realism, and inhibit new tactics development. A noise analysis to determine frequency of sonic booms, potential effects on personnel/property, and minimum distance requirements to preclude future noise complaints was completed. The findings of the resulting Environmental Assessment recommended stipulating the expansion of an existing buffer zone around the Dry Tortugas by 2,000 ft., from 18,000 to 20,000 ft., to ensure natural and historic resources would not be impacted.
Wetlands	Anti-Air Warfare (AAW)	●	Wetlands vegetation encroachment obstructs air traffic controllers' lines of site with aircraft and affects radar performance. Management of wetland vegetation imposes additional natural resource management requirements. This air traffic control obstruction could affect access to portions of the Key West Range Complex airspace. The Navy recommends to implement actions to restore and enhance airfield clearance safety areas. No current action.

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Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Mariana Islands Assessment Details

Range Mission Description

The Mariana Islands Range Complex (MIRC) is a developing capability with the primary mission requirement to support all levels of Navy training across all Navy warfare areas: SW, EC, AAW, ASUW, MW, AW, ASW, and NWS.

Capability Data

Mission Areas	Landspace	Airspace	Seaspace	Underseaspace	Targets	Threats	Scoring & Feedback System	Infrastructure	Range Support	Small Arms Ranges	Collective Ranges	MOUT Facilities	Suite of Ranges
	Capability Attributes												
Strike Warfare	●	●	●	●	●	●	●		●				
Electronic Combat	●	●	●	●	●	●	●		●				
Anti-Air Warfare	●	●	●		●	●	●		●				
Anti-Surface Warfare		●	●	●	●	●	●		●				
Mine Warfare		●	●	●	●	●	●		●				
Amphibious Warfare	●	●	●		●	●	●		●				
Anti-Submarine		●	●	●	●	●	●		●				
Naval Special Warfare	●	●	●	●	●	●	●		●				

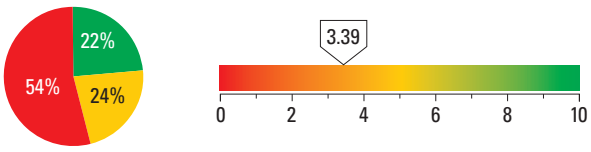
Legend: FMC ● PMC ● NMC ●

Encroachment Data

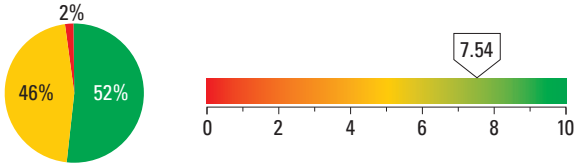
Mission Areas	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
	Encroachment Factors											
Strike Warfare	●	●	●	●	●	●	●	●	●	●	●	●
Electronic Combat	●		●		●	●	●	●				●
Anti-Air Warfare			●		●	●	●	●				●
Anti-Surface Warfare			●	●	●				●			●
Mine Warfare			●	●	●				●	●		●
Amphibious Warfare	●		●	●	●		●	●	●		●	●
Anti-Submarine		●	●	●	●				●			●
Naval Special Warfare	●	●	●	●	●	●	●	●	●	●	●	●

Legend: Minimal ● Moderate ● Severe ●

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

1. Capability attributes most impacting range mission performance: Targets, Threats, Scoring & Feedback Systems.
2. Mission area most severely impacted: All.
3. Projected Status: No immediate change.

Note: Assessments of NSW training are based on actual NSW demand and use of training range capability and space. Actual training range capability and space requirements are based on Fleet Readiness Training Plan (FRTP) demands for conventional warfare areas.

Summary Observations

1. T&E Species, Spectrum, and Maritime Sustainability are the encroachment factors with most impact on training.
2. All mission areas have encroachment issues that have substantial impact on training.
3. The Navy continues consulting and discussing with MIRC stakeholders on various issues, including encroachment, that pertain to current and future training requirements as they apply to expanded training required primarily by the move of Marine Corps forces to Guam from Okinawa. The Government of Guam also consults with MIRC stakeholders. Additional forces will require supporting training ranges and operating areas on Guam and select islands in the Commonwealth of the Northern Mariana Islands (CNMI). Training requirements and training ranges and OPAREAs are identified and assessed in the Mariana Islands Range Complex EIS and the Guam and CNMI Relocation EIS, both completed in 2010.

Note: assessments of NSW training are based on actual NSW demand and use of training range capability and space. Actual training range capability and space requirements are based on FRTP demands for conventional warfare areas.

Mariana Islands Assessment Details

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Capability Scores	2.80	2.80	2.80	2.80

1. In the CY2010 report, the range specific display incorrectly showed 3.04 as the capability score in the graphic. The actual tabulated score was 2.80. There has been no change between CY2008 through CY2011.
2. In support of the Marine Corps Guam relocation, the Marine Corps has proposed new small arms, known distance, and maneuver ranges on Guam and Tinian. A .50 caliber machine gun range has been proposed for construction on Guam. Additional training support facilities have been proposed on Guam and Tinian, and additional training facilities have been proposed on Guam, Tinian, and other Northern Mariana Islands.
3. In support of U.S. Air Force training and operational requirements, a new divert airfield has been proposed for aircraft operating from Andersen Air Force Base on Guam.
4. To more safely and securely accommodate Navy and other Service training requirements, a four phase air space plan is being proposed that would reconfigure existing SUA and create new Warning Areas and Restricted Areas for conduct of military training.
5. A Mariana Islands Test and Training (MITT) EIS/OEIS is being conducted that will propose a site-specific AMW amphibious landing area alternative on Tinian, and expand Restricted Airspace and the Surface Danger Zone around FDM.
6. A multi-purpose range craft is being constructed for deployment in Seventh Fleet that will support aerial drone, Mk-30 (ASW target), and mine shape launch and recovery, deployment/recovery of the portable ASW range, and EW training (limited).

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Encroachment Scores	8.49	7.58	7.54	7.54

1. Encroachment assessments for CY2008 were different than for CY2009, CY2010, and CY2011. The algorithm for the overall assessment score for CY2009 through CY2011 was revised from the original algorithm used in CY2008 to provide greater fidelity and consistency across all range complexes. Based on an improved review process and revised algorithms, the assessments for CY2009, CY2010, and CY2011 provide a more accurate assessment of encroachment. The assessments for the latter three years reveal there has been little encroachment change from year to year, with relatively constant overall scores for CY2009, CY2010, and CY2011.
2. The assessment score change from CY2009 to CY2010 is due to a change in EC for airspace of green in CY2009 to yellow in CY2010. The change is attributed to an increased encroachment pressure from commercial aviation regarding the use of chaff and flares in the vicinity of the air routes.
3. Potential growth in military training activity in the Mariana Islands will be subjected to encroachment similar to current training. As training activities spread to the various islands, encroachment will vary depending on each island's environmental and mitigation protocols. The MIRC EIS and the Guam and CNMI Relocation EIS, both completed in 2010, are recent and comprehensive. The National Environmental Policy Act (NEPA) addresses compliance for current and future military training and testing in the Mariana Islands.
4. An EOD emergency open detonation area is needed on Tinian for disposal of UXO, primarily left from WWII actions. CNMI EPA office may require permit for a detonation area.
5. The Mariana Islands Test and Training (MITT) EIS/OEIS is an update to the Mariana Islands Range Complex (MIRC) EIS/OEIS. The MITT EIS/OEIS addresses the changes in testing and training cycles as well as the incorporation of new technology and analyzes the impact of these on the environment.
6. A revised Guam INRMP is due to be completed in 2011.

Mariana Islands Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Strike Warfare (STW)	●	Land area is too small, all required ordnance is not cleared for use. Size of land area detracts from all levels of training. Conduct feasibility study for establishing a high-fidelity and urban target, inert, A-G range, and training area with an associated Warning Area. No completion date identified
	Electronic Combat (EC)	●	Land area does not meet requirements for EC training. Prevents conduct of EC training. Acquire appropriate land area to support EC assets. No completion date has been identified.
	Anti-Air Warfare (AAW)	●	No suitable land area is available under the training airspace. Prevents realistic overland detection and tracking scenarios. A four phase air space plan and planned NEPA assessment has been proposed with a phased conversion of Air Traffic Control Assigned Airspaces (ATCAAs) to Warning Areas, and creation of new overland special use airspace. No completion date has been identified.
	Amphibious Warfare (AMW)	●	Minimal land area available for AMW training. Live fire not permitted; maneuver is restricted to use of roads; helicopters must land on designated airfields. Propose a site-specific Tinian amphibious landing area in the Mariana Islands Training and Testing (MITT) EIS/OEIS. A four phase air space plan and planned NEPA assessment has been proposed with a phased conversion of ATCAAs to Warning Areas, and creation of new overland special use airspace (SUA). No completion date has been identified.
	Naval Special Warfare (NSW)	●	Insufficient maneuver area that supports live fire training; NSW MOUT is too small; laser designators are not allowed. Limits NSW realistic training. Conduct study to locate land area and propose facilities that will support NSW training. No completion date has been identified.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Mariana Islands Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Airspace	Strike Warfare (STW)	🔴	Size and altitudes of airspace too small. Cannot accommodate multiple strike packages. A four phase air space plan and planned NEPA has been proposed with the first phase being a conversion of ATCAAs to Warning Areas and Restricted Airspace. No completion date has been identified.
	Anti-Air Warfare (AAW)	🟡	No suitable land area is available under the training airspace. Prevents realistic overland detection and tracking scenarios. A four phase air space plan and planned NEPA assessment has been proposed with the first phase being a conversion of ATCAAs to Warning Areas and Restricted Airspace. No completion date has been identified.
	Amphibious Warfare (AMW)	🔴	Minimal airspace exists over beaches that support AMW training. Prevents air support training for AMW. A four phase air space plan and planned NEPA assessment has been proposed with the first phase being a conversion of ATCAAs to Warning Areas and Restricted Airspace. No completion date has been identified.
	Naval Special Warfare (NSW)	🟡	No special use airspace adjacent to land that supports High Altitude Low Opening (HALO) or High Altitude High Opening (HAHO) parachute training. Prevents complete range of required parachute training. Establish SUA in required area. No completion date has been identified.
Seaspace	Electronic Combat (EC)	🔴	No EC threat stimulation assets, special use airspace and associated at-sea OPAREA supporting EC training. Prevents realistic EC training. Establish SUA with associated OPAREA to support EC training, and obtain EC threat emitter assets. A four phase air space plan and planned NEPA has been proposed with a phased conversion of ATCAAs to Warning Areas, and creation of new overland SUA. The proposal needs to be reviewed with inclusion of a plan for EC SUA, associated OPAREA, and threat emitter and jamming requirements. No completion date has been identified.
	Mine Warfare (MW)	🟡	Insufficient geographic references for aerial mine laying; no designated operating area for mine laying. Prevents training to proper procedures for aerial mining. Designate geographic reference point and OPAREA for aerial mining. No completion date has been identified.
	Amphibious Warfare (AMW)	🔴	A site-specific designated sea space supported by required beach front is not available, which prevents conduct of AMW beach assault training. Propose a site-specific Tinian amphibious landing area in the MITT EIS/OEIS. No completion date has been identified.
	Naval Special Warfare (NSW)	🔴	Insufficient beachfront contiguous with sea area; coral heads prevent access to beaches from sea. NSW training is limited. Conduct study to locate area to support required training. No completion date has been identified.
Underseaspace	Mine Warfare (MW)	🔴	No dedicated area for SWAG or mine avoidance training. The extreme water depth and lack of variance in sea bottom is problematic, and limits mine countermeasures training. Study feasibility of installing a mine training range with instrumented shapes, false targets, and mines for SWAG training. No completion date has been identified.
	Naval Special Warfare (NSW)	🟡	Insufficient beachfront contiguous with sea area; coral heads prevent access to beaches from sea. NSW training limited. Conduct study to locate area to support required training. No completion date has been identified.
Targets	Strike Warfare (STW)	🔴	There are no raked, strafe, structural, revetted, or moving targets; no urban terrain or targets; targets do not support cluster munitions; targets do not support multiple strike packages; targets do not have spectral signatures. These conditions limit live fire and realistic training. Conduct feasibility study to establish high fidelity, inert, A-G range and training area with associated Warning Area. No completion date has been identified.
	Electronic Combat (EC)	🔴	No targets are available at the Mariana Islands Range. Full range of EC training that requires target support is not available. Study feasibility of establishing target unit at the range complex. A multi-purpose range craft is being constructed for deployment in Seventh Fleet that will support aerial drone, M-30 (ASW target), and mine shape launch and recovery, deployment/recovery of the portable ASW range, and EW training (limited). No completion date has been identified.
	Anti-Air Warfare (AAW)	🔴	No targets or contract opposing air are available at the Mariana Islands Range. Full range of AAW training that requires target support is not available. Study feasibility of establishing target unit at the range complex. A multi-purpose range craft is being constructed for deployment in the Seventh Fleet that will support aerial drone, M-30 (ASW target), and mine shape launch and recovery, deployment/recovery of the portable ASW range, and EW training (limited). No completion date has been identified.
	Anti-Surface Warfare (ASUW)	🟡	There is limited surface target support available for training at the Mariana Islands Range Complex. Full range of ASUW training that requires target support is not available. Study feasibility of establishing target unit at the range complex. No completion date has been identified.

Mariana Islands Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Targets	Mine Warfare (MW)	🔴	No targets available from range; users sometimes supply their own targets. This condition will degrade training capability for organic mine countermeasures systems (OMCM) units. Study feasibility of installing a mine range with instrumented mines, false targets, and mines for SWAG training. A multi-purpose range craft is being constructed for deployment in Seventh Fleet that will support aerial drone, M-30 (ASW target), and mine shape launch and recovery, deployment/recovery of the portable ASW range, and EW training (limited). No completion date has been identified.
	Amphibious Warfare (AMW)	🔴	No targets exist for AMW Firing Exercise (FIREX) training. No co-located live fire area and amphibious landing area exists. Prevents live fire training associated with AMW training. Integrate Navy AMW target requirements into Marine Corps amphibious feasibility study. No completion date has been identified.
	Naval Special Warfare (NSW)	🔴	No targets exist for NSW training. MOUT facility is limited. Reduces live fire proficiency; inhibits new tactics. Study feasibility of establishing a targets division at range complex. No completion date has been identified.
Threats	Strike Warfare (STW)	🔴	No OPFOR or EC threat stimulation is available at the range. Full range of STW training that requires OPFOR support is not available. Study feasibility of establishing OPFOR resources at the range complex. No completion date has been identified.
	Electronic Combat (EC)	🔴	Same as above.
	Anti-Air Warfare (AAW)	🔴	Same as above.
	Anti-Surface Warfare (ASUW)	🔴	Same as above.
	Mine Warfare (MW)	🔴	Same as above.
	Amphibious Warfare (AMW)	🔴	Same as above.
	Anti-Submarine (ASW)	🔴	Same as above.
	Naval Special Warfare (NSW)	🔴	Same as above.
Scoring & Feedback	Strike Warfare (STW)	🔴	No instrumentation exists at the range. Full range of training that requires instrumentation is not available. Study feasibility of providing instrumentation to the range complex. No completion date has been identified.
	Electronic Combat (EC)	🔴	Same as above.
	Anti-Air Warfare (AAW)	🔴	Same as above.
	Anti-Surface Warfare (ASUW)	🔴	Same as above.
	Mine Warfare (MW)	🔴	Same as above.
	Amphibious Warfare (AMW)	🔴	Same as above.
	Anti-Submarine (ASW)	🔴	Same as above.
	Naval Special Warfare (NSW)	🔴	Same as above.
Range Support	Strike Warfare (STW)	🟡	Lack of a web-based scheduling system with pre-event, real-time, and post-event modules precludes most efficient scheduling and documenting of range usage. Post-event reporting is particularly critical for ordnance expenditures or active sonar usage in at-sea OPAREAs, since the MMPA permits require the Navy to periodically report these values. Non-compliance or inaccurately reporting post-event values to regulators risks range access or prohibitions on training events that involve active sonar or high explosives at-sea. PACFLT is developing a Data Collection and Scheduling Tool (DCAST) that includes a post-event module to mitigate issues outlined above. DCAST development is in progress and deployment has begun in CONUS. Deployment date for WESTPAC will be completed during FY2012.
	Electronic Combat (EC)	🟡	Same as above.
	Anti-Air Warfare (AAW)	🟡	Same as above.
	Anti-Surface Warfare (ASUW)	🟡	Same as above.
	Mine Warfare (MW)	🟡	Same as above.
	Amphibious Warfare (AMW)	🟡	Same as above.
	Anti-Submarine (ASW)	🟡	Same as above.
	Naval Special Warfare (NSW)	🟡	Same as above.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Mariana Islands Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Threatened & Endangered Species	Strike Warfare (STW)		Threatened species and migratory bird habitat restricts area available for training on Farallon de Medinilla (FDM). Restrictions create avoidance areas, prohibit certain training events, reduce range access, segment training/reduce realism, complicate night and all-weather training, and raise flight altitudes. The Navy complies with current regulations, attempts to negotiate a reduction in the number of restrictions throughout the complex, and designates alternate locations for STW that do not have such restrictions.
	Amphibious Warfare (AMW)		The MMPA, ESA, the EIS for Military Training in the Marianas, and the U.S. Department of Agriculture (USDA) Brown Tree Snake (BTS) protocol place restrictions on military training throughout the Marianas. Regulatory controls documented in the INRMPs have placed restrictions on military operations. Coral and essential fish habitat (EFH) conservation, marine mammal protection, munitions in the water, turtle nesting, and BTS protocols are some of the encroachment issues that influence training activities. Landing Craft Air Cushion (LCAC) and Amphibious Assault Vehicle (AAV) landings on the beaches in the Marianas are problematic. Amphibious landings require compensatory coral reef mitigation efforts. Species restrictions create avoidance areas, prohibit certain training events, reduce range access, segment training/reduce realism, raise flight altitudes, complicate night and all-weather training, and raise flight altitudes. All military Services are subject to and conform to training restrictions. The Navy should attempt to negotiate a reduction in the number of restrictions throughout the complex.
	Naval Special Warfare (NSW)		The MMPA, ESA, the EIS for Military Training in the Marianas, and the USDA BTS protocol place restrictions on military training throughout the Marianas. Regulatory controls documented in the INRMPs have placed restrictions on military training. Restrictions create avoidance areas, prohibit certain training events, reduce range access, segment training/reduce realism. The Navy continues to pursue regulatory relief while adhering to compliance provisions.
Munitions Restrictions	Strike Warfare (STW)		De-vegetation and erosion on FDM caused by explosive munitions has restricted and prohibited certain munitions expenditures. FDM restrictions create avoidance areas, prohibit certain training events. FDM users are continually reminded to use only authorized munitions and to keep munitions on island. All military Services are subject to and conform to training restrictions.
	Naval Special Warfare (NSW)		EOD permitting in the Ordnance Annex and UXO on the inactive mortar range, and live coral beds on Tinian are issues that restrict EOD and training activity. Restrictions prohibit certain training events. The Navy is evaluating alternatives that will allow EOD and appropriate training activity.
Spectrum	Strike Warfare (STW)		Employment of Link 16 is restricted. Restrictions limit spectrum operations and prohibit certain training events, segment training/reduce realism, reduce training days, limit application of new weapons technologies, and inhibit new tactics development. The Navy continues to coordinate with appropriate frequency allocation and oversight agencies to seek spectrum relief, and to develop encroachment strategies that will reduce encroachment, while ensuring pending use of emerging spectrum technologies. Competition for frequency spectrum will add increased pressure on available bandwidth for Naval operations.
	Anti-Air Warfare (AAW)		Same as above.
	Anti-Surface Warfare (ASUW)		Employment of Link 16, SPY-1 radar, SPS 49 radar, and IFF are restricted. Restrictions limit spectrum operations and prohibit certain training events, segment training/reduce realism, reduce training days, limit application of new weapons technologies, and inhibit new tactics development. The Navy continues to coordinate with appropriate frequency allocation and oversight agencies to seek spectrum relief and to develop encroachment strategies that will reduce encroachment while ensuring pending use of emerging spectrum technologies. Competition for frequency spectrum will add increased pressure on available bandwidth for Naval operations.
	Mine Warfare (MW)		Same as above.
	Amphibious Warfare (AMW)		Same as above.
	Anti-Submarine (ASW)		Same as above.

Mariana Islands Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Maritime Sustainability	Anti-Surface Warfare (ASUW)	●	Maritime protective and mitigation measures undertaken in compliance with regulatory requirements have resulted in training restrictions that reduce training flexibility, force segmented training, and ultimately reduce training realism. All at-sea training is impacted to some degree; impacts are most significant to integrated warfare training using active underwater acoustic sources or in-water explosive ordnance. The Navy and National Marine Fisheries Service (NMFS) have developed science based protective and mitigation measures that adequately protect marine species while accommodating military readiness activities. The Navy continues to develop EISs, and obtain permits and authorizations for its range complexes to ensure military training complies with applicable laws and regulations. Litigation risks remain a concern, entailing the potential to delay or further restrict training, despite the protective and mitigation measures applied by the Navy in compliance with the MMPA and the ESA. Endangered species encroachment has created avoidance areas that have resulted in some reduction of training days and prohibits certain training events. This area is relatively small in scope; however, if these types of restrictions were applied to other species/areas, there would be significant impacts to readiness through reduction in range access, segmentation of training/reduction in realism, limits on the application of new technologies, raised flight altitudes, reduced live fire proficiency, increased personnel tempo, and increased O&M costs. The Navy will continue to invest in marine mammal research, rely on scientifically valid empirical data results as basis of marine mammal mitigation development, and factor mitigation effectiveness into permit requests. It will continue education of Fleet units to adhere to the maritime protective and mitigation measures, and sponsor public education outreach efforts. The Navy's authorizations under the MMPA and ESA include an adaptive management approach that includes continually evaluating existing mitigation measures for their potential impacts on training. If impacts on training from mitigation measures are identified and documented, the Navy will raise these impacts with the NMFS for resolution during an annual adaptive management review process. The Navy is currently preparing environmental compliance documentation to renew its MMPA and ESA authorizations, which will consider any impacts on training stemming from existing mitigations measures and propose changes as warranted.
	Mine Warfare (MW)	●	Same as above.
	Amphibious Warfare (AMW)	●	Same as above.
	Anti-Submarine (ASW)	●	Same as above.
Airspace	Strike Warfare (STW)	●	Marianas airspace is adequate when the ATCAAs are available; however, scheduling can be problematic as FAA is not always flexible to short notice requests. The FAA in the Marianas has tremendous pressure from the airlines. Warfare areas participating in combined arms training are impacted by the current lack of SUA over land areas in the Marianas. Encroachment from airspace restrictions creates avoidance areas, prohibits certain training events, reduces range access, segments training/reduces realism, inhibits new tactics development. The Navy is considering establishing Warning Areas to replace the ATCAAs. For possible range complex upgrades with live fire ranges, there will be a requirement for additional SUA, including Restricted Airspace, over the live fire ranges.
	Electronic Combat (EC)	●	FAA restrictions on EC/chaff operations in proximity to air routes is problematic. EC/chaff restrictions creates avoidance areas, prohibits certain training events, segments training/reduces realism, inhibits new tactics development, and limits application of new technologies. The Navy is negotiating with the FAA for relief; but there is no pending resolution date.
	Anti-Air Warfare (AAW)	●	Marianas airspace is adequate when the ATCAAs are available; however, scheduling can be problematic as the FAA is not always flexible to short notice requests. The FAA in the Marianas has tremendous pressure from the airlines. Warfare areas participating in combined arms training are impacted by the current lack of SUA over land areas in the Marianas. Encroachment from airspace restrictions creates avoidance areas, prohibits certain training events, reduces range access, segments training/reduces realism, and inhibits new tactics development. The Navy is considering establishing Warning Areas to replace the ATCAAs. For possible range complex upgrades with live fire ranges, there will be a requirement for additional SUA, including Restricted Airspace, over the live fire ranges.
Noise Restrictions	Strike Warfare (STW)	●	There is a continuing concern with noise at Andersen Northwest Field, due to residential areas adjoining the property. Nighttime flying activities are restricted and flight tracks are routed to avoid populated areas. Only mission essential aircraft arrivals and departures are scheduled between 2200 and 0600 hours. Noise-related restrictions prohibit certain training events and complicate night training. The Air Force continues close coordination with local stakeholders to ensure military operations can proceed normally.
	Anti-Air Warfare (AAW)	●	Same as above.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Mariana Islands Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Adjacent Land Use	Strike Warfare (STW)	●	Privately owned land near the runway at Andersen Air Field Northwest falls within the clear zones for aircraft operations. Nighttime flying activities are restricted and flight tracks are routed to avoid populated areas. Only mission essential aircraft arrivals and departures are scheduled between 2200 and 0600 hours. Private owners are a source for noise complaints. Noise-related restrictions prohibit certain training events and complicate night training. The Air Force continues close coordination with local stakeholders to ensure military operations can proceed normally.
	Anti-Air Warfare (AAW)	●	Same as above.
Cultural Resources	Amphibious Warfare (AMW)	●	When an LCAC lands at Chulu Beach, Tinian, it must remain on full air cushion until the entire craft is on the beach. LCAC full cushion operations on Chulu Beach are problematic as the beachfront is narrow and shallow. LCAC training restrictions create avoidance areas and prohibit certain training events. This condition is currently insolvable. The Navy is evaluating a site-specific analysis for amphibious landings on Tinian in the MITT EIS/OEIS.
	Naval Special Warfare (NSW)	●	The pervasiveness of cultural resources in the Marianas limits locations for NSW ranges and training areas where special operations forces would logically train. Restrictions create avoidance areas, prohibit certain training events, reduce range access, and segment training/reduce realism. Insolvable.
Wetlands	Amphibious Warfare (AMW)	●	There are sensitive wetlands areas in the vicinity of the Reserve Craft Beach (RCB), which GovGuam has declared a conservation area. The Navy owns the RCB, but GovGuam has restricted its use. Restrictions over wetlands reduce range access, create avoidance areas, segment training and/or reduce realism, and raise flight altitudes. The Navy may try to negotiate with GovGuam to lessen the impacts of RCB restrictions.
	Naval Special Warfare (NSW)	●	There are sensitive wetlands areas in the vicinity of the RCB, which GovGuam has declared a conservation area. The Navy owns the RCB, but GovGuam has restricted its use. Restrictions create avoidance areas, prohibit certain training events, reduce range access, and segment training/reduce realism. The Navy may try to negotiate with GovGuam to lessen the impacts of RCB restrictions.
Range Transients	Strike Warfare (STW)	●	Commercial and private fishing boats and dive boats frequent near-shore areas throughout the Marianas. Transient boat traffic interrupts or stops military training activity. Training interruptions reduce range access, create avoidance areas, segment training and/reduce realism, and prohibit certain training events. The Navy pursues outreach to local mayors, fishermen, and tour operators to ensure better understanding of military training. The Navy is pursuing an exclusion zone around FDM for safety reasons.
	Mine Warfare (MW)	●	Commercial and private fishing boats and dive boats frequent near-shore areas throughout the Marianas. There are no enforced surface danger zones (SDZs) over the water. Transient boat traffic interrupts or stops military training activity. Transient boat activity reduces range access, creates avoidance areas, segments training and/or reduces realism, and prohibits certain training events. Active patrolling of near-shore areas may need to be implemented to avoid civilian encroachment onto hot ranges and training areas. The Navy pursues outreach to local mayors, fishermen, and tour operators to ensure better understanding of military training. The Navy is pursuing an exclusion zone around FDM for safety reasons.
	Amphibious Warfare (AMW)	●	Same as above.
	Naval Special Warfare (NSW)	●	Commercial and private fishing boats and dive boats frequent near-shore areas throughout the Marianas. There are no enforced SDZs over the water. Transient boat traffic interrupts or stops military training activity. Transient boat activity reduces range access, creates avoidance areas, segments training and/or reduces realism, and prohibits certain training events. Active patrolling of near-shore areas may need to be implemented to avoid civilian encroachment onto hot ranges and training areas. The Navy is pursuing outreach to local mayors, fishermen, and tour operators to ensure better understanding of military training.

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Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Narragansett Bay Assessment Details

Range Mission Description

The Narragansett Bay Range Complex's mission is to support Antisubmarine Warfare (ASW) through its surface and subsurface operating area.

Capability Data

Mission Areas	Capability Attributes												
	Landspace	Airspace	Seaspace	Underseaspace	Targets	Threats	Scoring & Feedback System	Infrastructure	Range Support	Small Arms Ranges	Collective Ranges	MOUT Facilities	Suite of Ranges
Strike Warfare													
Electronic Combat													
Anti-Air Warfare													
Anti-Surface Warfare													
Mine Warfare													
Amphibious Warfare													
Anti-Submarine		●	●	●	●	●	●		●				
Naval Special Warfare													

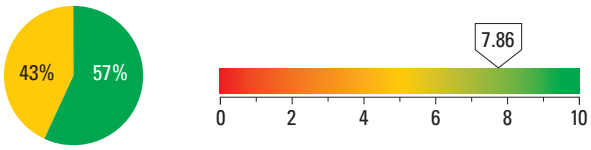
Legend: FMC ● PMC ● NMC ●

Encroachment Data

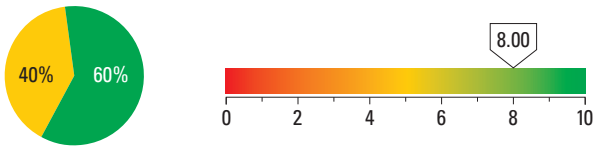
Mission Areas	Encroachment Factors											
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strike Warfare												
Electronic Combat												
Anti-Air Warfare												
Anti-Surface Warfare												
Mine Warfare												
Amphibious Warfare												
Anti-Submarine			●	●	●				●			●
Naval Special Warfare												

Legend: Minimal ● Moderate ● Severe ●

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

1. Capability attribute most impacting range mission performance: Scoring & Feedback System.
2. Mission area most severely impacted: ASW.
3. Projected Status: No immediate change.

Summary Observations

1. Spectrum and Maritime Sustainability are the two encroachment factors having the most impact on training.
2. ASW is the only mission area impacted by encroachment.
3. ASW forces have developed training procedures, maritime mitigation measures, and workarounds that cope with the pressures of encroachment on ASW training.

Narragansett Bay Assessment Details

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Capability Scores	7.14	7.86	7.86	7.86

1. ASW Scoring & Feedback was red in CY2008 and re-evaluated to yellow in CY2009.

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Encroachment Scores	8.75	8.00	8.00	8.00

1. Encroachment assessments for CY2008 were different than for CY2009, CY2010, CY2011, and CY2012. The algorithm for the overall assessment score for 2009–2012 was revised from the original algorithm used in CY2008 to provide greater fidelity and consistency across all range complexes. Based on an improved review process and revised algorithms, the assessments for CY2009, CY2010, and CY2011 provide a more accurate assessment of encroachment. The assessments for the latter three years reveal there has been little encroachment change from year to year, with relatively constant overall scores for CY2009, CY2010, and CY2011.
2. The VACAPES-Northeast RCMP update is currently in progress.
3. Department of Interior (DOI) and private energy interests in the Outer Continental Shelf (OCS) are increasing as domestic energy demand builds. Naval offshore operating areas and training events may be affected. High priority areas include training ranges and sea-space in and adjacent to all Navy OPAREAs. OASN (E,I&E), as DoD spokesman for military offshore use, continues to work closely with the Fleets and DOI's Bureau of Ocean Energy Management (BOEM) to resolve issues of combined use of the OCS important to both agencies. Fleet review and analysis of impacts from both oil/gas and wind energy "lease sale" areas (Mission Critical Areas [MCAs]) have been reviewed and forwarded to OSD. DoD, and DOI coordination continues.
4. Narragansett Bay had no emerging encroachment issues during CY2011 that affect Narragansett Bay operations. CY2012 encroachment assessment data remain the same as CY2011.

Narragansett Bay Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Threats	Anti-Submarine (ASW)	●	There are limited dedicated live submarines, surface ships, or aircraft to serve in the OPFOR role. This shortfall prohibits certain training events, reduces realism, inhibits tactics, increases personnel op-tempo, and increases O&M costs. The Navy will invest in additional threat OPFOR and increase availability of submarines through the Diesel Electric Submarine Initiative (DESI) and aircraft through the Contract Air Support (CAS) programs. No completion date has been identified.
Scoring & Feedback Systems	Anti-Submarine (ASW)	●	There is no underwater tracking range, scoring capability, M&S, or post-mission feedback. This prohibits certain training events, reduces realism, limits weapon technologies, inhibits tactics, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy plans to expand and improve 2-D & 3-D coverage of the OPAREA; invest in JNTC compliant M&S; and improve debrief capabilities. An East Coast USWTR is planned for the Jacksonville Range Complex—IOC is planned for FY2017. No completion date has been identified for other plans.
Range Support	Anti-Submarine (ASW)	●	The lack of a web-based scheduling system with pre-event, real-time, and post-event modules precludes most efficient scheduling and documenting of range usage. Post-event reporting is particularly critical for ordnance expenditures or active sonar usage in at-sea OPAREAs, since MMPA permits require the Navy to periodically report these values. Non-compliance or inaccurately reporting post-event values to regulators risks range access or prohibitions on training events that involve active sonar or high explosives at-sea. PACFLT is developing a Data Collection and Scheduling Tool (DCAST) that includes a post-event module to mitigate issues outlined above. If successful, the Navy could consider adopting it at all range scheduling facilities.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Narragansett Bay Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Spectrum	Anti-Submarine (ASW)		Employment of Link 16, SPY-1 radar, and IFF are restricted. Restrictions limit spectrum operations and prohibit certain training events, segment training/reduce realism, reduce training days, limit application of new weapons technologies, and inhibit new tactics development. The Navy continues to coordinate with appropriate frequency allocation and oversight agencies to seek spectrum relief, and to develop encroachment strategies that will reduce encroachment, while ensuring pending use of emerging spectrum technologies. Competition for frequency spectrum will add increased pressure on available bandwidth for Naval operations.
Maritime Sustainability	Anti-Submarine (ASW)		Maritime protective and mitigation measures undertaken in compliance with regulatory requirements have resulted in training restrictions that reduce training flexibility, force segmented training, and ultimately reduce training realism. All at-sea training is impacted to some degree; impacts are most significant to integrated warfare training using active underwater acoustic sources or in-water explosive ordnance. The Navy and National Marine Fisheries Service (NMFS) have developed science based protective and mitigation measures that adequately protect marine species while accommodating military readiness activities. The Navy continues to develop EISs and obtain permits and authorizations for its range complexes to ensure military training complies with applicable laws and regulations. Litigation risks remain a concern, entailing the potential to delay or further restrict training, despite the protective and mitigation measures applied by the Navy in compliance with the Marine Mammal Protection Act (MMPA) and the Endangered Species Act (ESA). Endangered species encroachment from the North Atlantic Right Whale has created avoidance areas that have resulted in some reduction of training days and prohibits certain training events. This area is relatively small in scope; however, if these types of restrictions were applied to other species/areas, there would be significant impacts to readiness through reduction in range access, segmentation of training/reduction in realism, limits on the application of new technologies, raised flight altitudes, reduced live fire proficiency, increased personnel tempo, and increased O&M costs. The Navy will continue to invest in marine mammal research, rely on scientifically valid empirical data results as basis of marine mammal mitigation development, factor mitigation effectiveness into permit requests, and continue education of Fleet units to adhere to the maritime protective and mitigation measures. It will also sponsor public education outreach efforts. The Navy's authorizations under the MMPA and ESA include an adaptive management approach that includes continually evaluating existing mitigation measures for their potential impacts on training. If impacts on training from mitigation measures are identified and documented, the Navy will raise these impacts with NMFS for resolution during an annual adaptive management review process. The Navy is currently preparing environmental compliance documentation to renew its MMPA and ESA authorizations by January 2014, which will consider any impacts on training stemming from existing mitigations measures and propose changes as warranted.

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Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Navy Cherry Point Assessment Details

Range Mission Description

The Navy Cherry Point Range Complex supports training across all Navy mission areas except Naval Special Warfare. It has the only East Coast Electronic Combat (EC) training facility.

Capability Data

Mission Areas	Landspace	Airspace	Seaspace	Underseaspace	Targets	Threats	Scoring & Feedback System	Infrastructure	Range Support	Small Arms Ranges	Collective Ranges	MOUT Facilities	Suite of Ranges
	Capability Attributes												
Strike Warfare	PMC	PMC	FMC	FMC	PMC	PMC	PMC		PMC				
Electronic Combat	FMC	FMC	FMC	FMC	PMC	PMC	FMC		PMC				
Anti-Air Warfare	PMC	FMC	FMC		FMC	PMC	PMC		PMC				
Anti-Surface Warfare		FMC	FMC	FMC	FMC	FMC	PMC		PMC				
Mine Warfare		FMC	FMC	FMC	PMC	FMC			PMC				
Amphibious Warfare	FMC	FMC	FMC	FMC	PMC	PMC	FMC		PMC				
Anti-Submarine		FMC	FMC	FMC	FMC	PMC	NMC		PMC				
Naval Special Warfare													

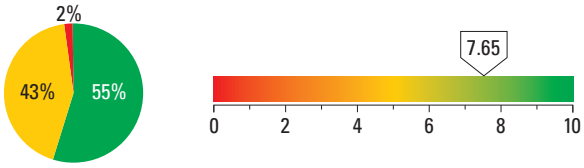
Legend: FMC PMC NMC

Encroachment Data

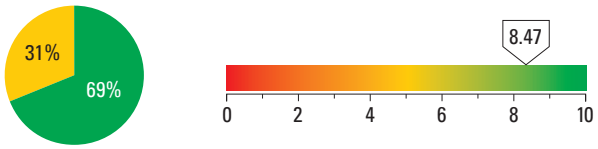
Mission Areas	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
	Encroachment Factors											
Strike Warfare		Moderate	Minimal	Moderate	Moderate		Minimal		Minimal			Minimal
Electronic Combat			Moderate		Minimal		Minimal					Minimal
Anti-Air Warfare			Moderate		Minimal		Minimal					Minimal
Anti-Surface Warfare			Moderate	Moderate	Minimal				Minimal			Moderate
Mine Warfare			Minimal	Minimal	Minimal				Minimal			Minimal
Amphibious Warfare			Moderate	Moderate	Minimal		Minimal		Minimal			Moderate
Anti-Submarine			Minimal	Minimal	Minimal				Minimal			Moderate
Naval Special Warfare												

Legend: Minimal Moderate Severe

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

1. Capability attribute most impacting range mission performance: Scoring & Feedback Systems.
2. Mission areas most severely impacted: ASW and MW.
3. Projected Status: No immediate change.

Summary Observations

1. Spectrum and Maritime Sustainability are the two encroachment factors having the greatest impact on training.
2. ASUW and AMW are the two mission areas with the greatest encroachment impacts.
3. The Navy has developed procedures, maritime mitigation measures, and workarounds to accommodate encroachment impacts. The Navy continues to consult and discuss with stakeholders various strategies that can lessen encroachment impacts.

Navy Cherry Point Assessment Details

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Capability Scores	7.40	7.50	7.50	7.65

1. The airspace training requirement for STW was re-evaluated between the CY2008 report and CY2009. The impact assessment from red to yellow based on review of similar impacts at Jacksonville and VACAPES range complexes in order to achieve a consistent evaluation between ranges.
2. MW Scoring & Feedback Systems changed from red to white based on USFF evaluation that TSPI Scoring data is not required.

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Encroachment Scores	9.29	8.33	8.33	8.47

1. Encroachment assessments for CY2008 were different than for CY2009, CY2010, and CY2011. The algorithm for the overall assessment score for CY2009 through CY2011 was revised from the original algorithm used in CY2008 to provide greater fidelity and consistency across all range complexes. Based on an improved review process and revised algorithms, the assessments for CY2009, CY2010, and CY2011 provide more accurate assessments of encroachment. The assessments for the latter three years reveal there has been little encroachment change from year to year, with relatively constant overall scores for CY2009, CY2010, and CY2011, except EC Spectrum prohibits use of some threat simulation equipment. ASUW and AMW maritime Sustainability re-evaluated from red to yellow based on affect on range capabilities.
2. The Cherry Point RCMP update is tentatively scheduled to begin in early 2012 and to be completed during FY2013. The Cherry Point OPAREA EAP is scheduled to be completed in December 2011.
3. Department of Interior (DOI) and private energy interests in the Outer Continental Shelf (OCS) are increasing as domestic energy demand builds. Naval offshore operating areas and training events may be affected. High priority areas include training ranges and sea space in and adjacent to all Navy OPAREAs. OASN (E,I&E), as DoD spokesman for military offshore use, continues to work closely with the Fleets and DOI's Bureau of Ocean Energy Management (BOEM) to resolve issues of combined use of the OCS important to both agencies. Fleet review & analysis of impacts from both oil/gas and wind energy "lease sale" areas (Mission Critical Areas [MCAs]) have been reviewed and forwarded to OSD. DoD and DOI coordination continues.
4. Cherry Point had no emerging encroachment issues during CY2011 that affect Cherry Point operations. The CY2012 Cherry Point encroachment assessment remains the same as CY2011.

Navy Cherry Point Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Strike Warfare (STW)	●	There is no land in the Navy Cherry Point range. Land area in contiguous Marine Corps ranges provides some land space and contains two targets, but the land size does not meet minimum requirements. Additional land space is only available at Dare County Bombing Range. The land area does not fully support size or topography requirements for placement of required number of targets. Use of live ordnance is not supported. The area is too small to support standoff PGM weapons. These shortfalls prohibit certain training events, reduce realism, reduce life fire proficiency. There are no local options for increasing land availability.
	Anti-Air Warfare (AAW)	●	Land space is only available at adjacent Marine Corps ranges and at the Dare County Bombing Range, which does not fully support size or topography requirements, or support surface combatant detection of aircraft over land. Use of flares is restricted. This prohibits certain training events, reduces realism, and increases personnel op-tempo. Overland ACM training is conducted at Fallon Range Training Complex. No additional land options are available.
Airspace	Strike Warfare (STW)	●	There is no land in the Navy Cherry Point range. Land area in contiguous Marine Corps ranges provides some land space, but the airspace configuration lacks characteristics for realistic tactical approaches and does not support the area size to meet minimum training requirements. Altitudes are limited to 17,999 ft.; and the area is not cleared for supersonic operations. This reduces realism, inhibits new tactics development, and reduces live fire proficiency. There are no local options for increasing land availability, but coordination and investment in new MOAs could reduce the impact on flight operations by increasing airspace area and altitudes.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Navy Cherry Point Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Targets	Strike Warfare (STW)		No targets are available in the range. Two targets are moderately supported by contiguous USMC ranges, but do not allow live ordnance. This reduces realism, prohibits certain events, increases personnel op-tempo, and increases O&M costs. Improvements are expected due to recent investment planning for targets, but additional investment in moving and urban targets located in a land area that will support STW is required. No completion date has been identified.
	Electronic Combat (EC)		There is no EC support above level 2 for aircraft and no support for surface units. Contiguous USMC ranges provide some support, but lack mobile targets, and lack sufficient threat emitters to cover range of threats. This prohibits certain training events, and reduces realism. The Navy plans to invest in upgrades to MAEWR to cover range of required threats and targets. No completion date has been identified.
	Mine Warfare (MW)		There are insufficient training mines to support increased MW training requirements from MH-60 and MH-53 helicopter squadrons. This prohibits certain training events, reduces realism, inhibits tactics, increases personnel op-tempo, and increases O&M costs. The Navy will procure appropriate mix of recoverable and expendable inert bottom and moored mine shapes and instrumented bottom training mines to populate a temporary mine training area for major exercises. No completion date has been identified.
	Amphibious Warfare (AMW)		Portable beach obstacles are available, but are not cleared for engagement/destruction. This reduces realism for assault training, and prohibits certain training events, such as obstacle clearance. The Navy recommends investing in beach obstacles that will fully support training requirements. No completion date has been identified.
Threats	Strike Warfare (STW)		An additional amount of live or virtual fixed winged or helicopter OPFOR is required for realistic threat representation. This reduces realism; and prohibits certain events. The Navy plans to invest in additional Commercial Air Services (CAS) to serve as OPFOR. No completion date has been identified.
	Electronic Combat (EC)		EC threat representation does not fully support EC threat levels 3 or 4 for required mission areas. Existing instrumentation systems are becoming obsolete and unsupportable through the FYDP. This reduces realism, inhibits tactics development, and greatly increases O&M costs. The Navy plans to maintain current upgrade schedule to preclude severe degradation of system capability. No completion date has been identified.
	Anti-Air Warfare (AAW)		Helicopter and supersonic threat OPFOR and required quantity of threat OPFOR is not available. This shortfall reduces realism, inhibits new tactics development, increases personnel op-tempo, and increases O&M costs. The Navy plans to invest in additional CAS to serve as OPFOR. No completion date has been identified.
	Amphibious Warfare (AMW)		There is no dedicated OPFOR consisting of minefields, submarines, small high-speed boats, a battalion-sized ground force, a company-sized mechanized force and anti-ship cruise missiles available. This reduces realism and inhibits new tactics development. The Navy will provide funding to develop a dedicated threat of live, virtual, and constructive OPFOR. No completion date has been identified.
	Anti-Submarine (ASW)		There are limited dedicated live submarines, surface ships, or aircraft to serve in the OPFOR role. This prohibits certain training events, reduces realism, inhibits tactics, increases personnel op-tempo, and increases O&M costs. The Navy plans to invest in additional threat OPFOR and increase availability of submarines through the DESI and aircraft through CAS. No completion date has been identified.
Scoring & Feedback System	Strike Warfare (STW)		OPAREA lacks full TSPI and EC&C coverage. It has no M&S capabilities and lacks real-time kill notification. This reduces realism; prohibits certain events, increases personnel op-tempo, and increases O&M costs. The Navy plans to expand and improve 2-D & 3-D coverage of OPAREA, invest in JNTC compliant M&S, and improve debrief and data collection capabilities. No completion date has been identified.
	Anti-Air Warfare (AAW)		OPAREA coverage is not complete. M&S is inadequate and there is no RTKN. Existing instrumentation systems are not supportable through the FYDP. This reduces realism, inhibits tactics, increases personnel op-tempo, and increases O&M costs. The Navy plans to expand and improve 2-D & 3-D coverage of the OPAREA, invest in JNTC compliant M&S, and improve debrief capabilities. No completion date has been identified.
	Anti-Surface Warfare (ASUW)		Range lacks full TSPI coverage. There is no M&S capabilities and it lacks automatic scoring. This reduces realism, inhibits tactics, increases personnel op-tempo, and increases O&M costs. The Navy plans to expand and improve 2-D & 3-D coverage of the OPAREA, invest in JNTC compliant M&S, and improve debrief capabilities. No completion date has been identified.
	Anti-Submarine (ASW)		There is no underwater tracking range, scoring capability, M&S, or post mission feedback. This prohibits certain training events; reduces realism, limits weapon technologies, inhibits tactics, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy plans to develop and fund an East Coast USWTR, expand and improve 2-D & 3-D coverage of the OPAREA, invest in JNTC compliant M&S, and improve debrief capabilities. The East Coast USWTR IOC is planned for FY2017; no completion date has been identified for other plans.

Navy Cherry Point Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Range Support	Strike Warfare (STW)	●	The lack of a web-based scheduling system with pre-event, real-time, and post-event modules precludes most efficient scheduling and documenting of range usage. Post-event reporting is particularly critical for ordnance expenditures or active sonar usage in at-sea OPAREAs, since MMPA permits require the Navy to periodically report these values. Non-compliance or inaccurately reporting post-event values to regulators risks range access or prohibitions on training events that involve active sonar or high explosives at-sea. PACFLT is developing a Data Collection and Scheduling Tool (DCAST) that includes a post-event module to mitigate issues outlined above. If successful, the Navy could consider adopting it at all range scheduling facilities.
	Electronic Combat (EC)	●	Same as above.
	Anti-Air Warfare (AAW)	●	Same as above.
	Anti-Surface Warfare (ASUW)	●	Same as above.
	Mine Warfare (MW)	●	Same as above.
	Amphibious Warfare (AMW)	●	Same as above.
	Anti-Submarine (ASW)	●	Same as above.

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Spectrum	Strike Warfare (STW)	●	Employment of Link 16, SPY-1 radar, SPS 49 radar, and IFF are restricted. Restrictions limit spectrum operations and prohibit certain training events, segment training/reduce realism, reduce training days, limit application of new weapons technologies, and inhibit new tactics development. The Navy continues to coordinate with appropriate frequency allocation and oversight agencies to seek spectrum relief, and to develop encroachment strategies that will reduce encroachment, while ensuring pending use of emerging spectrum technologies. Competition for frequency spectrum will add increased pressure on available bandwidth for Naval operations.
	Electronic Combat (EC)	●	Restrictions resulting from electromagnetic spectrum encroachment include prohibitions from performing GPS jamming, authorization to radiate the Spoon Rest VHF early warning threat radar system, and restricted use of the Track While Scan Simulator (TWSS). Employment of Link 16, SPY-1 radar, SPS 49 radar, and IFF are restricted. Restrictions limit spectrum operations and prohibit certain training events, segment training/reduce realism, reduce training days, limit application of new weapons technologies, and inhibit new tactics development. The Navy continues to coordinate with appropriate frequency allocation and oversight agencies to seek spectrum relief, and to develop encroachment strategies that will reduce encroachment, while ensuring pending use of emerging spectrum technologies. Competition for frequency spectrum will add increased pressure on available bandwidth for Naval operations.
	Anti-Air Warfare (AAW)	●	Employment of Link 16, SPY-1 radar, SPS 49 radar, and IFF are restricted. Restrictions limit spectrum operations and prohibit certain training events, segment training/reduce realism, reduce training days, limit application of new weapons technologies, and inhibit new tactics development. The Navy continues to coordinate with appropriate frequency allocation and oversight agencies to seek spectrum relief, and to develop encroachment strategies that will reduce encroachment, while ensuring pending use of emerging spectrum technologies. Competition for frequency spectrum will add increased pressure on available bandwidth for Naval operations.
	Anti-Surface Warfare (ASUW)	●	Same as above.
	Amphibious Warfare (AMW)	●	Same as above.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Navy Cherry Point Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Maritime Sustainability	Anti-Surface Warfare (ASUW)		Maritime protective and mitigation measures undertaken in compliance with regulatory requirements have resulted in training restrictions that reduce training flexibility, force segmented training, and ultimately reduce training realism. All at-sea training is impacted to some degree; impacts are most significant to integrated warfare training using active underwater acoustic sources or in-water explosive ordnance. The Navy and National Marine Fisheries Service (NMFS) have developed science based protective and mitigation measures that adequately protect marine species while accommodating military readiness activities. The Navy continues to develop EISs and obtain permits and authorizations for its range complexes to ensure military training complies with applicable laws and regulations. Litigation risks remain a concern, entailing the potential to delay or further restrict training, despite the protective and mitigation measures applied by the Navy in compliance with the MMPA and the Endangered Species Act (ESA). Endangered species encroachment from the North Atlantic Right Whale has created avoidance areas that have resulted in some reduction of training days and prohibits certain training events. This area is relatively small in scope; however, if these types of restrictions were applied to other species/areas, there would be significant impacts to readiness through reduction in range access, segmentation of training/reduction in realism, limits on the application of new technologies, raised flight altitudes, reduced live fire proficiency, increased personnel tempo, and increased O&M costs. The Navy will continue to invest in marine mammal research, rely on scientifically valid empirical data results as basis of marine mammal mitigation development, factor mitigation effectiveness into permit requests, continue education of Fleet units to adhere to the maritime protective and mitigation measures, and sponsor public education outreach efforts. The Navy's authorizations under the MMPA and ESA include an adaptive management approach that includes continually evaluating existing mitigation measures for their potential impacts on training. If impacts on training from mitigation measures are identified and documented, the Navy will raise these impacts with NMFS for resolution during an annual adaptive management review process. The Navy is currently preparing environmental compliance documentation to renew its MMPA and ESA authorizations by January 2014, which will consider any impacts on training stemming from existing mitigations measures and propose changes as warranted.
	Amphibious Warfare (AMW)		Same as above.
Airspace	Strike Warfare (STW)		FACSFAC and FAA communications and flight procedures in controlled airspace between W-122 and R-5306A/C/D/E (the Navy Cherry Point Range Complex to BT-9, BT-11 and G-10 impact areas) interrupt the flow of tactical flight operations from W-122 to the R-5306 airspace. Airspace restrictions encroachment segments training and reduces realism. FACSFAC VACAPES, Marine Corps Air Station Cherry Point (MCAS CP), Marine Corps Base Camp Lejeune (MCB CL) continue to coordinate with each other and the FAA Washington Center to refine airspace procedures and alleviate airspace flight restrictions that provide better tactical aircraft movement from W-122 to the R-5306.
Range Transients	Anti-Surface Warfare (ASUW)		Range transients, involving commercial shipping, commercial fishing, and private pleasure boating, encroach on training, either by delaying events or forcing relocation to less than optimum locations. Commercial vessel and recreational vessel encroachment creates avoidance areas and segments training/reduces realism. The Navy will continue to pursue opportunities to inform industry and the public of the impact of range transient encroachment on at-sea OPAREAs and Navy readiness.
	Amphibious Warfare (AMW)		Same as above.
	Anti-Submarine (ASW)		Same as above.

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Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Northern California (NOCAL) Assessment Details

Range Mission Description

The Northern California (NOCAL) Range Complex mission is to support Navy training in Strike Warfare (STW), Anti-Air Warfare (AAW), Anti-surface Warfare (ASUW), and Naval Special Warfare (NSW).

Capability Data

Mission Areas	Capability Attributes												
	Landspace	Airspace	Seaspace	Underseaspace	Targets	Threats	Scoring & Feedback System	Infrastructure	Range Support	Small Arms Ranges	Collective Ranges	MOUT Facilities	Suite of Ranges
Strike Warfare	●	●	●	●	●	●	●		●				
Electronic Combat													
Anti-Air Warfare	●	●	●		●	●	●		●				
Anti-Surface Warfare		●	●	●	●	●	●		●				
Mine Warfare													
Amphibious Warfare													
Anti-Submarine													
Naval Special Warfare	●	●	●	●	●	●	●		●				

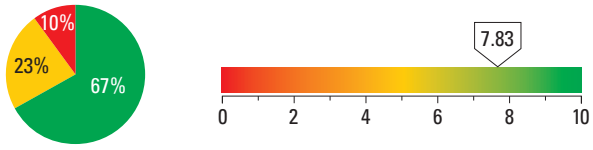
Legend: FMC ● PMC ● NMC ●

Encroachment Data

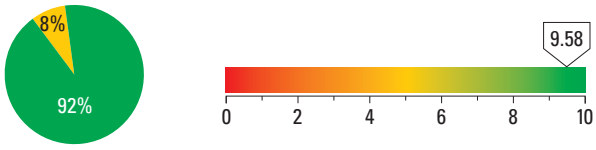
Mission Areas	Encroachment Factors												
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strike Warfare			●	●	●	●	●		●			●
Electronic Combat												
Anti-Air Warfare			●		●	●	●					●
Anti-Surface Warfare			●	●	●				●			●
Mine Warfare												
Amphibious Warfare												
Anti-Submarine												
Naval Special Warfare			●	●	●	●	●		●			●

Legend: Minimal ● Moderate ● Severe ●

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

1. Capability attribute most impacting range mission performance: Targets and Scoring & Feedback Systems.
2. Mission area most severely impacted: STW.
3. Projected Status: Updated to reflect TCTS introduction at NAS Fallon and DCAST status.
4. Range Support changed from yellow to green as PACFLT has developed a Web-enabled DCAST that includes: customizable scheduling, event deconfliction, range map graphics generation, schedule notification, and automatic reports generation. The tool is an OPNAV (N433) program of record that has an authority to operate within the DISA Cloud.

Summary Observations

1. Range Transients is the encroachment factor with the greatest impact on training.
2. STW and AAW are the mission areas most affected.
3. The Navy may seek to enlarge the MOAs and create transit corridors for civil aircraft that are below the training altitudes for military aircraft.

Northern California (NOCAL) Assessment Details

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Capability Scores	7.33	7.33	7.33	7.83

1. The capability assessment has been stable from year to year, with relatively constant overall scores for CY2010 and CY2011 and a slight improvement for CY2012.

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Encroachment Scores	9.58	9.58	9.58	9.58

1. Encroachment assessments for CY2008 were different than for CY2009, CY2010, and CY2011. The algorithm for the overall assessment score for CY2009 through CY2011 was revised from the original algorithm used in CY2008 to provide greater fidelity and consistency across all range complexes. Based on an improved review process and revised algorithms, the assessments for CY2009, CY2010, and CY2011 provide more accurate assessments of encroachment. The assessments for the latter three years reveal there has been little encroachment change from year to year, with relatively constant overall scores for CY2009, CY2010, and CY2011.
2. There is little indication encroachment pressures will change in the foreseeable future.

Northern California (NOCAL) Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Strike Warfare (STW)	🔴	There is no Navy owned landspace. Army Fort Hunter Liggett provides support for limited helicopter training, but its support for FRS and Fleet F/A-18 squadron strike training capability is severely limited. These units must rely on out-of-area training to fulfill basic level requirements. This prohibits training events, complicates night and all-weather training, reduces realism, limits tactics, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy recommends development of an instrumented air-to-ground range in the NOCAL Training Area and investigating other feasible range areas. No completion date has been identified.
Airspace	Strike Warfare (STW)	🔴	Same as above, as airspace must be associated with landspace requirements.
	Anti-Air Warfare (AAW)	🟡	Operations over water in the NOCAL Warning Areas are significantly limited due the persistent, extreme coldwater conditions, coupled with the lack of a dedicated Search and Rescue (SAR) capability. Transit time from NAS Lemoore to the Warning Areas is significant. Supersonic flight is restricted to greater than 30nm from land and above 30K ft. Limited training time due to transit time and lack of required SAR inhibits employment of tactics, and decreases realism. The Navy is working on establishing an approved ready SAR capability and with the FAA to reduce limitations on SUA. No completion date has been identified.
Targets	Strike Warfare (STW)	🔴	Only one target site exists and there are no DMPIs or raked targets. There is an unmet requirement for a target within the Superior Valley Range Complex (R-2524) that GPS Weapons (specifically JDAM in either Pre Planned or Target of Opportunity modes) can be dropped on. This prohibits certain training; reduces realism, limits application of new technologies, inhibits some tactics, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy recommends investigation of other feasible range areas to support this training. No completion date has been identified.
Threats	Strike Warfare (STW)	🟡	There is no Helicopter OPFOR available. Commercial OPFOR is extremely limited, there is no supersonic OPFOR; and EC OPFOR extremely limited. These shortfalls reduce realism; inhibits tactics; increase personnel op-tempo; and increase O&M costs. The Navy recommends increasing funding for commercial OPFORs and providing additional target vessel services to support air and EC OPFOR. No completion date has been identified.
	Anti-Air Warfare (AAW)	🟡	Same as above.
Scoring & Feedback System	Strike Warfare (STW)	🟡	Link-16 and the introduction of TCTS at NAS Lemoore provide a basic-level of TSPI coverage of NOCAL MOAs, with some debriefing and mission reconstruction capability. There is currently no M&S capability and limited scoring system. The maturing of TCTS will provide the needed upgrade. There is an unmet requirement for a Range Training Officer/Range Safety Officer (RTO/RSO) capability. RTO/RSO capability would improve overall training and would enable training operators to evaluate training evolutions in real-time and provide a safety aspect. NAS Lemoore is one of the only installations without RTO/RSO capability. Funding would need to include both installation facilities and range infrastructure. The current debriefing system has a lag time of about 1 ½ hours. These shortfalls increase O&M costs, and personnel op-tempo, reduce realism, and inhibit tactics. The Navy needs to invest in JNTC compliant M&S and expand TCTS coverage to link with other feasible range areas. The Navy needs to invest in RTO/RSO capabilities at NAS Lemoore. No completion date has been identified.
	Anti-Air Warfare (AAW)	🟡	Same as above.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Northern California (NOCAL) Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Range Support	Strike Warfare (STW)	●	There is an unmet requirement for a RTO/RSO capability. RTO/RSO capability would improve overall training and would enable training operators to evaluate training evolutions in real-time and provide a safety aspect. NAS Lemoore is one of the only installations without RTO/RSO capability. Funding would need to include both installation facilities and range infrastructure. The current debriefing system has a lag time of about 1 ½ hours. Lack of RTO/RSO capability decreases safety and training realism because training operators cannot confirm kill shots or remove training participants from the training exercise. The Navy needs to invest in RTO/RSO capabilities at NAS Lemoore. The set up would need to be similar to Fallon or Key West, to include radios, tracking/controlling, and record/playback capability for real time safety and debrief. No completion date has been identified.
	Anti-Air Warfare (AAW)	●	Same as above.

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Range Transients	Strike Warfare (STW)	●	Civil aircraft fly through the Hunter, Roberts, and Foothills MOAs when the MOAs are activated. Military aircrews must be vigilant to see and avoid small civil aircraft. This encroachment requires aircrews to direct their attention away from the mission at-hand to avoid collisions or near misses with civil aircraft. Restrictions prohibit certain training events, segment training/reduce realism, and inhibit new tactics development. The Navy and the Army may seek to enlarge the MOAs and create transit corridors for civil aircraft that are below the training altitudes for military aircraft.
	Anti-Air Warfare (AAW)	●	Same as above.

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Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Northwest Training Range Complex Assessment Details

Range Mission Description

The Northwest Training Range Complex (NRTC) offers operating areas with varied littoral water conditions, depths, and bottom types, and depths supported by airspace warning areas. The range complex has a mission to support basic and intermediate level training events for Strike Warfare (STW), Antisubmarine Warfare (ASW), Mine Warfare (MW), Electronic Combat (EC), Antisurface Warfare (ASUW), Naval Special Warfare (NSW), and Explosive Ordnance Disposal (EOD) forces.

Capability Data

Mission Areas	Capability Attributes												
	Landspace	Airspace	Seaspace	Underseaspace	Targets	Threats	Scoring & Feedback System	Infrastructure	Range Support	Small Arms Ranges	Collective Ranges	MOUT Facilities	Suite of Ranges
Strike Warfare	PMC	PMC	FMC	FMC	FMC	PMC	PMC		PMC				
Electronic Combat	FMC	FMC	PMC	FMC	PMC	NMC	PMC		PMC				
Anti-Air Warfare	FMC	FMC	FMC		PMC	PMC	PMC		PMC				
Anti-Surface Warfare		FMC	FMC	FMC	PMC	PMC	FMC		PMC				
Mine Warfare		FMC	FMC	FMC	FMC	FMC	FMC		PMC				
Amphibious Warfare													
Anti-Submarine		FMC	FMC	FMC	FMC	FMC	FMC		PMC				
Naval Special Warfare	PMC	FMC	FMC	PMC	PMC	FMC	FMC		PMC				

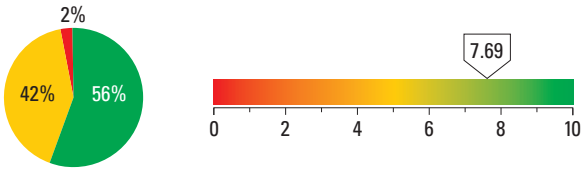
Legend: FMC, PMC, NMC

Encroachment Data

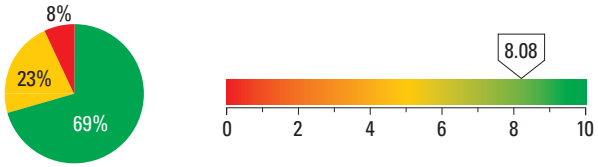
Mission Areas	Encroachment Factors											
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strike Warfare	Minimal	Minimal	Minimal	Minimal	Severe	Minimal	Minimal	Severe	Minimal	Minimal	Minimal	Minimal
Electronic Combat			Moderate		Moderate	Minimal	Minimal	Minimal				Minimal
Anti-Air Warfare			Minimal	Minimal	Severe	Minimal	Minimal	Severe				Minimal
Anti-Surface Warfare			Minimal	Moderate	Minimal		Moderate	Moderate	Minimal			Minimal
Mine Warfare		Minimal	Minimal	Moderate	Minimal				Minimal			Minimal
Amphibious Warfare												
Anti-Submarine			Minimal	Moderate	Minimal			Moderate	Minimal			Moderate
Naval Special Warfare	Minimal	Minimal		Moderate				Moderate	Minimal	Minimal	Minimal	Moderate

Legend: Minimal, Moderate, Severe

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

1. Capability attribute most impacting range mission performance: EC Threats capabilities, followed by Scoring & Feedback Systems.
2. Mission areas most severely impacted: EC and STW.
3. Projected Status: No immediate change.

Note: Assessments of NSW training are based on actual NSW demand and use of training range capability and space. Actual training range capability and space requirements are based on Fleet Readiness Training Plan demands for conventional warfare areas.

Summary Observations

1. Maritime Sustainability is the encroachment factor with the most impact on training. Additionally, wind energy projects inside of Restricted Airspace will eliminate low altitude training capability.
2. STW, AAW, and ASW are the mission areas most affected by encroachment.
3. The Navy has implemented training procedures, mitigation measures, and workarounds to accommodate encroachment. The Navy efforts to mitigate encroachment are continuing efforts.

Northwest Training Range Complex Assessment Details

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Capability Scores	7.98	7.88	7.88	7.79

1. ASUW Threats were green in CY2008 and re-evaluated to yellow in CY2009 and beyond based on review of range capability and impacts with PACFLT.
2. EC Threats were green in CY2009; re-evaluated to yellow in 2010; and re-evaluated to red in CY2012 due to the introduction of EA-18G within the range complex area. Mobile EW equipment has been requested to provide required EC threats, but the signal variations do not meet the EA-18G training requirements.
3. NTRC had no emerging capability issues during CY2011 that affect NTRC operations. The CY2012 capability assessment data remain the same as CY2011.

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Encroachment Scores	9.40	9.04	8.77	8.58

1. Encroachment assessments for CY2008 were different than for CY2009, CY2010, and CY2011. The algorithm for the overall assessment score for CY2009 through CY2011 was revised from the original algorithm used in CY2008 to provide greater fidelity and consistency across all range complexes. Based on an improved review process and revised algorithms, the assessments for CY2009, CY2010, and CY2011 provide more accurate assessments of encroachment. The assessments for the latter three years reveal there has been little encroachment change from year to year, with relatively constant overall scores for CY2009, CY2010, and CY2011.
2. NWSTF Boardman is in process of losing low altitude training capability below 1000 ft. above ground level due to vertical encroachment from 102 wind energy projects (7 constructed, 6 more under construction) that place wind turbines within the Boardman Restricted Airspace. The wind turbines range from 400-450 ft. in height. There is a 500 ft. vertical and lateral clearance criterion in the vicinity of each wind turbine for aircraft activity. Combined with the approximate 450 ft. height of a wind turbine, the 500 ft. clearance criterion mandates that low altitude flying in the vicinity of a wind turbine must remain at roughly 1000 ft. or greater above ground level. Additionally, a dairy farm has been established in the WSTF Boardman Arlington easement. This structure has caused the loss of approximately 1 mile of run-in arming area for aircraft into the main target area.
3. Due to NWTRC EIS ROD of October 2010 and Letter of Authorization of November 2010, there are new restrictions on training events.

Northwest Training Range Complex Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Strike Warfare (STW)	●	Size does not meet requirements, live ordnance not allowed, and use of inert ordnance at Basic and Intermediate level is authorized. This inhibits tactics development, limits application of new weapon technologies, increases personnel op-tempo, and increases O&M costs. The Navy plans to redevelop the bombing range area, and establish second target complex per range required capabilities document. No completion date has been identified.
	Naval Special Warfare (NSW)	●	There is limited maneuver area, no live fire area, and no MOUT. This shortfall inhibits tactics development, limits application of new weapon technologies, increases personnel op-tempo, and increases O&M costs. The Navy plans to pursue development of live fire small arms training capabilities near Puget Sound. No completion date has been identified.
Airspace	Strike Warfare (STW)	●	Size and altitudes do not meet requirements, and supersonic operations are not allowed over land. This Inhibits tactics development, limits application of new weapon technologies, increases personnel op-tempo, and increases O&M costs. The Navy plans to coordinate larger areas and higher altitudes to meet requirements. No completion date has been identified.
Seaspace	Electronic Combat (EC)	●	Land area where EC emitter is located cannot support seaspace EC. This inhibits tactics development; limits application of new weapon technologies, increases personnel op-tempo, and increases O&M costs. The Navy development of a mobile EW range for Okanogan, Roosevelt, and Olympic MOAS is in conceptual planning.
Underseaspace	Naval Special Warfare (NSW)	●	Net Explosive Weight (NEW) is limited by the ROD dated 10/25/10 to a NEW of no more than 2.5 lbs at Crescent Harbor and 1.5 lbs at Floral Point. This restriction inhibits tactics development, limits application of new weapon technologies, increases personnel op-tempo, and increases O&M costs. Environmental studies to determine the impact of explosive operations in Crescent Harbor are under way.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Northwest Training Range Complex Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Targets	Electronic Combat (EC)	🟡	Limited threat representative fixed and mobile targets are available. This shortfall inhibits tactics development, limits application of new weapon technologies, increases personnel op-tempo, and increases O&M costs. Acquisition of re-locatable EC threat emitters is under way. Acquisition of "smart targets" (visually representative of threats) needs to be initiated. No completion date has been identified.
	Anti-Air Warfare (AAW)	🟡	There is no towed target or subscale target capability in the range complex. This reduces live fire proficiency, limits application of new weapon technologies, increases personnel op-tempo, and increases O&M costs. The Navy plans to invest in Commercial Air Services (CAS) with target towing and other target capabilities. No completion date has been identified.
	Anti-Surface Warfare (ASUW)	🟡	There are no targets available or targets provided by range users. This reduces realism, inhibits tactics, limits application of new weapon technologies, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy plans to invest in required self-propelled, towed, programmed, or remote controlled targets. No completion date has been identified.
	Naval Special Warfare (NSW)	🟡	There are no local live firing areas with realistic targets. This inhibits tactics development, limits application of new weapon technologies, increases personnel op-tempo, and increases O&M costs. The Navy will pursue development of live fire capabilities near Puget Sound.
Threats	Strike Warfare (STW)	🟡	The full required EC threat level does not exist at bombing range. No live or virtual rotary or fixed wing threat exists at the bombing range. The acquisition of re-locatable EC threat simulators has been initiated. The Navy will coordinate with other range users (USAF, Oregon Air, Army Guard) to provide threat support or use CAS. No completion date has been identified.
	Electronic Combat (EC)	🔴	Realistic OPFOR variety and responses are not available, and EC threats are not available above level 2. This reduces realism, inhibits new tactics development, limits application of new weapon technologies, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy plans to invest in enhanced EC threat capabilities. No completion date has been identified.
	Anti-Air Warfare (AAW)	🟡	There is no dedicated OPFOR. This reduces realism, inhibits tactics development, increases personnel op-tempo, and increases O&M costs. The Navy plans to invest in commercial air services equipped with required threat augmentation. No completion date has been identified.
	Anti-Surface Warfare (ASUW)	🟡	There is no dedicated OPFOR. This reduces realism, inhibits tactics development, increases personnel op-tempo, and increases O&M costs. The Navy plans to investigate potential to use range craft for OPFOR presentation. No completion date has been identified.
Scoring & Feedback System	Strike Warfare (STW)	🟡	Range lacks instrumentation, and there is no real-time or debrief capability. This increases personnel op-tempo, reduces realism, increases O&M costs, and inhibits tactics development. The Navy plans to invest in instrumentation that will meet requirements for an instrumented range. No completion date has been identified.
	Electronic Combat (EC)	🟡	Same as above.
	Anti-Air Warfare (AAW)	🟡	Same as above.
Range Support	Strike Warfare (STW)	🟡	The lack of web-based scheduling system with pre-event, real-time, and post-event modules precludes most efficient scheduling and documenting of range usage. Post-event reporting is particularly critical for ordnance expenditures or active sonar usage in at-sea OPAREAs since Marine Mammal Protection Act permits require the Navy to periodically report these values. Non-compliance or inaccurately reporting post-event values to regulators risks range access or prohibitions on training events that involve active sonar or high explosives at-sea. Scheduling issues reduce range access, prohibit certain training events, reduce realism, and segment training. PACFLT is developing a Data Collection and Scheduling Tool (DCAST) that includes a post-event module to mitigate issues outlined above. It is expected that this system will be available in the Spring of CY2012.
	Electronic Combat (EC)	🟡	Same as above.
	Anti-Air Warfare (AAW)	🟡	Same as above.
	Anti-Surface Warfare (ASUW)	🟡	Same as above.
	Mine Warfare (MW)	🟡	Same as above.
	Anti-Submarine (ASW)	🟡	Same as above.
	Naval Special Warfare (NSW)	🟡	Same as above.

Northwest Training Range Complex Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Spectrum	Electronic Combat (EC)	●	Jamming is severely restricted east of the Cascade Mountains due to satellite communications stations, etc. Jamming is restricted off-shore in that aircraft must face out to sea, not shoreward, due to Seattle urbanized area and interference with FAA radars. Additional jamming target sets have developed in current combat theaters that cannot be jammed for training in inhabited areas. Restrictions from the JRFL and FAA create avoidance areas, prohibit certain training events, segment training and reduce realism, limit application of new weapons technologies, and inhibits new tactics development. Aircrews travel to NAS Fallon and Mountain Home AFB to complete EC training requirements. Restrictions on Surface Combatant radar (SPS-49) limit its use within 100 NM of land. Workarounds currently permit completion of training. EC range placement is underway for the Olympic MOA area with possible future expansion into the Okanogan and Roosevelt MOAs. However, for now these EC ranges are passive only with no jamming. However, even with passive EW range in place all training requirements will not be met will still have to travel to NAS Fallon to complete.
Maritime Sustainability	Electronic Combat (EC)	●	Maritime protective and mitigation measures undertaken in compliance with regulatory requirements have resulted in training restrictions that reduce training flexibility, force segmented training, and ultimately reduce training realism. All at-sea training is impacted to some degree; impacts are most significant to integrated warfare training using active underwater acoustic sources or in-water explosive ordnance. The Navy and National Marine Fisheries Service (NMFS) have developed science based protective and mitigation measures that adequately protect marine species while accommodating military readiness activities. The Navy continues to develop Environmental Impact Statements (EISs) and obtain permits and authorizations for its range complexes to ensure military training complies with applicable laws and regulations. Litigation risks remain a concern, entailing the potential to delay or further restrict training, despite the protective and mitigation measures applied by the Navy in compliance with the MMPA and the Endangered Species Act (ESA).Endangered species encroachment has created avoidance areas that have resulted in some reduction of training days and prohibits certain training events. This area is relatively small in scope; however, if these types of restrictions were applied to other species, there would be significant impacts to readiness through reduction in range access, segmentation of training/reduction in realism, limits on the application of new technologies, raised flight altitudes, reduced live fire proficiency, increased personnel tempo, and increased O&M costs. The Navy will continue to invest in marine mammal research, rely on scientifically valid empirical data results as basis of marine mammal mitigation development, and factor mitigation effectiveness into permit requests. It will continue education of Fleet units to adhere to the maritime protective and mitigation measures and sponsor public education outreach efforts. The Navy's authorizations under the MMPA and ESA include an adaptive management approach that includes continually evaluating existing mitigation measures for their potential impacts on training. If impacts on training from mitigation measures are identified and documented, the Navy will raise these impacts with the NMFS for resolution during an annual adaptive management review process. The Navy is currently preparing environmental compliance documentation to renew its MMPA and ESA authorizations, which will consider any impacts on training stemming from existing mitigations measures and propose changes as warranted.
	Anti-Surface Warfare (ASUW)	●	Same as above.
	Mine Warfare (MW)	●	Same as above.
	Anti-Submarine (ASW)	●	Same as above.
	Naval Special Warfare (NSW)	●	Same as above.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Northwest Training Range Complex Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Airspace	Strike Warfare (STW)	🔴	Wind energy projects in Restricted Airspace and FAA determination of no hazard will lead to loss of low altitude tactical training in NWSTF Boardman. The presence of 450 ft. tall wind turbines in Restricted Airspace and a 500 ft vertical and lateral clearance requirement in the vicinity of each wind turbine mandate that low altitude training in the Boardman airspace must be at least 1,000 ft. above ground level. The FAA determination allows wind turbine construction inside Restricted Airspace. Additionally, a dairy farm has been established in the WSTF Boardman Arlington easement. This structure has caused the loss of approximately 1 mile of run-in arming area for aircraft into the main target area. Wind energy projects can reduce access, prohibit certain training events, segment training/reduce realism, and raise flight altitudes. The Navy recommends purchase of aviation easements from land owners or it must accept loss of training capability on an existing range. It also recommends pursuing the addition of a MOA joining current airspace in order to maintain training capability. If the Navy is unable to maintain training capability at NWSTF Boardman, it recommends pursuing additional airspace elsewhere.
	Electronic Combat (EC)	🟡	VQ Aircrews based at NAS Whidbey Island train in Electronic Reconnaissance in Darrington OPAREA. They routinely experience difficulty getting clearance from Seattle ARTCC (FAA) to climb above FL 250. The aircraft are routinely vectored around by Seattle ARTCC causing delays, wasting airborne training time. These restrictions result in reduced range access. The Navy recommends developing a mobile EW training emitter system to work in the Military OPAREAs such as Okanogan, Roosevelt and Olympic MOAs. Additionally, the Navy will work on establishment of additional training airspace.
	Anti-Air Warfare (AAW)	🔴	Wind energy projects in Restricted Airspace and FAA determination of no hazard will lead to loss of low altitude tactical training in NWSTF Boardman. The presence of 450 ft. tall wind turbines in Restricted Airspace and a 500 ft. vertical and lateral clearance requirement in the vicinity of each wind turbine mandate that low altitude training in the Boardman airspace must be at least 1,000 ft. above ground level. The FAA determination allows wind turbine construction inside Restricted Airspace. Wind energy projects can reduce access, prohibit certain training events, segment training/reduce realism, and raise flight altitudes. The Navy recommends purchase of aviation easements from land owners or it must accept loss of training capability on an existing range. The Navy is pursuing the addition of a MOA joining current airspace in order to maintain training capability. If it is unable to maintain training capability at NWSTF Boardman, the Navy recommends pursuing additional airspace elsewhere.
Noise Restriction	Anti-Surface Warfare (ASUW)	🟡	MSRON 9 is unable to perform required training within the Crescent Harbor Naval OPAREA due to noise from shooting blanks. It is not covered in the current EIS and LOA. Shooting blanks (M16,M4,9mm, 50 cal,240, shotgun) on water training has no NEPA coverage. The next Northwest Testing and Training EIS will ensure coverage for noise of from shooting blanks inside of Crescent Harbor in the Crescent Harbor Naval OPAREA.
Adjacent Land Use	Strike Warfare (STW)	🔴	Wind energy projects in Restricted Airspace and FAA determination of no hazard will lead to loss of low altitude tactical training in NWSTF Boardman. The presence of 450 ft. tall wind turbines in Restricted Airspace and a 500 ft. vertical and lateral clearance requirement in the vicinity of each wind turbine mandate that low altitude training in the Boardman airspace must be at least 1,000 ft. above ground level. The FAA determination allows wind turbine construction inside Restricted Airspace. Additionally, a dairy farm has been established in the WSTF Boardman Arlington easement. This structure has caused the loss of approximately 1 mile of run-in arming area for aircraft into the main target area. Wind energy projects can reduce access, prohibit certain training events, segment training/reduce realism, and raise flight altitudes. The Navy recommends purchase of aviation easements from land owners or it must accept loss of training capability on an existing range. The Navy is pursuing the addition of a MOA joining current airspace in order to maintain training capability. If it is unable to maintain training capability at NWSTF Boardman, the Navy recommends pursuing additional airspace elsewhere.

Northwest Training Range Complex Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Adjacent Land Use	Anti-Air Warfare (AAW)	🔴	Wind energy projects in Restricted Airspace and FAA determination of no hazard will lead to loss of low altitude tactical training in NWSTF Boardman. Presence of 450 foot tall wind turbines in Restricted Airspace and a 500 ft. vertical and lateral clearance requirement in the vicinity of each wind turbine mandate that low altitude training in the Boardman airspace must be at least 1,000 ft. above ground level. The FAA determination allows wind turbine construction inside Restricted Airspace. Wind energy projects can reduce access; prohibit certain training events, segment training/reduce realism, raise flight altitudes. The Navy recommends purchase of aviation easements from land owners or it must accept loss of training capability on an existing range. The Navy is pursuing the addition of a MOA joining current airspace in order to maintain training capability. If the Navy is unable to maintain training capability at NWSTF Boardman, it will recommends pursuing additional airspace elsewhere.
	Anti-Surface Warfare (ASUW)	🟡	MSRON 9/EOD training in Crescent Harbor Naval OPAREA suffers occasional presence of recreational and small commercial fishing boats and scuba diving as the training areas are not restricted areas. Transient activity creates avoidance areas, prohibits certain training events, and segments training/ reduces realism. NAS Whidbey Island attempted to pursue establishing a restricted area within Crescent Harbor to restrict access to the range during training operations. However, establishing this restricted area proved to be unattainable due to cost and the movement of EOD MU 11 to California. With placement of MSRON 9 at NAS Whidbey Island, this issue of establishment of a restricted area should be reviewed for resubmission.
	Anti-Submarine (ASW)	🟡	Instruments to monitor seismic activity on the floor of the ocean have been deployed by civilian scientists, in the northwestern portion of the PACNORWEST OPAREA. Because of the presence of these measuring instruments, Navy submarine crews are directed to remain clear of this area. The exact size and location of this area is classified. Restrictions on training in the vicinity of seismic instrument create avoidance areas, prohibit certain training events, and segment training/reduce realism. This remains insolvable.
	Naval Special Warfare (NSW)	🟡	EOD training in Crescent Harbor and Indian Island areas suffer occasional presence of recreational and small commercial fishing boats and scuba diving as the underwater detonation training areas are not restricted areas. Transient activity creates avoidance areas, prohibits certain training events, and segments training/reduces realism. NAS Whidbey Island attempted to pursue establishing a restricted area within Crescent Harbor to restrict access to the underwater detonation range during training operations. However, establishing this restricted area proved to be unattainable due to cost and the movement of EOD MU 11 to California.
Range Transients	Anti-Submarine (ASW)	🟡	Commercial and private shrimp fishing boats congregate in Dabob Bay for several weeks in late April to mid-June. Additionally, Native Americans fishing for clams and shrimp traverse across NUWC RDT&E ranges without contacting NUWC Operations, thereby interfering with ongoing events. Commercial vessel and recreational vessel encroachment creates avoidance areas and segments training/reduces realism. The Navy will continue to pursue opportunities to inform industry and the public of the impact of range transient encroachment on at-sea OPAREAs and Navy readiness.
	Naval Special Warfare (NSW)	🟡	Commercial and private shrimp fishing boats congregate in Dabob Bay for several weeks in late April to mid-June. Additionally, Native Americans fishing for clams and shrimp traverse across NUWC RDT&E ranges without contacting NUWC Operations, thereby interfering with ongoing events. Native American and civilian fishing boats occasionally inhibit EODMU-11 underwater detonation training in Crescent Harbor. Native American and fishing activities create avoidance areas, prohibit certain training events, and segment training/reduce realism. The Navy continues to work with law enforcement agencies to enforce the Dabob Bay Restricted area during RDT&E and occasional NSW training activities. NAS Whidbey Island is pursuing a surface/subsurface restricted area designation in Crescent Harbor to deter range transients.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Okinawa Assessment Details

Range Mission Description

The Okinawa Range Complex has airspace, seaspace, undersea space, and landspace to support mission requirements for STW, EC, AAW, ASUW, MW, AMW, and ASW. It does not have a mission for supporting NSW training.

Capability Data

Mission Areas	Landspace	Airspace	Seaspace	Underseaspace	Targets	Threats	Scoring & Feedback System	Infrastructure	Range Support	Small Arms Ranges	Collective Ranges	MOUT Facilities	Suite of Ranges
	Capability Attributes												
Strike Warfare	●	●	●		●	●	●		●				
Electronic Combat	●	●	●		●	●	●		●				
Anti-Air Warfare	●	●	●		●	●	●		●				
Anti-Surface Warfare		●	●	●	●	●	●		●				
Mine Warfare		●	●	●	●	●	●		●				
Amphibious Warfare	●	●	●	●	●	●	●		●				
Anti-Submarine		●	●	●	●	●	●		●				
Naval Special Warfare													

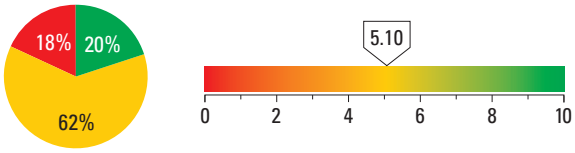
Legend: FMC ● PMC ● NMC ●

Encroachment Data

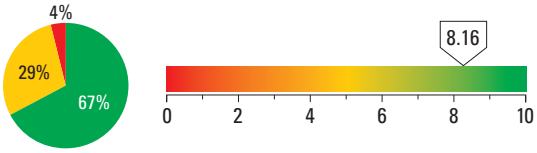
Mission Areas	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
	Encroachment Factors											
Strike Warfare	●	●	●	●	●	●	●	●	●	●	●	●
Electronic Combat	●		●		●	●	●	●				●
Anti-Air Warfare			●		●	●	●	●				●
Anti-Surface Warfare			●	●	●				●			●
Mine Warfare			●	●	●				●			●
Amphibious Warfare	●		●	●	●		●	●	●		●	●
Anti-Submarine			●	●	●				●			●
Naval Special Warfare												

Legend: Minimal ● Moderate ● Severe ●

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

1. Capability attributes most impacting range mission performance: Landspace, Targets, Threats, and Scoring & Feedback Systems.
2. Mission areas most severely impacted: STW, EC, and AAW.
3. Projected Status: No immediate change. Recommend the Navy continue deployments of Portable Underwater Tracking Range (PUTR) or Portable Acoustic Range (PAR), and Man Portable Air Defense System (MANPADS).

Summary Observations

1. Spectrum is the encroachment factor with greatest impact on training.
2. EC and AAW are the two mission areas with greatest encroachment from Spectrum.
3. The Navy continues to coordinate with Government of Japan (GOJ) agencies to seek encroachment relief and to develop strategies that will reduce encroachment, while ensuring quality training operations.

Okinawa Assessment Details

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Capability Scores	4.90	5.00	5.10	5.10

1. ASW in CY2008 Tracking & Scoring was red, but re-evaluated to yellow in CY2009 and forward, based on the availability of the PAR/PUTR, which provides a partial capability for ASW training.
2. In CY2009, STW Targets were evaluated as red (no targets), but were re-evaluated to yellow in CY2010 and forward, based on "limited" target availability.
3. TCTS is currently not available in Okinawa/7th Fleet due to RF restrictions.
4. A Multi-Purpose Range Craft is being constructed for deployment in Seventh Fleet that will support aerial drone, M-30 (ASW target), and mine shape launch and recovery, deployment/recovery of the portable ASW range, and electronic warfare training (limited).

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Encroachment Scores	9.23	8.16	8.16	8.16

1. Encroachment assessments for CY2008 were different than for CY2009, CY2010, and CY2011. The algorithm for the overall assessment score for CY2009 through CY2011 was revised from the original algorithm used in CY2008 to provide greater fidelity and consistency across all range complexes. Based on an improved review process and revised algorithms, the assessments for CY2009, CY2010, and CY2011 provide a more accurate assessment of encroachment. The assessments for the latter three years reveal there has been little encroachment change from year to year, with relatively constant overall scores for CY2009, CY2010, and CY2011.
2. There is little indication encroachment pressures will change in the foreseeable future.

Okinawa Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Strike Warfare (STW)	🟡	Range land area is too small and prohibits certain training events, reduces realism, limits application of new technologies, inhibits new tactics development, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy will pursue opportunities with other Services. No completion date has been identified.
	Electronic Combat (EC)	🔴	The range has no land area that supports EC training. There are political and frequency spectrum constraints that prohibit certain training events, reduce realism, limit application of new technologies, inhibit new tactics development, increase personnel op-tempo, and increase O&M costs. The Navy recommends conducting feasibility study for EC assets to be incorporated into a high fidelity, inert, and A-G training range and pursuing MPRC with EC assets. No completion date has been identified.
	Anti-Air Warfare (AAW)	🟡	There is no overland airspace that supports AAW training. This prohibits certain training events, reduces realism, limits application of new technologies, inhibits new tactics development, increases personnel op-tempo, and increases O&M costs. The Navy recommends pursuing opportunities with other Services. No completion date has been identified.
	Amphibious Warfare (AMW)	🔴	Range is not contiguous with required size of beachfront area. The beach area is very limited; and the area does not support NSFS. This prohibits certain training events; reduces realism, limits application of new technologies, inhibits new tactics development, increases personnel op-tempo, and increases O&M costs. The Navy recommends it pursue opportunities with other Services. No completion date has been identified.
Airspace	Anti-Air Warfare (AAW)	🟡	Range has no overland airspace supporting AAW training. This prohibits certain training events, reduces realism, limits application of new technologies, inhibits new tactics development, increases personnel op-tempo, and increases O&M costs. The Navy recommends it pursue opportunities with other Services. No completion date has been identified.
	Amphibious Warfare (AMW)	🟡	Range has no airspace over beaches that meet training requirements. This prohibits certain training events, reduces realism, limits application of new technologies, inhibits new tactics development, increases personnel op-tempo, and increases O&M costs. The Navy recommends it pursue opportunities with other Services. No completion date has been identified.
	Anti-Submarine (ASW)	🟡	Airspace is not supported by an Underwater Training Range. This prohibits certain training events; reduces realism, limits application of new technologies, inhibits new tactics development, increases personnel op-tempo, and increases O&M costs. The Navy recommends it pursue MPRC, and continue deployment of PUTR. No completion date has been identified.
Seaspace	Mine Warfare (MW)	🟡	Range has insufficient geographic references and water is too deep. This prohibits certain training events, reduces realism, limits application of new technologies, inhibits new tactics development, increases personnel op-tempo, and increases O&M costs. The Navy recommends it pursue opportunities with other Services. No completion date has been identified.
	Amphibious Warfare (AMW)	🟡	Range is not contiguous with required size of beachfront area. This prohibits certain training events, reduces realism, limits application of new technologies, inhibits new tactics development, increases personnel op-tempo, and increases O&M costs. The Navy recommends it pursue opportunities with other Services. No completion date has been identified.
	Anti-Submarine (ASW)	🟡	Seaspace is not supported by an Undersea Warfare Training Range. This prohibits certain training events, reduces realism, limits application of new technologies, inhibits new tactics development, increases personnel op-tempo, and increases O&M costs. The Navy recommends it pursue MPRC; continuing deployment of its PAR/PUTR. No completion date has been identified.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Okinawa Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Undersea Space	Mine Warfare (MW)		Sufficient space exists, but bottom type does not have required characteristics, water depth is too deep, no underwater training range, no dedicated Shock Wave Action Generator (SWAG) training area, no mine avoidance area. This prohibits certain training events, reduces realism, limits application of new technologies, inhibits new tactics development, increases personnel op-tempo, and increases O&M costs. The Navy recommends it pursue opportunities with other Services. It will evaluate feasibility of installing a mine range with instrumented shapes, false targets, bottom mines, and mines approved for SWAG training. The Navy will evaluate feasibility of creating a shallow water OPAREA. No completion date has been identified.
	Amphibious Warfare (AMW)		Range is not contiguous with required size of beachfront area. This prohibits certain training events, reduces realism, limits application of new technologies, inhibits new tactics development, increases personnel op-tempo, and increases O&M costs. The Navy recommends it pursue opportunities with other Services. No completion date has been identified.
	Anti-Submarine (ASW)		Undersea space does not have significant areas with water less than 600 ft. deep and is not supported by an Undersea Warfare Training Range. This prohibits certain training events, reduces realism, limits application of new technologies, inhibits new tactics development, increases personnel op-tempo, and increases O&M costs. The Navy recommends pursuing a, MPRC; continuing deployment of PAR/PUTR. No completion date has been identified.
Targets	Strike Warfare (STW)		Range has limited targets available (they were replaced early 2009). This prohibits certain training events, reduces realism, limits application of new technologies, inhibits new tactics development, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy recommends it pursue opportunities with other Services and to procure high fidelity targets. No completion date has been identified.
	Electronic Combat (EC)		Range has no dedicated EC targets available. This prohibits certain training events; reduces realism; limits application of new technologies; inhibits new tactics development; increases personnel op-tempo; and increases O&M costs. The Navy recommends to conduct feasibility study for EC assets to be incorporated into a high fidelity, inert, A-G training range; also to pursue MPRC with EC assets. No completion date has been identified.
	Anti-Air Warfare (AAW)		Range has no supersonic targets available and no dedicated targets available. This reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy recommends increasing availability of CAS and pursuing MPRC options. No completion date has been identified.
	Mine Warfare (MW)		While limited targets are available, there are no dedicated targets that meet full training requirements. This prohibits certain training events; reduces realism; limits application of new technologies, inhibits new tactics development, increases personnel op-tempo, and increases O&M costs. The Navy recommends it pursue opportunities with other Services; evaluate feasibility of installing a mine range with instrumented shapes, false targets, bottom mines, mines approved for SWAG training; and evaluate feasibility of creating a shallow water OPAREA. No completion date has been identified.
	Amphibious Warfare (AMW)		Range has no targets available to support AMW. This prohibits certain training events; reduces realism; limits application of new technologies, inhibits new tactics development, increases personnel op-tempo, and increases O&M costs. The Navy recommends it pursue opportunities with other Services. No completion date has been identified.
	Anti-Submarine (ASW)		Range has no dedicated ASW targets available. Units typically supply their own expendable targets. Reduces realism, limits application of new technologies, inhibits new tactics development, reduces live fire proficiency, and increases O&M costs. A MK-30 ASW Target facility is being considered on Okinawa. The Navy additionally recommends increasing the availability of ASW targets by pursuing MPRC support. No completion date has been identified.
Threats	Strike Warfare (STW)		Range has no dedicated OPFOR available. This reduces realism; limits application of new technologies; and inhibits new tactics development. The Navy recommends it improve availability of CAS, and the number and variety of threats; and pursue an MPRC with EC capability. No completion date has been identified.
	Electronic Combat (EC)		Same as above.
	Anti-Air Warfare (AAW)		Same as above.
	Anti-Surface Warfare (ASUW)		Same as above.
	Mine Warfare (MW)		Same as above.
	Amphibious Warfare (AMW)		Same as above.
	Anti-Submarine (ASW)		Same as above.

Okinawa Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Scoring & Feedback System	Strike Warfare (STW)	🔴	No permanent instrumentation exists for this range. This reduces realism, limits application of new technologies, and complicates night and all weather training. The Navy recommends continuing planned deployment of TCTS and evaluating potential to accelerate its deployment. No completion date has been identified.
	Electronic Combat (EC)	🔴	Same as above.
	Anti-Air Warfare (AAW)	🔴	Same as above.
	Anti-Surface Warfare (ASUW)	🟡	Same as above.
	Mine Warfare (MW)	🟡	Same as above.
	Amphibious Warfare (AMW)	🟡	Same as above.
	Anti-Submarine (ASW)	🟡	Same as above.
Range Support	Strike Warfare (STW)	🟡	The lack of a web-based scheduling system with pre-event, real-time, and post-event modules precludes most efficient scheduling and documenting of range usage. Post-event reporting is particularly critical for ordnance expenditures or active sonar usage in at-sea OPAREAs since the MMPA permits require the Navy to periodically report these values. Non-compliance or inaccurately reporting post-event values to regulators risks range access or prohibitions on training events that involve active sonar or high explosives at-sea. PACFLT is developing a Data Collection and Scheduling Tool (DCAST) that includes a post-event module to mitigate issues outlined above. DCAST development is in progress and deployment has begun in CONUS. Deployment date for WESTPAC will be completed during FY2012; it should be ready for Okinawa by January 2012.
	Electronic Combat (EC)	🟡	Same as above.
	Anti-Air Warfare (AAW)	🟡	Same as above.
	Mine Warfare (MW)	🟡	Same as above.
	Amphibious Warfare (AMW)	🟡	Same as above.
	Anti-Submarine (ASW)	🟡	Same as above.

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Threatened & Endangered Species	Amphibious Warfare (AMW)	🟡	When the native Dugong species is spotted, the Marines change tactics to avoid interacting with the Dugong. The Dugong live in the near-shore waters; thus, their presence can interrupt amphibious operations. Dugong protective measures create avoidance areas, prohibit certain training events, reduce range access, and segment training. Both the Navy and Marine Corps seek to avoid operating in the near vicinity of the Dugong.
Spectrum	Strike Warfare (STW)	🟡	Restrictions on RF emissions limit the use of the TCTS. These restrictions limit spectrum operations and prohibit certain training events, segment training and reduce realism, reduce training days, limit application of new weapons technologies, and inhibit new tactics development. The Navy continues to coordinate with GOJ agencies to seek spectrum relief and to develop encroachment strategies that will reduce encroachment, while ensuring pending use of emerging spectrum technologies.
	Electronic Combat (EC)	🔴	There are no EW training ranges due to RF restrictions. RF restrictions limit spectrum operations and prohibit certain training events, segment training and reduce realism, reduce training days, limit application of new weapons technologies, and inhibit new tactics development. The Navy continues to coordinate with GOJ agencies to seek spectrum relief and to develop encroachment strategies that will reduce encroachment, while ensuring pending use of emerging spectrum technologies.
	Anti-Air Warfare (AAW)	🔴	Same as above.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Okinawa Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Spectrum	Anti-Surface Warfare (ASUW)	●	Restrictions on RF emissions limit the use of the TCTS. These restrictions limit spectrum operations and prohibit certain training events, segment training and reduce realism, reduce training days, limit application of new weapons technologies, and inhibit new tactics development. The Navy continues to coordinate with GOJ agencies to seek spectrum relief and to develop encroachment strategies that will reduce encroachment, while ensuring pending use of emerging spectrum technologies.
Maritime Sustainability	Anti-Surface Warfare (ASUW)	●	The Navy uses the Protective Measures Assessment Protocol (PMAP) to assess range specific marine mammal encroachment issues and to identify specific protection measures. PMAP provides a fleet-wide set of protective measures for particular maritime activities and for designated geographic areas of interest. PMAP procedures have resulted in some training restrictions that reduce training flexibility, force segmented training, and ultimately reduce training realism. All at-sea training is impacted to some degree; impacts are most significant to integrated warfare training using active underwater acoustic sources or in-water explosive ordnance. This existing encroachment is relatively small in scope. Should the encroachment become more pervasive across additional species and locations, there could be other training and readiness impacts through reduced range access, segmented training, reduced realism, limited application of new technologies, raised flight altitudes, reduced live fire proficiency, increased personnel tempo, and increased O&M costs. The Navy continues to invest in marine mammal research; to rely on scientifically valid empirical data results as basis of marine mammal mitigation development; and to factor mitigation effectiveness into maritime operations. All Navy units are expected to adhere to PMAP. The Navy continually evaluates existing PMAP measures for their potential encroachment and impacts on training. If impacts on training from PMAP are identified and documented, the Navy will address impact resolution during management review processes.
	Mine Warfare (MW)	●	Same as above.
	Amphibious Warfare (AMW)	●	Same as above.
	Anti-Submarine (ASW)	●	Same as above.
Airspace	Strike Warfare (STW)	●	When civil or commercial air traffic is routed through or strays into SUA, the SUA is partially or fully shut down. Okinawa air operations must cease or be delayed until the range is cleared, surface to unlimited. These restrictions create avoidance areas, segment training, reduce realism, prohibit certain training events, reduce range access, reduce live fire proficiency, and delay operations until range clears. The Navy continues close coordination with Okinawa aviation controllers, which helps to ameliorate the impacts of SUA incursion by non-military aircraft. Air operations in the vicinity of Area India are impacted because overflight of any nearby islands with ordnance (live or inert) is prohibited.
	Anti-Air Warfare (AAW)	●	Same as above.
	Anti-Surface Warfare (ASUW)	●	Same as above.
Range Transients	Anti-Surface Warfare (ASUW)	●	Okinawa families may claim that scheduled U.S. military training prohibits their use of their historical fishing grounds. Illegal fishing and seaweed harvesting in exclusive use areas can prohibit certain training events, reduce range access, create avoidance areas, and reduce training days. Operations are delayed until the fishermen depart the area. Utilizing established USFJ procedures, the Navy will continue to have the USFJ work through the GOJ. The GOJ notifies the Japanese Maritime Safety Agency, which then coordinates with the local fishermen's associations.
	Mine Warfare (MW)	●	Same as above.
	Amphibious Warfare (AMW)	●	Same as above.
	Anti-Submarine (ASW)	●	Same as above.

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Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Point Mugu Sea Range Complex Assessment Details

Range Mission Description

The Point Mugu Sea Range is DoD's largest and most extensively instrumented over-water range. The Sea 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 range supports Fleet training exercises, such as Joint Task Force Exercise (JTFEX) and target presentations.

Capability Data

Mission Areas	Capability Attributes												
	Landspace	Airspace	Seaspace	Underseaspace	Targets	Threats	Scoring & Feedback System	Infrastructure	Range Support	Small Arms Ranges	Collective Ranges	MOUT Facilities	Suite of Ranges
Strike Warfare	PMC	FMC	FMC		FMC	FMC	FMC	FMC	FMC				
Electronic Combat	FMC	FMC	FMC		FMC	FMC	FMC	FMC	FMC				
Anti-Air Warfare	FMC	FMC	FMC		FMC	FMC	FMC	FMC	FMC				
Anti-Surface Warfare		FMC	FMC		FMC	FMC	FMC	FMC	FMC				
Mine Warfare													
Amphibious Warfare	PMC	FMC	FMC		FMC	FMC	FMC	FMC	FMC				
Anti-Submarine		FMC	FMC	FMC					PMC				
Naval Special Warfare	PMC	FMC	FMC		FMC	FMC	FMC	FMC	FMC				

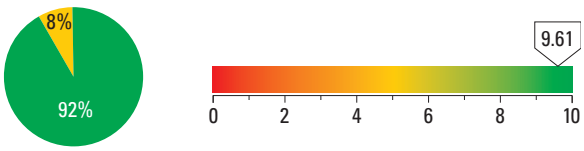
Legend: FMC, PMC, NMC

Encroachment Data

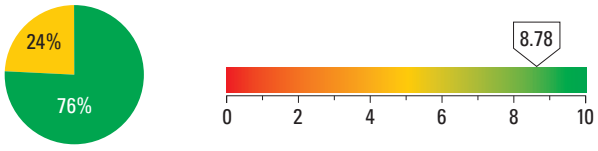
Mission Areas	Encroachment Factors											
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strike Warfare	Moderate	Minimal	Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Moderate	Moderate	Minimal	Minimal
Electronic Combat	Moderate	Minimal	Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Moderate	Minimal	Minimal
Anti-Air Warfare	Moderate	Minimal	Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Moderate	Minimal	Minimal
Anti-Surface Warfare	Moderate	Minimal	Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Moderate	Minimal	Minimal
Mine Warfare												
Amphibious Warfare	Moderate	Minimal	Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Moderate	Minimal	Minimal
Anti-Submarine				Moderate	Minimal							
Naval Special Warfare	Minimal	Minimal	Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal

Legend: Minimal, Moderate, Severe

Capability Chart and Scores



Encroachment Chart and Scores



Point Mugu Sea Range Complex Assessment Details

Summary Observations	Summary Observations
1. Landspace is the capability attribute that impacts the range's ability to perform its assigned mission the most. 2. There is no single mission area that is impacted the most. STW, AMW, ASW and NSW all have a single capability with a moderate impact. 3. No change in capability is anticipated for the future. Note: Assessments of NSW training are based on actual NSW demand and use of training range capability and space. Actual training range capability and space requirements are based on Fleet Readiness Training Plan (FRTP) demands for conventional warfare areas.	1. Frequency spectrum is the encroachment factor that impacts the range's ability to perform its assigned mission the most. 2. STW is mission area that is impacted the most. 3. Increased desire for additional spectrum for commercial use will lead to additional encroachment pressures. The impacts of frequency spectrum encroachment will improve only with continued national attention to increase spectrum for military use and more efficiently use the available spectrum. As a direct result of California air quality regulations that went into effect on 1 July 2009, ship traffic through the Sea Range has increased from an average of 2 ships per day (1 in each direction) to 14 ships per day (7 in each direction) and continues to grow. Significant coordination effort is required to mitigate impacts on Sea Range activities and there have been several near cancellations. To date, one major missile exercise was delayed because a ship only partially complied with requests to avoid the hazard pattern. The Navy is working with the various stakeholders on potential solutions. Note: Assessments of NSW training are based on actual NSW demand and use of training range capability and space. Actual Training range capability and space requirements are based on FRTP demands for conventional warfare areas.

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Capability Scores	9.68	9.32	9.61	9.61

1. Capability at the Point Mugu Sea Range has remained steady since CY2008. Its anticipated capability will remain stable in the future.

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Encroachment Scores	9.51	8.78	8.78	8.78

1. The encroachment assessment has been stable from year to year, with relatively constant overall scores for CY2010 and CY2011.

Point Mugu Sea Range Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Strike Warfare (STW)	●	San Nicolas Island is the only land impact area within the Sea Range. Impacts are limited to inert weapons only and in just one location. This impacts training with limited realistic training. There is no planned remedy at this time.
	Amphibious Warfare (AMW)	●	There are limited areas on San Nicolas Island and Point Mugu where this type of training can be conducted. This leads to limited realistic training. There is no planned remedy at this time.
	Naval Special Warfare (NSW)	●	There are limited areas on San Nicolas Island where this type of training can be conducted and underwater detonations are not possible. This limits realistic training. There is no planned remedy available.
Range Support	Anti-Submarine (ASW)	●	There are limited areas on San Nicolas Island and Point Mugu where this type of training can be conducted and underwater detonations are not possible. This leads to limited realistic training. There is no planned remedy at this time.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Point Mugu Sea Range Complex Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Threatened & Endangered Species	Strike Warfare (STW)	●	The presence of T&E species at Point Mugu and San Nicolas Island requires significant mitigation effort to support training activities. The Navy updated the San Nicolas Island INRMP in 2010 and will continue mitigations as needed.
	Electronic Combat (EC)	●	Same as above.
	Anti-Air Warfare (AAW)	●	Same as above.
	Anti-Surface Warfare (ASUW)	●	Same as above.
	Amphibious Warfare (AMW)	●	Same as above.
Spectrum	Strike Warfare (STW)	●	The reduction of available spectrum coupled with the increase in spectrum requirements limits the ability to schedule certain types of events and many concurrent activities. The Navy will continue coordination at the local level to deconflict when possible and work through the chain of command and Range Commanders Council to address spectrum requirements at the national level.
	Electronic Combat (EC)	●	Same as above.
	Anti-Air Warfare (AAW)	●	Same as above.
	Anti-Surface Warfare (ASUW)	●	Same as above.
	Amphibious Warfare (AMW)	●	Same as above.
	Naval Special Warfare (NSW)	●	Same as above.
Maritime Sustainability	Anti-Submarine (ASW)	●	Marine mammals are present on the Sea Range and there is no environmental coverage for ASW on the Sea Range, except for the limited coverage of exercises included in the SOCAL EIS. As a result, ASW training can only be conducted in a small portion of the Sea Range. There is no planned remedy at this time.
Cultural Resources	Strike Warfare (STW)	●	There are hundreds of archeological sites on San Nicolas Island. They do not significantly impact the sea range's mission, but do require substantial management effort and financial support, primarily for surveys. Any expansion of existing target areas requires a detailed survey to identify, evaluate, and treat cultural resources. This limits realistic training. The Navy plans to continue mitigation efforts.
Water Quality/ Water Supply	Strike Warfare (STW)	●	There are restrictions on discharge from the reverse osmosis water purification system that provides potable water to San Nicolas Island. The number of people that can be on San Nicolas Island to support training is limited by the water supply. The Navy plans to continue to work with regulators to modify the discharge permit.
	Electronic Combat (EC)	●	Same as above.
	Anti-Air Warfare (AAW)	●	Same as above.
	Anti-Surface Warfare (ASUW)	●	Same as above.
	Amphibious Warfare (AMW)	●	Same as above.

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Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Southern California (SOCAL) Assessment Details

Range Mission Description

The SOCAL Range Complex mission is to support Navy training in all Navy mission areas, at all levels of training. The Complex is a state-of-the-art, multi-warfare, integrated training facility serving a wide variety of customers with primary mission requirements and providing support at all levels of training: basic, intermediate, and advanced. The Range Complex conducts a multitude of operations including multi-warfare and battle group evolutions, with principal training conducted on, around, and in the air space around San Clemente Island. While the majority of the scenarios are designed to support forces assigned to the Commander of Third Fleet, other events are also conducted that facilitate the test, evaluation, and development of weapon systems and tactics.

Capability Data

Mission Areas	Capability Attributes												
	Landspace	Airspace	Seaspace	Underseaspace	Targets	Threats	Scoring & Feedback System	Infrastructure	Range Support	Small Arms Ranges	Collective Ranges	MOUT Facilities	Suite of Ranges
Strike Warfare	PMC	FMC	FMC	FMC	PMC	PMC	PMC		PMC				
Electronic Combat	FMC	FMC	FMC	FMC	PMC	PMC	PMC		FMC				
Anti-Air Warfare	FMC	FMC	FMC		PMC	PMC	PMC		PMC				
Anti-Surface Warfare		FMC	FMC	FMC	FMC	PMC	PMC		FMC				
Mine Warfare		FMC	FMC	FMC	PMC	PMC	PMC		FMC				
Amphibious Warfare	NMC	FMC	FMC	FMC	PMC	PMC	PMC		PMC				
Anti-Submarine		FMC	FMC	PMC	PMC	PMC	FMC		FMC				
Naval Special Warfare	PMC	FMC	FMC	FMC	NMC	PMC	PMC		PMC				

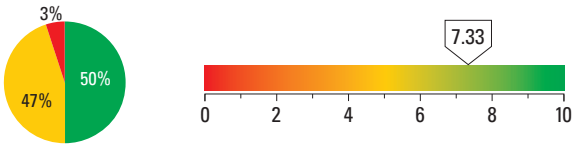
Legend: FMC PMC NMC

Encroachment Data

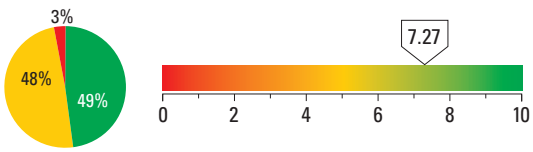
Mission Areas	Encroachment Factors											
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strike Warfare	PMC	PMC	PMC	FMC	FMC	FMC	FMC	FMC	PMC	FMC	FMC	FMC
Electronic Combat	FMC		PMC		FMC	FMC	FMC	FMC				FMC
Anti-Air Warfare			PMC		FMC	FMC	FMC	FMC				FMC
Anti-Surface Warfare			PMC	PMC	FMC				FMC			PMC
Mine Warfare		PMC	PMC	PMC	FMC		PMC	PMC	FMC		PMC	PMC
Amphibious Warfare	NMC	PMC	PMC	FMC	PMC		PMC	PMC	NMC		PMC	PMC
Anti-Submarine			FMC	PMC	FMC				FMC			FMC
Naval Special Warfare	PMC	PMC	FMC	FMC	PMC	FMC	PMC	PMC	PMC	FMC	PMC	PMC

Legend: Minimal Moderate Severe

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

1. Capability attribute most impacting range mission performance: Targets and Scoring & Feedback Systems.
2. Mission areas most severely impacted: AMW, NSW, MW (MIW).
3. PACFLT has developing a Web-enabled Data Collection and Scheduling Tool (DCAST) that includes a customizable scheduling, event deconfliction, range map graphics generation, schedule notification, and automatic reports generation. The tool is a N433 program of record and has an authority to operate within the DISA Cloud.

Note: Assessments of NSW training are based on actual NSW demand and use of training range capability and space. Actual training range capability and space requirements are based on Fleet Readiness Training Plan (FRTP) demands for conventional warfare areas.

Summary Observations

1. Spectrum is the encroachment factor having the most affect on training.
2. All mission areas are affected by encroachment.
3. Encroachment impacts are long-standing and have been addressed through EIS actions and training procedures and protocols. The Navy continues to consult and discuss these issues with stakeholders, with the expectation that some encroachment restrictions may be lessened.

Note: Assessments of NSW training are based on actual NSW demand and use of training range capability and space. Actual Training range capability and space requirements are based on FRTP demands for conventional warfare areas.

Southern California (SOCAL) Assessment Details

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Capability Scores	6.67	6.75	6.75	6.92

1. ASW Underseaspace in CY2008 was reassessed from red to yellow in CY2009 and forward. Assessment of the impact was revised to more consistently reflect similar impacts in other range complexes.
2. MW Targets and Scoring & Feedback Systems changed from red to yellow for CY2012. Installation of fixed targets at Imperial Beach and Tanner Bank will provide rudimentary target support to MIW forces, and Instrumentation equipment has been procured for the planned MIW training range.
3. Range support changed from yellow to green for all warfare areas to reflect deployment and use of DCAST.
4. AMW landspace and targets changed from red to yellow to reflect ability for amphibious forces to conduct battalion-level operations on SCI, to include all phases of MEU employment, with the exception of overcoming beach obstacles and defenses.

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Encroachment Scores	9.06	8.57	8.15	7.27

1. Encroachment assessments for CY2008 were different than for CY2009, CY2010, and CY2011. The algorithm for the overall assessment score for CY2009 through CY2011 was revised from the original algorithm used in CY2008 to provide greater fidelity and consistency across all range complexes. Based on an improved review process and revised algorithms, the assessments for CY2009, CY2010, and CY2011 provide a more accurate assessment of encroachment.
2. Since the CY2009 assessment, MW assessment for Noise Restrictions was increased from green to red; and Adjacent Land Use was changed from green to yellow, due to MW and public use concerns. In addition, SHPO has restricted placement of targets on SHOBA impact areas, changing the rating for Cultural Resources/STW from green to yellow. Vernal Pool Fairy Shrimp habitat restricts use of portions of SSTC South, changing the rating for wetlands/MW and AMW from green to yellow. These assessment changes resulted in an assessment score change from CY2009 to CY2010 to CY2011.
3. Should the proposed Federal Listing of the Rossem's Gull-Billed Tern (GBTE) pass, there is potential of increased GBTE predation on the California Least Tern (LETE) and the Western Snowy Plover (SNPL). The increased predation could hinder the recovery of the LETE and the SNPL on Naval Base Coronado beaches and could adversely affect take permits from the USFWS.
4. There is little indication encroachment pressures will change substantially in the foreseeable future.

Southern California (SOCAL) Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Strike Warfare (STW)		The range cannot support two separate concurrent strikes, and use of live ordnance is limited to specific areas of the range complex. This reduces realism, inhibits new tactics development, limits application of new weapon technologies, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. There is no solution except to use other ranges. No completion date has been identified.
	Amphibious Warfare (AMW)		SCIRC land area for AMW is limited due to lack of a soil erosion plan, cultural resources surveys, and presence of UXO. STC land use for AMW is limited to individual and basic level training, larger amphibious events, such as MPF, are currently not approved. Completion of the soil erosion, UXO clearance, and funding cultural resources surveys will resolved SCIRC limitations: additional environmental analysis will be required to support larger field exercises on SSTC.
	Naval Special Warfare (NSW)		Range has limited maneuver area and limited beach front areas. Range supports basic level training, but additional land is required for more advanced training. This reduces realism, inhibits new tactics development, limits application of new weapon technologies, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy recommends investing in MOUT, road infrastructure, and firing range areas. No completion date has been identified.
Undersea Space	Anti-Submarine (ASW)		The issue is lack of instrumentation of the two West Coast Shallow Water Training Ranges (SWTR). The requirement for an instrumented SWTR was documented in CY1994 in a NAVAIR Mission Needs Statement and then again in CY1997 by COMCRUDESGRU to C3F (R 142 125Z AUG 97). There continues to be a documented, unmet requirement for instrumented deep to shallow water tracking and communication capability in SOCAL. Instrumentation and operational use of SWTRs was included in the SOCAL EIS/OEIS (ROD 2009). A lack of SWTR instrumentation reduces realism, inhibits new tactics development, and limits application of new weapon technologies. Recommend funding instrumentation of the West Coast SWTR. No completion date has been identified.
Targets	Strike Warfare (STW)		Range has no moving targets, limited number of structural targets, and inadequate Designated Mean Point of Impact at each site. This reduces realism, inhibits new tactics development, limits application of new weapon technologies, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy recommends it invest in smart targets and upgrades to current targets. No completion date has been identified.
	Electronic Combat (EC)		Range has no visually significant targets and live ordnance is not allowed. This reduces realism; inhibits new tactics development, limits application of new weapon technologies, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy recommends it invest in smart targets and EC threat levels through Level No completion date has been identified.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Southern California (SOCAL) Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Targets	Anti-Air Warfare (AAW)	🟡	The range has no supersonic targets or targets with jamming capability and has altitude restrictions. This reduces realism, inhibits new tactics development, limits application of new weapon technologies, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy recommends investing in supersonic targets and additional drones with active jamming capabilities. No completion date has been identified.
	Mine Warfare (MW)	🟡	A newly-installed shallow water minefield off SSTC and a mid-depth (and deep-water) minefield on Tanner Bank contain respectively, 28 and 30 non-instrumented, threat-representative shapes in specified field configurations in support of emergent MIW (mine hunting, influence sweeping) training. Both fields contain bottom and tethered mine shapes in accordance with SUBPAC and NMAWC requirements. However, due to excessive costs (i.e. VEMS), the minefields do not contain instrumented mine shapes. OPNAV N433 is the resource sponsor for MCM ranges (as of February 2010); investment in SOCAL MCM ranges (in accordance with SOCAL MCM POM 12 Proposal) is a fully-funded line item in the FYDP; however, the proposal did not contain specifications for instrumented targets. The lack of instrumented targets inhibits new tactics development, reduces training proficiency, and limits application of new weapon technologies. The SOCAL Working Group prioritized establishing fixed MCM training ranges in SOCAL and retained proposals for instrumented shapes as part of out-year planning. The Navy recommends investing in expanding existing shallow and mid- to deep-water mine fields with instrumented mine threat composition targets. No completion date has been identified.
	Amphibious Warfare (AMW)	🟡	The required target types are not all available to this range, specifically beach obstacles and beach defenses. This reduces realism, inhibits new tactics development, limits application of new weapon technologies, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy recommends installing exposed and submerged targets and beach obstacles that may be engaged with live ordnance. No completion date has been identified.
	Anti-Submarine (ASW)	🟡	Currently available Mk-30 Mod 1 ASW targets do not support the MH-60R dipping sonar; EMATT does not provide required realism. The MH-60R has a much better dipping sonar than previous sonars; Mk-30 Mod 2 targets are preferred over EMATTs, because they are a more effective/realistic target. Additionally, the Mk-30 Mod 1 is not an effective target for sonar, because there is a delay in response (return) from the target and Mk-30 Mod 1 does not recognize the MH-60R signal. Lack of realistic ASW targets reduces realism, and limits use of new technologies. The Navy recommends investing in additional Mk 30 mod 2 targets. The requirement is to increase use of live submarines and 170 Mk 30 Mod 2 ASW targets. No completion date has been identified.
	Naval Special Warfare (NSW)	🔴	No range targets meet requirements. This reduces realism, inhibits new tactics development, limits application of new weapon technologies, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy recommends it invest in a wide range of NSW required targets.
Threats	Strike Warfare (STW)	🟡	There is no dedicated threat aircraft and threats are not available in required quantity. EC threats are not available above level 2. There is no capability for virtual threat aircraft. This reduces realism, inhibits new tactics development, limits application of new weapon technologies, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy recommends investing in enhanced EC threat capabilities. No completion date has been identified.
	Electronic Combat (EC)	🟡	Realistic OPFOR responses are not available; EC threats are not available above level 2. This reduces realism, inhibits new tactics development, limits application of new weapon technologies, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy recommends investing in enhanced EC threat capabilities. No completion date has been identified.
	Anti-Air Warfare (AAW)	🟡	The range has no dedicated threat aircraft and threats are not available in required quantity. This reduces realism; inhibits new tactics development; limits application of new weapon technologies; reduces live fire proficiency; increases personnel op-tempo, and increases O&M costs. The Navy recommends investing in contract air threat OPFOR with EC augmentation. No completion date has been identified.
	Anti-Surface Warfare (ASUW)	🟡	There is no dedicated air or surface threat capability in required numbers; EC threats are not available above level 2; and command and control capability for OPFOR does not meet requirements. This reduces realism, inhibits new tactics development, limits application of new weapon technologies, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy recommends it invest in enhanced EC threat capabilities. No completion date has been identified.
	Mine Warfare (MW)	🟡	The range has no dedicated threat aircraft or submarines. EC threats are not available above level 2. This reduces realism; inhibits new tactics development, limits application of new weapon technologies, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy recommends investing in enhanced EC threat capabilities. No completion date identified
	Amphibious Warfare (AMW)	🟡	There is no live, virtual, constructive threat ground force; EC threats are not available above level 2. This reduces realism; inhibits new tactics development, limits application of new weapon technologies, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy recommends investing in enhanced EC threat capabilities. No completion date has been identified.

Southern California (SOCAL) Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Threats	Anti-Submarine (ASW)	●	The range has no dedicated threat aircraft, submarines, or surface ships. Threats are not available in required quantity. EC threats are not available above level 2. There is no capability for virtual threat aircraft. This reduces realism, inhibits new tactics development, and limits application of new weapon technologies, reduces live fire proficiency, and increases personnel op-tempo, and increases O&M costs. The Navy recommends investing in enhanced EC threat capabilities. No completion date has been identified.
	Naval Special Warfare (NSW)	●	The range has no live, virtual, or constructive threat ground force. This reduces realism, inhibits new tactics development, limits application of new weapon technologies, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy recommends investing in enhanced EC threat capabilities. No completion date has been identified.
Scoring & Feedback System	Strike Warfare (STW)	●	There is no M&S capability, and no scoring capabilities. This reduces realism, inhibits new tactics development, limits application of new weapon technologies, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy recommends investing in M&S systems. No completion date has been identified.
	Electronic Combat (EC)	●	Same as above.
	Anti-Air Warfare (AAW)	●	Same as above.
	Anti-Surface Warfare (ASUW)	●	Same as above.
	Mine Warfare (MW)	●	There is no M&S capability, no scoring capabilities, and no instrumented mines. This reduces realism; inhibits new tactics development, limits application of new weapon technologies, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy recommends investing in seeding shallow water and mid to deep water (for SUBPAC and NMAWC) mine fields (see SOCAL MCM Working Group Proposal submitted to CPF TTR and endorsed by MIWIP Training Subgroup; M&S systems.) No completion date has been identified.
	Amphibious Warfare (AMW)	●	There is no Modeling & Simulation capability and no scoring capabilities. This reduces realism, inhibits new tactics development, limits application of new weapon technologies, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy recommends capabilities to invest in M&S systems. No completion date has been identified.
	Naval Special Warfare (NSW)	●	There is no M&S capability and no scoring. This reduces realism; inhibits new tactics development; limits application of new weapon technologies, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy recommends it invest in M&S systems. No completion date has been identified.
Range Support	Strike Warfare (STW)	●	Lack of access control and physical security for the SCIRC open the island to security and safety breaches. There is a requirement for persistent, on-island range control of San Clemente Island (SCI). SCORE provides some aspects of range control through its scheduling process. However, SCORE is not resourced or chartered to provide access control or physical security to the island or training areas on the island. While CINCPACFLT 112353Z FEB00 assigned overall operational authority to SCORE for SCI, changes in Navy structure (CNIC, USFFC) significantly impede SCORE's ability to provide required oversight and coordination. Lack of range control on SCI exacerbates safety concerns, reduces range efficiency, and restricts range usage data collection requirements. SOCAL/NOCAL Fleet Project Team consensus was reached (August 2011) on the requirement for a centralized Range Control Center (RCC) for SCI. The Navy recommends fully funding the RCC for SCI.
	Anti-Air Warfare (AAW)	●	Same as above.
	Amphibious Warfare (AMW)	●	Same as above.
	Naval Special Warfare (NSW)	●	Same as above.

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Threatened & Endangered Species	Strike Warfare (STW)	●	The presence of T&E species at SOCAL has an impact on training. It requires significant mitigation effort to support training activities. The Navy plans to update its latest INRMP (In progress; expected completion date 2011), continue mitigations, and update its SOCAL EIS (ECD: January 2014).

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Southern California (SOCAL) Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Threatened & Endangered Species	Amphibious Warfare (AMW)	🔴	Fire restrictions and species protection affect activities at the SCIRC. Restriction of controlled burns (Biological Opinion FWS-LA-09B0027-09F0040) limits Navy's ability to deal with island-wide UXO, cactus and exotic grasses. Dense grasses and cactus prevent operational range clearance and range personnel from accessing target areas. The ubiquitous presence of 22 million Island Night Lizards (INL) (ESA species) severely restricts the ability to conduct UXO sweeps on SCI as directed in accordance with DoD-mandated Operational Range Clearance (ORC) guidelines. Controlled burns must be implemented in order to remove vegetation, so EOD personnel can see the UXO. However, island-wide presence of the INL creates a requirement to conduct NEPA analysis and ESA consultations on the controlled burns. Although the Navy submitted a INL de-listing package over five years ago, USFWS has not prioritized de-listing the INL. The Loggerhead Shrike and the San Clemente Sage Sparrow also limit training opportunities on San Clemente Island. California Least Tern, Western Snowy Plover, and San Diego Fairy Shrimp presence on the beaches of SSTC create avoidance areas. As long as the INL remains on the ESA list, UXO sweeps, public works projects, operations, and conservation activities requiring access throughout the island will be restricted. Species restrictions create avoidance areas, prohibit certain training events, segment training/reduce realism, limit application of new technologies, and inhibit new tactics development. SCIRC operations must be conducted during times of reduced fire potential and in areas where species are not prevalent. A draft SCI Operational Range Clearance Plan is in development; need for associated Environmental Assessment addressing island-wide, controlled burns has been identified. The Navy requires that USFWS prioritize de-listing the INL on SCI. No completion date has been identified.
	Naval Special Warfare (NSW)	🟡	Military working dog (MWD) restrictions and species protection affect activities at the SCIRC and SSTC. MWDs are required to meet specific kennel, working area, transport, and health certification requirements provided in SCIINST 5585.2. The SCI Island Fox is susceptible to diseases and parasites from dogs. MWDs on SSTC are required to remain 30m outside of Western Snowy Plover buffer areas for nests, and have restricted exercise areas on SSTC-N until completion of a study to evaluate the effects of MWDs on Terns and Plovers. Over the beach (OTB) activities at SSTC-S can occur year-round with a platoon of personnel and one dog. USFWS designated the land areas around the ONLY maritime Special Operations Urban Complex (SOUC) MOUT for NSW as medium to poor SCI Sage Sparrow habitat. Per Biological Opinion 1-6-00-F-19 (2001), NSW has paid for Sage Sparrow monitoring around the SOUC. The CY2008 USFWS Biological Opinion extended this monitoring commitment indefinitely, but, to date, USFWS does not have a Recovery Plan for the San Clemente Sage Sparrow (listed as threatened species August 11, 1977 (42 Federal Register 40682). SCI Biological Opinion Terms and Conditions contains restrictions on ordnance use, and insertions and extractions encircling the SOUC. These restrictions reduce access to training ranges; and inhibit new tactics development for NSW in state-of-the-art, real-world urban training environment, including IED, CQC, CQD training. In absence of a USFWS Recovery Plan for the San Clemente Sage Sparrows, operational restrictions on NSW SOUC training (insertion and extractions) and requirement to fund monitoring activities will continue indefinitely.
Munitions Restrictions	Strike Warfare (STW)	🟡	There are munitions restrictions on SHOBA that affect related training activity. SHOBA users must restrict munitions use to approved types, amounts, and expenditure locations. Munitions restrictions create avoidance areas, prohibit certain training events, segment training/reduce realism, limit application of new technologies, and inhibit new tactics development. Operations involving munitions must be conducted during times of reduced fire potential and in areas where species are not prevalent. No planned remediation.
	Mine Warfare (MW)	🟡	There are munitions restrictions in SSTC bay training areas (e.g., max 15 grams NEW). SSTC users must restrict munitions use to approved types, amounts, and expenditure locations. Munitions restrictions create safety buffer zones, avoidance areas, prohibit certain training events, segment training/reduce realism, limit application of new technologies, and inhibit new tactics development. No planned remediation. SSTC operations involving munitions may not be conducted in areas where marine mammals, sea birds, and sea turtles are present.
	Amphibious Warfare (AMW)	🟡	There are munitions restrictions on SHOBA and SSTC that affect related training activity. SHOBA users must restrict munitions use to approved types, amounts, and expenditure locations. Operations involving munitions must be conducted during times of reduced fire potential and in areas where species are not prevalent. Munitions restrictions create avoidance areas, prohibit certain training events, segment training/reduce realism, limit application of new technologies, and inhibit new tactics development. No planned remediation. SSTC conforms to restrictions on small arms blanks and simunitions expenditures and to prohibitions on land detonations.
	Naval Special Warfare (NSW)	🟡	Same as above.

Southern California (SOCAL) Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Spectrum	Strike Warfare (STW)	●	Employment of Link 16 is restricted. Restrictions limit spectrum operations and prohibit certain training events, segment training/reduce realism, reduce training days, limit application of new weapons technologies, and inhibit new tactics development. The Navy continues to coordinate with appropriate frequency allocation and oversight agencies to seek spectrum relief and to develop encroachment strategies that will reduce encroachment while ensuring pending use of emerging spectrum technologies. Competition for frequency spectrum will add increased pressure on available bandwidth for Naval operations.
	Electronic Combat (EC)	●	Same as above.
	Anti-Air Warfare (AAW)	●	Same as above.
	Anti-Surface Warfare (ASUW)	●	Same as above.
	Mine Warfare (MW)	●	Same as above.
	Amphibious Warfare (AMW)	●	Same as above.
Maritime Sustainability	Anti-Surface Warfare (ASUW)	●	Maritime protective and mitigation measures undertaken in compliance with regulatory requirements have resulted in training restrictions that reduce training flexibility, force segmented training, and ultimately reduce training realism. All at-sea training is impacted to some degree; impacts are most significant to integrated warfare training using active underwater acoustic sources or in-water explosive ordnance. The Navy and National Marine Fisheries Service (NMFS) have developed science-based protective and mitigation measures that adequately protect marine species while accommodating military readiness activities. The Navy continues to develop EISs and obtain permits and authorizations for its range complexes to ensure military training complies with applicable laws and regulations. Litigation risks remain a concern, entailing the potential to delay or further restrict training, despite the protective and mitigation measures applied by the Navy in compliance with the Marine Mammal Protection Act (MMPA) and the Endangered Species Act (ESA). Endangered species encroachment has created avoidance areas that have resulted in some reduction of training days and prohibits certain training events. This area is relatively small in scope; however, if these types of restrictions were applied to other species/areas, there would be significant impacts to readiness through reduction in range access, segmentation of training/reduction in realism, limits on the application of new technologies, raised flight altitudes, reduced live fire proficiency, increased personnel tempo, and increased O&M costs. The Navy will continue to invest in marine mammal research, rely on scientifically valid empirical data results as basis of marine mammal mitigation development, and factor mitigation effectiveness into permit requests. It will continue education of Fleet units to adhere to the maritime protective and mitigation measures, and sponsor public education outreach efforts. The Navy's authorizations under the MMPA and ESA include an adaptive management approach that includes continually evaluating existing mitigation measures for their potential impacts on training. If impacts on training from mitigation measures are identified and documented,the Navy will raise these impacts with the NMFS for resolution during an annual adaptive management review process. The Navy is currently preparing environmental compliance documentation to renew the MMPA and ESA authorizations, which will consider any impacts on training stemming from existing mitigations measures and propose changes as warranted.
	Mine Warfare (MW)	●	Same as above.
	Amphibious Warfare (AMW)	●	Maritime protective and mitigation measures undertaken in compliance with regulatory requirements have resulted in training restrictions that reduce training flexibility, force segmented training, and ultimately reduce training realism. Amphibious landings on SSTC must consider and avoid major grunion spawns on SSTC beaches in April and May. Endangered species encroachment has created avoidance areas that have resulted in some reduction of training areas on SSTC and SCIRC. This area is relatively small in scope; however, if these types of restrictions were applied to other species/areas, there would be significant impacts to readiness through reduction in range access, segmentation of training/reduction in realism, limits on the application of new technologies, raised flight altitudes, reduced live fire proficiency, increased personnel tempo, and increased O&M costs. The Navy will continue to invest in fish habitat research on SSTC and monitor grunion spawns; factor mitigation effectiveness into permit requests. It will continue education of Fleet units to adhere to the maritime protective and mitigation measures, and sponor public education outreach efforts.
	Anti-Submarine (ASW)	●	Same as above.
Airspace	Amphibious Warfare (AMW)	●	Helicopters supporting SSTC amphibious operations compete with multiple airspace users on SSTC, including military aircraft training, law enforcement, commercial, and private aircraft. Multiple airspace users and congested airspace on SSTC prohibit certain training events, reduce range access, reduce realism, inhibit tactics development, and limit application of new technologies. The Navy continues coordination with Navy air traffic controllers and public stakeholders to educate them on matters of SSTC training.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Southern California (SOCAL) Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Airspace	Naval Special Warfare (NSW)	🟡	Same as above.
Noise Restrictions	Mine Warfare (MW)	🟡	Concerns with noise impacts on the Imperial Beach community from SSTC NSW and EOD MCM operations have prohibited the construction of a Demolition Pit at SSTC South. The Demolition Pit was eliminated from the SSTC EIS Proposed Action. Although this expansion was identified by EOD and NSW as a critical backyard capability, the Demolition Pit was not carried forward in the DEIS. Encroachment from noise restrictions creates avoidance areas, prohibits certain training events, reduces range access, reduces realism, inhibits tactics development, and limits application of new technologies. The Navy plans to recommend the evaluation of technologies and structures for an EOD Demolition Pit and to re-engage with the public to permit installation of an EOD pit on the SSTC.
	Amphibious Warfare (AMW)	🟡	Helicopter noise from SSTC amphibious operations impacts surrounding communities and limits expansion of helicopter supported training. Multiple airspace users and congested airspace on the SSTC prohibits certain training events, reduces range access, reduces realism, inhibits tactics development, and limits application of new technologies. The Navy continues coordination with Navy air traffic controllers and public stakeholders to educate them on matters of SSTC training.
	Naval Special Warfare (NSW)	🟡	Same as above for the lack of a demo pit in SSTC-S and use of helicopters in training.
Adjacent Land Use	Mine Warfare (MW)	🟡	Concerns about public usage of beaches adjacent to Navy training areas as well as the impact of noise on the adjacent community on Silver Strand has led to reduced intensity of training and training realism. Usage and noise concerns create avoidance areas, prohibit certain training events, reduce range access, reduce realism, inhibit tactics development, and limit application of new technologies. The Navy continues coordination with public stakeholders to educate on matters of SSTC training.
	Ambitious Warfare (AMW)	🟡	Same as above.
	Naval Special Warfare (NSW)	🟡	Same as above.
Cultural Resources	Strike Warfare (STW)	🟡	Cultural resources on the SHOBA affect STW target placement (impact areas 1 and 2) and expansion of Adversary Village (impact area 1). Cultural resources encroachment creates avoidance areas, reduces range access, reduces realism, and inhibits tactics development. There is collaboration between the Navy and ACHP/CASHPO on the development of the Integrated Cultural Resources Management Plan description of a modeling study to address sec 106 compliance in the impact areas.
	Amphibious Warfare (AMW)	🔴	SCI is the ONLY maritime training area that can support I MEF Battalion Landings, tactical tracked vehicle insertions, and live fire targeting. The preponderance of the potential archaeological sites identified on San Clemente Island lack definitive eligibility determination, resulting in a reduction in the use of available training areas. Presence of archaeological sites in the Assault Vehicle Maneuver Areas and SHOBA restricts tracked vehicle and howitzer maneuvers. All sites are treated as if eligible under the NHPA. In the absence of an eligibility determination, over 7,000 potential sites and associated landmass create avoidance areas throughout maneuver spaces designated in the SOCAL EIS/OEIS as the USMC Assault Vehicle Maneuver Area, Artillery Firing Positions (AFP), and Assault Maneuver Positions (AMP). The Navy recommends it assess regulatory status of cultural resource for eligibility under the NHPA in accordance with operationally-prioritized areas, and if eligible, annotate the historical significance and either remove representative artifacts or establish avoidance area around representative artifact outside of high-value range areas designated (SOCAL EIS/OEIS) for tracked vehicle maneuvers and live fire operations.
	Naval Special Warfare (NSW)	🟡	The presence of archaeological sites restrict NSWG-1 and NSWC tactical training at a cost to NSW of over $25M. SWAT 1 contains the ONLY maritime SOUC. SCI supports the only location for BUD/S Third Phase training. Cultural resources create an avoidance area that resulted in lost range access and tactical training development. The Navy recommends it assess regulatory status of cultural resources for eligibility under the NHPA, and if eligible, annotate the historical significance and remove the artifacts from SSTC range.
Wetlands	Mine Warfare (MW)	🟡	Vernal Pool Fairy Shrimp habitat restricts use of portion of SSTC South for troop maneuvers, EOD and land mine detection, HRST, and IAD. Habitat encroachment creates avoidance areas, prohibits certain training events, reduces range access, reduces realism, inhibits tactics development, and limits application of new technologies. The Navy adheres to SSTC EIS/BO avoidance measures.
	Amphibious Warfare (AMW)	🟡	Same as above.
	Naval Special Warfare (NSW)	🟡	Same as above.

Southern California (SOCAL) Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Range Transients	Anti-Surface Warfare (ASUW)	●	Range transients, involving commercial shipping, commercial fishing, and private pleasure boating, encroach on training, either by delaying events or forcing relocation to less than optimum locations. Commercial vessel and recreational vessel encroachment creates avoidance areas and segments training/reduces realism. The Navy will continue to pursue opportunities to inform industry and the public of the impact of range transient encroachment on at-sea OPAREAs and Navy readiness. FACSFAC SD is currently negotiating with the FAA to establish a restricted area over all of SCI and extending out 12nm. This will allow security enforcement of range transient encroachment, and will assist the public in avoiding hazardous operations.
	Mine Warfare (MW)	●	Same as above.
	Amphibious Warfare (AMW)	●	Same as above.
	Naval Special Warfare (NSW)	●	Incidents of range transients cause the delay or cancellation of operations. SSTC ocean and some bayside areas are open navigable waters, so the Navy has no legal authority to request that boaters leave the boat lanes during scheduled operations. Range transients around SCI create avoidance areas, prohibit certain training events, reduce range access, reduce realism, inhibit tactics development, and limit application of new technologies. Waters off SCI were designated 21 June 2010 through formal Federal rule making (Final Rule—Federal Register 20 May 2010) as a Safety Zone out to 3nm (encircles SCI). NBC and FACSFAC SD are working with the U.S. Coast Guard (USCG) to effectively communicate safety zone status to the public (www.island.org). The USCG is the enforcement agency. Navy will continue to pursue opportunities to inform industry and the public of the impact of range transient encroachment on at-sea OPAREAs and Navy readiness, and will continue to work with the USCG to assess the feasibility of establishing Safety Zones in the SSTC boat lanes and undesignated Bay training areas. FACSFAC SD is currently negotiating with the FAA to establish a restricted area over all of SCI and extending out 12nm. This will allow security enforcement of range transient encroachment, and will assist the public is avoiding hazardous operations.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Virginia Capes (VACAPES) Assessment Details

Range Mission Description

The Virginia Capes Range Complex consists of surface and subsurface Ocean Operating Area (VACAPES OPAREA) supported by airspace off the Virginia and North Carolina coasts as well as land areas supported by airspace. These areas support training for all Navy warfare areas, principally for Naval forces homeported in the Norfolk, VA area.

Capability Data

Mission Areas	Capability Attributes												
	Landspace	Airspace	Seaspace	Underseaspace	Targets	Threats	Scoring & Feedback System	Infrastructure	Range Support	Small Arms Ranges	Collective Ranges	MOUT Facilities	Suite of Ranges
Strike Warfare	PMC	FMC	FMC	FMC	PMC	FMC	PMC		PMC				
Electronic Combat	FMC	FMC	FMC	FMC	PMC	PMC	PMC		PMC				
Anti-Air Warfare	PMC	FMC	FMC		FMC	PMC	PMC		PMC				
Anti-Surface Warfare		FMC	FMC	FMC	FMC	FMC	PMC		PMC				
Mine Warfare		FMC	FMC	FMC	PMC	FMC			PMC				
Amphibious Warfare													
Anti-Submarine		FMC	FMC	FMC	FMC	PMC	NMC		PMC				
Naval Special Warfare	PMC	FMC	FMC	FMC	PMC	PMC	FMC		PMC				

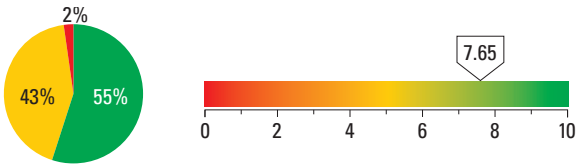
Legend: FMC, PMC, NMC

Encroachment Data

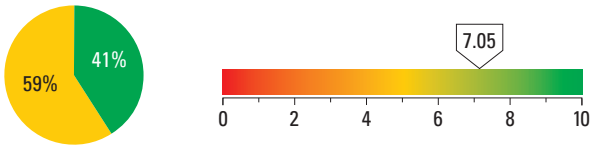
Mission Areas	Encroachment Factors												
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strike Warfare	Minimal	Minimal			Moderate	Minimal	Minimal	Moderate	Minimal	Minimal	Moderate	Moderate
Electronic Combat	Minimal		Moderate		Moderate	Minimal	Minimal	Minimal			Moderate	Moderate
Anti-Air Warfare			Moderate	Moderate	Moderate	Minimal	Minimal	Minimal				Moderate
Anti-Surface Warfare			Moderate	Moderate	Moderate			Moderate	Minimal			Moderate
Mine Warfare				Moderate	Minimal				Minimal			Moderate
Amphibious Warfare				Moderate								Moderate
Anti-Submarine			Moderate	Moderate	Minimal				Minimal			Moderate
Naval Special Warfare	Moderate											Moderate

Legend: Minimal, Moderate, Severe

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

1. Capability attribute most impacting range mission performance: Scoring & Feedback Systems.
2. Mission area most severely impacted: ASW, EC.
3. Projected Status: No immediate change.

Summary Observations

1. Spectrum, Maritime Sustainability, Airspace, and Range Transients are the encroachment areas that have the most pervasive training impacts.
2. All mission areas have considerable encroachment.
3. There are no prevailing or emerging mitigation strategies that will alter training encroachment for the foreseeable future. Most encroachment is long-standing, and has been addressed through maritime mitigation measures and operations procedures.

Virginia Capes (VACAPES) Assessment Details

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Capability Scores	7.39	7.50	7.50	7.67

1. EC for Landspace was yellow in CY2008 and reassessed to green in CY2009 and forward based on an updated assessment of Landspace requirement to the primary use of the range, which is for only the "basic" level training.
2. In CY2011 MW, the capability score for Scoring & Feedback Systems changed from red to white based on USFF evaluation that TSPI Scoring data is not required.
3. In CY2012 NSW mission assessment re-added to assessment file, as it is a primary mission area for the VACAPES Range Complex.

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Encroachment Scores	8.70	8.38	8.38	8.25

1. Encroachment assessments for CY2008 were different than for CY2009, CY2010, and CY2011. The algorithm for the overall assessment score for CY2009 through CY2011 was revised from the original algorithm used in CY2008 to provide greater fidelity and consistency across all range complexes. Based on an improved review process and revised algorithms, the assessments for CY2009, CY2010, and CY2011 provide a more accurate assessment of encroachment. The assessments for the latter three years reveal there has been little encroachment change from year to year, with relatively constant overall scores for CY2009, CY2010, and CY2011.
2. The VACAPES-Northeast RCMP update is currently in progress; the VACAPES OPAREA EAP was completed in May 2011.
3. Department of Interior (DOI) and private energy interests in the Outer Continental Shelf (OCS) are increasing as domestic energy demand builds. Naval offshore operating areas and training events may be affected. High priority areas include training ranges & sea space in and adjacent to all Navy OPAREAs. OASN (E,I&E), as DoD spokesman for military offshore use, continues to work closely with the Fleets & DOI's Bureau of Ocean Energy Management (BOEM) to resolve issues of combined use of the OCS important to both agencies. Fleet review and analysis of impacts from both oil/gas and wind energy "lease sale" areas (Mission Critical Areas [MCAs]) have been reviewed and forwarded to OSD. DoD and DOI coordination continues.
4. There is potential for wind-farm development in the VACAPES OPAREA. Development of proposed lease blocks with wind farm infrastructure would have an impact on Navy testing and training activities conducted in the vicinity of the infrastructure. The encroachment time frame is undetermined.
5. There is potential for oil/gas development efforts in the VACAPES OPAREA. Development of Lease Sale 220 with oil/gas infrastructure would affect Navy testing and training activities conducted in the vicinity of the infrastructure. Although, on May 27, 2010, President Obama announced Secretary Salazar's decision to cancel Sales 215 and 220, this issue should remain in the Navy's purview as the potential exists that it, along with other areas within the VACAPES Range Complex, may be considered for exploration and production in the future.
6. The Federal Government has warned the City of Virginia Beach that more tall buildings at the resort area could obstruct the long range radar that sits at NAS Oceana. The radar is designed and used to detect low flying objects that could threaten the coastline

Virginia Capes (VACAPES) Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Strike Warfare (STW)		Landspace is only available at Dare County Bombing Range, which does not fully support size nor topography requirements for placement of required number of targets. Use of live ordnance is not supported. Use of flares is restricted. No land area supports NSFS training or CSAR training. These shortfalls prohibits certain training events, reduces realism, and increases personnel op-tempo. The Navy recommends identifying East Coast land areas of sufficient size to support standoff weapons and CSAR training. No completion date has been identified.
	Anti-Air Warfare (AAW)		Landspace is only available at Dare County Bombing Range, which does not fully support size or topography requirements, or support surface combatant detection of aircraft over land. Use of flares is restricted. These shortfalls prohibit certain training events, reduce realism, and increase personnel op-tempo. Overland ACM training is conducted at Fallon Range Training Complex. No additional land options are available within VACAPES.
	Naval Special Warfare (NSW)		Landspace is only available at JEB Little Creek-Fort Story, NAS Oceana Detachment Dam Neck, and Navy Dare County Bombing Range, which do not fully support live fire and maneuver and MOUT requirements. This prohibits certain training events; reduces realism; limits application of new weapon systems, reduces live fire proficiency, increases personnel tempo, and increases O&M costs. No additional Navy-owned land options are available within VACAPES. Other Service land areas are used to supplement land area requirements.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Virginia Capes (VACAPES) Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Targets	Strike Warfare (STW)		Live ordnance is not allowed, (the urban area is too small). NSFS is not supported ashore; and required targets do not provide both visual and infrared signatures. These shortfalls prohibit certain training events, reduce realism, limit application of weapon technologies, reduce live fire proficiency, increase personnel op-tempo, and increase O&M costs. The Navy recommends increasing the number and variety of targets with more realistic signatures and installing no drop ordnance instrumentation where applicable. No completion date has been identified.
	Electronic Combat (EC)		Additional targets are required to achieve required density and a more representative threat. This prohibits certain training events; reduces realism, limits application of weapon technologies, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy recommends increasing the number and variety of EC threats. Install portable systems where applicable. No completion date has been identified.
	Mine Warfare (MW)		There are insufficient training mines and range areas to support increased MW training. VACAPES must support the Navy's principal MH-60 and MH-53 MW helicopter squadrons. This prohibits certain training events; reduces realism; inhibits tactics, increases personnel op-tempo, and increases O&M costs. The Navy will investigate procurement of appropriate mix of recoverable and expendable inert bottom and moored mine shapes and instrumented bottom training mines to populate a series of permanent MW training areas. No completion date has been identified.
	Naval Special Warfare (NSW)		Available beach areas do not support placement of obstacles and defenses that support employment of HE ordnance clearing devices. Prohibits certain training events, reduces realism, limits application of new weapons, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy recommends investigating other locations to support required training events. No completion date has been identified.
Threats	Electronic Combat (EC)		The EC threat representation does not fully support EC threat levels 3 or 4 for required mission areas. The existing instrumentation systems are becoming obsolete and unsupportable through the FYDP. This reduces realism; inhibits tactics development; and greatly increases O&M costs. The Navy recommends maintaining the current upgrade schedule to preclude severe degradation of system capability. No completion date has been identified.
	Anti-Air Warfare (AAW)		Helicopter threat OPFOR is not available; required number of air threat OPFOR is not available; there is no dedicated supersonic threat OPFOR available. This reduces realism; inhibits tactics, increases personnel op-tempo, and increases O&M costs. The Navy recommends increasing the number and types of air threat OPFOR. No completion date has been identified.
	Anti-Submarine (ASW)		There are limited dedicated live submarines, surface ships, or aircraft to serve in the OPFOR role. This prohibits certain training events; reduces realism; inhibits tactics; increases personnel op-tempo; and increases O&M costs. The Navy recommends investing in additional threat OPFOR and increasing the availability of submarines through the DESI and aircraft through CAS. No completion date has been identified.
	Naval Special Warfare (NSW)		Dedicated ground, armor, and mechanized vehicle OPFORs are not available. This prohibits certain training events, reduces realism, limits application of new weapons, reduces live fire proficiency, increases personnel tempo, and increases O&M costs. The Navy will investigate other locations that will support the required OPFOR and work with other forces for mutual support of training requirements. No completion date has been identified.
Scoring & Feedback System	Strike Warfare (STW)		The OPAREA coverage is not complete, M&S is inadequate, and there is no RTKN. This reduces realism, inhibits tactics, increases personnel op-tempo, and increases O&M costs. The Navy recommends expanding and improving 2-D & 3-D coverage of the OPAREA, investing in JNTC-compliant M&S, and improving debrief capabilities. No completion date has been identified.
	Electronic Combat (EC)		Same as above.
	Anti-Air Warfare (AAW)		The OPAREA coverage is not complete, M&S is inadequate, and there is no RTKN. This reduces realism, inhibits tactics, increases personnel op-tempo, and increases O&M costs. The Navy recommends expanding and improving 2-D & 3-D coverage of the OPAREA, investing in JNTC-compliant M&S, and improving debrief capabilities. No completion date has been identified.
	Anti-Surface Warfare (ASUW)		Same as above.
	Anti-Submarine (ASW)		There is no underwater tracking range, scoring capability, M&S, or post mission feedback. This prohibits certain training events, reduces realism, limits weapon technologies, inhibits tactics, reduces live fire proficiency, increases personnel op-tempo, and increases O&M costs. The Navy recommends developing an East Coast USWTR; expanding and improving 2-D & 3-D coverage of the OPAREA, investing in JNTC compliant M&S, and improving debrief capabilities. An East Coast USWTR is planned for the Jacksonville Range Complex; IOC is planned for FY2017. No completion date has been identified for other recommendations.

Virginia Capes (VACAPES) Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Range Support	Strike Warfare (STW)	●	The lack of web-based scheduling system with pre-event, real-time, and post-event modules precludes most efficient scheduling and documenting of range usage. Post-event reporting is particularly critical for ordnance expenditures or active sonar usage in at-sea OPAREAs since MMPA permits require the Navy to periodically report these values. Non-compliance or inaccurately reporting post-event values to regulators risks range access or prohibitions on training events that involve active sonar or high explosives at-sea. PACFLT is developing a Data Collection and Scheduling Tool (DCAST) that includes a post-event module to mitigate issues outlined above. If successful, the Navy could consider adopting it at all range scheduling facilities.
	Electronic Combat (EC)	●	Same as above.
	Anti-Air Warfare (AAW)	●	Same as above.
	Anti-Surface Warfare (ASUW)	●	Same as above.
	Mine Warfare (MW)	●	Same as above.
	Anti-Submarine (ASW)	●	Same as above.
	Naval Special Warfare (NSW)	●	Same as above.

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Threats & Endangered Species	Naval Special Warfare (NSW)	●	Sea turtles and marine mammals can be found in the waters offshore from NAS Oceana Dam Neck Annex. Sea turtles use the Dam Neck beach for nesting purposes. Threatened and endangered marine mammal species may migrate through the littoral waters offshore. Both of these conditions result in potential training impacts for Naval Special Warfare Development Group (DEVGRU). Training activities affected are NSW OPS; Over-the-Beach; Marksmanship. Continue Fleet unit education on adherence to marine species protective measures.
Spectrum	Electronic Combat (EC)	●	Restrictions resulting from electromagnetic spectrum encroachment include prohibitions from performing GPS jamming, authorization to radiate the Spoon Rest VHF early warning threat radar system, and restricted use of the Track While Scan Simulator (ITWSS). Additionally, employment of Link 16, SPY-1 radar, SPS 49 radar, and IFF are restricted. These restrictions limit spectrum operations and prohibit certain training events, segment training/reduce realism, reduce training days, limit application of new weapons technologies, and inhibit new tactics development. The Navy continues to coordinate with appropriate frequency allocation and oversight agencies to seek spectrum relief and to develop encroachment strategies that will reduce encroachment while ensuring pending use of emerging spectrum technologies. Competition for frequency spectrum will add increased pressure on available bandwidth for Naval operations.
	Anti-Air Warfare (AAW)	●	Employment of Link 16 is restricted. There is frequency interference with BQM-74 drone operations out of Dam Neck into SUA. These restrictions limit spectrum operations and prohibit certain training events, segment training/reduce realism, reduce training days, limit application of new weapons technologies, and inhibit new tactics development. The Navy continues to coordinate with appropriate frequency allocation and oversight agencies to seek spectrum relief, and to develop encroachment strategies that will reduce encroachment while ensuring pending use of emerging spectrum technologies. Competition for frequency spectrum will add increased pressure on available bandwidth for Naval operations.
	Anti-Surface Warfare (ASUW)	●	Employment of Link 16, SPY-1 radar, SPS 49 radar, and IFF are restricted. These restrictions limit spectrum operations and prohibit certain training events, segment training/reduce realism, reduce training days, limit application of new weapons technologies, and inhibit new tactics development. The Navy continues to coordinate with appropriate frequency allocation and oversight agencies to seek spectrum relief and to develop encroachment strategies that will reduce encroachment while ensuring pending use of emerging spectrum technologies. Competition for frequency spectrum will add increased pressure on available bandwidth for Naval operations.
	Anti-Submarine (ASW)	●	Same as above.

Figure 3-28 Navy Capability and Encroachment Assessment Detail (continued)

Virginia Capes (VACAPES) Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Maritime Sustainability	Anti-Air Warfare (AAW)	●	Maritime protective and mitigation measures undertaken in compliance with regulatory requirements have resulted in training restrictions that reduce training flexibility, force segmented training, and ultimately reduce training realism. All at-sea training is impacted to some degree; impacts are most significant to integrated warfare training using active underwater acoustic sources or in-water explosive ordnance. The Navy and NMFS have developed science-based protective and mitigation measures that adequately protect marine species while accommodating military readiness activities. The Navy continues to develop EISs, and obtain permits and authorizations for its range complexes to ensure military training complies with applicable laws and regulations. Litigation risks remain a concern, entailing the potential to delay or further restrict training, despite the protective and mitigation measures applied by the Navy in compliance with the MMPA and the ESA. Endangered species encroachment from the North Atlantic Right Whale has created avoidance areas that have resulted in some reduction of training days and prohibits certain training events. This area is relatively small in scope; however, if these types of restrictions were applied to other species, there would be significant impacts to readiness through reduction in range access, segmentation of training/reduction in realism, limits on the application of new technologies, raised flight altitudes, reduced live fire proficiency, increased personnel tempo, and increased O&M costs. The Navy will continue to invest in marine mammal research, rely on scientifically valid empirical data results as basis of marine mammal mitigation development, and factor mitigation effectiveness into permit requests and continue education of Fleet units to adhere to the maritime protective and mitigation measures, and sponsor public education outreach efforts. The Navy's authorizations under the MMPA and ESA include an adaptive management approach that includes continually evaluating existing mitigation measures for their potential impacts on training. If impacts on training from mitigation measures are identified and documented, the Navy will raise these impacts with the NMFS for resolution during an annual adaptive management review process. The Navy is currently preparing environmental compliance documentation to renew the MMPA and ESA authorizations by January 2014, which will consider any impacts on training stemming from existing mitigations measures and propose changes as warranted.
	Anti-Surface Warfare (ASUW)	●	Same as above.
	Mine Warfare (MW)	●	Same as above.
	Amphibious Warfare (AMW)	●	Same as above.
	Anti-Submarine (ASW)	●	Same as above.
Adjacent Land Use	Strike Warfare (STW)	●	There are potential Safety Zone Issues with regard to communities underlying Navy Dare County Bombing Range (NDCBR) and Long Shoal Naval Ordnance Area (LSNOA) SUA. The NDCBR Compatibility Zones extend over large areas of Dare and Tyrrell Counties, and some existing and future land uses in these zones are incompatible. The LSNOA Compatibility Zones extend over large areas of the Pamlico Sound and perimeter villages, and some existing and future land uses in these zones are incompatible. This creates avoidance areas, restricts flight altitudes and/or airspeeds, inhibits new tactics development. The Navy will work with Dare County to incorporate the RAICUZ recommendations into Dare County land use planning initiatives. It will continue the DBRAC meetings, and support compatible land use, such as farmland preservation.
	Anti-Surface Warfare (ASUW)	●	Same as above.
Wetlands	Strike Warfare (STW)	●	Self-imposed Clean Water Act/Dare County wetlands and land use plans limit target configuration, placement, and maintenance, due to many NDCBR impact areas having been situated in designated wetlands. This Navy-induced encroachment affects STW by limiting targetry opportunities at NDCBR. Consideration should be given to seeking out a wetlands delineation at NDCBR and seeking wetlands 404 permits to accommodate target configuration, placement, and maintenance. The Navy will assess emerging demands for upgraded or additional impact areas within or out of the wetland areas to accommodate new munitions technologies.
	Electronic Combat (EC)	●	Self-imposed Clean Water Act/Dare County wetlands and land use plans limit target configuration, placement, and maintenance, due to many NDCBR impact areas having been situated in designated wetlands. This Navy-induced encroachment affects STW by limiting targetry opportunities at NDCBR. Consideration should be given to seeking out a wetlands delineation at NDCBR and seeking wetlands 404 permits to accommodate target configuration, placement, and maintenance. The Navy will assess emerging demands for upgraded or additional impact areas within or out of the wetland areas to accommodate new munitions technologies.

Virginia Capes (VACAPES) Detailed Comments

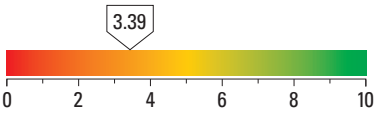
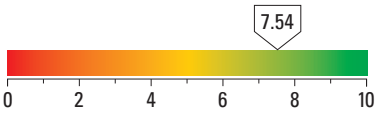
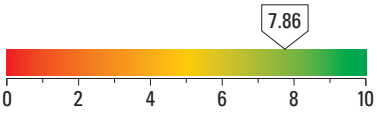
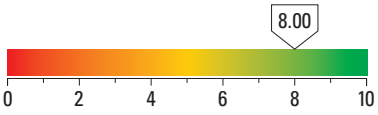
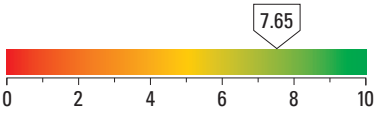
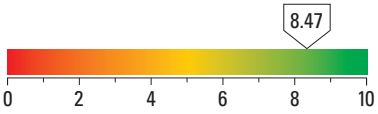
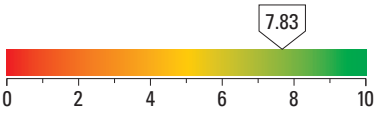
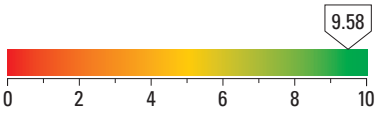
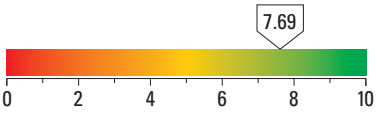
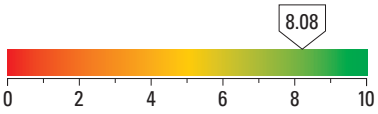
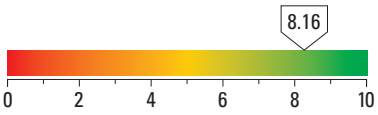
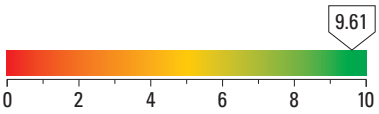
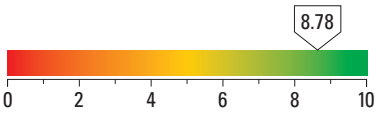
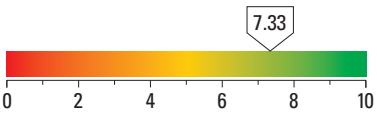
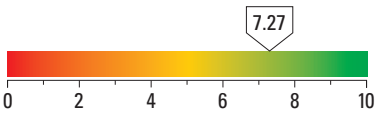
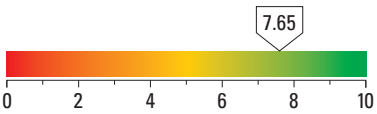
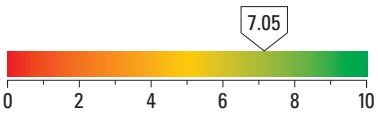
Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Range Transients	Strike Warfare (STW)	●	Range transients, involving commercial shipping, commercial fishing, and private pleasure boating encroach on training, either by delaying events or forcing relocation to less than optimum locations. Commercial vessel and recreational vessel encroachment create avoidance areas and segments training/reduces realism. The Navy will continue to pursue opportunities to inform industry and the public of the impact of range transient encroachment on at-sea OPAREAs and Navy readiness.
	Electronic Combat (EC)	●	Same as above.
	Anti-Air Warfare (AAW)	●	Same as above.
	Anti-Surface Warfare (ASUW)	●	Same as above.
	Mine Warfare (MW)	●	Same as above.
	Anti-Submarine (ASW)	●	Same as above.
	Naval Special Warfare (NSW)	●	Same as above.

Table 3-10 Navy Range Capability and Encroachment Assessment Comparison

Range Name	Capability Score	Encroachment Score
Atlantic City	9.29	8.33
Atlantic Test Ranges	7.93	8.33
AUTEC	9.86	8.33
Boston	9.29	8.00
China Lake	9.82	8.13
El Centro	9.00	10.00
Fallon Training Range Complex	6.96	8.21
Gulf of Mexico	9.31	8.60
Hawaii	8.02	8.23
Jacksonville	7.74	7.75
Japan	5.45	8.10
Key West	7.86	8.33

Table 3-10 Navy Range Capability and Encroachment Assessment Comparison (continued)

Range Name	Capability Score	Encroachment Score
Mariana Islands		
Narragansett Bay		
Navy Cherry Point		
NOCAL		
Northwest Training Range Complex		
Okinawa		
Point Mugu Sea Range		
SOCAL		
VACAPES		

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