## 3.2.2 Marine Corps Assessment Results[10]

### Marine Corps Training Range Capability Assessment Analysis Results

The U.S. Marine Corps (USMC) Capability Assessment data from 10 USMC range complexes are summarized and presented in Table 3-5.

The USMC Range Capability Chart and Scores are presented in Figure 3-11 and assessments by Range, Attributes, and Mission Areas are shown in Figures 3-13, 3-15, and 3-17.

The USMC's 10 individual range capability assessments along with comments for red and yellow ratings are included at the end of this section (Figure 3-19).

### Marine Corps Training Range Encroachment Assessment Analysis Results

USMC Range Encroachment Assessment data from the 10 USMC ranges complexes are summarized in Table 3-6.

The USMC Range Encroachment Chart and Scores are presented in Figure 3-12 and assessments by Range, Factors, and Mission Areas are shown in Figures 3-14, 3-16, and 3-18.

The USMC's 10 individual encroachment assessments along with comments for red and yellow ratings are included at the end of this section (Figure 3-19).

The USMC Range Capability and Encroachment assessment comparisons are presented in Table 3-7.

**10** Of the 14 ranges identified in the Marin Corps' range inventory in Appendix C., four are not assessed. Marine Corps Logistics Base (MCLB) Albany, MCLB Barstow, Marine Corps Air Station Miramar, and Marine Corps Recruit Depot (MCRD) Parris Island have no ranges other than small arm ranges used for the limited purpose of weapons qualification training. Due to their limited nature, the Marine Corps does not intend to formally evaluate these ranges unless the mission changes or some encroachment factor threatens their ability to function. MCB Japan includes MCB Camp Butler.

**Table 3-5** Marine Corps Capability Assessment Data Summary

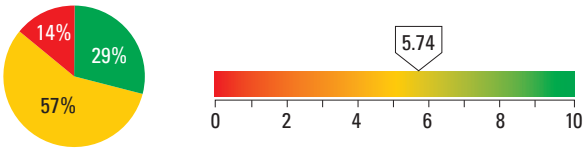
| Range | NMC | PMC | FMC | Capability Scores |
|---|---|---|---|---|
| MCAS Beaufort/Townsend | 0 | 6 | 8 | 7.86 |
| MCMWTC Bridgeport | 0 | 8 | 0 | 5.00 |
| MCAS Cherry Point | 0 | 8 | 9 | 7.65 |
| MCB Hawaii | 6 | 14 | 2 | 4.09 |
| MCB Japan | 14 | 11 | 5 | 3.50 |
| MCB Camp Lejeune | 3 | 19 | 8 | 5.83 |
| MCB Camp Pendleton | 4 | 17 | 9 | 5.83 |
| MCB Quantico | 0 | 14 | 4 | 6.11 |
| MCAGCC Twentynine Palms | 6 | 15 | 13 | 6.03 |
| MCAS Yuma/Bob Stump | 0 | 18 | 9 | 6.67 |
| **HQ USMC** | **33** | **130** | **67** | **5.74** |

**Table 3-6** Marine Corps Encroachment Assessment Data Summary

| Range | Severe | Moderate | Minimal | Encroachment Scores |
|---|---|---|---|---|
| MCAS Beaufort/Townsend | 0 | 0 | 22 | 10.00 |
| MCMWTC Bridgeport | 2 | 16 | 2 | 5.00 |
| MCAS Cherry Point | 0 | 7 | 15 | 8.41 |
| MCB Hawaii | 5 | 6 | 10 | 6.19 |
| MCB Japan | 7 | 5 | 0 | 2.08 |
| MCB Camp Lejeune | 0 | 18 | 15 | 7.27 |
| MCB Camp Pendleton | 8 | 10 | 15 | 6.06 |
| MCB Quantico | 4 | 4 | 14 | 7.27 |
| MCAGCC Twentynine Palms | 0 | 7 | 32 | 9.10 |
| MCAS Yuma/Bob Stump | 5 | 13 | 12 | 6.17 |
| **HQ USMC** | **31** | **86** | **137** | **7.09** |

**Figure 3-11** Marine Corps Capability Chart and Scores

2012




**Summary Observations**

1. USMC's overall capability score is 5.74 for 2012 and relatively unchanged from 2011
2. Fully Mission Capable (FMC) assessments (green) are unchanged at 29%
3. Partially Mission Capable (PMC) assessments (yellow) are unchanged at 57%
4. Not Mission Capable (NMC) assessments (red) are unchanged at 14%

**Historical Information, Results, and Future Projections**

| Calendar Year | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|
| Capability Scores | 5.73 | 5.73 | 6.34 | 5.75 |

The top three capability attributes with the maximum number of red and yellow assessments are (Figure 3-15):

- Target (5+18)
- Scoring & Feedback Systems (6+16)
- Threats (7+13)

The top three mission areas with the maximum number of red and yellow assessments are (Figure 3-17):

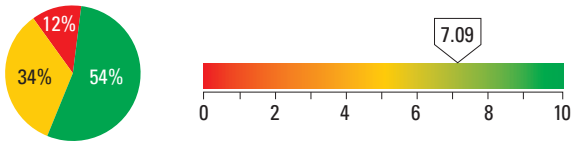
- Unit Level Training (9+53)
- Individual Level Training (2+48)
- MEU Level Training (18+26)

The Marine Corps has identified Service-level deficits in its ability to train. Continued analysis and the fielding of new systems may cause other requirements to surface. Today, the projected operational range requirements at the Service level focus on the following three critical deficiencies: 1) USMC ranges presently lack capability in the size of facilities to fully exercise a large Marine Air Ground Task Force (MAGTF), 2) the proximity of capability to forces stationed in the Western Pacific and Hawaii, and 3) an air range on the East Coast similar to the capabilities provided by the Marine Corps Air Station (MCAS) Yuma on the West Coast. Refer to the USMC Special Interest Section for more details. Based on the scoring, there are additional needs in the areas of Targets, Scoring & Feedback Systems, and Threats.

Refer to USMC's 10 individual range assessments for comments and additional information (Figure 3-19).

**Figure 3-12** Marine Corps Encroachment Chart and Scores

2012




**Summary Observations**

1. USMC's overall encroachment score is 7.09 for 2012 and decreased slightly from 2011
2. Minimal risk assessments (green) remained steady at 55%
3. Moderate risk assessment (yellow) slightly increased at 34%
4. Severe risk assessments (red) remained steady at 12%

**Historical Information, Results, and Future Projections**

| Calendar Year | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|
| Encroachment Scores | 7.90 | 7.90 | 7.44 | 7.13 |

The three encroachment factors with the maximum number of red and yellow assessment are (Figure 3-16):

- Adjacent Land Use (10+11)
- Munitions Restrictions (6+11)
- Airspace (2+15)

The top three mission areas with the maximum number of red and yellow assessments are (Figure 3-18):

- Unit Level Training (13+32)
- Individual Level Training (8+36)
- MEU Level Training (10+16)

Encroachment data must be carefully considered to fully understand its meaning for each installation. The relative impact of each encroachment factor at each USMC installation has different implications to the overall Mission Capable Ranges program. While two installations may have severe encroachment concerns from the same encroachment category, synergistic effects may be experienced at one installation, but not at the other. The assessment process captures encroachment for current installation readiness activities.

Refer to the USMC Special Interest Section for more details. Based on the assessment scoring, encroachment risks to the USMC mission areas are most notable in the encroachment factors of Adjacent Land Use, Munitions Restrictions, and Noise Restrictions. Refer to USMC's 10 individual range assessments for comments and additional information (Figure 3-19).

**Figure 3-13** Marine Corps Capability Assessments by Range

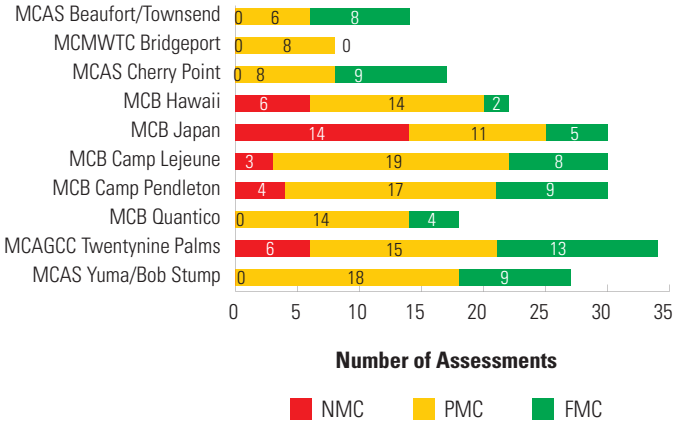



**Figure 3-14** Marine Corps Encroachment Assessments by Range

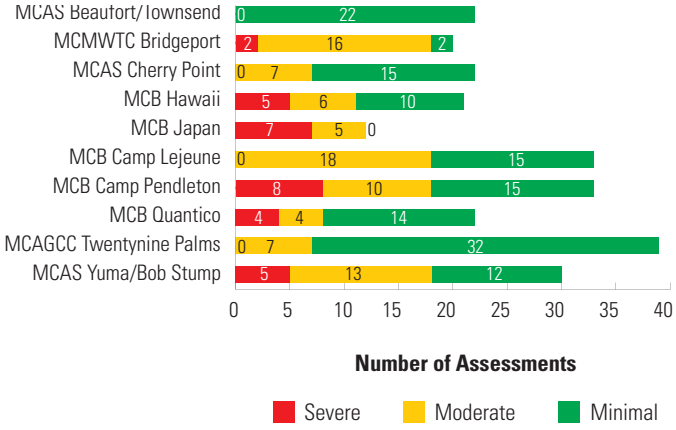



**Figure 3-15** Marine Corps Capability Assessment by Attributes

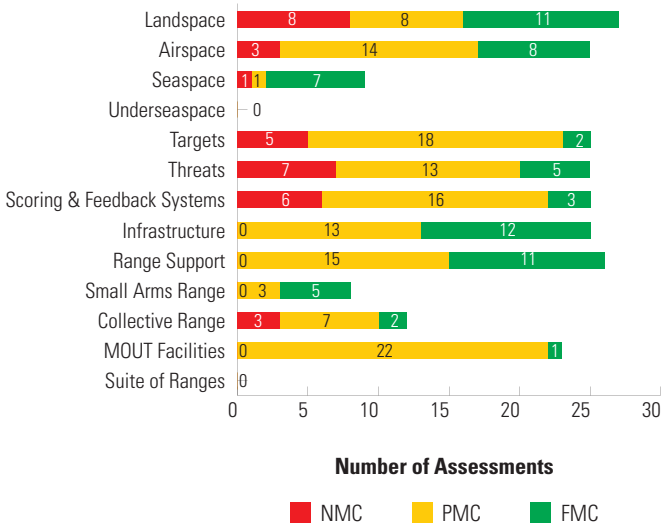



**Figure 3-16** Marine Corps Encroachment Assessment by Factors

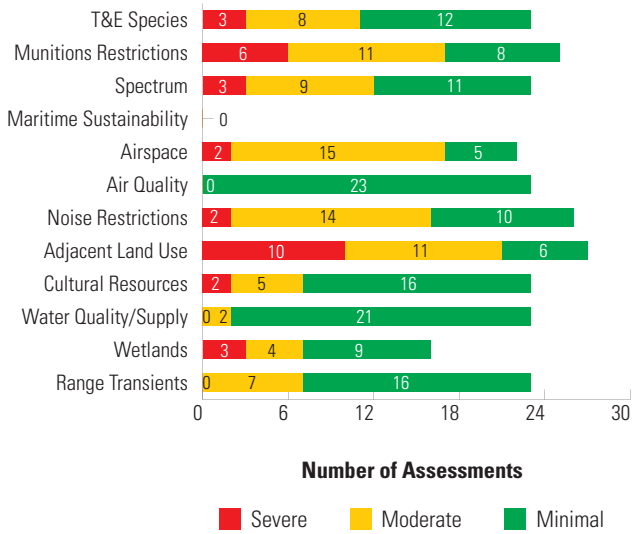



**Figure 3-17** Marine Corps Capability Assessment by Mission Areas

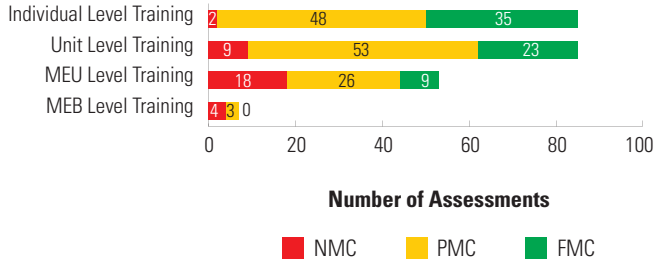
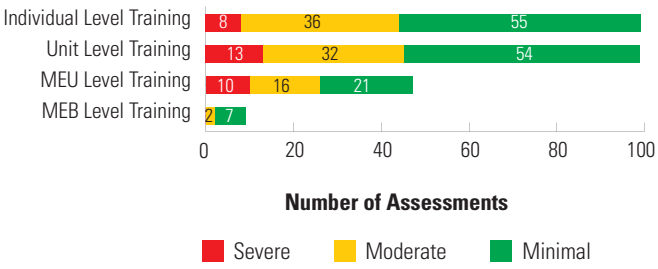



**Figure 3-18** Marine Corps Encroachment Assessment by Mission Areas



## Marine Corps Special Interest Section

### *General Issues*

The Mission Capable Ranges program provides the Marine Corps with a comprehensive, fully-developed range program that defines current, emerging and future range requirements, and executes range modernization initiatives focused on the needs of the warfighter. Over the past decade, the Marine Corps has invested over $700 million in ranges. The cornerstone of the program is range modernization through (1) sustainment of ranges to maintain capabilities and protect range investments; (2) re-capitalization to upgrade or replace existing ranges and range resources; and (3) investment in new ranges that leverage advanced instrumentation, targets, and training systems. Range modernization requires a substantial, ongoing commitment of resources to address each of these categories. Without sufficient commitments focused at a minimum on sustainment and re-capitalization, today's range capabilities will become tomorrow's liabilities, with adverse impacts on the ability of our installations to support required training with mission-capable ranges.

### Critical Issues: Range Capabilities

The Marine Corps has identified Service-level deficits in its ability to train to the many missions that it faces. Continued analysis and the fielding of new systems may cause other requirements to surface in the future, but today the projected operational range requirements at the Service-level focus on the following three critical deficiencies:

1. Marine Corps ranges presently lack the capability to fully exercise a large MAGTF in a realistic, doctrinally appropriate training scenario. The premiere MCAGCC at Twentynine Palms is the center of excellence for developing and executing combined arms live fire training of MAGTFs; however, MCAGCC cannot accommodate a full-scale, live fire MEB exercise. Expansion of MCAGCC/Marine Air-Ground Task Force Training Center (MAGTFTC) would significantly enhance the Marine Corps' ability to continue providing trained Marines, Marine units, and MAGTFs in furtherance of national security objectives. Having obtained necessary authorizations from DoD, the Marine Corps is proceeding with analysis and assessments that support land expansion and establishing additional airspace.
2. Inadequate training opportunities exist for the Marine units stationed in the Western Pacific and Hawaii. Marine Corps installations in Hawaii lack sufficient range capabilities to fully support training of units stationed there. Therefore, these units train extensively on other-Military Service facilities, particularly U.S. Army ranges in Hawaii. The Marine Corps is in the process of assessing approaches to the challenging issue of mitigating range shortfalls within Hawaii. The initiative to relocate units from Okinawa to Guam and develop training ranges and infrastructure on Guam and selected islands of the Commonwealth of the Northern Mariana Islands may provide additional training opportunities for Marines stationed in Okinawa and the Hawaiian Islands.
3. The Marine Corps has identified the need for an aviation training range on the East Coast of the United States with range capabilities like those provided by Marine Corps Air Station (MCAS) Yuma/Bob Stump on the West Coast. To address this requirement, the Marine Corps has assessed potential alternatives, including expanding the MCAS Beaufort/Townsend range. Based on preliminary analysis, the Marine Corps determined that this expansion is feasible, and that additional assessment and analysis is warranted. Assessing possible courses of action, including Townsend Range expansion, will therefore continue in FY2012.

The Mission Capable Ranges program is also focused on developing aviation training on ranges and enhancing access to training airspace, in addition to expanding Townsend and special use airspace at MCAGCC. In particular, the Marine Corps is engaged in developing airspace access, landing zones, and range support requirements to accommodate MV-22 Osprey and UAS capabilities, and in determining range and airspace needs for the Joint Strike Fighter (JSF). The Mission Capable Ranges program is also increasing the Marine Corps' emphasis on supporting implementation of advanced training technologies for LVC environments. Training technologies have the capability to substantially increase the training value provided by our ranges, and to enhance the realism of virtual and constructive training. Implementing advanced training technologies is a critical component of range modernization.

### Critical Issues: Encroachment Factors

Encroachment that constrains the use of Marine Corps installations for realistic military training remains a significant concern. Continued population growth, increased levels of environmental regulation, and expanding development in the regions that are home to Marine Corps installations generate pressure on scarce resources (land, airspace, water space, radio frequency spectrum) that are critical to current and future military training, testing, and general mission activities. The Marine Corps programmatically assesses and addresses encroachment issues, as discussed in Chapter 4.

This report includes assessment of encroachment at Marine Corps complexes, utilizing defined categories of encroachment. The impact of each category of encroachment factor differs across Marine Corps installations. While two installations may have severe encroachment concerns from the same encroachment category, synergistic effects may be experienced at one installation, but not at the other. Accordingly, the data must be carefully considered to fully understand the encroachment effects on each installation. The encroachment

score for Marine Corps installations in total should be considered against the backdrop of each installation's encroachment score.

In addition, the encroachment assessment merely evaluates effects on current operations; it does not predict how future operations may be affected by encroachment. Changes in installation readiness activities, due to changes in doctrine and equipment, or changes in encroachment threats, are not captured by this encroachment assessment. For instance, the introduction of new equipment which requires extended areas in which to train, such as the JSF, may result in significant degradation of encroachment scores at those installations supporting this new aircraft.

A summary of major encroachment concerns at Marine Corps Base Camp Pendleton illustrates the spectrum of challenges that threaten the capabilities of Marine Corps range complexes.

- Sixteen species listed under the Endangered Species Act (ESA) are found on Camp Pendleton. Their presence limits and in some cases prevents the use of certain areas for training. Seasonal restrictions in the vicinity of sensitive habitats include those designed to prevent digging, off-road vehicle use, and stand-off distance requirements for field activities. Other constraints on training can include speed restrictions, dust minimization requirements, and limits or prohibitions on the use of certain pyrotechnics.
- Areas defined as wetlands are found throughout Camp Pendleton. Restrictions on training in wetlands areas can include permitting requirements and associated mitigations for soil disturbance, multi-agency coordination or consultation and approval where wetlands support certain species, and specific restrictions on training in the vicinity of vernal pools and coastal marshes and lagoons.
- Areas of Camp Pendleton are severely constrained from supporting training, due to the presence of cultural resources. Restrictions in the vicinity of known archeological sites include those designed to prevent digging, off-road vehicle use, and stand-off distance requirements for field activities.
- Urban development has nearly surrounded Camp Pendleton. Proposed development, if executed, has the potential to further encroach on the mission of the installation. Camp Pendleton is at the confluence of the second, third, and fourth most populated counties in California. Pressure continues to be exerted on the installation by surrounding communities' initiatives to develop water, energy, and transportation infrastructure. For example, planning has long been underway for construction of a toll road connecting to Interstate 5 adjacent to Camp Pendleton (although one proposed alignment would actually traverse installation lands that are presently used for training).

While this report includes assessment of encroachment at range complexes, encroachment also threatens Marine Corps installations that do not provide significant range resources, but which are home to operational forces that utilize nearby training areas. Encroachment at these installations also affects training and mission readiness. MCAS Miramar, for example, while not a "range complex," is identified here as an example of a Marine Corps installation that is subject to significant encroachment pressures. Urban growth and land uses adjacent to the installation and airspace congestion present particular concerns, with potential or actual impacts on military aviation activities. MCAS Miramar has implemented a comprehensive Encroachment Control Program and maintains an active community relations program as a core component of its encroachment strategy. The Encroachment Control Program includes monitoring local development planning for consistency with Air Installation Compatible Use Zone (AICUZ) and Airport Land Use Compatibility Plan (ALUCP) guidelines and potential impacts on the installation mission. These efforts are intended to ensure that adequate safety and operation buffers are maintained. The cost of establishing additional buffers, if practically feasible, would be substantial given the urban land use profile in the area.

**Figure 3-19** Marine Corps Capability and Encroachment Assessment Detail

## Marine Corps Air Station (MCAS) Beaufort/Townsend Assessment Details

### Range Mission Description

The primary mission of MCAS Beaufort and Townsend Range is to provide support as an operational base and training area for Marine Aircraft Group (MAG)-31, which conducts and supports all active duty USMC Range F/A-18 air operations on the East Coast. The mission of MAG-31 is to conduct anti-air-warfare and offensive air support operations in support of Fleet Marine Forces from advanced bases, expeditionary airfields, or aircraft carriers.

### 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 |
| Individual Level Training | PMC | FMC | | | PMC | FMC | FMC | PMC | FMC | | | | |
| Unit Level Training | PMC | FMC | | | PMC | FMC | FMC | PMC | FMC | | | | |
| MEU Level Training | | | | | | | | | | | | | |
| MEB Level Training | | | | | | | | | | | | | |

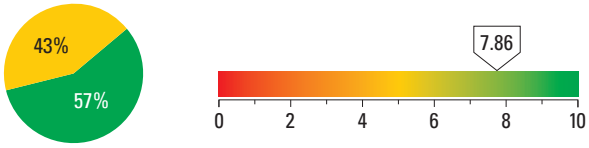
Legend: FMC, PMC, NMC

### Encroachment Data

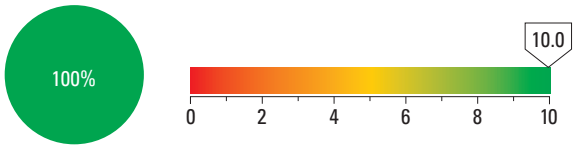
| Mission Areas | Encroachment Factors | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Threatened & Endangered Species | Munitions Restrictions | Spectrum | Maritime Sustainability | Airspace | Air Quality | Noise Restrictions | Adjacent Land Use | Cultural Resources | Water Quality/Supply | Wetlands | Range Transients |
| Individual Level Training | Minimal | Minimal | Minimal | | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate |
| Unit Level Training | Minimal | Minimal | Minimal | | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate |
| MEU Level Training | | | | | | | | | | | | |
| MEB Level Training | | | | | | | | | | | | |

Legend: Minimal, Moderate, Severe

### Capability Chart and Scores




### Encroachment Chart and Scores




### Summary Observations

1. Doctrinal range requirements are derived from Operational Training Ranges Required Capabilities Marine Corps Reference Publication (MCRP) 3-0C. Mission areas and Capability Attributes areas in "white" were not assessed, or are not applicable to this installation.
2. Townsend Range generally has the capability to support required training; however, the range lacks the land area necessary for development of Surface/ Weapons Danger Zones required for certain stand-off weapons, in particular Joint Direct Attack Munition (JDAM). The range lacks mobile targets. Landspace and Targets are the deficits with greatest impact on training mission.
3. The Marine Corps is assessing feasibility of pursuing acquisition of land adjacent to Townsend Range to mitigate current shortfalls.

### Summary Observations

1. Encroachment factors do not presently have adverse impacts on the training mission of Townsend Range. Mission areas and encroachment factors areas in "white" were not assessed, or are not applicable to this installation.

## Marine Corps Air Station (MCAS) Beaufort/Townsend 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** | 8.33 | 8.33 | 8.57 | 7.86 | **Encroachment Scores** | 10.00 | 10.00 | 10.00 | 10.00 |
| Impacts from key range capability shortcomings resulted in PMC designations for this installation during FY2008–FY2011, when assessing the installation's ability to support Marine Corps Task 1.7 (Support Maneuver through the Provision of Training Areas) and Marine Corps Task 3.3 (Support Fires through the Provision of Ranges and Training Areas). Top two capabilities and/or enhancements required to facilitate transition to FMC include: (1) upgraded aviation ordnance delivery training opportunities, and (2) enhanced joint forces training integration. Townsend Bombing Range expansion is currently being analyzed as a venue to address these capability requirements. | | | | | Impacts from key encroachment factors threatened to lead to PMC designations for this installation during FY2008–FY2011, when assessing the installation's ability to support Marine Corps Task 1.7 (Support Maneuver through the Provision of Training Areas) and Marine Corps Task 3.3 (Support Fires through the Provision of Ranges and Training Areas). Successful mitigation of key encroachment factors, including (1) Airspace restrictions, (2) frequency Spectrum limitations, and (3) urban growth, facilitated retention of a FMC designation. | | | | |

## MCAS Beaufort/Townsend Detailed Comments

Capability Observations

| Attributes | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **Landspace** | Individual Level Training | ● | Landspace does not support training using modern inventory of standoff weapons, such as JDAM, in that Surface/Weapons Danger Zones for these weapons exceed boundaries of the range. The Marine Corps has undertaken preliminary analysis of feasibility of range expansion to accommodate standoff weapons air-to-ground deliveries. |
| | Unit Level Training | ● | Same as above. |
| **Targets** | Individual Level Training | ● | The range lacks mobile targets, affecting training realism. The Marine Corps Range Modernization/Transformation (RM/T) Program is addressing shortfalls, consistent with available resources. |
| | Unit Level Training | ● | Same as above. |
| **Infrastructure** | Individual Level Training | ● | Deficiencies in range maintenance and real property due to fiscal constraints. |
| | Unit Level Training | ● | Same as above. |

**Figure 3-19** Marine Corps Capability and Encroachment Assessment Detail (continued)

## Marine Corps Mountain Warfare Training Center (MCMWTC) Bridgeport Assessment Details

### Range Mission Description

The MCMWTC Bridgeport provides range capabilities to support training of Marines, Marine units, and MAGTF elements in the mission essential tasks of modern expeditionary warfare, focused on the training requirements for operations in mountainous, high altitude, and cold weather environments, and to support the development and testing of specialized equipment for use in mountain and cold weather operations.

### 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 |
| Individual Level Training | PMC | PMC | | | | | | PMC | PMC | | | | |
| Unit Level Training | PMC | PMC | | | | | | PMC | PMC | | | | |
| MEU Level Training | | | | | | | | | | | | | |
| MEB Level Training | | | | | | | | | | | | | |

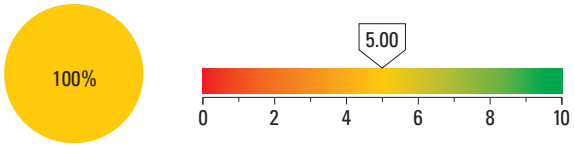
Legend: FMC, PMC, NMC

### Encroachment Data

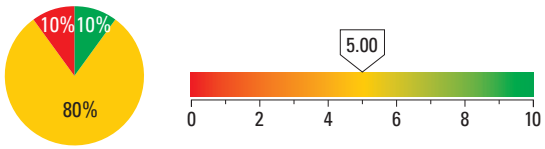
| Mission Areas | Encroachment Factors | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Threatened & Endangered Species | Munitions Restrictions | Spectrum | Maritime Sustainability | Airspace | Air Quality | Noise Restrictions | Adjacent Land Use | Cultural Resources | Water Quality/Supply | Wetlands | Range Transients |
| Individual Level Training | Minimal | Severe | Minimal | | | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate |
| Unit Level Training | Minimal | Severe | Minimal | | | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate | Moderate |
| MEU Level Training | | | | | | | | | | | | |
| MEB Level Training | | | | | | | | | | | | |

Legend: Minimal, Moderate, Severe

### Capability Chart and Scores




### Encroachment Chart and Scores




### Summary Observations

1. Doctrinal range requirements are derived from Operational Training Ranges Required Capabilities Operational Training Ranges Required Capabilities MCRP 3-0C. The MCMWTC Bridgeport Range Complex Management Plan (RCMP) analysis (FY2011) provides the basis for this assessment. Attribute areas in "white" were not assessed because the capability is not present at this installation.
2. MCMWTC Bridgeport generally has the capability to support required non-live fire training; however, limitations on munitions use, target and training infrastructure emplacement, and other land use constraints affect its capability to fully support training requirements. Marines and units training at MCMWTC make use of other Service ranges in the region for live fire and maneuver training.

### Summary Observations

1. 90% of the range complex mission is moderately or severely impacted by encroachment factors.
2. Munitions Restrictions, Adjacent Land Use, and Wetlands are the encroachment factors with greatest impact on training mission.
3. The RCMP has been prepared (FY2010). The Encroachment Control Plan (ECP) is in progress in FY2011/FY2012.
4. To mitigate encroachment impacts, units training at MCMWTC Bridgeport make use of other Service ranges, particularly the live fire training capabilities of the Army's Hawthrorne Ammunition Depot (HWAD) in Nevada.

### Historical Information, Results, and Future Projections

| Calendar Year | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|
| Capability Scores | N/A | N/A | 5.00 | 5.00 |

Impacts from key range capabilities shortcomings resulted in PMC designations for this installation during FY2010–FY2011, when assessing the installation's ability to support Marine Corps Task 1.7 (Support Maneuver through the Provision of Training Areas) and Marine Corps Task 3.3 (Support Fires through the Provision of Ranges and Training Areas). The top three capabilities and/or enhancements required to facilitate transition to FMC include: (1) reduction of limitations associated with tenant status on United States Forest Service (USFS) land, (2) fully resourced installation range program, and (3) consistent/permanent funding for range maintenance real property sustainment.

### Historical Information, Results, and Future Projections

| Calendar Year | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|
| Encroachment Scores | 8.00 | 8.00 | 4.50 | 5.00 |

Impacts from key encroachment factors resulted in PMC designations for this installation during FY2008–FY2011, when assessing the installation's ability to support Marine Corps Task 1.7 (Support Maneuver through the Provision of training areas) and Marine Corps Task 3.3 (Support Fires through the Provision of Ranges and Training Areas). Successful mitigation of key encroachment factors, including (1) Airspace restrictions, (2) frequency Spectrum limitations, and (3) urban growth, are required to facilitate transition to a FMC designation.

## MCMWTC Bridgeport Detailed Comments

Capability Observations

| Attributes | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **Landspace** | Individual Level Training | 🟡 | Training land is sufficient to support required training; however, limitations on land use affect capability of available land to fully support training. The Marine Corps is conducting ongoing planning and analysis and examining options to acquire in-holdings (private lands within the forest area) that would support development of permanent training structures such as MOUT Facilities, to mitigate limitations of USFS constraints. |
| | Unit Level Training | 🟡 | Same as above. Marines and Marine units training in mountain warfare operations make extensive use of other Military Service ranges at Hawthorne Ammunition Depot (HWAD) and also use ranges at Fallon Training Range Complex (FTRC), to supplement training conducted at MCMWTC. HWAD and FTRC permit live fire, but lack ranges to support extended live fire and maneuver training by Marine units. |
| **Airspace** | Individual Level Training | 🟡 | Use of MCMWTC by aviation assets presents challenges because no special use Airspace is designated. |
| | Unit Level Training | 🟡 | Same as above. |
| **Infrastructure** | Individual Level Training | 🟡 | MCMWTC is responsible for road maintenance in the MCMWTC training areas. MCMWTC is generally not authorized to develop range infrastructure. |
| | Unit Level Training | 🟡 | Same as above. |
| **Range Support** | Individual Level Training | 🟡 | Communication infrastructure improvements to enhance Range Control and range safety have been planned, but implementation is subject to funding constraints. |
| | Unit Level Training | 🟡 | Same as above. |

Encroachment Observations

| Factors | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **Threatened & Endangered Species** | Individual Level Training | 🟡 | The presence of sensitive species seasonally restricts use of some areas of MCMWTC. The presence of these resources significantly constrains the ability to identify landing zones (LZs) for rotary aircraft. Intensive survey and related environmental planning efforts are underway to address these and other natural resource-based issues and training impacts. |
| | Unit Level Training | 🟡 | Same as above. |
| **Munitions Restrictions** | Individual Level Training | 🔴 | MCMWTC is situated on land owned by the USFS. Military training proceeds pursuant to Special Use Permits. Training lands of MCMWTC are also used by the public. The Marine Corps has no authority to restrict use of these lands. USFS permits strictly limit live fire training within MCMWTC to limited use of small arms in designated areas. Fire danger is a significant concern, as is public safety. As a result, extensive live fire training at MCMWTC is not feasible. |
| | Unit Level Training | 🔴 | Same as above. |
| **Spectrum** | Individual Level Training | 🟡 | Communications infrastructure does not support an adequate safety and operational VHF/HF network to cover all of the training areas. |
| | Unit Level Training | 🟡 | Same as above. |
| **Noise Restrictions** | Individual Level Training | 🟡 | Potential impacts on forest land users (e.g., domestic livestock grazing) from aircraft and ordnance noise contribute to concerns leading to restrictions on military uses of USFS lands that comprise MCMWTC. |
| | Unit Level Training | 🟡 | Same as above. |
| **Adjacent Land Use** | Individual Level Training | 🟡 | As noted, MCMWTC is situated on land owned by USFS. The entire range complex is a co-use area, contains environmentally sensitive resources, and is subject to permit-based restrictions on land use for military training. Some adjacent lands are designated as wilderness pursuant to the Wilderness Act. These lands are generally not available for training, and the designation may create public expectations about appropriate noise emanating from MCMWTC training activities into wilderness areas. In addition, Congress designated a portion of MCMWTC as a National Winter Recreational Area for snowmobile use by the public. |
| | Unit Level Training | 🟡 | Same as above. |
| **Cultural Resources** | Individual Level Training | 🟡 | MCMWTC is characterized by cultural sites that must be surveyed and assessed by USFS before USFS will permit training activities in areas with potentially significant sites. Cultural sites presently constrain ground movement and maneuver training, and the ability to identify suitable LZs for rotary aircraft. Analysis currently being conducted addresses these cultural sites to obtain clearance for training and establishment of suitable LZs. |
| | Unit Level Training | 🟡 | Same as above. |
| **Water Quality/ Supply** | Individual Level Training | 🟡 | Reported high nitrate levels in water supply are being investigated. Waste water treatment plants are near or at capacity during larger Unit training events, limiting opportunity for expansion of training opportunities. One of the two wells that MCMWTC maintains is not usable for potable water, due to reportedly elevated levels of manganese. |
| | Unit Level Training | 🟡 | Same as above. |

**Figure 3-19** Marine Corps Capability and Encroachment Assessment Detail (continued)

## MCMWTC Bridgeport Detailed Comments

Encroachment Observations

| Factors | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **Wetlands** | Individual Level Training |  | MCMWTC is characterized by mountain meadows that contain wetland habitats and resources. The presence of these resources constrains training uses of these areas, including restricting avenues of movement through affected training areas. Wetlands also constrain the ability to identify suitable LZs for rotary aircraft. Environmental analysis that is currently being conducted will address wetlands issues. Surveys and other analysis have been conducted and are ongoing to identify and obtain clearance for suitable LZ sites. |
| | Unit Level Training |  | Same as above. |
| **Range Transients** | Individual Level Training |  | The presence of non-military forest users significantly impacts training in that the rights of the public to use these forest lands is a factor in the limited use on most live fire training. |
| | Unit Level Training |  | Same as above. |

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**Figure 3-19** Marine Corps Capability and Encroachment Assessment Detail (continued)

## MCAS Cherry Point Assessment Details

### Range Mission Description

MCAS Cherry Point (CP) provides range capabilities to support training of Marines, Marine Corps units, MAGTF elements, and MAGTFs in the mission essential tasks of modern expeditionary warfare, including the training requirements of the 2d Marine Air Wing (2d MAW) and other units assigned to the installation.

### 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 | | | | | | | | | | | | |
| Individual Level Training | ● | ● | | | ● | ● | ● | ● | ● | ● | | ● | |
| Unit Level Training | ● | ● | | | ● | ● | ● | ● | ● | | | ● | |
| MEU Level Training | | | | | | | | | | | | | |
| MEB Level Training | | | | | | | | | | | | | |

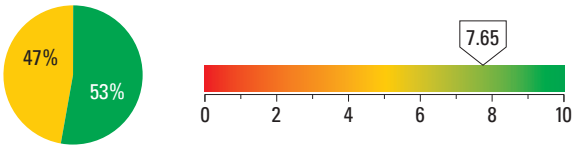
Legend: FMC ● PMC ● NMC ●

### Encroachment Data

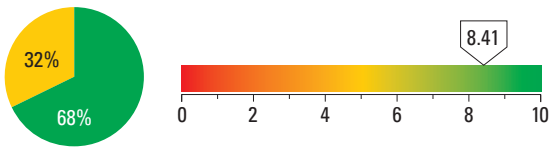
| Mission Areas | Threatened & Endangered Species | Munitions Restrictions | Spectrum | Maritime Sustainability | Airspace | Air Quality | Noise Restrictions | Adjacent Land Use | Cultural Resources | Water Quality/Supply | Wetlands | Range Transients |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Encroachment Factors | | | | | | | | | | | |
| Individual Level Training | ● | ● | ● | | ● | ● | ● | ● | ● | ● | ● | ● |
| Unit Level Training | ● | ● | ● | | ● | ● | ● | ● | ● | ● | ● | ● |
| MEU Level Training | | | | | | | | | | | | |
| MEB Level Training | | | | | | | | | | | | |

Legend: Minimal ● Moderate ● Severe ●

### Capability Chart and Scores




### Encroachment Chart and Scores




### Summary Observations

1. Operational Training Ranges Required Capabilities MCRP 3-0C and the RCMP are the references for this assessment.
2. Marine Expeditionary Brigade (MEB)-level training was not assessed. Attribute areas in "white" were not assessed at MCAS CP.
3. Targets and Scoring & Feedback Systems deficits are the capability attributes most significantly impacting the overall mission.
4. Capability shortfalls affect all levels of training equally.

### Summary Observations

1. 32% of the range/range complex mission is moderately impacted by encroachment factors.
2. Munition Restrictions, Noise Restrictions, Adjacent Land Use, and Range Transients are the encroachment factors moderately impacting most of the training mission.
3. Individual and Unit Level Training are the affected mission areas.
4. An ECP for this installation has been completed, and is presently being updated; execution of the ECP is ongoing. Numerous wind developers have proposed wind energy farms next to or within the MCAS Cherry Point 5306A Special Use Airspace (SUA). The pressures from wind developers make it a necessity to look for means to protect this SUA. MCIEAST and MCAS Cherry Point will be meeting with the majority owner of this prime wind energy land (Open Grounds Farm) and will propose a fee simple purchase or restrictive development easement. Successful negotiations with the land owner will be followed up by an Urgent UNS.

## MCAS Cherry Point 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** | 7.0 | 7.0 | 8.67 | 7.65 | **Encroachment Scores** | 7.73 | 7.73 | 8.41 | 8.41 |
| Impacts from key range capabilities shortcomings resulted in PMC designations for this installation during FY2008–FY2011, when assessing the installation's ability to support Marine Corps Task 1.7 (Support Maneuver through the Provision of Training Areas) and Marine Corps Task 3.3 (Support Fires through the Provision of Ranges and Training Areas). The top three capabilities and/or enhancements required to facilitate transition to FMC include: (1) upgraded and enhanced range safety and exercise command and control (C2) communications systems; (2) urban training facilities, including urban close air support (CAS) capability and MOUT Facility; and (3) fully resourced Range Control facility. | | | | | Impacts from key encroachment factors resulted in PMC designations for this installation during FY2008–FY2011, when assessing the installation's ability to support Marine Corps Task 1.7 (Support Maneuver through the Provision of Training Areas) and Marine Corps Task 3.3 (Support Fires through the Provision of Ranges and Training Areas). Successful mitigation of key encroachment factors, including (1) Munitions Restrictions, (2) Noise Restrictions, and (3) urban growth, and (4) Range Transients, are required to facilitate transition to a FMC designation. | | | | |

## MCAS Cherry Point Detailed Comments

Capability Observations

| Attributes | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **Targets** | Individual Level Training | ● | Targets do not meet requirements of Operational Training Ranges Required Capabilities MCRP 3-0C; ranges lack structural/urban targets. The Marine Corps RM/T program is addressing shortfalls consistent with available resources and Marine Corps priorities. |
| | Unit Level Training | ● | Same as above. |
| **Scoring & Feedback System** | Individual Level Training | ● | Scoring & Feedback systems do not meet requirements of Operational Training Ranges Required Capabilities MCRP 3-0C. The RM/T program is addressing shortfalls consistent with available resources and Marine Corps priorities. |
| | Unit Level Training | ● | Same as above. |
| **Infrastructure** | Individual Level Training | ● | Range control facility resourcing has been addressed with addition of dedicated personnel. A new microwave transmission tower at BT-11 is to be installed to enhance Range Control and communications. Upon completion, the installation Range Control infrastructure will be FMC. |
| | Unit Level Training | ● | Same as above. |
| **MOUT Facilities** | Individual Level Training | ● | An identified requirement for a MOUT Facility is being addressed in the RM/T Program, with planned MOUT construction at Atlantic Field Marine Corps Outlying Landing Field (MCOLF). Development of urban CAS capability, while required, is not feasible within current installation lands. |
| | Unit Level Training | ● | Same as above. |

**Figure 3-19** Marine Corps Capability and Encroachment Assessment Detail (continued)

## MCAS Cherry Point Detailed Comments

Encroachment Observations

| Factors | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **Munitions Restrictions** | Individual Level Training | ● | Aerial bombing and gunnery ranges BT-9 and BT-11, situated on islands within R5306A, are surrounded by NC Public Trust Waters with the intra-coastal waterway splitting the two range areas. The area supports fisheries and recreation. Associated limitations on Surface/Weapons Danger Zone (SDZ/WDZ) restrict allowable munitions for aerial bombing and gunnery using BT-9 and BT-11. Inert ordnance is only authorized up to 500 lbs at BT-11; 35 lbs TNT equivalent for BT-9; no cluster munitions. BT-9 and BT-11 range areas are also used by waterborne craft in practicing shallow water target engagements; however, the firing of primary weapons systems using .50 caliber munitions from surface platforms is restricted at BT-11. Actions to address include community liaison; however, remedies remain elusive. |
| | Unit Level Training | ● | Same as above. |
| **Noise Restrictions** | Individual Level Training | ● | The installation operates a Class C Range for Explosive Ordnance Disposal. The range is capable of disposing of up to 150 lbs net explosive weight (NEW). However, the Base has self-imposed limitations of 50 lbs NEW to ensure noise from detonations does not impact the nearby communities. |
| **Adjacent Land Use** | Individual Level Training | ● | Population increases in the region are resulting in increased construction of housing and other urban infrastructure in the vicinity of the installation and associated Airspace and ranges. The changing land use increasingly impacts the Base's flexibility to execute training. Marine Corps Auxiliary Landing Field (MCALF) Bogue also has major urban encroachment. BT-9 and BT-11 are affected by civilian use of surrounding waters (see above). Examples of impacts include Noise Restrictions affecting munitions use and night training; increased light that conflicts with flight crews' use of night vision equipment; and alteration of flight patterns to avoid urbanizing areas, both within restricted SUA and for low-altitude routes outside restricted Airspace. Explosive storage areas are negatively impacted by flight corridor civilian overflight and vehicle traffic on adjacent roads. Cellular towers constructed close to Cherry Point boundaries can negatively affect operations by raising the weather minimums required for aircraft conducting instrument approaches. Actions to address include community liaison; however, remedies remain elusive. |
| | Unit Level Training | ● | Same as above. |
| **Range Transients** | Individual Level Training | ● | As noted above, the waters surrounding BT-9 and BT-11 are used extensively for civilian activities. MCOLF Atlantic is a high value, 1200 acre airfield facility used for numerous supporting arms (aviation) activities. This airfield is subject to incursions by recreational off-road vehicle users. Actions to address include patrolling, reporting, and community liaison. |
| | Unit Level Training | ● | Same as above. |

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**Figure 3-19** Marine Corps Capability and Encroachment Assessment Detail (continued)

## MCB Hawaii (MCBH) Assessment Details

### Range Mission Description

MCBH provides range capabilities to support training of Marines, Marine Corps units, MAGTF elements, and MAGTFs in the mission essential tasks of modern expeditionary warfare, focused on training requirements of units assigned to the installation.

### 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 | | | | | | | | | | | | |
| Individual Level Training | ● | | | | ● | ● | ● | ● | ● | ● | | ● | |
| Unit Level Training | ● | ● | | | ● | ● | ● | ● | ● | | ● | ● | |
| MEU Level Training | ● | | | | ● | ● | ● | | | | | ● | |
| MEB Level Training | | | | | | | | | | | | | |

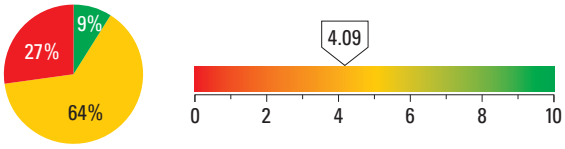
Legend: FMC ● PMC ● NMC ●

### Encroachment Data

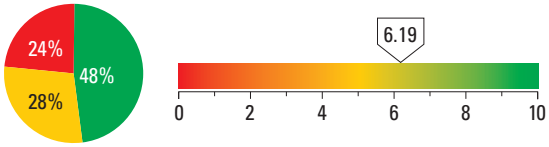
| Mission Areas | Threatened & Endangered Species | Munitions Restrictions | Spectrum | Maritime Sustainability | Airspace | Air Quality | Noise Restrictions | Adjacent Land Use | Cultural Resources | Water Quality/Supply | Wetlands | Range Transients |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Encroachment Factors | | | | | | | | | | | |
| Individual Level Training | ● | ● | ● | | | ● | ● | ● | ● | ● | ● | ● |
| Unit Level Training | ● | ● | ● | | | ● | ● | ● | ● | ● | ● | ● |
| MEU Level Training | | | | | | | | ● | | | | |
| MEB Level Training | | | | | | | | | | | | |

Legend: Minimal ● Moderate ● Severe ●

### Capability Chart and Scores




### Encroachment Chart and Scores




### Summary Observations

1. Doctrinal range requirements are derived from Operational Training Ranges Required Capabilities MCRP 3-0C. MCBH RCMP provides data for this assessment. Mission areas and attributes in "white" were not assessed or are not applicable to this installation.
2. Critical deficits have been noted in available training Landspace and Airspace, impacting the ability to conduct required training or develop sufficient ranges. Hawaii-based Marine units rely extensively, and for some training exclusively, on other Military Service ranges. Other significant deficits are the lack of modern automated targets. The ability of Marine Corps RM/T Program to address the Landspace and Airspace deficits is marginal.
3. The capability shortfalls noted generally affect all levels of training.
4. The urbanized nature of Oahu increasingly affects MCBH's capability to support fully the training requirements of Hawaii-based, operational force units. These units accomplish required training by extensively utilizing other Military Service ranges in Hawaii.

### Summary Observations

1. Over 50% of the range complex mission is moderately or severely impacted by encroachment factors. Mission areas and attributes in "white" were not assessed, or are not applicable to this installation.
2. Adjacent Land Use, Munitions Restrictions, and Noise Restrictions are the encroachment factors with greatest impact on training mission.
3. MCBH has implemented a comprehensive Encroachment Control Program, with an active community relations effort as the core element of its strategy. In support of this effort, an overarching, headquarters-level ECP is planned for FY2011/FY2012.
4. The urbanized nature of Oahu with its associated impacts on range use increasingly affects MCBH's capability to support the home-stationed, operational force units' training requirements fully. Units accomplish required training by extensively utilizing other Military Service ranges in Hawaii.

## MCBH 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** | 4.47 | 4.47 | 4.55 | 4.09 | **Encroachment Scores** | 7.27 | 7.27 | 6.19 | 6.19 |
| Impacts from key range capabilities shortcomings resulted in PMC designations for this installation during FY2008–FY2011, when assessing the installation's ability to support Marine Corps Task 1.7 (Support Maneuver through the Provision of Training Areas) and Marine Corps Task 3.3 (Support Fires through the Provision of Ranges and Training Areas). The top three capabilities and/or enhancements required to facilitate transition to FMC include: (1) sufficient Landspace and Airspace to support a Marine Expeditionary Unit/Battalion Landing Team MEU/BLT non-live fire maneuver in the Hawaiian Islands, (2) fully resourced Range Control facility, and (3) scored aviation and ground ranges. | | | | | Impacts from key encroachment factors resulted in PMC designations for this installation during FY2008–FY2011, when assessing the installation's ability to support Marine Corps Task 1.7 (Support Maneuver through the Provision of Training Areas) and Marine Corps Task 3.3 (Support Fires through the Provision of Ranges and Training Areas). Successful mitigation of key encroachment factors, including (1) Airspace restrictions, (2) frequency Spectrum limitations, and (3) urban growth, are required to facilitate transition to a FMC designation. | | | | |

## MCBH Detailed Comments

Capability Observations

| Attributes | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **Landspace** | Individual Level Training | 🟡 | MCBH ranges support limited live fire training at the individual level. Live fire training of artilllery-men and heavy mortar-men are prohibited on MCBH ranges. Convoy operations training is not feasible due to space constraints. Combat logistics training using heavy equipment is severely constrained by space limitations. Required training relies on use of other Military Service ranges and Airspace in Hawaii, which also requires travel with associated costs, and is further constrained by competition to use the ranges. The logistics, costs, and time to conduct required training increase when it is conducted off island at an other Military Service range. |
| | Unit Level Training | 🔴 | Same as above. |
| | MEU Level Training | 🔴 | Due to a lack of sufficient training lands, battalion-level training is not feasible. Home-stationed units of 3D Marine Infantry Regiment rely on the use of other Military Service ranges and Airspace in Hawaii to accomplish their training. The logistics, costs, and time to conduct required training increase when it is conducted off island at an other Military Service range. |
| **Airspace** | Unit Level Training | 🟡 | There is no restricted Airspace over MCBH ranges. There are no aviation over-land, low-level training routes on Oahu. Units rely on other Military Service ranges and Airspace to complete their training requirements. The logistics, costs, and time to conduct required training increase when it is conducted off island at an other Military Service range. |
| **Targets** | Individual Level Training | 🟡 | MCBH ranges lack automated, fixed and mobile targets. This shortfall reduces training realism, effectiveness, and training assessment capability. A lack of available training space severely constrains options for range development, threat system employment, and target emplacement; consequently, this shortfall is not likely to be remedied on MCBH ranges. |
| | Unit Level Training | 🟡 | Same as above. |
| | MEU Level Training | 🔴 | Same as above. Training constraints due to lack of available training space are most severe for larger units and MAGTFs. |
| **Threats** | Individual Level Training | 🟡 | MCBH ranges lack realistic, modern threat representation/simulation capability. This shortfall reduces training realism, effectiveness, and training assessment capability. A lack of available training space severely constrains options for range development, threat system employment, and target emplacement; this shortfall is not likely to be remedied on MCBH ranges. |
| | Unit Level Training | 🟡 | Same as above. |
| | MEU Level Training | 🔴 | Same as above. Training constraints due to lack of available training space are most severe for larger units and MAGTFs. |
| **Scoring & Feedback System** | Individual Level Training | 🟡 | The MCBH range complex lacks real-time training feedback systems. This shortfall reduces training realism, effectiveness, and training assessment capability. The RM/T Program is addressing shortfalls, consistent with available resources and Service priorities. Increased use of Multipurpose Integrated Laser Engraving System (MILES) 2000-type technology and renewal of the Location of Misses and Hits (LOMAH) maintenance contract for rifle marksmanship range will help to mitigate some instrumentation shortfalls. |
| | Unit Level Training | 🟡 | Same as the preceding comment. In addition, the lack of available training space severely constrains options for range development, threat system employment, and target emplacement. |
| | MEU Level Training | 🔴 | Same as above. |
| **Infrastructure** | Individual Level Training | 🟡 | Range infrastructure enhancements, including communications, Range Control systems, and staffing requirements are being addressed through the Marine Corps RM/T Program, as consistent with programmatic priorities and subject to available funding. |
| | Unit Level Training | 🟡 | Same as above. |

**Figure 3-19** Marine Corps Capability and Encroachment Assessment Detail (continued)

## MCBH Detailed Comments

Capability Observations

| Attributes | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **Small Arms Ranges** | Individual Level Training |  | As noted above, insufficient land area (Landspace) for range development limits required small arms training to static ranges. The comments above regarding deficits in Targets, Threat Systems, and Scoring & Feedback capabilities are also pertinent. This shortfall reduces the effectiveness of live fire training. Units rely on other Services, more advanced range capabilities to meet training requirements. |
| **Collective Ranges** | Unit Level Training |  | As noted above, insufficient land area (Landspace) for range development and lack of special use Airspace preclude conducting collective training, except at most basic levels on MCBH ranges. This shortfall limits the utility of MCBH ranges to support collective training. Units are forced to use available other Military Service ranges to accomplish required training. |
| **MOUT Ranges** | Individual Level Training |  | MCBH MOUT Facilities are insufficient to meet training needs. Consequently, competition to use these facilities is keen. Development of new MOUT Facilities has received focused attention throughout the Marine Corps. At MCBH (Bellows Training Area), investments in state-of-the-art MOUT Facilities are programmed. Further, construction of a modular MOUT at the U.S. Army's Pohakuloa Training Area is programmed. RM/T Program is continuing to address shortfalls consistent with available resources and Service priorities. |
| | Unit Level Training |  | Same as above. |
| | MEU Level Training |  | Same as above. |

Encroachment Observations

| Factors | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **Munitions Restrictions** | Individual Level Training |  | Live fire training using artillery or 81 mm mortar munitions are prohibited on MCBH ranges. This shortfall negatively impacts training for infantry weapons companies and artillery batteries. These units are forced to accomplish this training at other Service ranges in Hawaii. |
| | Unit Level Training |  | Same as above. |
| **Noise Restrictions** | Individual Level Training |  | Simulated Close Air Support (SIMCAS) training that supports beach landings during Rim of the Pacific (RIMPAC), a multi-national exercise, have been suspended due to noise complaints received from the local community. |
| | Unit Level Training |  | Same as above. |
| **Adjacent Land Use** | Individual Level Training |  | Due to the proximity of civilian housing and other community infrastructure, live fire training is prohibited at Marine Corps Training Area Bellows (an amphibious and MOUT training area), and is limited at Kaneohe Bay. Encroaching development continues with, for example, construction of a health clinic adjacent to Bellows. The urbanized character of the area constrains the development of ranges. As a result, training is generally confined to non-live fire events or the use of static positions when firing small arms. Extremely limited ship-to-shore training areas are available. Community noise concerns, as noted above, are pervasive. Light sources in surrounding communities preclude night vision training for air crews. Convoy training on public roads is not feasible due to traffic congestion. All of these constraints reduce the effectiveness of training to some extent. As a result, training is often often forced off island to other Service ranges. |
| | Unit Level Training |  | Same as above. |
| | MEU Level Training |  | Same as above. |
| **Cultural Resources** | Individual Level Training |  | Some existing MCBH range areas are considered archaeologically or culturally sensitive and cannot be disturbed. In some instances, these sites restrict training or preclude expanding training facilities. Environmental impacts analyses address these issues, as appropriate. |
| | Unit Level Training |  | Same as above. |
| **Range Transients** | Individual Level Training |  | MCBH live fire ranges are required to cease operations when civilian watercraft enter the confines of a range surface danger zone (SDZ), which extends into the ocean behind the impact area. These intermittent cease fire events disrupt and degrade live fire training events. The cost to provide personnel to watch the area for these intrusions is approximately 3,000 man-hours per year. To mitigate these training interruptions, the following measures have been adopted: placing personnel to watch for boat traffic in the range's SDZ; providing the ranges with radios to communicate with boat traffic; and directing available military vessels to intercept civilian boats in SDZs. In addition, updated notices to all mariners have been published. |
| | Unit Level Training |  | Same as above. |

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**Figure 3-19** Marine Corps Capability and Encroachment Assessment Detail (continued)

## MCB Japan Assessment Details

### Range Mission Description

MCB Japan provides range capabilities to support the training of Marines, Marine Corps units, MAGTF elements, and MAGTFs in the mission-essential tasks of modern expeditionary warfare. This includes training the Third Marine Expeditionary Force (III MEF) and other units assigned to the installation. Additionally, MCB Japan supports training of the other uniformed Services based in Japan and the Japanese Self-Defense Force.

### 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 | | | | | | | | | | | | |
| Individual Level Training | NMC | PMC | FMC | | PMC | NMC | PMC | FMC | PMC | PMC | | FMC | |
| Unit Level Training | NMC | NMC | PMC | | NMC | NMC | PMC | FMC | PMC | | NMC | PMC | |
| MEU Level Training | NMC | NMC | NMC | | NMC | NMC | NMC | FMC | PMC | | NMC | PMC | |
| MEB Level Training | | | | | | | | | | | | | |

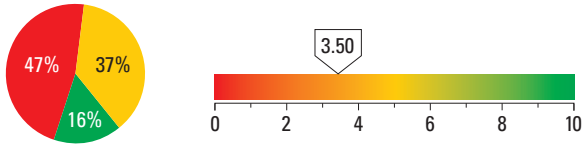
Legend: FMC (Fully Mission Capable), PMC (Partially Mission Capable), NMC (Not Mission Capable)

### Encroachment Data

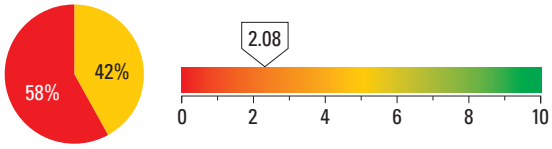
| Mission Areas | Threatened & Endangered Species | Munitions Restrictions | Spectrum | Maritime Sustainability | Airspace | Air Quality | Noise Restrictions | Adjacent Land Use | Cultural Resources | Water Quality/Supply | Wetlands | Range Transients |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Encroachment Factors | | | | | | | | | | | |
| Individual Level Training | | Moderate | | | Moderate | | Moderate | Severe | | | | |
| Unit Level Training | | Severe | | | Severe | | Moderate | Severe | | | | |
| MEU Level Training | | Severe | | | Severe | | Moderate | Severe | | | | |
| MEB Level Training | | | | | | | | | | | | |

Legend: Minimal, Moderate, Severe

### Capability Chart and Scores




### Encroachment Chart and Scores




### Summary Observations

1. MCB Japan includes Camp Smedley D. Butler, Okinawa, Japan, and Combined Arms Training Center (CATC) Camp Fuji, Japan. The Marine Corps initiated development of a RCMP for MCB Japan late in FY2009, with completion anticipated in FY2011/FY2012. The RCMP will include both encroachment assessments and detailed assessments of range capabilities. Complete assessments are included in this report and are based on information from the in-progress RCMP.
2. Deficits noted in available Landspace and Airspace are the most critical shortfalls. The lack of Targets and Threats Capabilities are additional critical shortfalls.
3. While CATC Camp Fuji Japan, on mainland Japan, provides additional range capabilities, the bulk of III MEF units based in WestPac are located in Okinawa. Consequently, the bulk of the training requirements for Okinawa-based units must be accomplished in Okinawa because of the time, cost, and range availability associated with training at CATC.

### Summary Observations

1. MCB Japan includes Camp Smedley D. Butler, Okinawa, Japan, and CATC Camp Fuji, Japan. The Marine Corps initiated development of a RCMP for MCB Japan late in FY2009, with completion anticipated in FY2011/FY2012. The RCMP will include both encroachment assessments and detailed assessment of range capabilities. Complete assessments are included in this report, based on information from the in-process RCMP.
2. The greatest encroachment challenges facing MCB Japan ranges in Okinawa are Adjacent Land Use, Munitions Restrictions, and Airspace.

## MCB Japan 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** | N/A | N/A | N/A | 3.79 | **Encroachment Scores** | N/A | N/A | N/A | 2.08 |
| When assessing the installation's ability to support Marine Corps Task 1.7 (Support Maneuver through the Provision of Training Areas) and Marine Corps Task 3.3 (Support Fires through the Provision of Ranges and Training Areas), impacts from key range capabilities shortcomings resulted in PMC designations for this installation in 2011. The top three capabilities and/or enhancements required to facilitate transition to FMC include: (1) enhanced/scored ground combat element direct and indirect fire ranges, (2) MAGTF combined arms live fire and maneuver training capability, and (3) scored aviation ranges (rotary and fixed wing). | | | | | Impacts from key encroachment factors resulted in PMC designations for this installation in 2011 when assessing the installation's ability to support Marine Corps Task 1.7 (Support Maneuver through the Provision of Training Areas) and Marine Corps Task 3.3 (Support Fires through the Provision of Ranges and Training Areas). Successful mitigation of key encroachment factors, including (1) Airspace restrictions, (2) Adjacent Land Use/urban growth, and (3) Munitions Restrictions are required to facilitate transition to a FMC designation. | | | | |

## MCB Japan Detailed Comments

Capability Observations

| Attributes | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **Landspace** | Individual Level Training | 🔴 | Effective training is possible on Okinawa; however, it will take imagination, creativity, and a continuously-aggressive outreach program to comply with the physical limitations of being located on a small island. The Central Training Area (the CTA) comprises MCB Camp Butler's training facilities. Public roads trisect and surround the CTA. Two impact areas occupy a significant portion of the south and north the CTA. The largest section of maneuver area is approximately 7.5 km x 3 km, but it is a heavily vegetated terrain full of ravines and, therefore, can restrict mobility. As such, this small area limits the types of training that can be conducted and the types of weapons that can be fired. Conversely, all weapons systems organic to the MEU can be fired within the CTA, with limitations. For example, not-fired and wire-guided munitions are excluded due to environmental limitations and political agreements on Okinawa. The Defense Policy Review Initiative (DPRI) is a U.S. Government/ Government of Japan (USG/GoJ) agreement signed at the Secretary of State/Secretary of Defense (State/SecDef) level that reduces the impact and scope of U.S. Marine training on Okinawa. Any expansion of training space or capability will need robust support from the State and DoD levels through the USG/ GoJ Joint Committee. |
| | Unit Level Training | 🔴 | Same as above. |
| | MEU Level Training | 🔴 | Same as above. |
| **Airspace** | Individual Level Training | 🟡 | The dimensions of the SUA is limited over the CTA, especially vertically. Its ceiling varies from 1,000 ft above Mean Sea Level (MSL) to 3,000 ft MSL. Some of the instrument approaches are into Kadena Air Base and overlie this SUA. Additionally, the relatively low ceilings for this SUA are minimally adequate to support individual weapons firing; however, expanding this SUA vertically is not likely to happen. |
| | Unit Level Training | 🔴 | With SUA over the CTA capped at either 1,000' or 3,000' MSL. Mortars must fire at a minimum charge to preclude exiting the Airspace. Fixed wing aircraft cannot support training operations within the CTA.<br>The limitations imposed on mortar fires limit combined-arms fires to platoon level. Fixed wing aircraft cannot operate within the CTA to support ground training, but CAS is available at nearby U.S. Air Force ranges just off Okinawa. Expanding this SUA vertically is being explored with the U.S. Air Force and the Japanese Civil Aeronautics Bureau. |
| | MEU Level Training | 🔴 | Same as above. |
| **Seaspace** | Unit Level Training | 🟡 | Per agreement with the GOJ, there are several water surface areas available for training 120 days per year. Two small training beach areas, Kin Red and Kin Blue, provide access to the sea and land, but traveling from them requires the use of public roads. Available beaches are not contiguous with the available training space within the CTA or at CATC Fuji, and no beach training areas exist on Ie Shima island currently. The limited beach areas for landings precludes conducting large-scale amphibious assaults or raids. The DPRI is a U.S. Government/GOJ agreement signed at the State/SecDef level which agrees to reduce the impact and scope of U.S. Marine training on Okinawa. Any expansion of training space or capability will need robust support from the State/SecDef level through the USG/GoJ Joint Committee. |
| | MEU Level Training | 🔴 | Same as above. |
| **Targets** | Individual Level Training | 🟡 | Twenty-five vehicle type steel targets have been recently added across five ranges within the CTA as part of the Operational Range Clearance Program. The lack of adequate targets makes it difficult to improve weapons skills. |
| | Unit Level Training | 🔴 | Same as above. |
| | MEU Level Training | 🔴 | Same as above. |

**Figure 3-19** Marine Corps Capability and Encroachment Assessment Detail (continued)

## MCB Japan Detailed Comments

Capability Observations

| Attributes | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **Threats** | Individual Level Training |  | There are no Electronic Warfare (EW) threats for aviation on Okinawa or mainland Japan. There is no standing Operating Force (OPFOR) to support ground training. Aviators are unable to familiarize themselves with EW Threat Systems or practice tactics against them. Ground OPFOR normally comes from a sister unit, which is not trained to execute threat tactics, and thus, provides a less effective training experience. Approaches to mitigating these shortfalls are being analyzed in the ongoing RCMP process. |
| | Unit Level Training |  | Same as above. |
| | MEU Level Training |  | Same as above. |
| **Scoring & Feedback System** | Individual Level Training |  | There are a limited number of ranges at MCB Japan that have automated or scored targets. Targets that do not provide scoring are less effective for improving weapons skills. The RM/T Program provides upgrades within its available resources. |
| | Unit Level Training |  | Same as above. In addition, there are currently two ranges that provide an after action review capability (R18 and R16 Shoot House). Plans are underway to expand the capability for individual and unit level training for Range 18. |
| | MEU Level Training |  | Same as above, but even more aggravated in proportion to the size of the unit. |
| **Range Support** | Individual Level Training |  | There is limited communications capability with units in the field. Also, there is currently no capability to monitor air traffic in the training areas. Communications outages interrupt training events and there is no means to monitor air traffic situational awareness until the situation is fixed. The RM/T Program is upgrading communications capabilities and installing the Integrated Range Status System (IRSS) to provide an air picture. These improvements are planned for 2011. |
| | Unit Level Training |  | Same as above. |
| | MEU Level Training |  | Same as above. |
| **Small Arms Ranges** | Individual Level Training |  | The targetry on existing ranges is very limited, which degrades its utility. Without adequate targets to fire at, individual weapons skills are degraded. There is an initiative to place additional targets in the impact area. |
| **Collective Ranges** | Unit Level Training |  | There are two ranges in Okinawa that support live fire and maneuver (LFAM) training to the platoon level, and none for live fire convoy operations. International agreements, such as the DPRI, impact any significant attempt at expansion to develop LFAM or convoy ranges. Integrating supporting arms is limited to restricted mortar fires. This lack of LFAM and convoy ranges limits opportunities for ground units to train in an LFAM or combined-arms environment. Range Operations is working to expand the capabilities of the existing LFAM ranges. |
| | MEU Level Training |  | Same as above. |
| **MOUT Facilities** | Unit Level Training |  | There are three non-live fire, MOUT Facilities in Okinawa. The largest is an 11-building facility made up of shipping containers. This facility could support training up to a company level, but there is not enough capacity to support all of the units that need it. MOUT Facilities have tripled over the past two years, as a result of the RM/T Program, which continues to address shortfalls consistent with available assets. |
| | MEU Level Training |  | Same as above. |

Encroachment Observations

| Factors | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **Munitions Restrictions** | Individual Level Training |  | Munitions Restrictions in the CTA on Okinawa are driven primarily by three factors working in consonance: geographic constraints, political constraints, and virtually unimpeded encroachment by local communities. Per agreement with the GOJ, artillery live fire training is no longer conducted on Okinawa. Instead, it takes place at five Japanese Ground Self Defense Force ranges. Okinawa has two ranges where .50cal machine guns may be fired. At one range, the gun's barrel must be placed into a physical restraint to prevent its movement. Guns must be bore sighted and have restraining devices added to ensure no rounds impact outside of a concrete tunnel approximately 20m wide and 15m high. Land and Airspace are also not large enough to allow for close air support training on Okinawa. CAS is conducted on Air Force ranges just off of Okinawa by both Marine rotary-wing and fixed-wing units. These restrictions limit the conduct of basic and combined-arms live fire training operations to the platoon level. The DPRI, an agreement between the U.S. and Japanese governments, reduces the impact and scope of U.S. Marine training on Okinawa. Expanding training space or capability on Okinawa requires robust support from the Departments of State and Defense through the USG/GoJ. |
| | Unit Level Training |  | Same as above, but even more aggravated in proportion to the size of the unit. |
| | MEU Level Training |  | Same as above. |
| **Airspace** | Individual Level Training |  | MCB Camp Butler SUA's dimensions are very limited, particularly vertically. Its ceiling varies from 1,000 ft MSL to 3,000 ft MSL, and some of the instrument approaches into Kadena Air Base overly this SUA. Additionally, the relatively low ceilings for this SUA are minimally adequate to support individual weapons firing. Expanding this SUA vertically is being explored with the U.S. Air Force and Japanese Civil Aeronautics Bureau. |
| | Unit Level Training |  | Same as above. In addition, the relatively low ceilings for this SUA limit live fire operations, like mortar employment and restrict fixed-wing aircraft from providing training support for ground units, such as simulated close air support. Expanding this SUA vertically is being explored with the U.S. Air Force and Japanese Civil Aeronautics Bureau; however, simulated Fixed-Wing/Rotary-Wing (RW/FW) Simulated Close Air Support (SIMCAS) remain unlikely because of the size and geographic constraints of the training area and existing political constraints and noise concerns. Accordingly, FW/RW SIMCAS and Fire Support Team/FAC training occur at an island location off the west coast of the main island of Okinawa, well clear of the CTA. Workarounds for mortar firing currently exist by putting someone from Range Control in the Naha Approach Control to provide positive communications between the firing party and the control tower, calling a cease-fire when aircraft are in the Airspace. |
| | MEU Level Training |  | Same as above. |
| **Noise Restrictions** | Individual Level Training |  | Small villages and municipalities surround the CTA, particularly the Hansen impact area, located on the southwest end of the CTA. Japan has no zoning laws. Thus, there is no buffer between these towns and the CTA. Noise from training, especially live fire operations, migrates off-base. As a result of having to operate in such a compact, urbanized area, training operations may be limited. Although the U.S. Marine Corps respects its surrounding communities, it must continue to train locally and conduct live fire operations. Therefore, through its aggressive outreach program, MCB Japan works to minimize this impact. During certain times of the year, training operations may be limited or suspended as a courtesy during school testing. |
| | Unit Level Training |  | Same as above. |
| | MEU Level Training |  | Same as above. |
| **Adjacent Land Use** | Individual Level Training |  | Public roads trisect the CTA and small towns surround it. This is particularly evident near the Hansen impact area, located on the southwest end of the CTA. In addition, tacit farms occupy a few areas within the borders of the CTA. Since there is no buffer between these towns and the CTA, noise from training, such as that from live fire operations, migrates off-base. During certain times of the year, training operations may be limited or suspended to prevent fires. Developing additional ranges in such a compact, urbanized area is also very challenging. As a result of these constraints, training operations have been limited in the past, and expanding the ranges is very difficult. These limitations require flexibility and creative training to realize effective training support. Furthermore, the DPRI reduces the impact and scope of U.S. Marine training on Okinawa. Expanding training space or capability requires support from the Departments of State and Defense through the USG/GoJ. |
| | Unit Level Training |  | Same as above. |
| | MEU Level Training |  | Same as above. |

**Figure 3-19** Marine Corps Capability and Encroachment Assessment Detail (continued)

## MCB Camp Lejeune Assessment Details

### Range Mission Description

MCB Camp Lejeune provides range capabilities to support training of Marines, Marine Corps units, MAGTF elements, and MAGTFs in the mission essential tasks of modern expeditionary warfare, including the training requirements of the Second Marine Expeditionary Force (II MEF) and other units assigned to the installation.

### 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 |
| Individual Level Training | FMC | PMC | FMC | | PMC | PMC | PMC | PMC | FMC | FMC | | PMC | |
| Unit Level Training | PMC | PMC | FMC | | PMC | NMC | PMC | PMC | FMC | | PMC | PMC | |
| MEU Level Training | NMC | PMC | FMC | | PMC | NMC | PMC | PMC | FMC | | PMC | PMC | |
| MEB Level Training | | | | | | | | | | | | | |

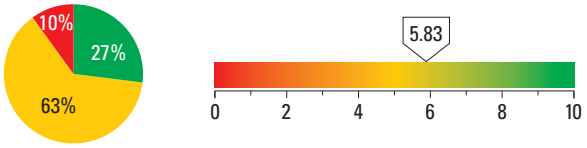
Legend: FMC, PMC, NMC

### Encroachment Data

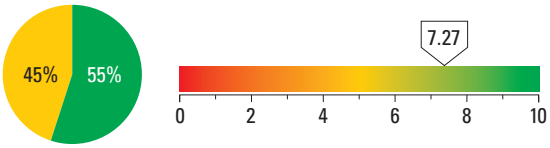
| Mission Areas | Encroachment Factors | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Threatened & Endangered Species | Munitions Restrictions | Spectrum | Maritime Sustainability | Airspace | Air Quality | Noise Restrictions | Adjacent Land Use | Cultural Resources | Water Quality/Supply | Wetlands | Range Transients |
| Individual Level Training | PMC | PMC | FMC | | PMC | FMC | PMC | PMC | FMC | FMC | FMC | FMC |
| Unit Level Training | PMC | PMC | FMC | | PMC | FMC | PMC | PMC | FMC | FMC | PMC | FMC |
| MEU Level Training | PMC | PMC | FMC | | PMC | FMC | PMC | PMC | FMC | FMC | PMC | PMC |
| MEB Level Training | | | | | | | | | | | | |

Legend: Minimal, Moderate, Severe

### Capability Chart and Scores




### Encroachment Chart and Scores




### Summary Observations

1. Doctrinal range requirements are derived from Operational Training Ranges Required Capabilities MCRP 3-0C. MCB Camp Lejeune provides data for this assessment. Mission areas and attributes in "white" were not assessed, or are not applicable to this installation.
2. Critical deficits are noted in available training Landspace and Airspace, which are impacting these installation's ability to conduct required training or develop sufficient ranges. Other significant deficits are lack of modern automated targets and Threat Systems.
3. These capability shortfalls generally affect all levels of training at this range.

### Summary Observations

1. The references for this assessment are Operational Training Ranges Required Capabilities MCRP 3-0C and the RCMP. Mission areas and attributes in "white" were not assessed, or are not applicable to this installation.
2. 48% of the training mission is moderately affected by encroachment. MCB Camp Lejeune has considerable encroachment at all levels of training. MEU-level training is most severely constrained.

## MCB Camp Lejeune Assessment Details

| Historical Information, Results, and Future Projections | | | | |
|---|---|---|---|---|
| **Calendar Year** | 2008 | 2009 | 2010 | 2011 |
| **Capability Scores** | 5.24 | 5.24 | 6.33 | 5.83 |

Impacts from key range capabilities shortcomings resulted in PMC designations for this installation during FY2008–FY2011, when assessing the installation's ability to support Marine Corps Task 1.7 (Support Maneuver through the Provision of Training Areas) and Marine Corps Task 3.3 (Support Fires through the Provision of Ranges and Training Areas). Top capabilities and/or enhancements required to facilitate transition to FMC include: (1) off-base MV-22 tactical training areas/landing zones, (2) MAGTF level instrumented MOUT capabilities, (3) upgraded and enhanced range safety and exercise C2 communications systems, (4) upgrade and modernize targets, (5) a combined arms maneuver course for individual, collective, and MEU level training, and (6) small arms ranges are generally 1970 vintage designs. These deficiencies have or will be addressed by Urgent Needs Statement (off base Tactical Training Areas supporting flight ops), PMC funded training system projects, Enterprise Land Mobile Radio (ELMR) fielding, and MILCON.

| Historical Information, Results, and Future Projections | | | | |
|---|---|---|---|---|
| **Calendar Year** | 2008 | 2009 | 2010 | 2011 |
| **Encroachment Scores** | 7.58 | 7.58 | 7.58 | 7.58 |

Impacts from key encroachment factors resulted in PMC designations for this installation during FY2008–FY2011, when assessing the installation's ability to support Marine Corps Task 1.7 (Support Maneuver through the Provision of Training Areas) and Marine Corps Task 3.3 (Support Fires through the Provision of Ranges and Training Areas). Successful mitigation of key encroachment factors, including (1) Airspace restrictions, (2) frequency Spectrum limitations, and (3) urban growth, are required to facilitate transition to a FMC designation.

## MCB Camp Lejeune Detailed Comments

Capability Observations

| Attributes | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **Landspace** | Unit Level Training | 🟡 | Limited available land training area limits options for siting/development of new ranges. Range planning seeks to maximize efficient use of available land for training. Expansion is not feasible. Landspace requirements include off-installation areas for dedicated landing zone use by MV-22 aircraft. Lack of ground space for unit level training per the Operational Training Ranges Required Capabilities MCRP 3-0C. The FY-11 Tank OAG highlighted the fact that maneuver training for tanks cannot be accomplished above the platoon level. |
| | MEU Level Training | 🔴 | Landspace for the training area does not meet Operational Training Ranges Required Capabilities MCRP 3-0C requirements. Range planning seeks to maximize efficient use of available land for training. Expansion is not feasible. Lack of ground space for unit level training per the Operational Training Ranges Required Capabilities MCRP 3-0C. The FY-11 Tank OAG highlighted the fact that maneuver training for tanks cannot be accomplished above the platoon level. |
| **Airspace** | Individual Level Training | 🟡 | Airspace extends from surface the to only 17,999 ft.; it does not extend 10 nautical miles (NM) beyond land area as necessary to avoid "spill outs" by military aircraft and incursions over ranges by civilian aircraft; supersonic flight is not authorized; fixed-wing flight operations restricted. Urbanization issues (e.g., noise and light) limit use of training Airspace that is not SUA (e.g., Terrain Flight [TERF]), including extended range Airspace areas required for MV-22 tactical training. |
| | Unit Level Training | 🟡 | Same as above. |
| | MEU Level Training | 🟡 | Same as above. |
| **Targets** | Individual Level Training | 🟡 | Not all ranges and targets meet Training Readiness/Individual Training Standards (T&R/ITS) training requirements for weapon systems, specifically for Infantry, Expeditionary Fighting Vehicle (EFV), and engineering systems; range area, distance, and feedback are limited; the EFV waterborne requirement is not met; minimal urban/structural targets. The RM/T Program is addressing shortfalls consistent with available resources and Service priorities. |
| | Unit Level Training | 🟡 | Targets do not meet full T&R training requirements. A-G bombs limited to inert only. The RM/T Program is addressing shortfalls consistent with available resources and Service priorities. |
| | MEU Level Training | 🟡 | Targets are not all set to T&R/ITS standards; A-G bombs are limited to inert only. The RM/T Program is addressing shortfalls consistent with available resources and Service priorities. |
| **Threats** | Individual Level Training | 🟡 | Limited to MILES 2000 equipment during tactical operations. The RM/T Program is addressing shortfalls consistent with available resources and Service priorities. |
| | Unit Level Training | 🔴 | OPFOR are provided by contracted Iraqi or Afghan Role Players who are not formally instructed on enemy tactics, techniques, and procedures; however, Role Players provide a second best alternative. |
| | MEU Level Training | 🔴 | No dedicated OPFOR, normally makeshift and controlled by handlers who are not trained to enemy tactics or techniques. |
| **Scoring & Feedback System** | Individual Level Training | 🟡 | Tracking—Radar Inputs Only; RC—2-D Capability Only; EC&C—Operational Unit Owned and Operated; M&S—Only S-S Scenarios; Scoring—At least 1 range to Training Standard; Debrief/AAR—Primarily Observers/Hit-or-Miss Targets. The RM/T Program is addressing shortfalls consistent with available resources and Service priorities. |
| | Unit Level Training | 🟡 | Same as above. |
| | MEU Level Training | 🟡 | Same as above. |

**Figure 3-19** Marine Corps Capability and Encroachment Assessment Detail (continued)

## MCB Camp Lejeune Detailed Comments

Capability Observations

| Attributes | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **Infrastructure** | Individual Level Training | | Range communication systems do not support full spectrum of Range Control functions. This deficiency is being addressed through fielding of the ELMR system. |
| | Unit Level Training | | Same as above. |
| | MEU Level Training | | Same as above. |
| **Collective Ranges** | Unit Level Training | | See comments above regarding Landspace, Airspace, Range Control, and Targets deficits. The RM/T Program is addressing shortfalls consistent with available resources and Service priorities. |
| | MEU Level Training | | Same as above. |
| **MOUT Facilities** | Individual Level Training | | Development of new MOUT Facilities has received focused attention throughout the Marine Corps, resulting in significant improvements; however, deficiencies remain. The RM/T Program is continuing to address shortfalls consistent with available resources and Service priorities. |
| | Unit Level Training | | Same as above. |
| | MEU Level Training | | Same as above. |

Encroachment Observations

| Factors | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **Threatened & Endangered Species** | Individual Level Training | | There are constraints on training due to the presence of the Endangered Species Act (ESA)-listed Red-Cockaded Woodpecker (RCW), especially within the High Value Training Areas. These constraints are addressed with the Environmental Division and the U.S. Fish and Wildlife Service (the USFWS) as range development and maneuver training requirements are identified. Bombing operations are restricted to inert ordnance. Bombing with live ordnance has been shifted to other bases. Consultations with the USFWS are ongoing concerning impacts of vegetation clearing within the G-10 impact area regarding RCW sites surrounding the impact area. |
| | Unit Level Training | | Same as above. Additionally, constraints due to T&E species and wetlands confine tracked and armored vehicles such as tanks to existing trails; therefore maneuver training for tanks cannot be accomplished above the platoon level. Additionally, habitat and other environmental concerns have made range enhancements and site selection for new ranges difficult, and, in some instances, have forced the installation to choose less desirable alternatives or limit range size/capability. |
| | MEU Level Training | | Same as above. Additionally, as a result of the constraints on training due to presence on beaches of the ESA-listed Sea Turtles during breeding season (May–Oct), use of much of the beach is restricted for amphibious vehicles and other types of training during this time. Dunes are "out of bounds" and must be maneuvered around. The remedy is elusive. |
| **Munitions Restrictions** | Individual Level Training | | Bombing operations at MCB Camp Lejeune are restricted to inert ordnance, due in part to concerns about the noise levels from use of explosive ordnance. Additional constraints are due to restrictions associated with presence of the ESA-listed RCW in the impact area and range areas; consultations are ongoing with the USFWS. |
| | Unit Level Training | | Tank operations at SR-7 Range have been suspended since 1998 due to noise complaints from the nearby community (although noise levels were within DoD standards). |
| | MEU Level Training | | The use of smoke at Camp Johnson is prohibited, except when the wind blows to the south, to ensure smoke does not drift over Highway 17, which, due to recent construction, is now quite close to the training areas at Camp Johnson. (CLUS App. D. Part II. 1 and 2) |
| **Airspace** | Individual Level Training | | No fixed wing operations are allowed in R5303 and R5304. Ranges that the SUA supports cannot be active unless the area has aviation radar coverage. R5306D cannot be expanded, due to civilian use of local beaches and the Hwy 17 corridor. Ship to shore movements require aircraft to utilize Airspace other than restricted areas to complete scenario based training. Increased civilian density in nearby areas leads to increases in noise complaints about aircraft flying tactical profiles during the day and night. As encroachment continues, Airspace and operating hours will become more restrictive. (MCAS New River adjacent to MCB Camp Lejeune) |
| | Unit Level Training | | Same as above. |
| | MEU Level Training | | Same as above. |
| **Noise Restrictions** | Individual Level Training | | Off-base noise concerns have resulted in the relocation of certain training venues, such as the Tank Live fire Range and steel cutting pit, to more centralized areas of the installation, which further reduces available training lands for non-noise producing training venues. The installation's flexibility to absorb the requirements of the future force structure and weapons training needs may be hampered by noise constraints. Remedies include ongoing community liaison. |
| | Unit Level Training | | Same as above. |
| | MEU Level Training | | Same as above. |

Capability Observations

| Attributes | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **Adjacent Land Use** | Individual Level Training | ● | From 1990 to 2000, the population of the Camp Lejeune region (Onslow County, NC) was essentially stable (1990 pop-149,838; 2000 pop.-150,335 [U.S. Census Bureau]). Between 2000 and 2008, the population surged, with an increase of over 10%. This trend continues, resulting in increased construction of housing and other urban infrastructure in the vicinity of the MCB and associated training areas and Airspace. The changing land use increasingly impacts the Base's flexibility to execute training. Examples of impacts include Noise Restrictions affecting munitions use and night training, increased light that conflicts with flight crews use of night vision equipment, and alteration of flight pattern to avoid new housing areas. Actions to address this challenge include aggressive community liaison; however, remedies remain elusive. |
| | Unit Level Training | ● | Same as above. |
| | MEU Level Training | ● | Same as above. |
| **Wetlands** | Unit Level Training | ● | Regulatory constraints due to wetlands and also T&E species confine tracked and armored vehicles such as tanks to existing trails; therefore maneuver training for tanks cannot be accomplished above the platoon level. |
| | MEU Level Training | ● | Same as above. |
| **Range Transients** | MEU Level Training | ● | Silting in the Intracoastal Waterway causes civilian vessels (usually recreational) to sometimes run aground in inlets adjacent to or within the Base (Browns and New River), leading to training disruptions . Remedies include ongoing activities with community liaison. |

**Figure 3-19** Marine Corps Capability and Encroachment Assessment Detail (continued)

## MCB Camp Pendleton Assessment Details

### Range Mission Description

MCB Camp Pendleton provides range capabilities to support training of Marines, Marine Corps units, MAGTF elements, and MAGTFs in the mission essential tasks of modern expeditionary warfare, including the training requirements of the First Marine Expeditionary Force (I MEF) and other units assigned to the installation.

### 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 |
| Individual Level Training | FMC | PMC | FMC | | FMC | PMC | PMC | FMC | PMC | FMC | | PMC | |
| Unit Level Training | PMC | PMC | FMC | | PMC | PMC | NMC | FMC | PMC | | PMC | PMC | |
| MEU Level Training | NMC | PMC | FMC | | PMC | NMC | NMC | FMC | PMC | | PMC | PMC | |
| MEB Level Training | | | | | | | | | | | | | |

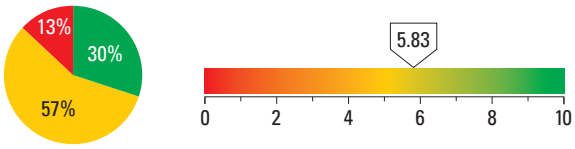
Legend: FMC, PMC, NMC

### Encroachment Data

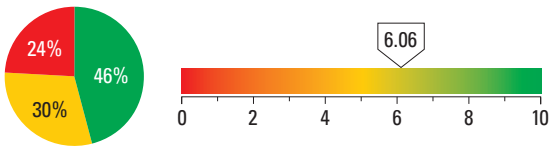
| Mission Areas | Encroachment Factors | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Threatened & Endangered Species | Munitions Restrictions | Spectrum | Maritime Sustainability | Airspace | Air Quality | Noise Restrictions | Adjacent Land Use | Cultural Resources | Water Quality/Supply | Wetlands | Range Transients |
| Individual Level Training | PMC | FMC | PMC | | PMC | FMC | FMC | PMC | PMC | FMC | NMC | FMC |
| Unit Level Training | PMC | FMC | PMC | | PMC | FMC | FMC | NMC | NMC | FMC | NMC | FMC |
| MEU Level Training | NMC | FMC | PMC | | PMC | FMC | FMC | NMC | NMC | FMC | NMC | FMC |
| MEB Level Training | | | | | | | | | | | | |

Legend: Minimal, Moderate, Severe

### Capability Chart and Scores




### Encroachment Chart and Scores




### Summary Observations

1. Doctrinal range requirements are derived from Operational Training Ranges Required Capabilities MCRP 3-0C. The MCB Camp Pendleton RCMP provides data for this assessment. The mission area and capability attributes in "white" were not assessed, or are not applicable to this installation.
2. Deficits noted in available training Landspace and Airspace, and lack of Threats capabilities, automated Targets, and Scoring & Feedback Systems.
3. These capability shortfalls generally affect all levels of training.

### Summary Observations

1. The references for this assessment are Operational Training Ranges Required Capabilities MCRP 3-0C and the Camp Pendleton RCMP.
2. The mission area and capability attributes in "white" were not assessed, or are not applicable to this installation.
3. 24% of the training mission is severely affected by encroachment, and 30% is moderately affected. Urbanization trends in the region will continue to exert ever-increasing pressure on training capabilities.
4. Development of the installation's ECP is ongoing (expected completion: FY2012).

### Historical Information, Results, and Future Projections

| Calendar Year | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|
| Capability Scores | 4.52 | 4.52 | 5.67 | 5.83 |

Impacts from key range capabilities shortcomings resulted in PMC designations for this installation during FY2008–FY2011, when assessing the installation's ability to support Marine Corps Task 1.7 (Support Maneuver through the Provision of Training Areas) and Marine Corps Task 3.3 (Support Fires through the Provision of Ranges and Training Areas). The top three capabilities and/or enhancements required to facilitate transition to FMC include: (1) completion of approved range modernization projects, (2) consistent/permanent funding for range maintenance real property sustainment, and (3) upgrade of target systems and shoot houses.

### Historical Information, Results, and Future Projections

| Calendar Year | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|
| Encroachment Scores | 6.67 | 6.67 | 6.82 | 6.06 |

Impacts from key encroachment factors resulted in PMC designations for this installation during FY2008–FY2011, when assessing the installation's ability to support Marine Corps Task 1.7 (Support Maneuver through the Provision of Training Areas) and Marine Corps Task 3.3 (Support Fires through the Provision of Ranges and Training Areas). Successful mitigation of key encroachment factors, including (1) urban growth and Adjacent Land Use, (2) Threatened & Endangered Species, (3) Wetlands, and (4) Cultural Resources, are required to facilitate transition to a FMC designation.

## MCB Camp Pendleton Detailed Comments

Capability Observations

| Attributes | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **Landspace** | Unit Level Training | 🟡 | Land training area (Landspace) does not meet Operational Training Ranges Required Capabilities MCRP 3-0C requirements. Range planning seeks to maximize efficient use of available land for training. Expansion is not feasible. |
| | MEU Level Training | 🔴 | Same as above. |
| **Airspace** | Individual Level Training | 🟡 | Lateral Airspace does not extend 10NM beyond land area as necessary to avoid "spill outs" by military aircraft and incursions over ranges by civilian aircraft; there is insufficient lateral air space for combined arms training in accordance with Operational Training Ranges Required Capabilities MCRP 3-0C. Urbanization and encroachment issues (e.g., noise, light) limit use of training Airspace that is not SUA (e.g., TERF). |
| | Unit Level Training | 🟡 | Same as above. |
| | MEU Level Training | 🟡 | Same as above. |
| **Targets** | Unit Level Training | 🟡 | There are a number of required ranges and target areas that need modernization to meet USMC training requirements. These shortfalls span all levels of Unit training. Shortfalls include infantry and mechanized automated ranges and targets, battle-course ranges and targets, and assault/breaching/demolition ranges. The Marine Corps RM/T Program is addressing these shortfalls through range investments consistent with available resources. The RM/T Program is addressing shortfalls consistent with available resources and Service priorities. |
| | MEU Level Training | 🟡 | Same as above. |
| **Threats** | Individual Level Training | 🟡 | Camp Pendleton requires a comprehensive electronic training environment, supporting basic through advanced collective training. The capability must simulate neutral, hostile, and non-hostile ground, air defense, and airborne weapons systems; OPFOR C2; neutral, hostile, and non-hostile cryptologic systems; and hostile jamming. There are efforts underway to study OPFOR capability alternatives and to develop shortfall strategies. Role player program (not a program-of-record) is a significant training enhancement. |
| | Unit Level Training | 🟡 | Same as above. |
| | MEU Level Training | 🔴 | Same as above. Shortfalls in Threat capabilities have the most significant impact on more complex training events. |
| **Scoring & Feedback System** | Individual Level Training | 🟡 | Many existing ranges lack modern Scoring & Feedback Systems. The Marine Corps RM/T Program is addressing these shortfalls through range investments consistent with available resources. |
| | Unit Level Training | 🔴 | Unit and MEU-level training require enhanced instrumentation for training event reconstruction, debriefing, and replay. MCB Camp Pendleton generally lacks such capabilities. The Marine Corps RM/T Program continues to analyze and address these shortfalls through range investments consistent with available resources. Construction of a state-of-the-art, large, instrumented MOUT facility has mitigated the issue, but an extensive number of ranges still do not have Scoring & Feedback Systems. |
| | MEU Level Training | 🔴 | Same as above. |
| **Range Support** | Individual Level Training | 🟡 | Range radio communication system failures at times have caused the cessation of training. Not all of the ranges have telephone capability. The installation does not have exercise C2 circuits or secure communications capable for Range Control. The Marine Corps RM/T Program continues to analyze and address these shortfalls through range investments consistent with available resources. |
| | Unit Level Training | 🟡 | Same as above. |
| | MEU Level Training | 🟡 | MCB Camp Pendleton lacks comprehensive exercise control capabilities integrated with Range Control functions. The Marine Corps RM/T Program continues to analyze and address these shortfalls through range investments consistent with available resources. |
| **Collective Ranges** | Unit Level Training | 🟡 | See comments above regarding land, Airspace, Range Control, target, and scoring deficits. The Marine Corps RM/T Program continues to analyze and address these shortfalls through range investments consistent with available resources. |
| | MEU Level Training | 🟡 | Same as above. |
| **MOUT Facilities** | Individual Level Training | 🟡 | Development of new MOUT Facilities has received focused attention throughout the Marine Corps, resulting in significant improvements; however, deficiencies remain. The RM/T Program is continuing to analyze and address shortfalls through range investments consistent with available resources. |
| | Unit Level Training | 🟡 | Same as above. |
| | MEU Level Training | 🟡 | Same as above. |

**Figure 3-19** Marine Corps Capability and Encroachment Assessment Detail (continued)

## MCB Camp Pendleton Detailed Comments

Encroachment Observations

| Factors | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **Threatened & Endangered Species** | Individual Level Training | | Constraints on training, due to presence of multiple the ESA-listed species, include an inability to conduct training that requires digging/earth moving; and limitations on use of military vehicles in some training areas; limitations on training use of beaches. Of 17 miles of coast, 6,000 yards are available for training use, and only approximately 1,500 linear yards of beach is currently available for non-restricted amphibious operations, due to ESA and other regulatory constraints, and encumbrances, such as long-term leases. MCB Camp Pendelton coordinates and consults extensively with the USFWS, with the objective of reducing constraints on training resulting from application of the ESA. |
| | Unit Level Training | | Same as above. |
| | MEU Level Training | | Same as above. |
| **Spectrum** | Individual Level Training | | Competition for access to and use of the frequency Spectrum has resulted in moderate to severe impacts on some training activities, including training requiring use of satellite communications frequencies, and training with UAS. |
| | Unit Level Training | | Same as above. |
| | MEU Level Training | | Same as above. |
| **Airspace** | Individual Level Training | | Intense competition and pressure from commercial and general aviation for access to and use of Airspace in the critically overcrowded coastal Airspace corridors threatens to impact military aviation operations in ranges and training areas. These concerns are addressed in inter-agency dialogue with the FAA. |
| | Unit Level Training | | Same as above. |
| | MEU Level Training | | Same as above. |
| **Adjacent Land Use** | Individual Level Training | | High density urban infrastructure contiguous to MCB Camp Pendelton inhibits the ability to train with night vision goggles (NVGs) and constrains training in some areas, due to noise considerations. Urbanization of the region puts pressure on off-installation natural resources (including sensitive and the ESA-listed species), potentially increasing the Base's share of remaining regional resources with increased management constraints affecting training. Regional growth affects access to off installation lands for training, and inhibits NVG training by aircraft crews when transiting from offshore littoral areas or from the Base to other training areas or installations within the region. Base lands are encumbered by long-term leasing outgrants to the State of California, a nuclear power plant facility, and agriculture field operations. Initiatives have been executed to reclaim training land formerly used for agricultural leases have been executed. Buffer-lands acquisition program is being executed. Expansion is not feasible. |
| | Unit Level Training | | Same as above. The location of Interstate 5 precludes NSFS training or external load ship-to-shore aviation support training. |
| | MEU Level Training | | Same as above. |
| **Cultural Resources** | Individual Level Training | | Constraints on training, due to the presence of cultural resources, include an inability to conduct training that requires digging/earth moving in some training areas and cultural resources on beaches result in limitations on use, which are cumulative with other limitations, such as ESA-based restrictions. The Base coordinates and consults with the State Historic Preservation Office, with the objective of reducing constraints on training. |
| | Unit Level Training | | Same as above. Impacts on training from cultural resources constraints are more severe for complex unit-level and MEU-level training. |
| | MEU Level Training | | Same as above. |
| **Wetlands** | Individual Level Training | | Regulatory constraints on use of wetlands for training impose limitations on uses of riverine areas, some watershed areas, and areas that contain vernal pools. The Base coordinates and consults with the U.S. Army Corps of Engineers, with the objective of reducing constraints on training. |
| | Unit Level Training | | Same as above. |
| | MEU Level Training | | Same as above. |

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**Figure 3-19** Marine Corps Capability and Encroachment Assessment Detail (continued)

## MCB Quantico Assessment Details

### Range Mission Description

The MCB Quantico Training Range Complex mission is to provide Individual level training support to TECOM formal schools. As a secondary priority, the Quantico Range Complex supports Unit level training conducted by Marine Reserve units. Other training includes operations by the Marine Corps Embassy Security Group, non-Department of Defense (DoD) tenants (FBI, DEA), and other Federal and law enforcement agencies and university ROTC programs.

### 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** | | | | | | | | | | | | |
| Individual Level Training | FMC | FMC | | | PMC | PMC | PMC | PMC | PMC | PMC | | PMC | |
| Unit Level Training | FMC | FMC | | | PMC | PMC | PMC | PMC | PMC | | PMC | PMC | |
| MEU Level Training | | | | | | | | | | | | | |
| MEB Level Training | | | | | | | | | | | | | |

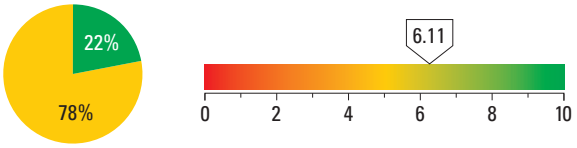
Legend: FMC, PMC, NMC

### Encroachment Data

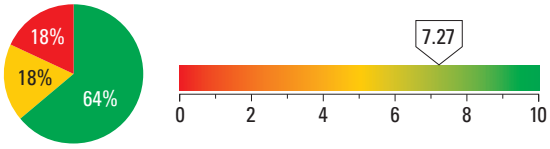
| Mission Areas | Threatened & Endangered Species | Munitions Restrictions | Spectrum | Maritime Sustainability | Airspace | Air Quality | Noise Restrictions | Adjacent Land Use | Cultural Resources | Water Quality/Supply | Wetlands | Range Transients |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Encroachment Factors** | | | | | | | | | | | |
| Individual Level Training | Minimal | Moderate | Minimal | | Moderate | Minimal | Severe | Severe | Minimal | Minimal | Minimal | Minimal |
| Unit Level Training | Minimal | Moderate | Minimal | | Moderate | Minimal | Severe | Severe | Minimal | Minimal | Minimal | Minimal |
| MEU Level Training | | | | | | | | | | | | |
| MEB Level Training | | | | | | | | | | | | |

Legend: Minimal, Moderate, Severe

### Capability Chart and Scores




### Encroachment Chart and Scores




### Summary Observations

1. Doctrinal range requirements are derived from Operational Training Ranges Required Capabilities MCRP 3-0C. MCB Quantico finalized its RCMP analysis in 4th Qtr FY2010. Observations made in the course of RCMP development are the basis for this assessment. Mission areas and attributes in "white" were not assessed, or are not applicable to this installation.
2. MCB Quantico generally has the capability to support required training; however, Unit-level training capability is limited to platoon-sized and smaller units.
3. The lack of modern, automated infantry Targets and Scoring & Feedback Systems are the deficits with greatest impact on training mission.

### Summary Observations

1. 18% of the range complex mission is moderately impacted by encroachment factors.
2. Adjacent Land Use, Munitions Restrictions, and Noise Restrictions are the encroachment factors with greatest impact on training mission.
3. Urbanization trends and associated impacts on range uses increasingly affect capability of installations to fully support initial Officer training at The Basic School, and the Infantry Officer Course MOS training.
4. Growth pressures from cantonment are reducing utility of some range areas.
5. An ECP has been completed, and is being executed.

### Historical Information, Results, and Future Projections

| **Calendar Year** | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|
| **Capability Scores** | 6.43 | 6.43 | 6.67 | 6.11 |

Impacts from key range capabilities shortcomings resulted in PMC designations for this installation during FY2008–FY2011, when assessing the installation's ability to support Marine Corps Task 1.7 (Support Maneuver through the Provision of Training Areas) and Marine Corps Task 3.3 (Support Fires through the Provision of Ranges and Training Areas). The top three capabilities and/or enhancements required to facilitate transition to FMC include: (1) instrumented MOUT capabilities, (2) fully resourced Range Control facility, and (3) upgraded and modernized targets.

### Historical Information, Results, and Future Projections

| **Calendar Year** | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|
| **Encroachment Scores** | 9.09 | 9.09 | 7.27 | 7.27 |

Impacts from key encroachment factors resulted in PMC designations for this installation during FY2008–FY2011, when assessing the installation's ability to support Marine Corps Task 1.7 (Support Maneuver through the Provision of Training Areas) and Marine Corps Task 3.3 (Support Fires through the Provision of Ranges and Training Areas). Successful mitigation of key encroachment factors, including (1) urban growth and Adjacent Land Use, (2) Airspace restrictions, and (3) Noise Restrictions are required to facilitate transition to a FMC designation.

## MCB Quantico Detailed Comments

Capability Observations

| Attributes | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **Targets** | Individual Level Training | | Ranges lack automated, fixed and mobile targets. The lack of adequate targetry reduces training realism and effectiveness, and training assessment capability. The RM/T Program is addressing shortfalls consistent with available resources. |
| | Unit Level Training | | Same as above. |
| **Threats** | Individual Level Training | | Ranges lack realistic, modern threat representation/simulation capability. Lack of modern threat representation reduces training realism and effectiveness, and training assessment capability. The RM/T Program is addressing shortfalls consistent with available resources. |
| | Unit Level Training | | Same as above. |
| **Scoring & Feedback System** | Individual Level Training | | The range complex lacks real-time training Scoring & Feedback Systems and position-location systems. Lack of real-time feedback reduces training realism and effectiveness, and training assessment capability. The RM/T Program is addressing shortfalls consistent with available resources. Current projects include an audio-visual feedback system and additional tracking systems for personnel and vehicles. |
| | Unit Level Training | | Same as above. |
| **Infrastructure** | Individual Level Training | | The condition of unimproved roadways and tank trails has, at times, limited the use of transportation assets to the ranges. |
| | Unit Level Training | | Same as above. |
| **Range Support** | Individual Level Training | | The base has limited C2 communications capability for exercise and training support. Limited C2 reduces exercise monitoring and management control. The RM/T Program is addressing shortfalls consistent with available resources. |
| | Unit Level Training | | Same as above. |
| **Small Arms Ranges** | Individual Level Training | | MCB Quantico ranges lack optimal targets and training feedback systems. Limited targetry reduces training realism and effectiveness, and training assessment capability. The RM/T Program is addressing shortfalls consistent with available resources. |
| **Collective Ranges** | Unit Level Training | | MCB Quantico has a single live fire and maneuver range capable of supporting platoon-level training. The Base is incapable of supporting company-level live fire training. Platoon range, and squad-level ranges lack optimal targets and training feedback systems. These limitations reduce training realism and effectiveness, and training assessment capability. The RM/T Program is addressing shortfalls consistent with available resources. |
| **MOUT Facilities** | Individual Level Training | | Development of new MOUT Facilities has received focused attention throughout the Marine Corps, resulting in improvements at Quantico; however, deficiencies remain. MOUT limitations reduce training realism and limit training feedback. The RM/T Program is continuing to address shortfalls consistent with available resources and Service priorities. |
| | Unit Level Training | | Same as above. |

Encroachment Observations

| Factors | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **Munitions Restrictions** | Individual Level Training | | Use of explosive ordnance is limited by noise concerns. MCB Quantico has come under increasing pressure to reduce use of demolition ordnance for training. Constraints affect ability of Explosive Ordnance Disposal (EOD) teams to conduct range clearance activities, resulting in pressures to reduce use of dud-producing ordnance on ranges. ECP has been completed. Development of new MOUT Facilities has received focused attention throughout the Marine Corps, resulting in improvements at Quantico; however, deficiencies remain. |
| | Unit Level Training | | Same as above. |
| **Airspace** | Individual Level Training | | From 2000 to 2008, the population of the MCB Quantico region (Prince William County, VA) has increased by 30% (U.S. Census Bureau). This burgeoning population exerts significant encroachment pressure on the Base, including Airspace limitations due to noise concerns, and safety concerns with regard training by fixed-wing military aircraft. Satisfactory remedies are elusive. |
| | Unit Level Training | | Same as above. |

**Figure 3-19** Marine Corps Capability and Encroachment Assessment Detail (continued)

## MCB Quantico Detailed Comments

Encroachment Observations

| Factors | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **Noise Restrictions** | Individual Level Training | ● | From 2000 to 2008, the population of the region of MCB Quantico region (Prince William County, VA) increased by 30% (U.S. Census Bureau). This burgeoning population exerts significant encroachment pressure on the Base, including restrictions on land uses for live fire training due to noise concerns. EOD demolition activity is prohibited after 2220 hrs. Encroachment pressures have significantly reduced the capability of the installation to support Unit training and increasingly effect its capability to support Individual training of newly commissioned lieutenants at The Basic School. ECP has been completed. |
| | Unit Level Training | ● | From 2000 to 2008, the population of the region of MCB Quantico region (Prince William County, VA) increased by 30% (U.S. Census Bureau). This burgeoning exerts significant encroachment pressure on the Base, including restrictions on land uses for live fire training due to noise concerns. EOD demolition activity is prohibited after 2220 hrs. Encroachment pressures have significantly reduced the capability of the installation to support Unit training and increasingly effect its capability to support Individual training of newly commissioned lieutenants at The Basic School. As with Individual training, noise constraints affect Unit-level training. ECP has been completed. |
| **Adjacent Land Use** | Individual Level Training | ● | From 2000 to 2008, the population of the region of MCB Quantico region (Prince William County, VA) increased by 30% (U.S. Census Bureau). Burgeoning population exerts significant encroachment pressure on the Base, resulting in Airspace use limitations, munitions constraints, and restrictions on land uses for live fire training due to noise concerns. Encroachment pressures have significantly reduced the capability of the installation to support Unit training, and increasingly affect its capability to fully support Individual training of newly commissioned lieutenants at The Basic School and MOS training of infantry officers. Growth pressures from non-DoD tenants (e.g., FBI, DEA) reduce the utility of some range areas. ECP has been completed; however, satisfactory remedies remain elusive. |
| | Unit Level Training | ● | Same as above. |

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**Figure 3-19** Marine Corps Capability and Encroachment Assessment Detail (continued)

## Marine Corps Air Ground Combat Center (MCAGCC) Twentynine Palms Assessment Details

### Range Mission Description

The MCAGCC Twentynine Palms provides range capabilities to support training of Marines, Marine Corps units, MAGTF elements, and MAGTFs in the mission essential tasks of modern expeditionary warfare, including Service-directed pre-deployment training exercises and training of units of the First Marine Expeditionary Force (I MEF) that are assigned to the installation. The Marine Air Ground Task Force Training Command (MAGTFTC) maintains its headquarters at MCAGCC Twentynine Palms.

### 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 |
| Individual Level Training | FMC | FMC | | | FMC | FMC | FMC | FMC | FMC | FMC | | PMC | |
| Unit Level Training | FMC | FMC | | | PMC | PMC | PMC | FMC | FMC | | PMC | PMC | |
| MEU Level Training | PMC | PMC | | | NMC | PMC | NMC | FMC | PMC | | PMC | PMC | |
| MEB Level Training | NMC | NMC | | | NMC | PMC | NMC | | PMC | | | PMC | |

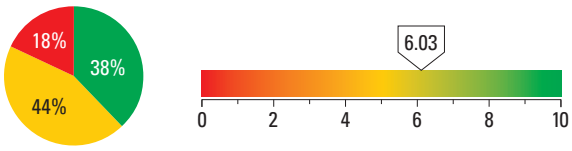
Legend: FMC, PMC, NMC

### Encroachment Data

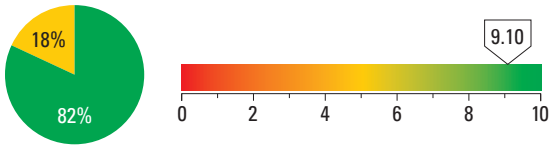
| Mission Areas | Encroachment Factors | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Threatened & Endangered Species | Munitions Restrictions | Spectrum | Maritime Sustainability | Airspace | Air Quality | Noise Restrictions | Adjacent Land Use | Cultural Resources | Water Quality/Supply | Wetlands | Range Transients |
| Individual Level Training | Minimal | Minimal | Moderate | | Minimal | Minimal | Minimal | Minimal | Minimal | Minimal | | Minimal |
| Unit Level Training | Minimal | Minimal | Moderate | | Moderate | Minimal | Minimal | Minimal | Minimal | Minimal | | Minimal |
| MEU Level Training | Minimal | Minimal | Moderate | | Moderate | Minimal | Minimal | Minimal | Minimal | Minimal | | Minimal |
| MEB Level Training | Minimal | | Moderate | | Moderate | Minimal | Minimal | Minimal | Minimal | Minimal | | Minimal |

Legend: Minimal, Moderate, Severe

### Capability Chart and Scores




### Encroachment Chart and Scores




### Summary Observations

1. Doctrinal range requirements are derived from Operational Training Ranges Required Capabilities MCRP 3-0C. The MCAGCC Twentynine Palms RCMP provides data for this assessment. Mission areas and attributes in "white" were not assessed, or are not applicable to this installation.
2. Deficits noted in available training Land (Landspace) space and Airspace, impacting ability to conduct required Service-level training of large Marine Air Ground Task Forces (MAGTFs). Other significant deficits are lack of modern automated Targets, Threat Systems, and Scoring & Feedback Systems.
3. The Land and Airspace Expansion Initiative is expected to significantly enhance range complex for MAGTF training.

### Summary Observations

1. The references for this assessment are Operational Training Ranges Required Capabilities Operational Training Ranges Required Capabilities MCRP 3-0C and RCMP.
2. 18% of the range/range complex mission is moderately impacted by encroachment factors.
3. Spectrum and Airspace are the encroachment factors moderately impacting the training mission. These impacts affect all levels of training.
4. An ECP has been completed and is being executed.

### Historical Information, Results, and Future Projections

| Calendar Year | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|
| Capability Scores | 5.63 | 5.63 | 6.03 | 6.03 |

Impacts from key range capabilities shortcomings resulted in PMC designations for this installation during FY2008–FY2011, when assessing the installation's ability to support Marine Corps Task 1.7 (Support Maneuver through the Provision of Training Areas) and Marine Corps Task 3.3 (Support Fires through the Provision of Ranges and Training Areas). The top three capabilities and/or enhancements required to facilitate transition to FMC include: (1) MEB-level combined arms live fire and maneuver training capability, (2) exercise C2 battle staff training capability, and (3) enhancement and upgrade of large scale urban training capability.

### Historical Information, Results, and Future Projections

| Calendar Year | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|
| Encroachment Scores | 9.00 | 9.00 | 9.10 | 9.10 |

Impacts from key encroachment factors resulted in PMC designations for this installation during FY2008–FY2011, when assessing the installation's ability to support Marine Corps Task 1.7 (Support Maneuver through the Provision of Training Areas) and Marine Corps Task 3.3 (Support Fires through the Provision of Ranges and Training Areas). Successful mitigation of key encroachment factors, including (1) Airspace restrictions and (2) frequency Spectrum limitations, are required to facilitate transition to a FMC designation.

## MCAGCC Twentynine Palms Detailed Comments

Capability Observations

| Attributes | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **Landspace** | MEU Level Training | 🟡 | There is insufficient Landspace and Airspace to meet USMC Operational Training Ranges Required Capabilities MCRP 3-0C and to conduct large-scale MAGTF and Joint exercises that involve all elements of combined arms training. Landspace and Airspace expansion planning is underway, including preparation of an Environmental Impact Statement addressing proposed alternatives to meet requirements. |
| | MEB Level Training | 🔴 | Same as above. |
| **Airspace** | MEU Level Training | 🟡 | Same as above. |
| | MEB Level Training | 🔴 | Same as above. |
| **Targets** | Unit Level Training | 🟡 | There are a number of required ranges and target areas that either don't exist or need modernization to meet USMC training requirements. These shortfalls span all levels of Unit training. Shortfalls include infantry and mechanized automated ranges and targets, battle-course ranges and targets, assault/breaching/demolition ranges, and others. The Marine Corps RM/T Program is addressing these shortfalls through range investments consistent with available resources. |
| | MEU Level Training | 🔴 | Target shortfalls affect the realism of MAGTF training. Due to the nature and size of the training area (i.e., an open, live fire impact area covering hundreds of square miles), target systems for large exercises are generally not automated. The Marine Corps RM/T Program is analyzing approaches to addressing these shortfalls through range investments consistent with available resources. |
| | MEB Level Training | 🔴 | Same as above. |
| **Threats** | Unit Level Training | 🟡 | MCAGCC Twentynine Palms requires a comprehensive electronic training environment supporting basic through advanced collective training. The capability must simulate neutral, hostile, and non-hostile ground, air defense, and airborne weapons systems; OPFOR C2; neutral, hostile, and non-hostile cryptologic systems; and hostile jamming. There are efforts underway to study OPFOR capability alternatives and to develop shortfall strategies. The role player program (not a program-of-record) is significant training enhancement. |
| | MEU Level Training | 🟡 | Same as above. |
| | MEB Level Training | 🟡 | MCAGCC Twentynine Palms requires a comprehensive electronic training environment supporting basic through advanced collective training. The capability must simulate neutral, hostile, and non-hostile ground, air defense, and airborne weapons systems; OPFOR C2; neutral, hostile, and non-hostile cryptologic systems; and hostile jamming. Through the RM/T Program efforts are underway to study OPFOR capability alternatives and to develop shortfall strategies. The role player program (not a program-of-record) is significant training enhancement. |
| **Scoring & Feedback System** | Unit Level Training | 🟡 | Some existing ranges lack modern Scoring & Feedback Systems. The Marine Corps RM/T Program is addressing these shortfalls through range investments consistent with available resources. |
| | MEU Level Training | 🔴 | MAGTF-level training requires enhanced instrumentation for training event reconstruction, debriefing, and replay. MCAGCC Twentynine Palms currently lacks such capabilities. The Marine Corps RM/T Program continues to analyze and address these shortfalls through range investments consistent with available resources. Current initiative to construct a state-of-the-art MAGTF-level MOUT Facility will mitigate some issues. The expected completion date is 2012. |
| | MEB Level Training | 🔴 | Same as above. |
| **Range Support** | MEU Level Training | 🟡 | Exercise Control facilities are insufficient for large-scale MAGTF and Joint exercises. MCAGCC Twentynine Palms has an effort for a design study and DD 1391s to construct and equip a C22/Exercise Control facility for large-scale exercises. The Bases's C4 infrastructure requires expansion to accommodate MAGTF- level training. |
| | MEB Level Training | 🟡 | Same as above. |
| **Collective Ranges** | Unit Level Training | 🟡 | See comments above regarding Target deficits. |
| | MEU Level Training | 🟡 | See comments above regarding Landspace, Airspace, Range Control, and Target deficits. |
| **MOUT Facilities** | Individual Level Training | 🟡 | Development of new MOUT Facilities has received focused attention throughout the Marine Corps, resulting in significant improvements; however, deficiencies remain. The RM/T Program is continuing to address shortfalls consistent with available resources and Service priorities. |
| | Unit Level Training | 🟡 | Same as above. |
| | MEU Level Training | 🟡 | A current initiative to construct a state-of-the-art MAGTF-level MOUT Facility will mitigate shortfall. The expected completion date is 2012. |
| | MEB Level Training | 🟡 | Same as above. |

**Figure 3-19** Marine Corps Capability and Encroachment Assessment Detail (continued)

## MCAGCC Twentynine Palms Detailed Comments

Encroachment Observations

| Factors | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **Spectrum** | Individual Level Training |  | The congested frequency Spectrum limits frequency availability/deconfliction. This deficiency affects all levels of training through frequency Spectrum interference. Assessment and mitigation planning actions and milestones are being implemented. |
| | Unit Level Training |  | Same as above. |
| | MEU Level Training |  | Same as above. |
| | MEB Level Training |  | Same as above. |
| **Airspace** | Unit Level Training |  | Congested regional Airspace surrounds the the SUA supporting MCAGCC Twentynine Palms ranges, resulting in FAA pressure for access to SUA. Interruptions and modifications of training result in limitations on the capabilities of fixed wing aviation assets to ingress/egress in tactical profiles over range areas. An initiative to expand Airspace access is ongoing, USMC is coordinating with FAA to discuss of land expansion. |
| | MEU Level Training |  | Same as above. |
| | MEB Level Training |  | Same as above. |

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**Figure 3-19** Marine Corps Capability and Encroachment Assessment Detail (continued)

## MCAS Yuma/Bob Stump Assessment Details

### Range Mission Description

MCAS Yuma/Bob Stump Training Range Complex provides range capabilities to support training of Marines, Marine Corps units, MAGTF elements, and MAGTFs in the mission essential tasks of modern expeditionary warfare, including Service-directed aerial weapons training exercises and training of units of the Third Marine Air Wing (3d MAW) that are assigned to or extensively utilize the installation.

### 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 |
| Individual Level Training | FMC | PMC | | | PMC | PMC | PMC | FMC | PMC | FMC | | PMC | |
| Unit Level Training | FMC | PMC | | | PMC | PMC | PMC | FMC | PMC | | FMC | PMC | |
| MEU Level Training | FMC | PMC | | | PMC | PMC | PMC | FMC | PMC | | FMC | PMC | |
| MEB Level Training | | | | | | | | | | | | | |

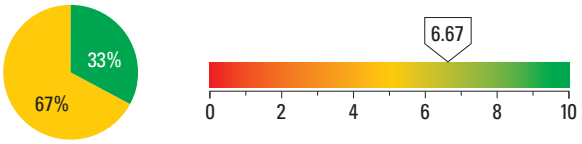
Legend: FMC, PMC, NMC

### Encroachment Data

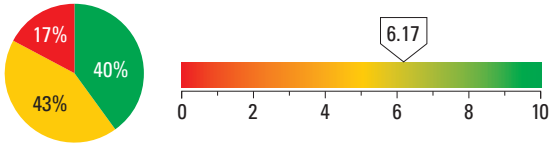
| Mission Areas | Encroachment Factors | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Threatened & Endangered Species | Munitions Restrictions | Spectrum | Maritime Sustainability | Airspace | Air Quality | Noise Restrictions | Adjacent Land Use | Cultural Resources | Water Quality/Supply | Wetlands | Range Transients |
| Individual Level Training | PMC | PMC | Severe | | PMC | FMC | PMC | PMC | FMC | FMC | | FMC |
| Unit Level Training | Severe | PMC | Severe | | PMC | FMC | PMC | PMC | FMC | FMC | | FMC |
| MEU Level Training | Severe | PMC | Severe | | PMC | FMC | PMC | PMC | FMC | FMC | | FMC |
| MEB Level Training | | | | | | | | | | | | |

Legend: Minimal, Moderate, Severe

### Capability Chart and Scores




### Encroachment Chart and Scores




### Summary Observations

1. Doctrinal range requirements are derived from Operational Training Ranges Required Capabilities MCRP 3-0C. The Bob Stump Training Range Complex RCMP provides data for this assessment. The Mission areas and attributes in "white" were not assessed, or are not applicable to this installation.
2. The Yuma Range Complex includes the Barry M. Goldwater Range (West), the Chocolate Mountains Aerial Gunnery Range (CMAGR), and additional designated Airspace areas. In addition to supporting Marine Corps-specific training, Marine Corps ranges in the CMAGR are used extensively by Naval Special Warfare (NSW) commands.
3. Significant deficits are noted in available Airspace, impacting the installation's ability to conduct required training or develop sufficient ranges. Other significant deficits are lack of modern automated Targets, Threat Systems, and Scoring & Feedback Systems.
4. Capability shortfalls generally affect all levels of training at this range.

### Summary Observations

1. 60% of the range/range complex mission is moderately or severely impacted by encroachment factors.
2. Encroachment factors with the greatest impact on training mission are frequency Spectrum and Threatened & Endangered Species. Noise Restrictions and Airspace availability also are significant encroachment impacts on training.
3. An ECP has been completed and is being executed. The references for this assessment are Operational Training Ranges Required Capabilities MCRP 3-0C and RCMP. Mission areas and attributes in "white" were not assessed, or are not applicable to this installation.

## MCAS Yuma/Bob Stump 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** | 5.28 | 5.28 | 6.67 | 6.67 | **Encroachment Scores** | 5.25 | 5.25 | 6.17 | 6.17 |
| Impacts from key range capabilities shortcomings resulted in PMC designations for this installation during FY2008–FY2011, when assessing the installation's ability to support Marine Corps Task 1.7 (Support Maneuver through the Provision of Training Areas) and Marine Corps Task 3.3 (Support Fires through the Provision of Ranges and Training Areas). The top three capabilities and/or enhancements required to facilitate transition to FMC include: (1) available Airspace, (2) modern automated Targets, and (3) Scoring & Feedback Systems. | | | | | Impacts from key encroachment factors resulted in PMC designations for this installation during FY2008–FY2011, when assessing the installation's ability to support Marine Corps Task 1.7 (Support Maneuver through the Provision of Training Areas) and Marine Corps Task 3.3 (Support Fires through the Provision of Ranges and Training Areas). Successful mitigation of key encroachment factors, including (1) Airspace restrictions, (2) frequency Spectrum limitations, and (3) urban growth, are required to facilitate transition to a FMC designation. | | | | |

## MCAS Yuma/Bob Stump Detailed Comments

Capability Observations

| Attributes | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **Airspace** | Individual Level Training | ● | Airspace requirements for Individual training are fully met within the range complex with the exception of the objective requirement of 30 NM x 60 NM for EW ranges. |
| | Unit Level Training | ● | The objective requirement for a 40 NM x 60 NM AAW and 30 NM x 60 NM EW range is not met within the range complex. The altitude blocks are not consistent causing the Airspace to be fragmented. Airspace has limited availability to non-participating units during WTI, other Service-level pre-deployment training exercises, and unit detachments to MCAS Yuma. Efforts are ongoing to improve Airspace scheduling and management to optimize Airspace availability and utilization. The Marine Corps is coordinating with the FAA to provide enhanced Airspace for larger training events. The Marine Corps is also evaluating the potential of a Memorandum of Agreement (MOA) with Luke AFB regarding use of R-2301E. |
| | MEU Level Training | ● | Same as above. |
| **Targets** | Individual Level Training | ● | The fidelity and quality of tactical targets are limited for training of aviation ground support units; however, the RM/T Program is addressing shortfalls consistent with available resources. Planned upgrades include investment in welded and pop-up targets; buildings for convoy operations; and enhanced marksmanship program (EMP) training. |
| | Unit Level Training | ● | The type, quality, fidelity, and quantity of targets are inadequate. There is a limited number of JDAM targets. The range has no targets with infrared (IR) signature capability. Urban Close Air Support Range (Yodaville) does not provide a realistic urban training environment for helicopter gunnery operations. The RM/T Program is addressing shortfalls consistent with available resources. |
| | MEU Level Training | ● | Same as above. |
| **Threats** | Individual Level Training | ● | Shortfalls in threat aircraft include: no rotary-wing threat aircraft, no aircraft with A-A radar missile presentations, and radar capability is limited on the F-5. Solutions or workarounds include units-in-training providing their own OPFOR and joint training with the USAF using F-15/16. Other shortfalls include: Threat Level 3 and 4 EC signature equipment, and limited coverage of EW Threat Systems and OPFOR simulators beyond R-2301W. The RM/T Program is addressing shortfalls consistent with available resources. |
| | Unit Level Training | ● | Same as above. |
| | MEU Level Training | ● | Same as above. |
| **Scoring & Feedback System** | Individual Level Training | ● | TACTS and EC&C coverage is limited to R-2301W. S-A threat simulations are limited. Tactical targets are not scored and there is no scoring feedback in R-2507. Debrief capability is limited to MCAS Yuma, MCAS Miramar, and NAF El Centro. Low altitude communication is limited. EC&C is limited to R-2301W. There are no secure EC&C circuits. The RM/T Program is addressing shortfalls consistent with available resources. Initiatives include: investments in JNTC compliant tracking and EC&C equipment to cover the entire range complex; provision of staffing support for Range Operational Control Center (ROCC); upgrade of S-A simulations; provision of scoring for tactical targets in R-2507N/S; upgrade of TACTS to TCTS; and communications upgrades to resolve low altitude shortfall and shortage of secure communication circuits. |
| | Unit Level Training | ● | Same as above. |
| | MEU Level Training | ● | Same as above. |
| **Range Support** | Individual Level Training | ● | Range support shortfalls include a lack of remote weather sensors on the range. The Range Operational Control Center (ROCC) is currently not functional; hardware is in place, but there is no trained staff. |
| | Unit Level Training | ● | Same as above. |
| | MEU Level Training | ● | Same as above. |

**Figure 3-19** Marine Corps Capability and Encroachment Assessment Detail (continued)

## MCAS Yuma/Bob Stump Detailed Comments

Capability Observations

| Attributes | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **MOUT Facilities** | Individual Level Training | | Development of new MOUT Facilities has received focused attention throughout the Marine Corps, resulting in significant improvements; however, deficiencies remain. The RM/T Program is continuing to address shortfalls consistent with available resources and Service priorities. |
| | Unit Level Training | | Same as above. |
| | MEU Level Training | | Same as above. |

Encroachment Observations

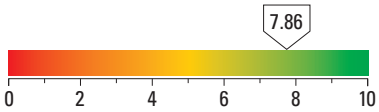
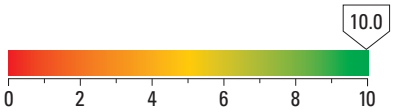
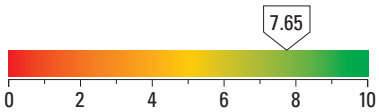
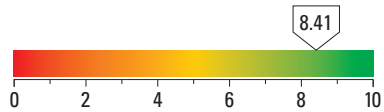
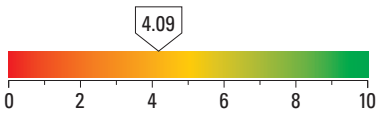
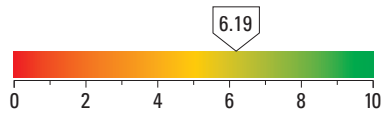
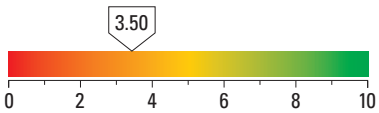
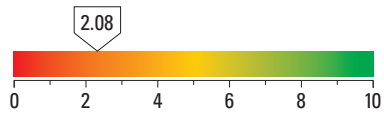
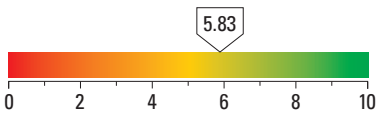
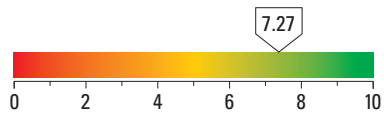
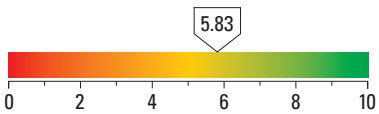
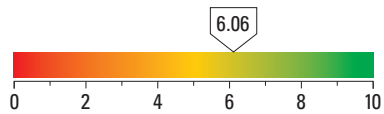
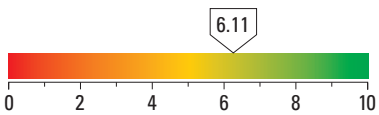
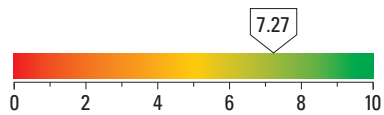
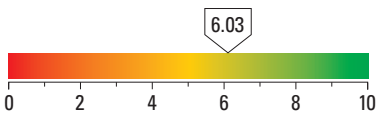
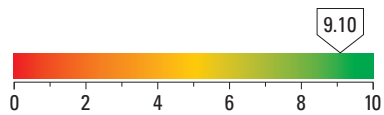
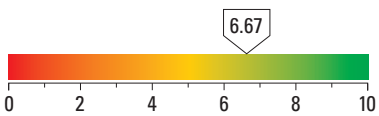
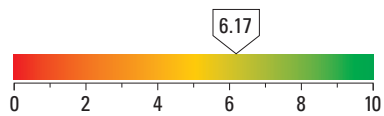
| Factors | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **Threatened & Endangered Species** | Individual Level Training | | Endangered species and habitat protection requirements result in significant challenges to effective training involving earthwork or heavy equipment operations. Range delays are encountered for some training activities involving high explosive ordnance due to the requirement to physically inspect the ranges to ensure that no endangered wildlife species are occupying the area. MCAS Yuma maintains close coordination with the USFWS to address ESA-based constraints on training. |
| | Unit Level Training | | Same as above. Impacts are more significant for unit- and MEU-level training. |
| | MEU Level Training | | Same as above. Impacts are more significant for unit- and MEU-level training. |
| **Munitions Restrictions** | Individual Level Training | | Due to UXO presence, convoy security elements are not authorized to depart existing roads or trails, which limits the realism of required training. Range clearance procedures mitigate impacts. |
| | Unit Level Training | | Same as above. |
| | MEU Level Training | | Same as above. |
| **Spectrum** | Individual Level Training | | MCAS Yuma is a joint military-civilian use airfield. Significant civilian aircraft operations often crowd tower and approach frequencies. Civilian and military frequencies are separate; however, ATC's response to military aircraft is often delayed due to communications with civilian traffic. Growth in regional communications infrastructure, including south of the border with Mexico and new commercial cell phone towers, increase noise floor levels. Some of the systems operate in the same frequency bands as the equipment used by MCAS Yuma or tenant units. The ability to use the full spectrum of L-Band (D-Band) for AN/TPS-59 (V)3 radar system, to include secondary radar (i.e., Identification Friend or Foe [IFF], specifically Mode-4 and Mode 5) is adversely effected. To date, Mode-4/5 cannot be used. Current impacts are manageable; however, trends, including proposed broadband allocation initiatives, threaten to significantly impact training and daily airfield operations. |
| | Unit Level Training | | Same as above. |
| | MEU Level Training | | Same as above. |
| **Airspace** | Individual Level Training | | When the FAA (LA Center) experiences significant en route weather issues, commercial air traffic sometimes is re-routed around or through MCAS controlled restricted Airspace. Typically, through Letter of Agreement (LOA), the use of MCAS Airspace is granted by MCAS, if not being utilized by scheduled military training, but emergent cases have led to LA Center assuming the Airspace, affecting military training. (CLUS App. D. Part II. 1 and 3). Aircraft ordnance takeoffs and recoveries are restricted to certain runways. As a shared use airfield, significant civilian a/c ops often delay military aircraft takeoffs and require military a/c to extend traffic pattern for proper spacing to land. Quiet hours have been imposed on a few occasions. Crop dusters operating within the tower's Airspace are mitigated by flying normal course rules into and out of airfield for helos and are distracting. Power lines planned around base underlying Class D Airspace impact instrument approach procedures. |
| | Unit Level Training | | Same as above. |
| | MEU Level Training | | Same as above. |
| **Noise Restrictions** | Individual Level Training | | Supersonic flight is restricted to a corridor located in the R2301W and is restricted to only one direction, inhibiting realistic training. Noise complaints stem from aircraft aligning to use targets in restricted areas that may be close to the borders of the area (R2301W/BMGR). Residential expansion towards the boundary of the range areas contributes to this. Low-level aircraft (helos) transiting to and from these areas have resulted in noise complaint issues as housing grows in the Foothills area. (JLUS App. D. Part II. 1 and 3). MCAS Yuma's community liaison and outreach program seeks to influence community understanding of training and operational concerns. |
| | Unit Level Training | | Same as above. |
| | MEU Level Training | | Same as above. |

## MCAS Yuma/Bob Stump Detailed Comments

Encroachment Observations

| Factors | Assigned Training Mission | Score | Comments |
|---|---|---|---|
| **Adjacent Land Use** | Individual Level Training | ● | The population of the MCAS Yuma region (Yuma County, AZ) increased 20% between 2000 and 2008 (U.S. Census Bureau). This trend is expected to continue, increasing urbanization in the vicinity of the Air Station and Yuma ranges, raising concerns about encroachment. Communications and electrical transmission infrastructure threatens to interfere with flight patterns and military use of critical bands of the frequency Spectrum. Light sources associated with urban growth around the airfield currently are impacting aircrews' ability to train with Night Vision Devices (NVDs). Noise Restrictions have resulted in alteration of flight corridors to mitigate community impacts. MCAS Yuma's community liaison and outreach program seeks to influence community understanding of training and operational concerns. |
| | Unit Level Training | ● | Same as above. |
| | MEU Level Training | ● | Same as above. |

**Table 3-7** Marine Corps Capability and Encroachment Assessment Comparison

| Range Name | Capability Score | Encroachment Score |
|---|---|---|
| **MCAS Beaufort/ Townsend** |  |  |
| **MCMWTC Bridgeport** |  |  |
| **MCAS Cherry Point** |  |  |
| **MCBH** |  |  |
| **MCB Japan** |  |  |
| **MCB Camp Lejeune** |  |  |
| **MCB Camp Pendleton** |  |  |
| **MCB Quantico** |  |  |
| **MCAGCC Twentynine Palms Twentynine Palms** |  |  |
| **MCAS Yuma/Bob Stump** |  |  |