3.2.4 Air Force Assessment Results[12]

Air Force Training Range Capability Assessment Results

The Air Force Range Capability Assessment data from 38 Air Force range complexes are summarized and presented in Table 3-11.

The Air Force Range Capability Chart and Scores are presented in Figure 3-29 and assessments by Range, Attributes, and Mission Areas are shown in Figures 3-31, 3-33, and 3-35.

The Air Force's 38 individual range assessments along with comments for red and yellow ratings are included at the end of this section (Figure 3-39).

Air Force Training Range Encroachment Impact Assessment Results

The Air Force Range Encroachment Assessment data from 38 Air Force range complexes are summarized and presented in Table 3-12.

The Air Force Range Encroachment Chart and Scores are presented in Figure 3-30 and assessments by Range, Factors, and Mission Areas are shown in Figures 3-32, 3-34, and 3-36.

The Air Force's 38 individual encroachment assessments along with comments for red and yellow ratings are included at the end of this section (Figure 3-39).

The Air Force Range Capability and Encroachment assessment comparisons are presented in Table 3-13.

12 Of the 40 locations in the Air Force's range inventory in Appendix C, two electronic scoring sites (ESS) were not assessed (Belle Fourche and Snyder). These two ESSs are not considered "range complexes" for the purpose of the report; therefore, the Air Force does not intend to evaluate them unless mission changes or some encroachment factors threaten their abilities to function.

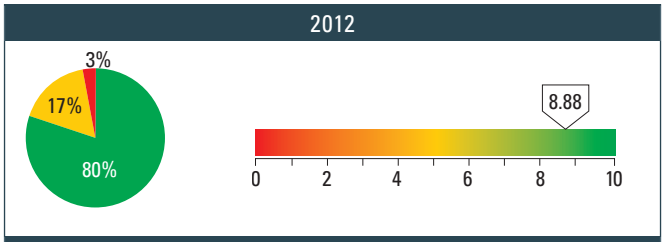
Table 3-11 Air Force Capability Assessment Data Summary

Range	NMC	PMC	FMC	Capability Scores
Adirondack	11	19	45	7.27
Airburst	2	13	62	8.90
Atterbury	0	6	36	9.29
Avon Park	0	16	51	8.81
Barry M. Goldwater Range (BMGR)	1	11	41	8.77
Blair Lake	0	17	37	8.43
Bollen	0	19	58	8.77
Cannon	10	37	11	5.09
Claiborne	0	12	6	6.67
Dare County Ranges	0	0	72	10.00
Draughon	9	22	15	5.65
Edwards Ranges	6	12	85	8.83
Eglin Ranges	0	44	70	8.07
Falcon	0	3	69	9.79
Grand Bay	0	2	108	9.91
Grayling	0	10	80	9.44
Hardwood	0	9	87	9.53
Holloman	4	3	86	9.41
Jefferson	1	16	70	8.97
McMullen	0	28	40	7.94
Melrose	1	4	55	9.50
Mountain Home Ranges	0	0	72	10.00
NTTR	8	14	67	8.31
Oklahoma	0	17	82	9.14
Patrick	0	1	12	9.62
Pilsung	4	11	19	7.21
Poinsett	0	6	126	9.77
Polygone	0	10	11	7.62
Razorback	1	6	76	9.52
Shelby Ranges	0	5	94	9.75
Siegenberg	0	4	2	6.67
Smoky Hill	0	0	63	10.00
Torishima	15	4	4	2.61
Townsend	0	4	67	9.72
UTTR	0	8	80	9.55
Vandenberg	0	3	10	8.85
Warren Grove	5	22	54	8.02
Yukon	0	15	84	9.24
HQ AF	**78**	**433**	**2,107**	**8.88**

Table 3-12 Air Force Encroachment Assessment Data Summary

Range	Severe	Moderate	Minimal	Encroachment Scores
Adirondack	0	15	56	8.94
Airburst	0	0	74	10.00
Atterbury	0	11	20	8.23
Avon Park	0	7	74	9.57
Barry M. Goldwater Range (BMGR)	0	8	38	9.13
Blair Lake	0	15	51	8.86
Bollen	0	15	73	9.15
Cannon	0	15	69	9.11
Claiborne	0	0	20	10.00
Dare County Ranges	0	0	88	10.00
Draughon	2	25	33	7.58
Edwards Ranges	0	16	35	8.43
Eglin Ranges	0	46	106	8.49
Falcon	0	0	90	10.00
Grand Bay	0	2	130	9.92
Grayling	1	8	90	9.49
Hardwood	0	15	84	9.24
Holloman	0	3	118	9.88
Jefferson	1	27	66	8.46
McMullen	0	4	84	9.77
Melrose	0	5	83	9.72
Mountain Home Ranges	0	0	88	10.00
NTTR	3	28	101	8.71
Oklahoma	0	20	101	9.17
Patrick	0	7	5	7.08
Pilsung	0	8	45	9.25
Poinsett	0	2	130	9.92
Polygone	0	6	14	8.50
Razorback	0	5	87	9.73
Shelby Ranges	0	1	109	9.95
Siegenberg	0	4	4	7.50
Smoky Hill	0	0	88	10.00
Torishima	0	4	8	8.33
Townsend	0	9	90	9.55
UTTR	0	8	80	9.55
Vandenberg	0	5	17	8.86
Warren Grove	1	9	89	9.44
Yukon	0	31	90	8.72
HQ AF	**8**	**384**	**2,628**	**9.34**

Figure 3-29 Air Force Capability Chart and Scores



Summary Observations

Air Force's overall capability score decreased from 9.02 in 2011 to 8.88 in 2012

- Air Force's Fully Mission Capable (FMC) assessments (green) decreased from 82% to 80%
- Partially Mission Capable (PMC) assessments (yellow) increased from 16% to 17%
- Not Mission Capable (NMC) assessments (red) increased from 2% to 3%

Historical Information, Results, and Future Projections

Calendar Year	2008	2009	2010	2011
Capability Scores	8.52	8.52	8.91	9.02

The top three capability attributes with the greatest number of red and yellow assessments are (Figure 3-33):

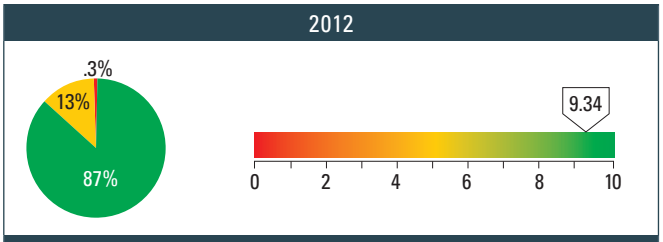
- Threats (16+81)
- Airspace (9+65)
- Range Support (8+45)

The top three mission areas with the greatest number of red and yellow assessment are (Figure 3-35):

- Counterland (10+89)
- Strategic Attack (11+78)
- Electronic Combat Support (16+49)

Refer to the Air Forces's 38 individual range assessments for comments and additional information (Figure 3-39).

Figure 3-30 Air Force Encroachment Chart and Scores



Summary Observations

Air Force's overall encroachment score marginally decreased from 9.44 in 2011 to 9.34 in 2012

- Air Force's minimal risk assessments (green) decreased 89% to 87%
- Moderate risk assessment (yellow) increased from 11% to 13%
- Severe risk assessments (red) marginally decreased from 0.4% to 0.3%

Historical Information, Results, and Future Projections

Calendar Year	2008	2009	2010	2011
Encroachment Scores	9.08	9.07	9.28	9.44

The three encroachment factors with the greatest number of red and yellow assessment are (Figure 3-34):

- Airspace (1+83)
- Munition Restrictions (0+56)
- Adjacent Land Use (2+53) .

The top three mission areas with the greatest number of red and yellow assessments are (Figure 3-36):

- Counterland (3+82)
- Strategic Attack (1+67)
- Special Operations (0+57)

Refer to the Air Forces's 38 individual range assessments for comments and additional information (Figure 3-39).

Figure 3-31 Air Force Capability Assessments by Range

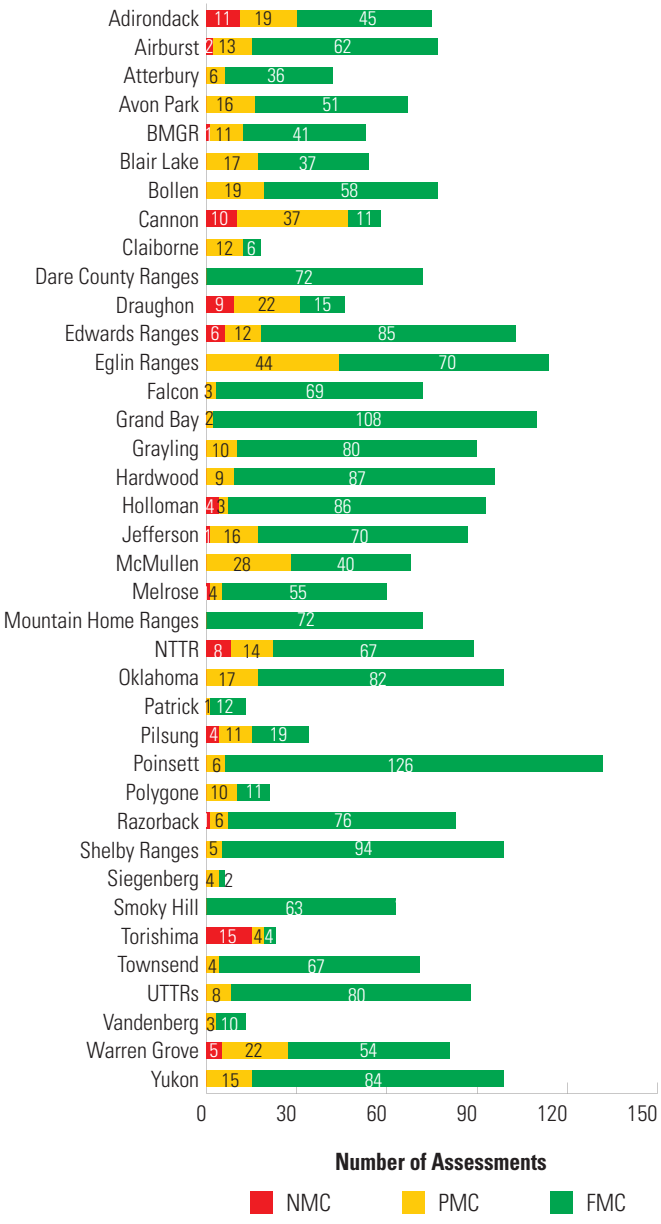


Figure 3-32 Air Force Encroachment Assessments by Range

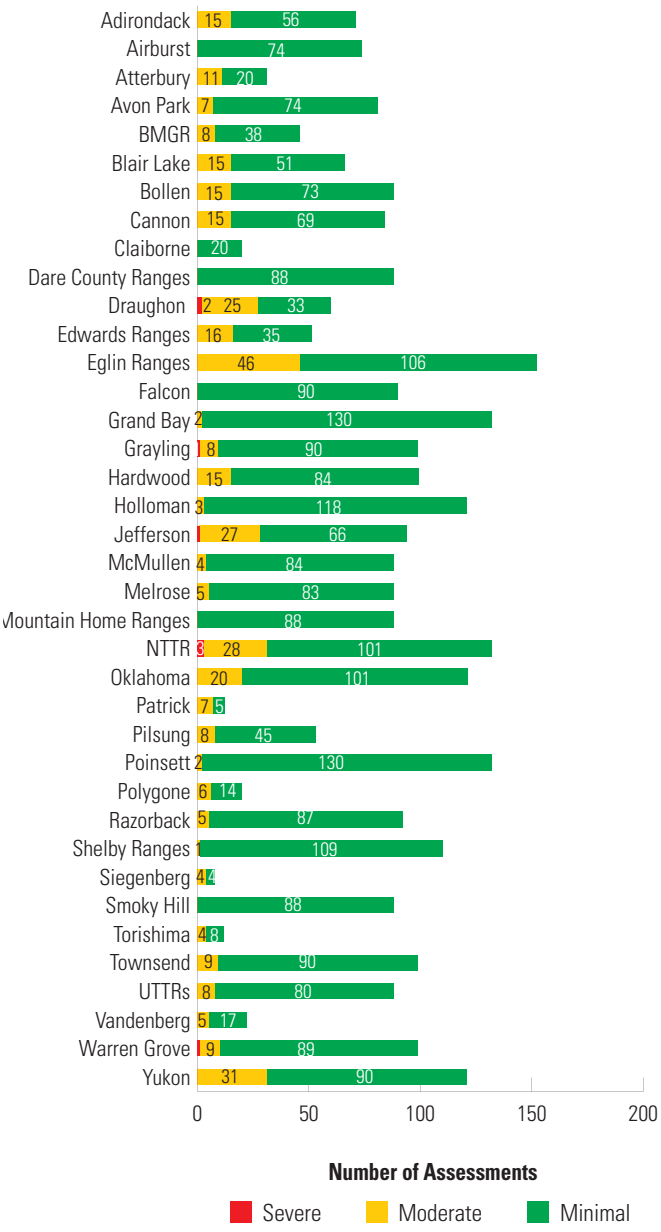


Figure 3-33 Air Force Capability Assessment by Attributes

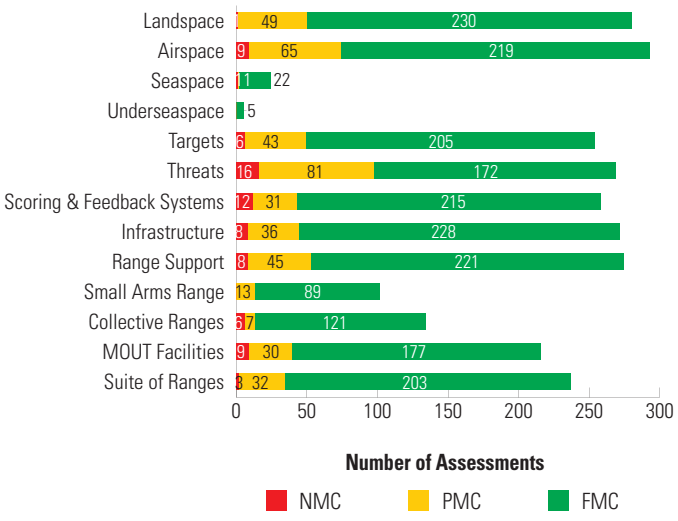


Figure 3-34 Air Force Encroachment Assessment by Factors

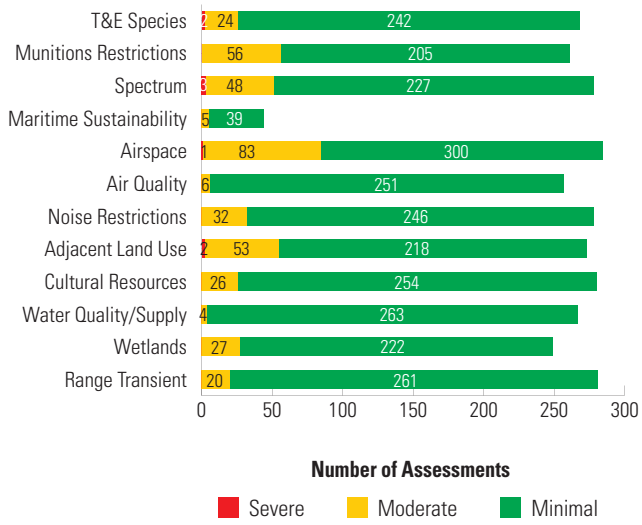


Figure 3-35 Air Force Capability Assessment by Mission Areas

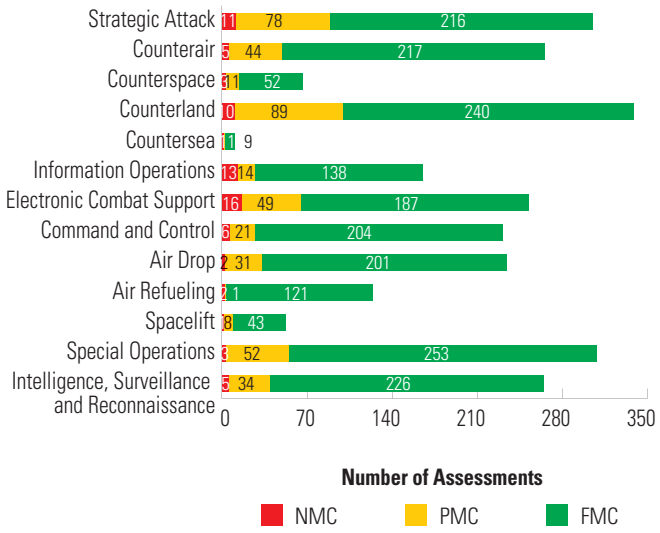
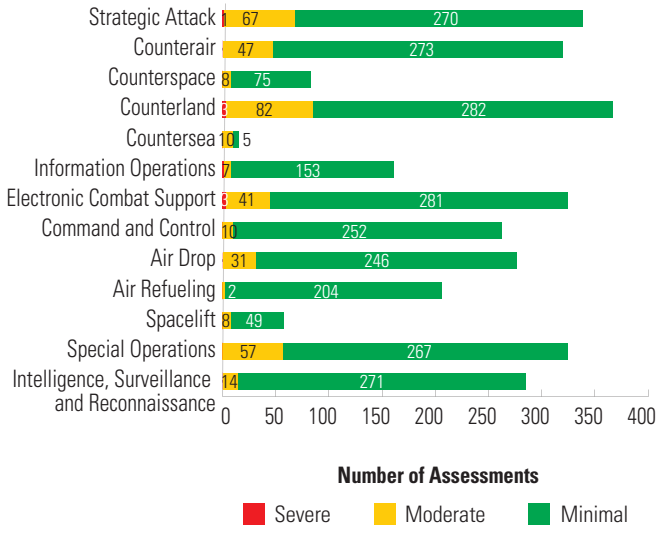


Figure 3-36 Air Force Encroachment Assessment by Mission Areas



Air Force Special Interest Section

General Issues

Gulf Regional Airspace Strategic Initiative (GRASI)

The eastern Gulf of Mexico region of the United States has one of the highest concentrations of military activity in the country. Airspace in the Gulf is quickly becoming over-congested, due to public and military growth. SUA was created to segregate civilian aircraft from military operations. SUA includes Restricted Airspace (RA), Military Operations Areas (MOAs), Alert Areas, and Warning Areas, each characterized by unique requirements for non-participating aircraft. RA that extends to the ground is especially important, as it allows for the testing of munitions dropped from an aircraft.

Five major installations call the area home, and each requires the presence of SUA to accomplish its mission. Eglin Air Force Base (AFB) manages two-thirds of the surface-to-unlimited RA in the eastern United States. Due to the extremely significant reach that use of this high-demand airspace has into military, socio-economic, and commercial aviation aspects of the region, the Air Force is actively working to ensure the continued utility of SUAs in the region via the Gulf Regional Airspace Strategic Initiative (GRASI).

GRASI is the result of DoD bringing together appropriate stakeholders to discuss the growing issue of airspace congestion and its associated hazards between military and civilian aircraft. Its goal is to ensure the availability of airspace and the continued economic prosperity of the Gulf coast. Using an agreed upon set of Performance Expectations, GRASI stakeholders worked for two years to model the region's future airspace usage and formulated the following goals: 1) develop and modernize air traffic control (ATC) procedures and airspace; 2) enhance military capacity of the region; and 3) maintain and enhance regional collaboration. A sitting Executive Steering Committee (ESC) oversees the GRASI, ensuring it runs according to three core guiding principles:

- Economic Prosperity—Solutions should have a neutral or positive economic impact on the region
- Collaboration—Solutions should involve cooperation between military stakeholders and general and commercial aviation officials
- Mission—Solutions should accommodate the region's various military missions and the requirements of civil aviation

Based on these principles, the ESC established a set of recommendations to help ensure near optimum use of airspace by civilians and the military. These recommendations, which must be approved by the FAA, are as follows:

- Develop and Modernize ATC Procedures and Airspace
- Enhance Military Capacity of the Region
- Maintain and Enhance Regional Collaboration

Air Force Center Scheduling Enterprise

As recently as 2009, the Air Force used 32 different systems and associated procedures to schedule activity on their ranges. These systems were all developed in the field to meet the day-to-day range needs. A 2007 Secretary of the Air Force "Eagle Look" examined the effectiveness of range management, and determined:

- Available airspace and range utilization reports did not provide a complete and accurate assessment of utilization
- Current reporting processes were labor intensive, difficult to complete, and lacked standardized tools
- IO activities were not consistent with standard open air range activities, precluding future integration

These issues led to a series of impacts across the Air Force, affecting both the efficient use of current Air Force range and airspace assets, and the ability to plan for future needs. These impacts were summarized into five areas:

- Failure to maximize usage of the limited resource of range and airspace
- Failure to capture all capabilities of airspace and ranges
- Inaccurate report of airspace and range use
- Lack of insight into possible addition capabilities and capacities
- Lack of integration in joint exercises

A key recommendation of the report was to "Implement a common automated utilization reporting tool for airspace and ranges." After examining all current Air Force and other Military Service ranges scheduling systems, the Center Scheduling Enterprise (CSE) system was chosen to provide an end-to-end capability from scheduling a range and/or airspace asset to recording utilization.

The Air Force CSE is currently being used by Eglin AFB Range, Edwards AFB Range, and the Nevada Test and Training Range. With several of the Air Force largest ranges currently using the CSE, instituting use across the Air Force is the most cost-effective low risk course of action. Specific benefits of the Air Force CSE include that it:

- Provides a common system for units to schedule Air Force assets across DoD
- Standardizes terms, practices, and procedures at all Air Force Ranges for scheduling and utilization reporting, allowing true asset comparisons

- Provides a quantitative basis for defending current requirements and developing future needs
- Provides a single interface to the future mandatory FAA Military Airspace Data Entry (MADE) system for the scheduling of SUA

Current Status of the Air Force CSE

Figure 3-37 depicts the Air Force CSE implementation status as of August 2011. Airspace shown in green is live and scheduling is accomplished using the CSE. Airspace shown in purple is live in the system, but these range/airspace managers have not completed training in the CSE. (The initial round of training has been completed.) All remaining Air Force airspace has been entered into the system; however, installation personnel training in use of the CSE will continue through the second quarter of FY2011.

CSE is in the process of being further enhanced using service oriented architecture (SOA) compliant to work with other flight scheduling systems as they come online in the future. Specific technical work has already been conducted with Patriot Excalibur (PEX), Graduate Training Integration Management System (GTIMS), and Training Management System (TMS). Figure 3-38 depicts the information sharing process between the flight and range schedulers, as well as the approval process for scheduling ranges and/or airspace.

Air Force CSE completed the interface with the FAA MADE system and is expected to start live scheduling in the second quarter of FY2012. The use of MADE will be required to schedule any SUA in the United States. Integration has also begun with the Army/USMC Range Facility Management Support System (RFMSS). RFMSS is responsible for range land scheduling required by Army and USMC ground forces. The goal of the integration efforts is to have seamless scheduling between the Military Service systems for both land and air assets.

Figure 3-37 Air Force CSE Airspace Status as of 8 August 2011

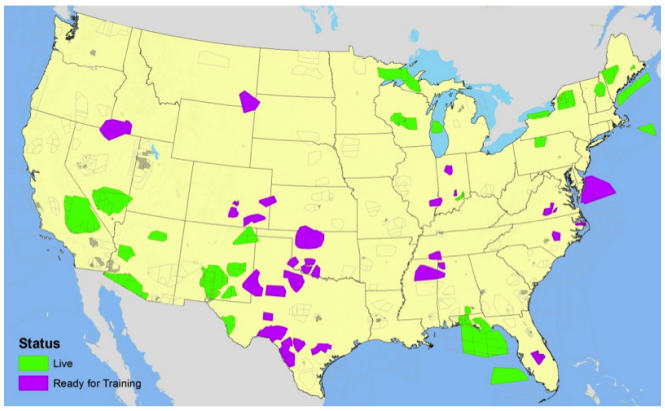
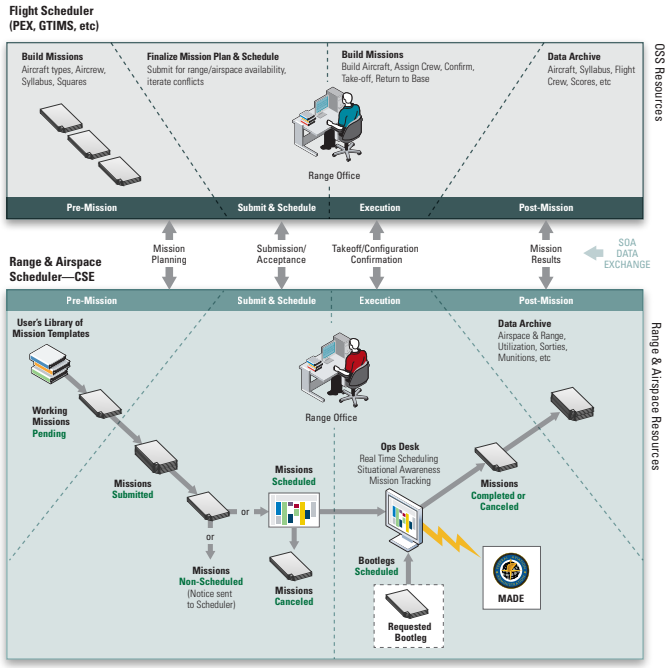


Figure 3-38 Air Force Flight Scheduler Process Flow



Energy Compatibility Studies and Tool Development

The Air Force is currently involved in analyzing and minimizing operational impacts posed by wind turbines on Air Force operations, particularly those arising from interference with radar operations. These turbines affect radar performance in two primary ways: decreased probability of detection and an increased number of false tracks (also referred to as clutter returns). A 2010 Air Force Research Laboratory (AFRL) report reviewed existing published research on operational impacts with respect to radar and other mission-related assets. The report also summarized current and proposed mitigation solutions to assess effectiveness and the relative pros and cons of each. In researching the report, one outstanding issue was a lack of real world data to support impact and mitigation effects.

Another observed shortfall was the lack of a coherent, top-down policy approach within DoD to effectively and efficiently quantify the effects of a proposed renewable energy development on operations and engage with developers. Proposal response was occurring late in the development process, past the point at which DoD concerns and requests could be addressed, and in an ad hoc manner. This situation resulted in legislative action that significantly raised the requirements for opposing a proposed project. It is important to note that this shortfall is being addressed by the current DoD Siting Clearinghouse.

Mission Compatibility Analysis Tool (MCAT)

The goal of MCAT is to develop a GIS-based database of existing and proposed renewable energy projects. A tracking tool developed for the Navy will be modified for use by all

Military Services. Proposed renewable energy and potential transmission projects will be logged in MCAT by users, and the installations that may be impacted will be notified. MCAT will then track the project through the OSD Clearinghouse process, allowing installation and MAJCOM assessments to be logged and viewed. This will create a central record of all proposed energy projects, and a history of action taken with regard to each proposal.

Radar Toolbox

The Air Force Radar Toolbox is an automated software tool for recording, reducing, and analyzing surveillance system performance data. The Air Force is working to add capability to the Radar Toolbox, which would allow it to estimate the effects of a proposed wind development project on radar performance. The ability to accurately predict the impact of a proposed project on radar performance would allow the Air Force to determine whether or not the proposal poses a hazard to operations and, if so, provides evidence to support such a claim. Efforts are currently underway to create a module that estimates the decrease in Probability of Detection (PD) from a proposed wind farm. Once the modifications are made to add this predictive analysis capability, an updated version of the Radar Toolbox that includes the new features will be released for use by federal and civilian agencies, including for use by military installations. Obtaining a baseline radar performance would allow an installation to assess its vulnerability to degraded performance from proposed wind development. Performance data could also be used to evaluate mitigation solutions. Once the predictive analysis capability is developed, performance data would form the basis for estimating new performance with the proposed development in place.

Experimental Data Collection and Validation

Experimental data collection provides documented scientific evidence of operational impacts, such as degraded radar or radio communications performance, and allows for the development, testing and evaluation of analysis tools. Current activities include flight trials of helicopter and fixed wing aircraft above local wind farms. Data is collected from the Airport Surveillance Radar (ASR)-11 Standard Terminal Automation Replacement System (STARS) operating at the Johnstown, Pennsylvania, airport. Radar performance is assessed by calculating probability of detection (PD) and false track rate for aircraft operating both within and outside of the wind farm to quantify wind turbine effects on these metrics. The results of two such trials have been submitted for publication, which could lead to a peer reviewed scientific paper documenting the effects of wind turbines on ASR-11 performance.

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Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Adirondack Assessment Details

Range Mission Description

Adirondack is a Joint A-G (A-G) range, an intermediate training range for the ANG/AF, an all-purpose range for the Army, and a combined arms/joint live fire exercise range. The primary user is the Vermont Air National Guard.

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												
Strategic Attack	●	●			●	●	●	●	●		●	●	●
Counterair	●	●			●	●	●		●				
Counterspace													
Counterland	●	●			●	●	●	●	●	●	●	●	●
Countersea													
Information Operations													
Electronic Combat Support	●	●			●	●	●	●	●		●		
Command and Control	●	●			●	●	●	●	●	●	●	●	●
Air Drop	●	●				●	●	●	●				
Air Refueling		●											
Spacelift													
Special Operations	●	●			●	●	●	●	●	●	●	●	●
Intelligence, Surveillance, and Reconnaissance	●	●			●	●	●	●	●	●	●	●	●

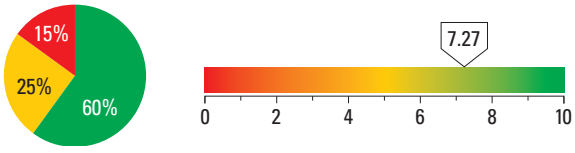
Legend: FMC ● PMC ● NMC ●

Encroachment Data

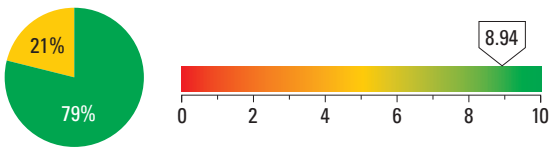
Mission Areas	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
	Encroachment Factors											
Strategic Attack	●	●	●		●	●	●	●	●	●	●	●
Counterair		●	●		●	●	●	●	●			●
Counterspace												
Counterland	●	●	●		●	●	●	●	●	●	●	●
Countersea												
Information Operations												
Electronic Combat Support	●		●		●	●	●	●				●
Command and Control	●	●	●		●	●	●	●	●	●	●	●
Air Drop												
Air Refueling			●		●	●		●				●
Spacelift												
Special Operations	●	●	●		●	●	●	●	●	●	●	●
Intelligence, Surveillance, and Reconnaissance	●		●		●	●		●		●		●

Legend: Minimal ● Moderate ● Severe ●

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

Adirondack Range is located on Ft. Drum and contained within its training areas. The range has large tracts of land that remain unusable, due to the presence of MPPEH. The range continues to request EOD support as personnel and funds become available in an effort to open up these areas for training use. Adirondack has had numerous requests from ASOS units and flying units for a digital gateway for training use on range. The range has requisitioned most of the equipment needed for this, but has not yet completed installation.

Summary Observations

Wetlands and Munitions Restrictions (residue) have restricted use of the vast majority of what would otherwise be usable training/target areas. The range has made significant progress in the past two years in clearing target areas of MPPEH and gaining approval from the Ft. Drum Environmental Division to develop those areas once cleared. Adirondack will continue to request EOD support to clear areas of MPPEH, and work with Ft. Drum's Environmental Division in an effort to gain access to areas near/in designated wetlands.

Adirondack 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	7.77	7.77	N/A	7.27	**Encroachment Scores**	8.96	8.96	N/A	8.94
No comments.					No comments.				

Adirondack Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Air Drop	🟡	Significant progress has been made in the past year with EOD clearance, but large areas of land remain unusable due to the presence of MPPEH. These hazards prevent the range from constructing realistic airfield and realistic urban training areas, and allowing realistic maneuver of ground forces. The range will continue to request EOD support as funding and EOD personnel become available. Additional tree clearance will occur this year. The Air Force needs an IR stimulator for realistic/relevant threat simulation.
	Special Operations	🟡	Significant progress has been made in the past year with EOD clearance, but large areas of land remain unusable due to the presence of MPPEH. These hazards prevent the range from constructing realistic airfield and realistic urban training areas, and allowing realistic maneuver of ground forces. The range will continue to request EOD support as funding and EOD personnel become available.
Targets	Strategic Attack	🟡	Significant progress has been made in the past year with EOD clearance, but large areas of land remain unusable due to the presence of MPPEH. These hazards prevent the range from constructing realistic airfield and realistic urban training areas. The range will continue to request EOD support as funding and EOD personnel become available.
	Counterair	🟡	Same as above.
	Counterland	🟡	Significant progress has been made in the past year with EOD clearance, but large areas of land remain unusable due to the presence of MPPEH. These hazards prevent the range from constructing realistic airfield and realistic urban training areas, and allowing realistic maneuver of ground forces. The range will continue to request EOD support as funding and EOD personnel become available.
Threats	Strategic Attack	🔴	The Wideband Remote Emitter Threat System (WRETS) has no supply or depot support. The RWR Lite has very limited range. The range has very limited success providing EW threats to its customers when requested to do so.
	Counterair	🔴	Same as above.
	Counterland	🔴	Same as above.
	Electronic Combat Support	🔴	Same as above.
	Air Drop	🟡	Same as above.
Scoring & Feedback System	Counterair	🟡	The range has no ACMI type system available.
	Electronic Combat Support	🟡	The range is transmitter only, visual/verbal feedback only in training.
Range Support	Strategic Attack	🟡	There is no current Link 16 capability. The range has acquired most of the hardware to setup a Digital Gateway but installation is still in development.
	Counterair	🔴	Same as above.
	Counterland	🔴	Same as above.
	Electronic Combat Support	🔴	Same as above.
	Command and Control	🔴	Same as above.
	Special Operations	🔴	Same as above.
	Intelligence, Surveillance and Reconnaissance	🔴	Same as above.
Small Arms Ranges	Counterland	🟡	Much of the range has become overgrown and/or littered with MPPEH. This prevents installation of targets and precludes land navigation training on much of the range. The range continues to request EOD support and work with environmental personnel to clear more land.
	Special Operations	🟡	Same as above.
	Intelligence, Surveillance and Reconnaissance	🟡	Same as above.
Collective Ranges	Electronic Combat Support	🔴	The Wideband Remote Emitter Threat System (WRETS) has no supply or depot support. The RWR Lite has very limited range. The range has very limited success providing EW threats to its customers when requested to do so.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Adirondack Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
MOUT Facilities	Counterland	●	Significant progress has been made in the past year with EOD clearance, but large areas of land remain unstable due to the presence of MPPEH. These hazards prevent the range from constructing realistic airfield and realistic urban training areas. The range will continue to request EOD support as funding and EOD personnel become available.
	Command and Control	●	Same as above.
	Special Operations	●	Significant progress has been made in the past year with EOD clearance, but large areas of land remain unstable due to the presence of MPPEH. These hazards prevent the range from constructing realistic airfield and realistic urban training areas, and allowing realistic maneuver of ground forces. The range will continue to request EOD support as funding and EOD personnel become available.
	Intelligence, Surveillance and Reconnaissance	●	Same as above.
Suite of Ranges	Counterland	●	Same as above.
	Special Operations	●	Same as above.
	Intelligence, Surveillance and Reconnaissance	●	Same as above.

Encroachment Observations

Attributes	Assigned Training Mission	Score	Comments
Threatened & Endangered Species	Strategic Attack	●	The presence of the Indiana Bat prevents the cutting of trees, which may be used as habitat for the bat, during much of the year. This restriction delays or prevents clear cutting of various parts of the range for target construction.
	Counterland	●	Same as above.
	Command and Control	●	Same as above.
	Special Operations	●	Same as above.
	Intelligence, Surveillance and Reconnaissance	●	Same as above.
Munitions Restrictions	Counterland	●	Significant progress has been made in the past year with EOD clearance, but large areas of land remain unstable due to the presence of MPPEH. These hazards prevent the range from constructing realistic airfield and realistic urban training areas, and allowing realistic maneuver of ground forces. The range will continue to request EOD support for surface clearance as funding and EOD personnel become available.
	Special Operations	●	Same as above.
Airspace	Strategic Attack	●	Army UAS activity and the Safety Danger Zones created by concurrent use of other ranges on Fort Drum create a number of restrictions on any given day in the R5201 restricted airspace.
	Counterland	●	Same as above.
	Command and Control	●	Same as above.
	Special Operations	●	Same as above.
Wetlands	Strategic Attack	●	Wetlands restrictions have had a significant negative impact on target area/training area development. The approval process required to develop target/training areas in the vicinity of wetlands often takes years to navigate. Requests for use of the wetlands mitigation bank on Ft. Drum have always been denied. Wetlands cover much of the training areas on Ft. Drum and, combined with the presence of MPPEH, have precluded use of vast tracts of land that would otherwise be available for training. The range continues to work with the Environmental Division to resolve wetland related issues.
	Counterland	●	Same as above.
	Command and Control	●	Same as above.
	Special Operations	●	Same as above.

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Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Airburst Assessment Details

Range Mission Description

Airburst is a 3,110 acre (845 acre impact area) Primary Training Range (PTR) located on the southern portion of Fort Carson Army Post. Airburst's mission is to provide today's warfighters with a training environment that closely mirrors the battlefields and threats they will face in today's combat theaters of operations. The range caters to a broad spectrum of federal, state, and local military; law enforcement; and first responder units. Range managers design relevant training packages/ scenarios that most closely replicate the real world challenges these users will face. The range is authorized all types of inert ordnance, to include PGMs and JDAM. Primary Training Units include: 120FS (F-16 Buckley AFB, CO), 13ASOS (Joint Terminal Attack Controllers, Fort Carson, CO), 1-2 (AH-64, Fort Carson, CO), 2-135 (CH-47, UH-60 Buckley AFB, CO), 302AW (C-130, Peterson AFB, CO), 160th SOAR (AH-6, MH-60, MH-47), 10SFG (Fort Carson), EOD (Buckley AFB, Peterson AFB), Security Forces (140 SFS/460 SFS Buckley AFB, 137 SWS Greeley, 302 SFS/21 SFS Peterson AFB, 10 SFS U.S. Air Force Academy). Other users include: 917AW (A-10 Barksdale AFB, LA), various F/A-18 and F-16 units, PC- 12 sensor testing (Centennial Airfield, CO), AF Research Lab, and the Naval Research Lab.

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
Strategic Attack	FMC	NMC			PMC	PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Counterair	FMC	NMC			FMC	FMC	FMC	FMC	FMC				FMC
Counterspace													
Counterland	PMC	PMC			PMC	PMC	FMC	FMC	FMC	FMC	FMC	PMC	FMC
Countersea													
Information Operations													
Electronic Combat Support	FMC	FMC			PMC	FMC		FMC	FMC		FMC		FMC
Command and Control	FMC	FMC			FMC	FMC		PMC	FMC		FMC	FMC	FMC
Air Drop	FMC	FMC			FMC	PMC	FMC	FMC	FMC		FMC	FMC	FMC
Air Refueling													
Spacelift													
Special Operations	FMC	FMC			FMC	PMC	FMC	FMC	FMC	FMC	FMC	PMC	FMC
Intelligence, Surveillance, and Reconnaissance	FMC	FMC			FMC	FMC		PMC	FMC		FMC	FMC	FMC

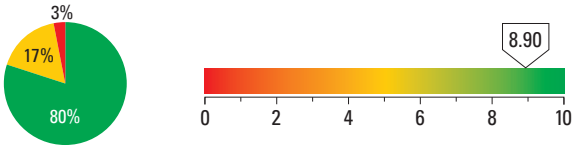
Legend: FMC PMC NMC

Encroachment Data

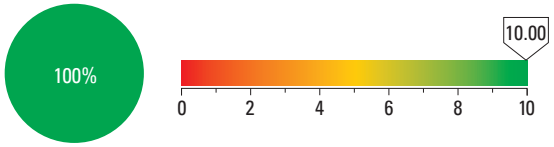
Mission Areas	Encroachment Factors												
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strategic Attack	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Counterair												
Counterspace												
Counterland	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Countersea												
Information Operations												
Electronic Combat Support	Minimal		Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Command and Control	Minimal		Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Air Drop	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Air Refueling												
Spacelift												
Special Operations	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Intelligence, Surveillance, and Reconnaissance	Minimal		Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal

Legend: Minimal Moderate Severe

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

No comments.

Summary Observations

No comments.

Airburst 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	8.28	8.28	10.00	8.90	**Encroachment Scores**	8.86	8.86	10.00	10.00
A vast majority of areas rated yellow can be attributed to the range's inability to create the most realistic and relevant training environment due to insufficient landspace, airspace, funding and target sets. The range performs very well at Close Air Support, Basic Surface Attack, and Basic Air Drops. Training evolutions suffer in terms of realism/relevance when the mission dictates large ground forces, enhanced threats, and large force exercises. In the coming years we will continue to operate as is currently, maximizing available assets and personnel the Air Force while operating on a shrinking budget.					No comments.				

Airburst Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Counterland	🟡	Limited land space does not allow for the building of a realistic Urban CAS village. The training impact is a limited number of targets and associated scenarios. The range will continue to build the best Urban CAS village within current land constraints.
Airspace	Strategic Attack	🔴	Insufficient volume and attributes of airspace to conduct large force exercises or for bomber aircraft to maneuver. Marginal for fighter aircraft conducting strategic attack training.
	Counterair	🔴	Insufficient volume and attributes of airspace to conduct large force exercises. Working to expand airspace via the Colorado Airspace Initiative.
	Counterland	🟡	Volume and attributes of airspace limits tactics and ordnance. Virtually all attack runs with PGMs or JDAM are limited to one direction. Working to expand airspace via Colorado Airspace Initiative.
Targets	Strategic Attack	🟡	Range target suite provides some but not all target types possible for strategic attack (e.g., real buildings/complexes vice stacked conex containers). Additionally, the range does not posses any target sets with required fidelity for 5th generation fighters. The Air Force will continue to try to build the most realistic target sets that current assets allow.
	Counterland	🟡	Range target suite provides some but not all target types possible for close air support. Limits are no realistic village for Urban CAS and no compressed soil block machine to build "mud huts" similar to those in OIF/OEF. Additionally, the range does not have any moving strafe targets that can be employed against with inert ordnance. Currently trying to procure funds for the compressed soil block machine through various channels.
	Electronic Combat Support	🟡	Limited capability to provide targets in the electro-magnetic spectrum, both in target types as well as range and cueing.
Threats	Strategic Attack	🟡	Limited capability to replicate a few tactical surface-to-air threats—RWR Lite x1, Smokey SAM launchers x 2.
	Counterland	🟡	Limited capability to replicate a few tactical surface-to-air threats—RWR Lite x1, Smokey SAM launchers x 2. Limited untrained, highly motivated, ground force (personnel) act as aggressors/Red Force against JTACS/SOF.
	Air Drop	🟡	Limited capability to replicate a few tactical surface-to-air threats—RWR Lite x1, Smokey SAM launchers x 2.
	Special Operations	🟡	Limited capability to replicate a few tactical surface-to-air threats—RWR Lite x1, Smokey SAM launchers x 2. Limited untrained, highly motivated, ground force (personnel) act as aggressors/Red Force against SOF.
Infrastructure	Command and Control	🟡	Current communications suite is antiquated and need of replacement by building of greater functional configuration, visibility, and cost-effective construction. Date of remedy unknown. Additionally, no SADL, Link-16 or RADS (ATC feed) capabilities at the range. Currently attempting to procure software/hardware for a SADL and RADS feed.
	Intelligence, Surveillance and Reconnaissance	🟡	No small paved runway available for small ISR platforms requiring a prepared or hard surface.
MOUT Facilities	Counterland	🟡	A MOUT facility would greatly enhance the CAS and ground forces (Security Forces, EOD, and Special Ops Forces) training evolutions. This could go hand in hand with an Urban CAS Village.
	Special Operations	🟡	Same as above.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Atterbury Range Assessment Details

Range Mission Description

Atterbury Range provides primary training for the 122nd FW, 178th FW, 180th FW, and joint training for LFE's, MEU's, SOF, SMERF, FEMA, ASOS, IW, Urban Warfare, and Homeland Defense all in conjunction with the Muskatatuck Urban Warfare Training Center.

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
Strategic Attack	●	●			●	●	●	●	●			●	●
Counterair		●				●			●				
Counterspace													
Counterland	●	●			●	●	●	●	●	●	●		●
Countersea													
Information Operations													
Electronic Combat Support													
Command and Control													
Air Drop													
Air Refueling													
Spacelift													
Special Operations	●	●			●	●	●	●	●	●		●	●
Intelligence, Surveillance, and Reconnaissance	●	●			●	●	●	●	●		●	●	●

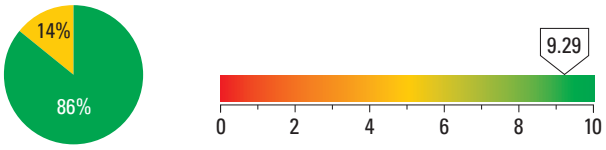
Legend: FMC ● PMC ● NMC ●

Encroachment Data

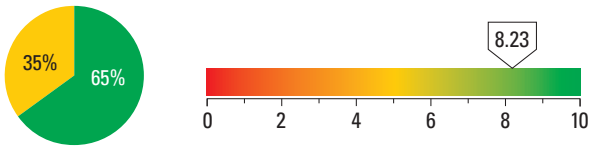
Mission Areas	Encroachment Factors												
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strategic Attack	●	●	●	●	●	●	●	●	●			●
Counterair					●	●	●	●				●
Counterspace												
Counterland		●			●		●	●	●	●		●
Countersea												
Information Operations												
Electronic Combat Support	●	●			●	●	●	●	●	●		●
Command and Control												
Air Drop												
Air Refueling												
Spacelift												
Special Operations												
Intelligence, Surveillance, and Reconnaissance												

Legend: Minimal ● Moderate ● Severe ●

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

1. 14% of the Air Force's range/range complex mission areas are Partially Mission Capable (PMC)
2. MOUT Facilities and Suite of Ranges are impacting the range's capability to support Intelligence, Surveillance, and Reconnaissance; Special Operations; and Strategic Attack.

Summary Observations

1. 35% of the range/range complex mission is moderately impacted by encroachment factors
2. Noise Restrictions and Adjacent Land Use are restricting the range's ability to support Counterland, Counterair, and Strategic Attack.

Atterbury Range 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	8.98	8.98	8.98	9.29	**Encroachment Scores**	8.23	8.23	8.23	8.23
No comments					No comments				

Atterbury Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
MOUT Facilities	Strategic Attack	●	MOUT facilities for the range are under construction.
	Special Operations	●	Same as above.
	Intelligence, Surveillance, and Reconnaissance	●	Same as above.
Suite of Ranges	Strategic Attack	●	There are various types of ranges available on post through the Army.
	Special Operations	●	Same as above.
	Intelligence, Surveillance, and Reconnaissance	●	Same as above.

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Airspace	Counterair	●	The Racer MOA cannot be scheduled at the same time as the JPG MOA, restricting the potential number of missions that could be scheduled.
	Counterland	●	There are occasional altitude restrictions over adjacent Army ranges.
Noise Restrictions	Strategic Attack	●	Missions cannot over fly Princes Lakes to the west due to noise complaints.
	Counterair	●	Same as above.
	Counterland	●	Same as above.
Adjacent Land Use	Strategic Attack	●	Missions cannot over fly Princes Lakes to the west due to noise complaints.
	Counterair	●	Same as above.
	Counterland	●	Same as above.
Cultural Resources	Counterland	●	No comments.
Water Quality/ Supply	Counterland	●	No comments.
Range Transients	Counterair	●	There are occasional civilian aircraft entering airspace during operations.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Avon Park Assessment Details

Range Mission Description

Avon Park Air Force Range (APAFR) provides DoD and Allied users a full-spectrum training facility focused on A-G operations. The complex maintains unique target sets, training sites, and state of the art scoring systems in battle space designated for fire and maneuver. Infrastructure supports any size unit up to and including composite large force exercises. While Avon Park is part of the 23rd Wing and is an Air Combat Command installation, the range's primary user is the 93rd FS, Homestead Air Reserve Base, FL. Avon Park is also host to Atlantic Strike and Jaded Thunder Large Force Employments.

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												
Strategic Attack													
Counterair		●			●	●	●	●	●				●
Counterspace													
Counterland	●	●			●	●	●	●	●	●		●	●
Countersea													
Information Operations													
Electronic Combat Support	●	●			●	●	●	●	●				●
Command and Control	●	●			●	●	●	●	●			●	●
Air Drop	●	●			●	●	●	●	●				●
Air Refueling		●				●	●	●	●				●
Spacelift													
Special Operations	●	●			●	●	●	●	●	●		●	●
Intelligence, Surveillance, and Reconnaissance	●	●			●	●	●	●	●			●	●

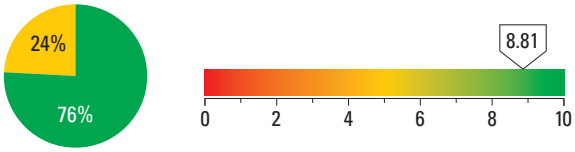
Legend: FMC ● PMC ● NMC ●

Encroachment Data

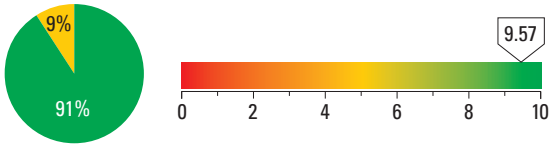
Mission Areas	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
	Encroachment Factors											
Strategic Attack												
Counterair	●		●		●	●	●	●	●	●	●	●
Counterspace												
Counterland	●	●	●		●	●	●	●	●	●	●	●
Countersea												
Information Operations												
Electronic Combat Support	●				●	●	●	●	●	●	●	●
Command and Control	●	●	●		●	●	●	●	●	●	●	●
Air Drop	●		●		●	●	●	●	●	●	●	●
Air Refueling	●		●		●	●	●	●	●	●	●	●
Spacelift												
Special Operations	●	●	●		●	●	●	●	●	●	●	●
Intelligence, Surveillance, and Reconnaissance	●		●		●	●	●	●	●	●		●

Legend: Minimal ● Moderate ● Severe ●

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

There is limited capability to train for Counterair, which is not a primary mission of APAFR. Counterland capability is limited by lack of runway certification; air assets must launch and recover from MacDill AFB, reducing their time on station. Biggest capability limitation has been a tremendous increase in op-tempo with no corresponding increase in manpower. APAFR is at or near its maximum training capacity with current manning.

Summary Observations

Adjacent land use continues to be the primary area of encroachment concern. Completion of the JLUS was a significant step. The local jurisdictions provided a good deal of support to the process and were generally very supportive of the range mission. Increased UAS/RPA activity may highlight additional encroachment issues in the future. Wetlands will continue to be a challenge, especially in the State of Florida.

Avon Park Assessment Details

Historical Information, Results, and Future Projections					Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011	**Calendar Year**	2008	2009	2010	2011
Capability Scores	9.62	9.62	9.62	8.81	**Encroachment Scores**	9.32	9.32	9.32	9.57
APAFR's capabilities rating has decreased in relation to the last two years, primarily due to a significant increase in op-tempo and the number and variety of units seeking training space. APAFR will be pursuing a man-power study in an effort to better align workload and manpower requirements. APAFR is actively pursuing runway certification and the programming actions needed to sustain the airfield as an integral part of the training environment. One significant mission change will be the introduction of the F-35 into the CAF and the associated operational requirements. Impacts of the F-35 operational training on range operations are not known at this time.					Increased emphasis on public outreach and the JLUS process has helped reduce encroachment impacts. Efforts to pursue adoption of the JLUS recommendations by the local jurisdictions will be a major emphasis area in the coming years. Recently passed legislation in the State of Florida makes it mandatory for local planning councils to coordinate with military installations in their districts. This has the potential to lessen encroachment pressures.				

Avon Park Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Threats	Counterair	●	APAFR has no high-fidelity, surface-to-air threat replication capability. Lack of high-fidelity threats limits the quality of training, especially during large force exercises. No current plans to integrate high-fidelity threats at APAFR.
	Counterland	●	Same as above.
	Electronic Combat Support	●	Same as above.
	Special Operations	●	Same as above.
	Intelligence, Surveillance and Reconnaissance	●	Same as above.
Scoring & Feedback System	Counterair	●	APAFR lacks any TSPI capability, which limits fidelity of air to air training. No current plans to integrate TSPI capability at APAFR.
	Electronic Combat Support	●	APAFR has an outdated communications infrastructure that cannot support LVC operations. This limits fidelity of training. APAFR communications upgrade has been funded and is underway. Expect new architecture in place by end of CY2010. LVC capability has been discussed and will be more actively pursued once upgrade is complete.
	Command and Control	●	Same as above.
Infrastructure	Counterair	●	APAFR has an 8000x150 ft runway that is currently only certified as an LZ. Lack of runway certification severely limits the number and type of aircraft that can operate from the range. Range is pursuing airfield certification/waiver approval with an estimated completion within 6 months.
	Counterland	●	Same as above.
Range Support	Counterair	●	Operational tempo has significantly increased, particularly over the last five years. Range manning has not been updated to keep pace with the additional workload. Manning, combined with the 60 hour per week contract limitation, has reached the point where APAFR staff cannot support all incoming training requests. Additionally, APAFR lacks SIPRNET capability, meaning units have to reschedule or are being denied range time. Lack of SIPRNET limits training fidelity and complicates range scheduling. APAFR staff will pursue a manpower survey and seek additional manpower authorizations, but an estimated completion date is unknown. SIPRNET capability will be pursued once communications infrastructure upgrade is complete.
	Counterland	●	Same as above. Additionally, APAFR has limited capability to respond to wildland fires and relies heavily on State assistance. APAFR will be coordinating the results of a wildland fire program evaluation with the 23rd WG .
	Electronic Combat Support	●	Same as above.
	Command and Control	●	Same as above.
	Special Operations	●	Same as above.
	Intelligence, Surveillance and Reconnaissance	●	Same as above.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Avon Park Detailed Comments

Encroachment Observations

Attributes	Assigned Training Mission	Score	Comments
Spectrum	Intelligence, Surveillance and Reconnaissance		Limited frequencies are available of UAS/RPA activity. Due to increased UAS/RPA activity at APAFR, available frequencies must be deconflicted through scheduling. Requests for range time have to be denied due to spectrum availability, despite available air and ground space. APAFR personnel need to determine if additional frequencies can be obtained and if the expanded frequencies will alleviate the conflicts.
Adjacent Land Use	Counterair		Private development and other land use could affect the training mission at APAFR. A specific project is the Destiny project in Osceola County, which would affect 1/3rd of the Marion MOA. APAFR does not have a community planner. If the development goes through, APAFR could lose 1/3rd of the Marion MOA, which extends from 500 to 5000 ft. AGL. The Air Force recently completed a Joint Land Use Study (JLUS) involving four counties and three municipalities, including Osceola County. It is working with all the planning councils to adopt JLUS recommendations, which will help fight encroachment. APAFR needs an authorization for a community planner. ECD—Encroachment is an ongoing issue with no completion date.
	Counterland		Same as above.
	Air Refueling		Same as above. Additionally, low-level helicopter refueling occurs in Marion MOA.
	Special Operations		Same as above.
Wetlands	Counterland		Any new training mission, project, or change to an existing range activity that impacts wetlands requires extensive coordination and approval from numerous State and Federal entities. Efforts to meet wetland requirements have the potential to delay or even prevent training activities. An effort to produce a range-wide FONPA is being processed to minimize impact.
	Special Operations		Same as above.

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Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Barry M. Goldwater Range (BMGR) Assessment Details

Range Mission Description

BMGR East (BMGR-E) is the major training range for the 56 FW, 162 FW, 355 FW, 563 RQS, and Arizona Army National Guard. BMGR supports daily A-G sorties and electronic combat training. The range also supports: Air Guard/Air Reserve Test Center operations; Arizona ANG "Snowbird" deployed operations; ACC directed Angel Thunder Ex and USMC Weapons and Tactics Instructor Course training; world-wide JTAC training as well as coalition war fighter A-G employment; HE/inert weapons employment; combat laser operations with a vast array of targets; and full spectrum Air Combat Training Systems to include ACMI, threat simulation, datalink network, C2. Primary range users include: 56 FW (AETC) F-16. 162 FW AZ ANG (AETC) F-16; 355 FW (ACC) A-10; 563 RQG (AFSOC) HC- 130/H-60; AFRES H-60; AZ ArNG AH-64; and three separate and distinct foreign military sales squadrons from Taiwan and Singapore.

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
Strategic Attack													
Counterair	●	●			●	●	●	●	●		●	●	●
Counterspace													
Counterland	●	●			●	●	●	●	●		●	●	●
Countersea													
Information Operations													
Electronic Combat Support	●	●				●							
Command and Control	●	●							●				
Air Drop	●	●				●	●	●	●	●	●	●	●
Air Refueling		●							●				
Spacelift													
Special Operations	●	●			●	●		●	●	●	●	●	●
Intelligence, Surveillance, and Reconnaissance	●	●			●	●						●	

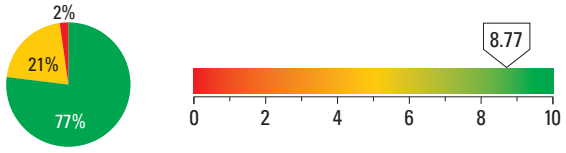
Legend: FMC ● PMC ● NMC ●

Encroachment Data

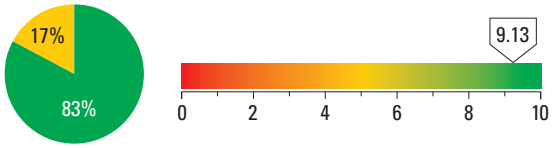
Mission Areas	Encroachment Factors													
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strategic Attack												
Counterair	●	●	●		●		●	●	●			●
Counterspace												
Counterland	●	●	●		●		●	●	●			●
Countersea												
Information Operations			●									
Electronic Combat Support			●		●				●			●
Command and Control			●		●				●			●
Air Drop	●	●	●		●	●	●		●			●
Air Refueling		●	●		●	●	●					
Spacelift												
Special Operations	●	●	●		●		●	●	●			●
Intelligence, Surveillance, and Reconnaissance												

Legend: Minimal ● Moderate ● Severe ●

Capability Chart and Scores



Encroachment Chart and Scores



Barry M. Goldwater Range (BMGR) Assessment Details

Summary Observations	Summary Observations
1. Did not rate training activities currently not conducted on the BMGR-E. In some cases, the range could support other mission needs, but with limited capability; i.e., ISR, electronic combat. 2. Effective C2 of training space is having a negative effect on some operations/ training, i.e., JTAC train-like-you fight operations. 3. Better fidelity MOUT facilities is the single most impactful attribute affecting the training mission. 4. While not a core competency of the range, supporting SPECOPS and like training is most the effected training activity on the BMGR.	1. 82.61% of the range/range complex mission areas are fully capable and are not impacted by encroachment factors. 2. 17.39% of the range/range complex missions areas are moderately impacted by encroachment factors, but are being addressed. 3. While it appears cultural resources and range transients are impacting BMGR-E the most, the Air Force is still able to support the mission as it stands today. Future/different military mission requirements may be more or less impacted in the future. Cultural impact is prevalent, given magnitude of archeological finds on range. Its impact is mitigated through need, assessment, and resolution. Range Transients issue is sporadic, based on Border Patrol effectiveness and overall flow of illegal traffic, but raises concern due to lack of solid visibility downrange. Range users have seen illegal transients in nontraditional areas and in an area not traditionally monitored. Counterland mission most effected by above encroachment factors. Sonoran Pronghorn population on the increase, due in part to a joint captive breeding venture. Introduction of a second herd being proposed by U.S. Fish and Wildlife Service. Potential exists to de-list the species in mid-term, vice long term, if herd continues to grow at current rate. 4. No range/range complex mission areas are severely impacted by encroachment. The Air Force is beginning to see solar development gain significant interest and development on the northern border of the BMGR-E (west of Gila Bend, AZ).

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	8.77	8.77	8.77	8.77	**Encroachment Scores**	9.13	9.13	9.13	9.13
1. Electronic combat/threats are a limited threat capability, with lack of interactive feedback to pilots. BMGR is seeing a lack of use due to limited system capabilities and nature/pace of F-16 syllabus training. 2. While Counterland/Airspace is coded "green," integration of RPAs/UAVs is extremely difficult, if not impossible, based on current manned aircraft customer base (significant amount of RTU training coupled with operational squadron training). The RPA/UAV mission is currently assessed as incompatible.					1. Rating stayed the same; however, BMGR realized significant gain in the new Sonoran Pronghorn Biological Opinion. New opinion reduced target closure criteria and lessened impact by over 80 percent, and a take statement was added to the agreement. New opinion realized from health of population and ongoing efforts, including Air Force cooperation. Due to its endangered status, the Pronghorn must be actively monitored and will continue to be an impact to the mission until de-listed. 2. Until the U.S.-Mexican border can be truly controlled, illegal trespass will continue to be an issue and impact the military mission. Excellent coordination with Customs and Border Protection is helping minimize impacts; most crossing are occurring during no-military operating times. Currently, no electronic observation means available on the BMGR (USAF side). All clearing is done by humans on-site, and can have limited effect based on volume of land space. 3. Non-renewable energy source development still being "watched" on the northern border of BMGR, primarily in the vicinity of Gila Bend, AZ. No ground breaking development to date, but permits and incentives have been issued by the State. 56 RMO and 56 FW trying to stay engaged with developers to ensure compatible development with military flying operations is considered.				

Barry M. Goldwater Range (BMGR) Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Targets	Special Operations	●	There are limited targets designed for SPECOPs (e.g., people/pop ups). There are severely limited opportunities for SPECOPs and combat search and rescue training. Planned action is to continue development of SPECOPs/CSAR ground movement area and the current EIS addressing the development of a helicopter unique range incorporating pop-up targets. ROD expected in Spring 2011; target area specific funding source unknown.
Threats	Electronic Combat Support	●	There is a lack of interactive threat simulation, limited threat capability, and no electronic means for real time feedback capability to ECM or maneuver. Therefore, the range has limited usefulness for flying community. Unknown remedies at this time; operations must provide requirement in order for BMGR-E to realize capability to support requirement.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Barry M. Goldwater Range (BMGR) Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Threats	Intelligence, Surveillance and Reconnaissance		There is limited threat generation down range, which limits ISR technique training and the inability to effectively support the mission. Unknown remedies at this time; addressing need however operational requirement will drive capability.
Scoring & Feedback System	Counterland		There is manual range scoring only. Lack of scoring capabilities on tactical ranges limits positive feedback to aircrew on effectiveness. The short-term solution is to provide limited optical scoring capability in one of the tactical ranges; however, there is limited capability funded in-house; IOC Spring 2011.
	Air Drop		There is no scoring capability for air drops and scoring is only provided on manned ranges. This limits operational feedback on effectiveness. Unknown remedy at this time; no operational requirement for drop zone scoring.
Range Support	Command and Control		There is limited capability for daily operations. No infrastructure exists to support operational C2 (AOC) if desired. LMR coverage is severely lacking. Air/ground advisory service is available, but ATC-like facility and positive control are necessary to sustain future operations. Impact to Training: Safety of humans on the ground and restrictions to aircrew based on low situational awareness from a C2 perspective. Planned Action: 1) Current C2 node continues to grow in support of range and airspace operations, and can provide access, deconfliction, and situational awareness to users with limited resources (one long range FAA radar feed, read-only Air Marine Operations Center [DHS] composite radar feed), extremely limited LMR system. 2) LMR repeater architecture submitted for assessment and approval—funding unknown; must wait for overall LMR upgrade of truncated system. 3) ATC-like facility being readdressed for requirements/ funding. The capability is seen as a must, given future real-time airspace sharing with FAA and expected integration of different assets downrange.
	Special Operations		There are limited maneuver areas and no instrumented MOUT facilities. This effects viable training opportunities for unique user set/requirement. Unknown remedy at this time; operators have not specifically addressed limited facilities with BMGR management. Currently, they have limited on-ground maneuver training opportunities.
Collective Ranges	Counterland		The range is primarily air-maneuver centric. This provides a limited opportunity to integrate full spectrum air with ground maneuver training such as convoy escort. Range Enhancement EIS is addressing this shortfall to a limited degree; ROD expected Spring 2011.
MOUT Facilities	Counterland		There are limited maneuver areas and no instrumented MOUT facilities. This affects viable training opportunities for unique user set/requirement. Unknown remedy at this time; operators have not specifically addressed limited facilities with BMGR management. Currently, they have limited on-ground maneuver training opportunities.
	Special Operations		MOUT areas are relatively rudimentary and limited in complexity (i.e., they are not instrumented for IED/cellular network and do not allow for full scale recovery operations). Limited utility/operational use. Planned Action: Continue to develop limited maneuver MOUT areas in support of SPECOPs and CSAR. While it may not be feasible to develop down range, Gila Bend AFAF is a potential candidate to support special mission training requirements.
	Intelligence, Surveillance and Reconnaissance		Same as above.
Suite of Ranges	Special Operations		Same as above.

Encroachment Observations

Attributes	Assigned Training Mission	Score	Comments
Threatened & Endangered Species	Counterland		Sonoran Pronghorn Antelope (endangered species) are on the range. Their presence on the range closes targets and slows EOD/maintenance activity. The range has a continuing program of unique, ongoing assessment and avoidance measures. A new Biological Opinion realized in 2010 reduced target closure criteria, opened targets by over 80% and realized one take statement. An additional captive breeding plot is being proposed by the Fish and Wildlife Service. The herd will be classified "experimental" and, therefore, should not have any operational impact to mission. However, if animals intermix with existing herd (by area), then they become protected.
Munitions Restrictions	Counterland		HEI bullets not allowed on range due to EOD and safety. This limits training opportunities. Planned actions include considering development of an HEI-only target area, contained. Unknown completion date due to operational requirement/needs statement.
Cultural Resources	Counterland		BMGR-E lands are rich in cultural artifacts requiring assessment and mitigation of each site that may or may not affect operations. Given time, each can be mitigated, minimizing impact. Cultural resource surveys and Section 106 consultation is required for most operational undertakings (outside existing/historical target sets). Discovery may impact training objectives and limit scope of operations. Planned actions are to continue programmatic survey of all range lands, determine eligibility of site(s), and continue to work with users to determine best course of action balancing operational need with cultural and biological sensitivities. Range enhancement EIS is to address expanded land use for target placement; ROD anticipated in Spring 2011.

Barry M. Goldwater Range (BMGR) Detailed Comments

Encroachment Observations

Attributes	Assigned Training Mission	Score	Comments
Cultural Resources	Air Drop		Same as above.
	Special Operations		Same as above.
Range Transients	Counterland		Illegal human traffic and resulting law enforcement cross/access the BMGR-E; currently, no electronic ground detection exists downrange. Discovery leads to range closures and cease weapons expenditures. Planned actions include continued interaction with Customs Border Protection agents and continued research on feasibility of ground-based, ground-detection radar systems in interest of human safety. In 2010, the Air Force has leveraged Civil Air Patrol flights with early AM sorties to help clear the range before opening. This program has been deemed a success to help visually acquire illegal traffic (abandoned and staged vehicles) and act as a deterrent to illegal traffic.
	Air Drop		Same as above.
	Special Operations		Same as above.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Blair Lakes Assessment Details

Range Mission Description

Blair Lakes Range provides a venue for basic skill development and recurring proficiencies in A-G free-fall and strafing ordnance delivery operations. Blair Lakes R-2211 is primarily a Basic Surface Attack (BSA), Class-A Scoring capable range.

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												
Strategic Attack													
Counterair	PMC	PMC			FMC	FMC	FMC	FMC	FMC			FMC	FMC
Counterspace													
Counterland	PMC	PMC			PMC	PMC	FMC	FMC	FMC			FMC	FMC
Countersea													
Information Operations													
Electronic Combat Support	FMC	FMC			FMC	PMC	FMC	FMC	FMC			FMC	FMC
Command and Control													
Air Drop	FMC	PMC			PMC	FMC	FMC	PMC	FMC			FMC	FMC
Air Refueling													
Spacelift													
Special Operations	PMC	FMC			FMC	PMC	FMC	FMC	FMC			PMC	FMC
Intelligence, Surveillance, and Reconnaissance	FMC	FMC			PMC	PMC	PMC	PMC	FMC			FMC	FMC

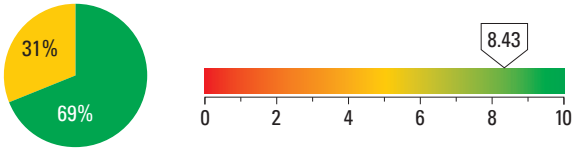
Legend: FMC, PMC, NMC

Encroachment Data

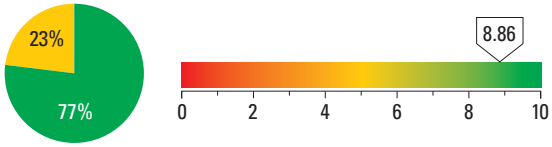
Mission Areas	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
	Encroachment Factors											
Strategic Attack												
Counterair	Minimal	Moderate	Minimal		Moderate	Minimal	Minimal	Moderate	Minimal	Minimal	Minimal	Minimal
Counterspace												
Counterland	Minimal	Moderate	Minimal		Moderate	Minimal	Minimal	Moderate	Minimal	Minimal	Moderate	Minimal
Countersea												
Information Operations												
Electronic Combat Support	Minimal	Minimal	Moderate		Moderate	Minimal	Minimal	Moderate	Minimal	Minimal	Minimal	Minimal
Command and Control												
Air Drop	Minimal	Moderate	Minimal		Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Air Refueling												
Spacelift												
Special Operations	Minimal	Minimal	Minimal		Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Moderate	Minimal
Intelligence, Surveillance, and Reconnaissance	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Moderate	Minimal	Minimal	Minimal	Minimal

Legend: Minimal, Moderate, Severe

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

Blair Lakes R-2211 is very good at its designed capability, being a BSA range. It does not lend itself well to large force employments, nor to joint ground maneuver operations due to its small size and isolated locale.

Summary Observations

Blair Lakes—R-2211 is a conventional, BSA range. It contains two conventional circle targets, one Nuke circle, and four straff pits. Blair Lakes is approximately 23nm from Alaska's second largest city/township, and 25nm from Eielson AFB. It is too small for Strategic Attack, Counterspace, and Air Refueling. Blair Lakes is remote and situated in swampy wetland tundra terrain. The remoteness lends well to avoiding encroachment, but does impact ability for ground maneuver. Likewise, its remoteness (air-only access for months) prohibits robust infrastructure to support Information Operations and Spacelift.

Blair Lakes 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	7.31	7.31	8.61	NA	**Encroachment Scores**	9.09	9.09	8.64	NA
No comments.					No comments.				

Blair Lakes Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Counterair	●	The small range limits Counterair operations. There is no remedy; some mitigation if scheduling adjacent Eielson MOA simultaneously.
	Counterland	●	The small range limits air operations supporting ground maneuver tactics. There is no remedy; some mitigation if scheduling adjacent Eielson MOA simultaneously. Also, there is limited terrain available in/near infrastructure and targets that are conducive to vehicle and foot movements. Most terrain is sensitive tundra and wetlands.
	Special Operations	●	Same as above.
Airspace	Counterair	●	The small range limits Counterair operations. There is no remedy; some mitigation if scheduling adjacent Eielson MOA simultaneously.
	Counterland	●	The small range limits air operations in support of Counterland operations. There is no remedy; some mitigation if scheduling adjacent Eielson MOA simultaneously.
	Air Drop	●	The small range limits Counterair operations. There is no remedy; some mitigation if scheduling adjacent Eielson MOA simultaneously.
Targets	Counterland	●	There are limited infrastructure targets and suitable maneuver spaces for large scale training operations. Small unit movement and small CAS scenarios are applicable. Sensitive tundra terrain and isolated locale prohibit further development.
	Air Drop	●	Air Drop is limited to the main complex and must avoid target impact areas. The noted target sizes are small and in close proximity to inhabited structures, thus restricting choices of munitions training units are able to expend. Surrounding terrain is muskeg/permafrost soils not conducive to movement by foot. There is no remedy other than expensive gravel excavation and backfill.
	Intelligence, Surveillance and Reconnaissance	●	Year-round access is limited, inhibiting placement of C4ISR targets. There is a cost effective remedy until permanent year-round access is developed.
Threats	Counterland	●	Surface-to-air emitter threats are not normally resident. They could be emplaced; however, it would be logistically and financially challenging.
	Electronic Combat Support	●	Same as above. In addition, electronic emitters face added restrictions due to their proximity and line-of-sight to critical FAA radars and communications nodes.
	Special Operations	●	Same as Counterland.
	Intelligence, Surveillance and Reconnaissance	●	Same as Counterland.
Scoring & Feedback System	Intelligence, Surveillance and Reconnaissance	●	There currently is limited feedback and scoring for any type of C4ISR operations.
Infrastructure	Air Drop	●	The range is isolated and remote. All Air Drop operations, except in winter months when ice bridge is in place, will require land to recover loads.
	Intelligence, Surveillance and Reconnaissance	●	The isolated and remote nature of the range limits emplacing detailed C4ISR targets and feedback systems.
MOUT Facilities	Special Operations	●	Existing infrastructure could be used for small-unit tactics, but are not true MOUT facilities. Additionally, no small-unit tactics feedback systems are permanently installed.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Blair Lakes Detailed Comments

Encroachment Observations

Attributes	Assigned Training Mission	Score	Comments
Munitions Restrictions	Counterair	●	Counterair may be conducted, but it is limited to short-range engagements due to small lateral and vertical size of airspace. There is no room for live ordnance expenditures. One aspect of a remedy for non-ordnance delivery training is scheduling Eielson MOA and R-2211 simultaneously, alleviating some lateral space restrictions.
	Counterland	●	Counterland is limited by small number of targets/target sets. Surrounding terrain is muskeg/permafrost soils that are not conducive to movement by foot/vehicle traffic, and the range's remote nature precludes significant build up. There is no remedy other than expensive gravel excavation/backfill and road building.
	Air Drop	●	Air Drop is limited to the main complex and must avoid target impact areas. The noted targets sizes are small and in close proximity to habitable structures, thus restricting choices of munitions training units are able to expend. Surrounding terrain is muskeg/permafrost soils not conducive to movement by foot. There is no remedy other than expensive gravel excavation and backfill.
Spectrum	Electronic Combat Support	●	There is limited capability to emplace threat emitters on-range. They have to be flown in during summer months, or hauled over an ice bridge in the winter and left there. Moreover, the airspace lateral and vertical limits may limit tactics to familiarization operations only. Lastly, the close proximity and direct line of site to critical FAA radars limits the type and quantity of emitters.
Airspace	Counterair	●	Airspace volume is too small for large force employment. Strictly designed for a 4-ship maximum, and simple/basic tactics execution.
	Counterland	●	Same as above.
	Electronic Combat Support	●	Same as above.
	Air Drop	●	Same as above.
	Special Operations	●	Same as above.
Adjacent Land Use	Counterair	●	There is a limited MOA surrounding the restricted area. All lands surrounding are wetlands, sensitive forest lands, and/or possess civil airways. All of these factors act as de facto encroachment aspects.
	Counterland	●	Same as above.
	Electronic Combat Support	●	Same as above.
	Intelligence, Surveillance and Reconnaissance	●	Same as above.
Wetlands	Counterland	●	The surrounding terrain is comprised of sensitive muskeg/permafrost soils and is not conducive to movement by vehicle or foot. Targets are limited to the small number of existing bombing circles. There is no remedy other than expensive gravel excavation and backfill.
	Special Operations	●	The surrounding terrain is comprised of sensitive muskeg/permafrost soils and is not conducive to movement by vehicle or foot. There is no remedy other than expensive gravel excavation and backfill.

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Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Bollen Assessment Details

Range Mission Description

Provide a quality, realistic, tactical range environment for A-G, forward air control and airdrop training to ensure the combat readiness of flying units throughout the Northeast and Mid Atlantic region. Primary Users 113 FW, 175th FW

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
Strategic Attack	PMC	PMC			FMC	PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Counterair	PMC	PMC			FMC	PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Counterspace													
Counterland	PMC	PMC			FMC	PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Countersea													
Information Operations													
Electronic Combat Support													
Command and Control	FMC	FMC			FMC	PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Air Drop	PMC	PMC			FMC	PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Air Refueling													
Spacelift													
Special Operations	PMC	PMC			FMC	PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Intelligence, Surveillance, and Reconnaissance	PMC	PMC			FMC	PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC

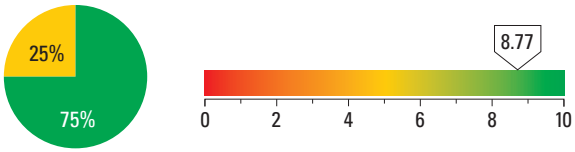
Legend: FMC PMC NMC

Encroachment Data

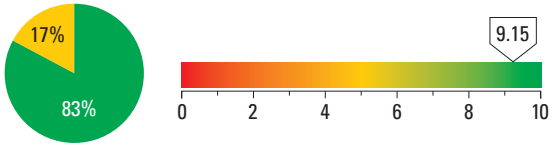
Mission Areas	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strategic Attack	Minimal	Moderate	Minimal		Moderate	Minimal	Moderate	Minimal	Minimal	Minimal	Minimal	Minimal
Counterair	Minimal	Moderate	Minimal		Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Counterspace												
Counterland	Minimal	Moderate	Minimal		Moderate	Minimal	Moderate	Minimal	Minimal	Minimal	Minimal	Minimal
Countersea												
Information Operations												
Electronic Combat Support	Minimal	Minimal	Minimal		Moderate	Minimal	Moderate	Minimal	Minimal	Minimal	Minimal	Minimal
Command and Control	Minimal	Minimal	Minimal		Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Air Drop	Moderate	Minimal	Minimal		Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Air Refueling												
Spacelift												
Special Operations	Minimal	Minimal	Minimal		Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Intelligence, Surveillance, and Reconnaissance	Minimal	Minimal	Minimal		Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal

Legend: Minimal Moderate Severe

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

1. The small size of the airspace and impact area directly affects the majority of mission areas.
2. Many munitions are restricted due to the small size of the impact area.
3. Counterair is fallback mission within the range airspace.
4. Fourth Generation fighters will not be able to utilize Bollen Range effectively without increase in restricted airspace size and noise assessment.
5. Modern precision weapons require larger landspace and airspace.

Summary Observations

1. The small size of the airspace and impact area directly affects the majority of mission areas.
2. Many munitions are restricted due to the small size of the impact area.
3. Counterair is a fallback mission within the range airspace.
4. Fourth Generation fighters will not be able to utilize Bollen Range effectively without an increase in restricted airspace size and noise assessment.
5. Modern precision weapons require larger landspace and airspace.

Bollen 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	8.90	8.90	8.77	8.77	**Encroachment Scores**	9.43	9.43	9.15	9.15
1. The size of the current airspace needs to be modified. Preliminary research is underway and discussions with FAA have taken place regarding modifying existing training airspace. Positive results anticipated. 2. Several threat systems have been researched and several avenues for funding are being pursued. Anticipating positive outcome with greatly improved threat training capabilities. 3. Several new missions to range are being integrated. These new missions will increase training realism and do so on a non-interference basis with existing training missions. 4. Encroachment issues stable at this time.					No comments.				

Bollen Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Strategic Attack		Range activities restricted due to small landspace that limit tactics; no planned remedy.
	Counterair		Same as above.
	Counterland		Same as above.
	Air Drop		Same as above.
	Special Operations		Same as above.
	Intelligence, Surveillance and Reconnaissance		Same as above.
Airspace	Strategic Attack		Range activities restricted due to small landspace that limit tactics; planning to increase restricted airspace size.
	Counterair		Same as above.
	Counterland		Same as above.
	Air Drop		Same as above.
	Special Operations		Same as above.
	Intelligence, Surveillance and Reconnaissance		Same as above.
Threats	Strategic Attack		There is limited threat capability resulting in a minimal training benefit; funding request for upgrade has been made.
	Counterair		Same as above.
	Counterland		Same as above.
	Command and Control		Same as above.
	Air Drop		Same as above.
	Special Operations		Same as above.
	Intelligence, Surveillance and Reconnaissance		Same as above.

Encroachment Observations

Attributes	Assigned Training Mission	Score	Comments
Threatened & Endangered Species	Air Drop		Endangered species inhabit the current drop zone. The drop zone offers incomplete mission feedback and selective relocation by wildlife biologists.
Munitions Restrictions	Strategic Attack		The range has a small landspace and restricts munition types. Planning taking place to modify existing airspace to better meet mission requirements.
	Counterair		Same as above.
	Counterland		Same as above.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Bollen Detailed Comments

Encroachment Observations

Attributes	Assigned Training Mission	Score	Comments
Airspace	Strategic Attack	●	The range has a small airspace which limits tactics. Planning in process to increase restricted airspace size.
	Counterair	●	Same as above.
	Counterland	●	Same as above.
	Electronic Combat Support	●	Same as above.
	Command and Control	●	Same as above.
	Air Drop	●	Same as above.
	Special Operations	●	Same as above.
	Intelligence, Surveillance and Reconnaissance	●	Same as above.
Noise Restrictions	Strategic Attack	●	Range is restricted because no missions are allowed from 2300 hours–0700 hours local, which limits night training. There is currently no planned remedy.
	Counterland	●	Same as above.
	Electronic Combat Support	●	Same as above.

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Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Cannon Assessment Details

Range Mission Description

Cannon Range is the primary training range for the 442FW. The 442FW utilizes Cannon Range twice a day Monday thru Friday and one weekend a month. Cannon hosts Joint Terminal Attack controllers on an average of two weeks per month working with the A-10's in Close Air Support. Cannon also supports the 131BW B-2 training, 139th AW for Airdrops, as well as an assortment of other types of air to ground exercises throughout the year. Cannon supports the 1-135th and the 3-135th Army aviation units and Missouri Army Guard in their UH-60 and AH-6 live gunnery training.

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
Strategic Attack	PMC	NMC			PMC	PMC	PMC	PMC	PMC				
Counterair													
Counterspace													
Counterland	PMC	PMC			FMC	PMC	PMC	PMC	PMC		FMC	PMC	
Countersea													
Information Operations	FMC					NMC		PMC	PMC				
Electronic Combat Support	FMC	PMC			PMC	NMC	NMC	PMC	PMC				
Command and Control	FMC	PMC			FMC	NMC	NMC	NMC	PMC			PMC	
Air Drop	PMC	PMC			FMC	PMC	FMC	FMC	PMC				
Air Refueling													
Spacelift													
Special Operations	PMC	PMC			FMC	PMC	PMC	PMC	PMC		PMC	PMC	
Intelligence, Surveillance, and Reconnaissance	FMC	PMC			PMC	NMC	NMC	NMC	PMC				

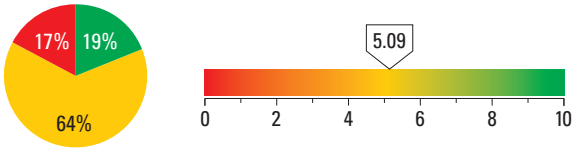
Legend: FMC, PMC, NMC

Encroachment Data

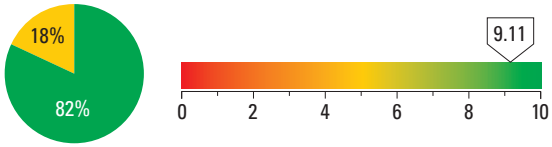
Mission Areas	Encroachment Factors												
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strategic Attack	Minimal	Moderate	Minimal		Minimal	Minimal	Minimal	Moderate	Minimal	Minimal	Minimal	Minimal
Counterair	Minimal	Moderate	Minimal		Minimal	Minimal	Minimal		Minimal	Minimal		Minimal
Counterspace												
Counterland	Minimal	Moderate	Minimal		Moderate	Minimal	Minimal	Moderate	Minimal	Minimal	Minimal	Minimal
Countersea												
Information Operations												
Electronic Combat Support	Minimal	Moderate	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Command and Control	Minimal		Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Air Drop	Minimal	Moderate	Minimal		Moderate	Minimal	Minimal	Moderate	Minimal	Minimal	Minimal	Minimal
Air Refueling												
Spacelift												
Special Operations	Minimal	Moderate	Minimal		Moderate	Minimal	Minimal	Moderate	Minimal	Minimal	Minimal	Minimal
Intelligence, Surveillance, and Reconnaissance	Minimal		Minimal		Moderate	Minimal	Minimal	Moderate	Minimal	Minimal	Minimal	Minimal

Legend: Minimal, Moderate, Severe

Capability Chart and Scores



Encroachment Chart and Scores



Cannon Assessment Details

Summary Observations	Summary Observations
1. Cannon Range primarily provides a joint training environment for Counterland operations. Other training uses in decreasing order of utilization are Special Operations, Air Drop, Strategic Attack, ISR, and Counterair. Training for Command and Control, Electronic Combat Support, and Information Operations are integrated, within Cannon Range's capabilities, in each mission area. 2. Range Support, particularly resource allocation (personnel and O&M $) is driving factor behind many of areas rated "Yellow" 3. 84% of rated areas are fully or partially mission capable	1. Adjacent Land Use is the highest encroachment factor affecting Cannon Range. As part of Fort Leonard Wood, small arms ranges are encroaching on the east side of Cannon to the point where it is effecting all air usage to some degree, and in some cases limiting when users can occupy these facilities (Army .50 cal range being active) 2. Mission areas most severely impacted are Counterland, since this encompasses most of the range's mission.

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	5.17	5.17	5.17	5.09	**Encroachment Scores**	9.05	9.05	9.05	9.11
Capability scores have remained relatively unchanged from last CY. A vast majority of areas rated yellow are due to insufficient personnel to perform the type and duration of missions being requested. Cannon Range has limited capability to perform missions outside the normal day to day operations. The range performs very well at CAS, basic air drops, etc. When the mission dictates large ground forces, enhanced threats, and large force exercises, training capabilities fall short. This shortfall is due to manning, airspace size, and budget shortfalls. In the coming years, range managers will continue to operate as always, maximizing the assets and personnel available.					1. Scores remained relatively the same since last CY; however, improved business practices have been implemented to mitigate the impact of the .50 cal Army range. Range managers have continued to deconflict the range schedule proactively with Fort Leonard Wood. 2. Encroachment will continue to be an issue in the future, maybe more so since the Army is modifying some of their small arms ranges, to include Range 24 (.50 cal) to support more soldiers. This will negate the current way of deconflicting schedules. Currently, the Army's requirement to train soldiers on the .50 cal range is able to be mitigated by giving them days that Cannon Range is not scheduled to go hot. However, in the future with more soldiers needing trained on those ranges, the Air Force sees encroachment to be an issue for several years to come. 3. In the future with current encroachment from other DoD assets (i.e., Army), Cannon Range will mitigate all conflicting land usage requirements by developing a solid relationship with our DoD counterparts. This will include analyzing the scheduling process to ensure all parties can perform their missions using the same landspace to accomplish goals.			

Cannon Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Strategic Attack	🟡	Adjoining land uses and infrastructure effectively limit or preclude certain ordnance deliveries, due to WDZ containment. No planned remedy.
	Counterland	🟡	Adjoining land uses and infrastructure effectively limit or preclude certain ordnance deliveries, particularly IAM due to WDZ size. The terrain limits feasible observation positions for Type 1 CAS controls.
	Air Drop	🟡	Range is unable to conduct static line airdrop due to vegetation, terrain, and adjacent HE impact area.
	Special Operations	🟡	Adjoining land uses and infrastructure effectively limit or preclude certain ordnance deliveries. Terrain limits feasible observation positions for Type 1 CAS controls.
Airspace	Strategic Attack	🔴	There is insufficient volume and attributes of airspace to conduct large force exercises or for bomber aircraft to maneuver. Training space is marginal for fighter aircraft conducting strategic attack training.
	Counterland	🟡	The volume and attributes of airspace limit tactics and ordnance.
	Electronic Combat Support	🟡	The volume of airspace limits types of EC aircraft that can utilize range airspace. Other nearby airspace can accommodate Iron Triad. The volume and attributes (chaff/flare restrictions) of airspace limit some types of defensive reactions.
	Command and Control	🟡	The volume of airspace limits types of C2 aircraft that can utilize range airspace. Other nearby airspace can accommodate Iron Triad. (Lindbergh MOA/ATCAA).
	Air Drop	🟡	The volume and attributes of airspace limit tactics.
	Special Operations	🟡	The volume and attributes of airspace limit tactics and ordnance.
	Intelligence, Surveillance and Reconnaissance	🟡	The volume of airspace limits types of ISR aircraft that can utilize range airspace. Other nearby airspace can accommodate manned ISR. The range accommodates space-based ISR. The restricted airspace is suitable for small and micro-UAS, but marginal for medium UAS.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Cannon Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Targets	Strategic Attack	🟡	The range target suite provides only some but not all target types possible for strategic attack.
	Electronic Combat Support	🟡	The range has a limited capability to provide targets in the electro-magnetic spectrum.
	Intelligence, Surveillance and Reconnaissance	🟡	Thermal characteristics of the target array are low-fidelity. Good CCD capabilities: terrain; vegetation; and dynamic, movable, and mobile targets provide high quality training for the find, fix, and track portions of the kill chain.
Threats	Strategic Attack	🟡	Limited capability to replicate a few surface-to-air tactical threats—RWR Lite x 2, Smokey SAM launchers x 2.
	Counterland	🟡	There is limited capability to replicate a few tactical surface-to-air threats—RWR Lite x2, Smokey SAM launchers x 2. There is limited untrained, highly motivated ground force (personnel) to act as aggressors/Red Force against JTACS/SOF.
	Information Operations	🔴	Limited because the only IO threat capability is spoofing or denial of service in UHF/VHF spectrum.
	Electronic Combat Support	🔴	Limited capability to replicate a few surface-to-air tactical threats—RWR Lite x 2, Smokey SAM launchers x 2.
	Command and Control	🔴	There is no capability to provide threats effecting C2 at a level higher than JTAC/AFAC/Flt Lead.
	Air Drop	🟡	There is only limited capability to replicate a few tactical surface-to-air threats—RWR Lite x2, Smokey SAM launchers x 2.
	Special Operations	🟡	There is only limited capability to replicate a few tactical surface-to-air threats—RWR Lite x2, Smokey SAM launchers x 2. There is only limited untrained, highly motivated ground force (personnel) to act as aggressors/Red Force against SOF.
	Intelligence, Surveillance and Reconnaissance	🔴	Only limited capability to replicate a few tactical surface-to-air threats—RWR Lite x2, Smokey SAM launchers x 2.
Scoring & Feedback System	Strategic Attack	🟡	A portion of the target array is un-scoreable; aircraft and ground personnel TSPI are not collected or stored. The range is SADL equipped, with no JTIDS capability, and no method to monitor C4I network information flow. Some hardware on site for implementation of LVC network. The scoreable target array will increase by end of FY2010 with phase 2 and 3 of JAWSS installation.
	Counterland	🟡	A portion of the target array is un-scoreable; aircraft and ground personnel TSPI are not collected or stored. The range is SADL equipped, with no JTIDS capability, and no method to monitor C4I network information flow. Some hardware on site for implementation of LVC network. The scoreable target array will increase by end of FY2010 with phase 2 and 3 of JAWSS installation.
	Electronic Combat Support	🔴	There is no method to assess or provide feed back for ECM/ECCM. SADL equipped, no JTIDS capability, no method to monitor C4I network information flow.
	Command and Control	🔴	Aircraft and ground personnel TSPI are not collected or stored. SADL equipped, with no JTIDS capability, no method to monitor C4I network information flow. There is some hardware on site for implementation of LVC network through ARCNet.
	Special Operations	🟡	A portion of the target array is un-scoreable; aircraft and ground personnel TSPI are not collected or stored. SADL equipped, with no JTIDS capability, and no method to monitor C4I network information flow. Some hardware on site for implementation of LVC network. The scoreable target array will increase by end of FY2010 with phase 2 and 3 of JAWSS installation.
	Intelligence, Surveillance and Reconnaissance	🔴	No substantial capability to provide feedback for ISR training. A portion of target array is un-scoreable; aircraft TSPI not collected or stored. The range is SADL equipped, with no JTIDS capability, and no method to monitor C4I network information flow. Some hardware is on site for implementation of LVC network through ARCNet. The scoreable target array will increase by FY2010 with phase 2 and 3 of JAWSS installation.
Infrastructure	Strategic Attack	🟡	The volume of indoor storage space is inadequate to store and maintain certain strategic attack targets, including next generation threats. There is no classified vault.
	Counterland	🟡	A bridge failure in FY2005 cut off access to the host U.S. Army post, nearly eliminating joint ground force access, and increasing time for JTACs to reach Cannon Range and certain OPS.
	Information Operations	🟡	There is a limited volume of space to improve/add hardware.
	Electronic Combat Support	🟡	Same as above.
	Command and Control	🔴	There is insufficient volume of space for a C2 unit to mobilize and operate out of existing buildings.

Cannon Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Infrastructure	Special Operations	🟡	Bridge failure in FY2005 cut off access to host U.S. Army post, nearly eliminating joint ground force access, increasing time for JTACs to reach Cannon Range and certain OPS.
	Intelligence, Surveillance and Reconnaissance	🔴	No small paved runway available for small ISR platforms requiring a prepared or hard surface.
Range Support	Strategic Attack	🟡	Insufficient number of personnel, full-time or part-time, to maintain target array, conduct support functions, or provide 2-shift manning. Operational hours limited to 8 hours per day.
	Counterland	🟡	Insufficient number of personnel, full-time or part-time, to maintain target array, conduct support functions, or provide 2-shift manning. Operational hours limited to 8 hours per day. UHF/VHF systems at 100% capacity, and additional hardware is required for mission growth.
	Information Operations	🟡	Insufficient number of personnel, full-time or part-time, to maintain target array, conduct support functions, or provide 2-shift manning. Operational hours limited to 8 hours per day. SIPRNET consistently unreliable. Limited NIPRNET bandwidth
	Electronic Combat Support	🟡	Insufficient number of personnel, full-time or part-time, to maintain target array, conduct support functions, or provide 2-shift manning. Operational hours limited to 8 hours per day.
	Command and Control	🟡	Same as above.
	Air Drop	🟡	Insufficient number of personnel, full-time or part-time, to maintain target array, conduct support functions, or provide 2-shift manning. Operational hours limited to 8 hours per day. Limited personnel and equipment to handle CDS or HE airdrops.
	Special Operations	🟡	Insufficient number of personnel, full-time or part-time, to maintain target array, conduct support functions, or provide 2-shift manning. Operational hours limited to 8 hours per day. Range personnel generally unavailable to assist with
	Intelligence, Surveillance and Reconnaissance	🟡	Insufficient number of personnel, full-time or part-time, to maintain target array, conduct support functions, or provide 2-shift manning. Operational hours limited to 8 hours per day.
Collective Ranges	Special Operations	🟡	Need to add properly equipped and trained aggressors/Red Force to improve.
MOUT Facilities	Counterland	🟡	There are five total complexes, and only low-fidelity thermal/IR signature.
	Command and Control	🟡	Same as above.
	Special Operations	🟡	There are five total complexes, and only low-fidelity thermal/IR signature. The range needs to add a sim-round capable shoot complex which is required to integrate the total mission from infiltration through exfiltration with A-G platforms.

Encroachment Observations

Attributes	Assigned Training Mission	Score	Comments
Munitions Restrictions	Strategic Attack	🟡	No live ordnance permitted. Theoretically, the range has limited capability to employ IAM 170 acres of inactive U.S. Army artillery range cannot be cleared for range residue. Flares not permitted below 1,000 ft. AGL.
	Counterair	🟡	Chaff (except RR-112) not permitted above 3,000 ft. AGL
	Counterland	🟡	No live ordnance permitted. White Phosphorous not permitted. Theoretically, the range has limited capability to employ IAM. 170 acres of inactive U.S. Army artillery range cannot be cleared for range residue; Chaff (except RR-112) not permitted above 3,000 ft. AGL. Flares not permitted below 1,000 ft. AGL. Illumination flares not permitted.
	Electronic Combat Support	🟡	Chaff (except RR-112) not permitted above 3,000 ft. AGL. Flares not permitted below 1,000 ft. AGL.
	Air Drop	🟡	Chaff (except RR-112) not permitted above 3,000 ft. AGL. Flares not permitted below 1,000 ft. AGL.
	Special Operations	🟡	No live ordnance permitted. White Phosphorous not permitted. Theoretically, the range has limited capability to employ IAM 170 acres of inactive U.S. Army artillery range cannot be cleared for range residue; Chaff (except RR-112) not permitted above 3,000 ft. AGL. Flares not permitted below 1,000 ft. AGL.
Airspace	Counterland	🟡	Surface Danger Zones from U.S. Army small arms ranges and demolitions ranges limit minimum altitudes over certain areas adjacent to impact area 10% of time.
	Air Drop	🟡	Same as above.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Cannon Detailed Comments

Encroachment Observations

Attributes	Assigned Training Mission	Score	Comments
Airspace	Special Operations	●	Same as above.
	Intelligence, Surveillance and Reconnaissance	●	Same as above.
Adjacent Land Use	Strategic Attack	●	Adjoining U.S. Army Multi-Purpose Machine Gun Range (.50 cal) closes Cannon Range to all use, including maintenance, approximately 30-60 hours/month, but not all of these hours are scheduled by Cannon Range for use or maintenance. Adjacent land uses limit or eliminate employing inert IAMs, some PWII, and other ordnance.
	Counterland	●	Same as above.
	Air Drop	●	Adjoining U.S. Army Multi-Purpose Machine Gun Range (.50 cal) closes Cannon Range to all use, including maintenance, approximately 30-60 hours/month, but not all of these hours are scheduled by Cannon Range for use or maintenance. Adjoining Live Fire Convoy course limits minimum altitudes over a portion of the range and ground personnel locations, including a portion of Slingshot DZ, 20% of time
	Special Operations	●	Same as above.
	Intelligence, Surveillance and Reconnaissance	●	Same as above.

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Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Claiborne Assessment Details

Range Mission Description

Claiborne is an A-G range whose primary user is the 47th Fighter Squadron, Barksdale AFB, LA.

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												
Strategic Attack	●	●			●	●	●	●	●		●	●	
Counterair													
Counterspace													
Counterland	●	●			●	●	●	●	●		●	●	
Countersea													
Information Operations													
Electronic Combat Support													
Command and Control													
Air Drop													
Air Refueling													
Spacelift													
Special Operations													
Intelligence, Surveillance, and Reconnaissance													

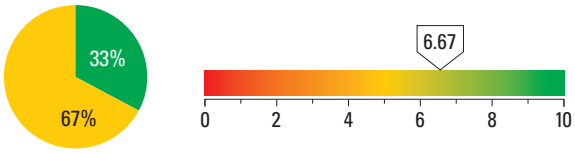
Legend: FMC ● PMC ● NMC ●

Encroachment Data

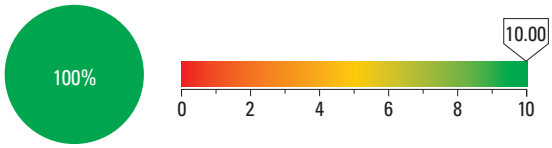
Mission Areas	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
	Encroachment Factors											
Strategic Attack	●	●			●	●	●	●	●	●	●	●
Counterair												
Counterspace												
Counterland	●	●			●	●	●	●	●	●	●	●
Countersea												
Information Operations												
Electronic Combat Support												
Command and Control												
Air Drop												
Air Refueling												
Spacelift												
Special Operations												
Intelligence, Surveillance, and Reconnaissance												

Legend: Minimal ● Moderate ● Severe ●

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

No comments.

Summary Observations

No comments.

Historical Information, Results, and Future Projections

Calendar Year	2008	2009	2010	2011
Capability Scores	6.56	6.56	7.86	6.67

No comments.

Historical Information, Results, and Future Projections

Calendar Year	2008	2009	2010	2011
Encroachment Scores	10.00	10.00	10.00	10.00

No comments.

Claiborne Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Strategic Attack		Claiborne Range is a small range located in a U.S. National Forest. Authorized weapons are limited to practice bombs and training rounds. This does not include inert JDAMs or LGBs. Additional land is not currently available. No remedy planned at this time.
	Counterland		Same as above.
Threats	Strategic Attack		Current inventory includes only an RWR lite threat emitter, which is not utilized very often in A-10 training scenarios and not robust enough for B-52 training. Local ACFT are required to travel further to accomplish required training. The current plan is to investigate increasing the ECM capabilities and adding simulated SAM threats upon completion of other improvements; 3 year plan.
	Counterland		Same as above.
Scoring & Feedback System	Strategic Attack		The current JAWSS scoring system is limited by antiquated analog technology. This prevents efficient and ongoing data storage and limits feedback to hard copies only. Current plan is to update scoring system upon completion of other facility upgrades; 2–3 years.
	Counterland		Same as above.
Range Support	Strategic Attack		Although a T1 communications line is in place and functioning, AF global email and the PEX server are unavailable. This requires additional effort by all to ensure that range personnel are aware of changes to the training schedule. A work order is in progress; estimated time of resolution is unknown.
	Counterland		Same as above.
Collective Ranges	Strategic Attack		There are currently no designated observation points besides the control towers for ground units; i.e., TACP teams. This limits training scenarios in which JTACs are required. Plans for construction are in currently in progress with an estimated completion date no later than October 2012.
	Counterland		Same as above.
MOUT Facilities	Strategic Attack		The current facility is very limited in scope. This limits training opportunities. Plans for construction are in currently in progress with an estimated completion date no later than October 2012.
	Counterland		Same as above.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Dare County Ranges Assessment Details

Range Mission Description

The Dare County Bombing Range (DCBR) is the primary training location for the 4th Fighter Wing, Seymour Johnson AFB, NC. Besides providing bombing, gunnery, and electronic combat training for these F-15E aircrews, a multitude of Navy, Marine, and Air National Guard units also use the range. The range is extremely popular with special operations (air and ground) and forward air control units from all Military Services for training personnel from across the U.S. and some foreign bases.

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
Strategic Attack	●	●			●	●	●	●	●			●	●
Counterair	●	●			●	●	●	●	●			●	●
Counterspace													
Counterland	●	●			●	●	●	●	●			●	●
Countersea													
Information Operations	●	●			●	●	●	●	●			●	●
Electronic Combat Support	●	●			●	●	●	●	●			●	●
Command and Control	●	●			●	●	●	●	●			●	●
Air Drop													
Air Refueling													
Spacelift													
Special Operations	●	●			●	●	●	●	●			●	●
Intelligence, Surveillance, and Reconnaissance	●	●			●	●	●	●	●			●	●

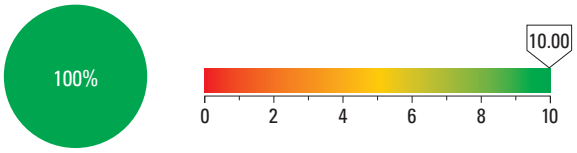
Legend: FMC ● PMC ● NMC ●

Encroachment Data

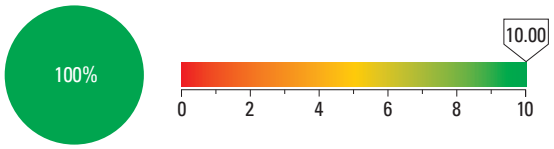
Mission Areas	Encroachment Factors												
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strategic Attack	●	●	●		●	●	●	●	●	●	●	●
Counterair	●	●	●		●	●	●	●	●	●	●	●
Counterspace												
Counterland	●	●	●		●	●	●	●	●	●	●	●
Countersea												
Information Operations	●	●	●		●	●	●	●	●	●	●	●
Electronic Combat Support	●	●	●		●	●	●	●	●	●	●	●
Command and Control	●	●	●		●	●	●	●	●	●	●	●
Air Drop												
Air Refueling												
Spacelift												
Special Operations	●	●	●		●	●	●	●	●	●	●	●
Intelligence, Surveillance, and Reconnaissance	●	●	●		●	●	●	●	●	●	●	●

Legend: Minimal ● Moderate ● Severe ●

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

There is no degradation of capabilities currently affecting DCBR due to encroachment. The potential for future wind energy farms does exist in surrounding airspace, but there are no farms currently planned that will impact our operations.

Summary Observations

Currently, there are no significant encroachment issues that are degrading the range training mission.

Dare County Ranges Assessment Details

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Capability Scores	9.95	9.95	9.59	10.00
There is no current issue with capability degradation from encroachment on DCBR due to the isolated location. The only potential issue in the future could be the vertical encroachment of wind farms into the surrounding airspace which could infringe on low altitude training in the R5314 Complex.				

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Encroachment Scores	9.95	9.95	9.55	10.00
The effects of encroachment factors are negligible. Range training capabilities have expanded dramatically due to the efficient use of existing air and ground space. Developers are showing increasing interest in developing wind farms at various locations in the coastal area, some in fairly close proximity to the range air and ground space. No development has been done as of yet. The range mission should continue to be unaffected for the foreseeable future.				

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Draughon Assessment Details

Range Mission Description

Draughon Range supports daily A-G sorties and electronic combat training. In addition, the range supports training for F-16 CMs, JASDF F-2s, Airdrop C-130 Missions, Helicopter infiltration/exfiltration exercises, SERE training, and SFS 40mm Grenade Launcher Initial Qualification training.

Capability Data

Mission Areas	Landspace	Airspace	Seaspace	Underseaspace	Targets	Threats	Scoring & Feedback System	Infrastructure	Range Support	Small Arms Ranges	Collective Ranges	MOUT Facilities	Suite of Ranges
	Capability Attributes												
Strategic Attack	PMC	PMC	FMC		PMC	PMC	FMC	FMC			NMC		PMC
Counterair													
Counterspace													
Counterland	PMC	PMC	FMC		PMC	PMC	FMC	FMC		PMC	PMC		PMC
Countersea													
Information Operations	PMC	PMC	FMC		NMC	NMC	NMC	FMC			NMC		PMC
Electronic Combat Support	PMC	PMC	FMC		NMC	NMC	NMC	FMC			NMC		PMC
Command and Control													
Air Drop	FMC	PMC	FMC		FMC	PMC	FMC	FMC			PMC		PMC
Air Refueling													
Spacelift													
Special Operations													
Intelligence, Surveillance, and Reconnaissance													

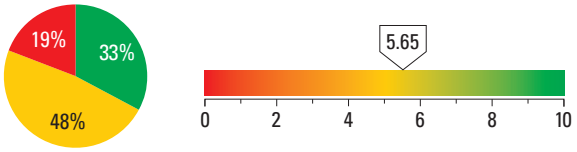
Legend: FMC PMC NMC

Encroachment Data

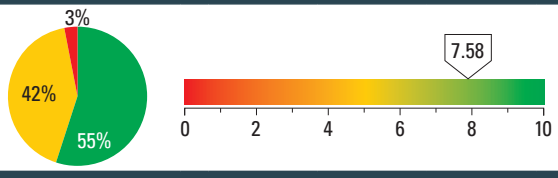
Mission Areas	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
	Encroachment Factors											
Strategic Attack	Minimal	Minimal	Moderate	Minimal	Moderate	Minimal	Moderate	Moderate	Moderate	Minimal	Minimal	Moderate
Counterair												
Counterspace												
Counterland	Minimal	Minimal	Moderate	Minimal	Moderate	Minimal	Moderate	Moderate	Moderate	Minimal	Minimal	Moderate
Countersea												
Information Operations	Minimal	Minimal	Severe	Minimal	Moderate	Minimal	Moderate	Moderate	Minimal	Minimal	Minimal	Moderate
Electronic Combat Support	Minimal	Minimal	Severe	Minimal	Moderate	Minimal	Moderate	Moderate	Minimal	Minimal	Minimal	Moderate
Command and Control												
Air Drop	Minimal	Minimal	Moderate	Minimal	Minimal	Minimal	Moderate	Moderate	Moderate	Minimal	Minimal	Moderate
Air Refueling												
Spacelift												
Special Operations												
Intelligence, Surveillance, and Reconnaissance												

Legend: Minimal Moderate Severe

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

No comments.

Summary Observations

No comments.

Historical Information, Results, and Future Projections

Calendar Year	2008	2009	2010	2011
Capability Scores	NA	NA	5.65	NA

No comments.

Historical Information, Results, and Future Projections

Calendar Year	2008	2009	2010	2011
Encroachment Scores	NA	NA	7.58	NA

No comments.

Draughon Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Strategic Attack	🟡	Limited landspace cannot accommodate modern weapons' danger zones, except from very limited attack axis against non-representative targets for strategic attack. Training is conducted "dry" against simulated targets in off-range areas. There is no further mitigation anticipated. The Air Force is working with USFJ/GOJ Joint Committee to update host nation agreements.
	Counterland	🟡	Same as above.
	Information Operations	🟡	Limited land area would limit ability to distribute threat systems to provide a realistic electronic order of battle, even if frequency spectrum permitted use of threat emitters.
	Electronic Combat Support	🟡	Same as above.
Airspace	Strategic Attack	🟡	Limited size and time restrictions for use of restricted airspace and Positive Control Airspace (PCA) limit ability to realistically train to mission area; efforts continue to expand PCA.
	Counterland	🟡	Same as above.
	Information Operations	🟡	Same as above.
	Electronic Combat Support	🟡	Same as above.
	Air Drop	🟡	Same as above.
Targets	Strategic Attack	🟡	Limited range size and material availability limits ability to simulate strategic targets; no further mitigation planned.
	Counterland	🟡	Limited range size and limited availability of tactical targets from DRMO within Japan limits ability to simulate tactical targets. Provision of excess tactical/armored vehicles/helicopters would significantly improve counterland targets.
	Information Operations	🔴	Electronic Threats for use as targets are not provided except for RWR Lite with limited frequency clearance to single threat system (AAA). Range needs multiple UMTE or JTE with broad frequency clearance from GOJ; however, no efforts are underway due to untenable spectrum restrictions.
	Electronic Combat Support	🔴	Same as above.
Threats	Strategic Attack	🟡	Electronic Threats for use as targets are not provided except for RWR Lite with limited frequency clearance to single threat system (AAA). Range needs multiple UMTE or JTE with broad frequency clearance from GOJ; however, no efforts are underway due to untenable spectrum restrictions. In addition, the range is exploring provision of visual simulation of threat systems. Draughon has recently purchased two (simulated) SA-6 Straight Flush radars with the following features: Skid Mounted, Rotating Dish, Copper Coating, and Green Top Coat with Camo Pattern. Draughon has also constructed a (simulated) SA-3 SAM emplacement as well as a (simulated) AAA formation.
	Counterland	🟡	Same as above.
	Information Operations	🔴	Electronic Threats for use as targets are not provided except for RWR Lite with limited frequency clearance to single threat system (AAA). Range needs multiple UMTE or JTE with broad frequency clearance from GOJ. No efforts underway due to untenable spectrum restrictions.
	Electronic Combat Support	🔴	Same as above.
	Air Drop	🟡	Same as Strategic Attack.
Scoring & Feedback System	Information Operations	🔴	Current low-fidelity threat system (RWR Lite) has no capability to integrate with ACMI or embedded training systems to automatically validate weapons system employment or results.
	Electronic Combat Support	🔴	Same as above.
Small Arms Ranges	Counterland	🟡	The range only has capability for 40mm grenade launcher training due to Host Nation restrictions. While surface area into water is available, the range is technically "Misawa A-G Range" in USFJ/GOJ Joint Committee agreements. Therefore, range is restricted from using ground fire of projectile ammunition. There is no planned resolution.
Collective Ranges	Strategic Attack	🔴	Limited air and land space and proximity of adjacent training areas limits ability for integrated operations with other assets for collective training.
	Counterland	🟡	Same as above; limited ability for small-unit collective training with tactical air control parties is available. There are no additional efforts underway.
	Information Operations	🔴	Same as Strategic Attack.
	Electronic Combat Support	🔴	Same as above.
	Air Drop	🟡	Air and land space size limits ability to conduct large force/collective training.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Draughon Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Suite of Ranges	Strategic Attack	🟡	The range is primarily limited in order by Landspace, Airspace, Targets, and Threats.
	Counterland	🟡	Same as above.
	Information Operations	🟡	The range is primarily limited in order by Threats, Targets, Airspace, and Landspace from primary encroachment factor of Spectrum.
	Electronic Combat Support	🟡	Same as above.
	Air Drop	🟡	Same as Strategic Attack.

Encroachment Observations

Attributes	Assigned Training Mission	Score	Comments
Spectrum	Strategic Attack	🟡	It is challenging to obtain a frequency clearance from GoJ to operate across the band of threat systems, which makes training to any electronic combat unavailable. Embedded training capability of local aircraft (F-16CM with Harm Targeting System R7) provides partial mitigation, but embedded training is insufficient and does not validate total system operation, nor does it replicate adversary tactics, techniques, and procedures for threat system operation. Additional mitigation is underway to conduct cooperative training with local JGSDF I-HAWK and Patriot systems, but coordination with Host Nation takes time. USFJ/DoS/DoD assistance to obtain frequency clearance to operate service/joint threat emitters might enable frequency clearance to operate an Electronic Warfare Range.
	Counterland	🟡	Same as above.
	Information Operations	🔴	Same as above.
	Electronic Combat Support	🔴	Same as above.
	Air Drop	🟡	Same as above.
Airspace	Strategic Attack	🟡	Actual restricted airspace is limited and supplemented with a range Positive Control Area (PCA) sanitized by Misawa AB radar approach control facility. Under Host Nation agreement, PCA is available for hazardous activities (laser/weapons transit), but extent of PCA is limited due to proximity of Misawa AB (10nm South), JGSDF restricted area and commercial air routes. Efforts are underway to extend PCA with additional volume for limited operating times to accommodate specialized training (exercise CAS scenarios and IAM weapons employment). Weapons employment is further restricted by USFJ/GOJ Joint Committee agreement on range restrictions originally established in 1952. Those agreements specify authorized weapons and attack restrictions, which do not account for increased weapon capability and weapon safety analysis. Efforts are underway to modify JC agreement on range restrictions but resolution is uncertain.
	Counterland	🟡	Same as above.
	Information Operations	🟡	Same as above.
	Electronic Combat Support	🟡	Same as above.
Noise Restrictions	Strategic Attack	🟡	Operating hours of the range are limited by USFJ/GOJ Joint Committee agreement on use restrictions for the range originally established in 1952. Range cannot be used after 2000 hrs during Fall-Spring and 2200 hrs during Summer. Operations from 2000-2200 are limited in total number per month. Efforts are underway to amend restrictions, but resolution is uncertain.
	Counterland	🟡	Same as above.
	Information Operations	🟡	Same as above.
	Electronic Combat Support	🟡	Same as above.
	Air Drop	🟡	Same as above.

Draughon Detailed Comments

Encroachment Observations

Attributes	Assigned Training Mission	Score	Comments
Adjacent Land Use	Strategic Attack	●	Adjacent land has been purchased and or leased by Aomori/Misawa Defense Facilities Office (DFO) when frequent low altitude operations are routine. However, several cattle farms, a port, and a nuclear power plant/fuel processing facility have "no overflight" restrictions, which limit access to the range and constrain operations. There is no current effort to increase the buffer area or alter DFO land ownership based on current use.
	Counterland	●	Same as above.
	Information Operations	●	Same as above.
	Electronic Combat Support	●	Same as above.
	Air Drop	●	Same as above.
Cultural Resources	Strategic Attack	●	Formal constraints are minimal, but as a jointly operated range with JASDF, discovery of cultural sites is handled on a case-by-case basis. Land area around the range is a historical site of regional Nanbu clan activities in Northern Japan. If discovered in areas close to target areas, archaeological assessments have the potential to reduce operating availability. No further mitigation planned.
	Counterland	●	Same as above.
	Air Drop	●	Same as above.
Range Transients	Strategic Attack	●	Range includes littoral region off the east coast of the range. Use requires sanitization to ensure area is clear of transients and fishing boats. There is no additional mitigation planned beyond current observation from additional manned sites on range.
	Counterland	●	Same as above.
	Information Operations	●	Same as above.
	Electronic Combat Support	●	Same as above.
	Air Drop	●	Same as above.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Edwards Ranges Assessment Details

Range Mission Description

The range at Edwards AFB is the AFMC center of excellence for research, development, test and evaluation, and training of aerospace systems for the United States and its allies. The combat support and training capabilities of most of the Air Force's weapons systems were first proven at the Edwards Flight Test Range (EFTR), giving AFFTC a direct, tangible link to each of the Air Force's core competencies. To support this, the AFFTC operates and manages the EFTR.

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
Strategic Attack	PMC	FMC			PMC	PMC	FMC	FMC	FMC	FMC	FMC	NMC	FMC
Counterair	PMC	FMC			PMC	PMC	FMC	FMC	FMC	FMC	FMC	NMC	FMC
Counterspace		FMC					FMC		FMC				
Counterland	PMC	FMC			FMC	PMC	FMC	FMC	FMC	FMC	FMC	NMC	FMC
Countersea							FMC		FMC				
Information Operations	FMC	FMC					FMC	FMC	FMC				FMC
Electronic Combat Support	FMC	FMC			FMC	FMC	FMC	FMC	FMC		FMC		FMC
Command and Control	FMC	FMC			FMC	FMC	FMC	FMC	FMC		FMC		FMC
Air Drop	FMC	FMC			FMC	PMC	FMC	FMC	FMC		FMC	NMC	FMC
Air Refueling	FMC	FMC				FMC	FMC		FMC		FMC		FMC
Spacelift		FMC					FMC		FMC				
Special Operations	PMC	FMC			PMC	FMC	FMC	FMC	FMC	FMC	FMC	NMC	FMC
Intelligence, Surveillance, and Reconnaissance	FMC	FMC			FMC	PMC	FMC	FMC	FMC		FMC	NMC	FMC

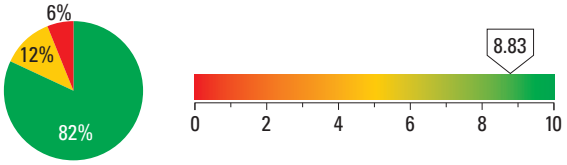
Legend: FMC, PMC, NMC

Encroachment Data

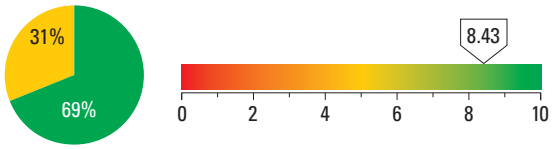
Mission Areas	Encroachment Factors												
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strategic Attack									Minimal			Minimal
Counterair		Moderate	Minimal		Moderate	Moderate	Minimal		Minimal			Minimal
Counterspace									Minimal			Minimal
Counterland	Minimal	Moderate	Minimal			Moderate		Minimal	Minimal	Minimal		Minimal
Countersea												
Information Operations			Moderate		Moderate		Moderate		Minimal			Minimal
Electronic Combat Support			Moderate		Minimal			Minimal	Minimal	Minimal		Minimal
Command and Control			Moderate		Moderate		Minimal		Minimal	Minimal		Minimal
Air Drop	Moderate	Moderate	Minimal		Minimal			Minimal	Moderate			Minimal
Air Refueling					Minimal							
Spacelift												
Special Operations			Minimal									
Intelligence, Surveillance, and Reconnaissance			Moderate		Minimal	Moderate	Minimal		Minimal			Minimal

Legend: Minimal, Moderate, Severe

Capability Chart and Scores



Encroachment Chart and Scores



Edwards Ranges Assessment Details

Summary Observations	Summary Observations
This assessment addresses the capabilities of EFTR and the 412 Range Squadron, Edwards AFB, CA to support the T&E mission. For the purpose of this assessment, EFTR is defined as the airspace within the R-2508 Restricted Area Complex, the 301,000 acres of withdrawn land making up the Edwards AFB Reservation, and the range instrumentation array. While the 412th RANS is the Range Operating Agency (ROA) as defined in AFI 13-212, the entire EFTR is a compilation of capabilities of multiple organizations within the 412 Test Wing, 95 Air Base Wing, and the USAF Flight Test Center. It is also important to note EFTR does not operate as stand-alone entity, but as a component of the DoD Southwest Complex, which includes EFTR, Ventura County NAS (Pt. Mugu), China Lake NAS, Nellis Test and Training Range, Utah Test and Training Range, White Sands Missile Range, and Vandenberg AFB. As such, the complementary capabilities of these ranges allow EFTR to operate at the fully mission capable level over all T&E mission area. Overall, EFTR is in good shape concerning Suite of Ranges, Collective Ranges, Range Support, Infrastructure, Scoring, and Airspace. There are potential medium risk concerns associated with Landspace in terms of size, Targets from a strategic attack and counterair perspective, and Threats primarily in the areas of Strategic Attack, Counterair, and Intelligence, Surveillance and Reconnaissance. MOUT facilities are classified as high risk as they pertain to this analysis, but are outside the scope of EFTR and therefore non-material.	This assessment addresses the capabilities of EFTR and the 412 Range Squadron, Edwards AFB CA to support the T&E mission. For the purpose of this assessment, EFTR is defined as the airspace within the R-2508 Restricted Area Complex, the 301,000 acres of withdrawn land making up the Edwards AFB Reservation, and the range instrumentation array. While the 412th RANS is the ROA as defined in AFI 13-212, the entire EFTR is a compilation of capabilities of multiple organizations within the 412 Test Wing, 95 Air Base Wing, and the USAF Flight Test Center. It is also important to note EFTR does not operate as stand-alone entity, but as a component of the DoD Southwest Complex, which includes EFTR, Ventura County NAS (Pt. Mugu), China Lake NAS, Nellis Test and Training Range, Utah Test and Training Range, White Sands Missile Range, and Vandenberg AFB. As such, the complementary capabilities of these ranges allow EFTR to operate at the fully mission capable level over all T&E mission areas. 68.63 % of the range/range complex mission areas are fully capable and are not impacted by encroachment factors; 31.37% of the range/range complex mission areas are moderately impacted by encroachment factors, but impacts are minimal and all issues are workable. Because of the Encroachment Prevention and Management Committee (EPMC), no range/range complex mission areas are severely impacted by encroachment. The future is uncertain due to large wind and solar development being mandated from the state and federal governments.

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	7.02	7.02	7.02	NA	**Encroachment Scores**	8.43	9.43	9.25	NA
Capability scores have historically remained the same over the last four years with only slight variation (CY2008, CY2009, CY2010, and CY2011).					Encroachment scores have historically remained the same over the last four years with only slight variation (CY2008, CY2009, CY2010, and CY2011).				

Edwards Ranges Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Strategic Attack	●	The existing range area can support most types of gravity and precision guided munitions. The landspace is not adequate for the employment of large footprint weapons, such as the JSOW and SDB. However, EFTR has the necessary infrastructure to support all aspects of the Strategic Attack training mission in conjunction with its DoD Southwest Range partners. This limitation restricts certain types of weapons training. EFTR is working to leverage partnership agreements with other DoD ranges; this is a continuing action where partnerships support activities on an as needed basis.
	Counterair	●	The existing range area can support of most types of counter air training. The range space is not adequate for the employment of large footprint air-to-air/ground-to-air weapons, such as the AIM-9 and AIM-120. However, EFTR has the necessary infrastructure to support all aspects of the Counterair training mission in conjunction with its DoD Southwest Range partners. This limitation restricts certain types of weapons training. EFTR is working to leverage partnership agreements with other DoD ranges; this is a continuing action where partnerships support activities on an as needed basis.
	Counterland	●	The existing range area can support training of some Counterland systems. The range space is not adequate for the employment of large footprint weapons or training of some platforms, such as the AC-130, using live munitions. However, EFTR has the necessary infrastructure to support all aspects of the Counterland training mission in conjunction with its DoD Southwest Range partners. This limitation restricts certain types of weapons training. EFTR is working to leverage partnership agreements with other DoD ranges; this is a continuing action where partnerships support range activities on an as needed basis.
	Special Operations	●	The existing range area can support training of most types of Special Operations (SPECOPs) systems. The range space is not adequate for the employment of large force activities or live fire training of some SPECOPs platforms, such as the AC-130. However, EFTR has the necessary infrastructure to support all aspects of the Special Operations training mission in conjunction with its DoD Southwest Range partners. This limitation restricts certain types of training. EFTR is working to leverage partnership agreements with other DoD ranges; this is a continuing action where partnerships support range activities on an as needed basis.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Edwards Ranges Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Targets	Strategic Attack		The 412th RANS has numerous target arrays, which can support most aspects of the Strategic Attack mission area. In addition, the range's Command and Control system/facility has the ability to generate airborne and ground threat scenarios and targets for distribution to participants via Link-16 and SADL. Specific target requirements, such as hardened bunkers and MOUT facilities, are not available but can be built with customer funding. However, EFTR has the necessary target infrastructure to support all aspects of the Strategic Attack training mission in conjunction with its DoD Southwest Range partners. This limitation restricts certain types of training. EFTR is working to leverage partnership agreements with other DoD ranges; this is a continuing action where partnerships support activities on an as needed basis.
	Counterair		EFTR cannot support Counterair training activities requiring the employment of large footprint air-to-air/ground-to-air weapons such as AIM-9 and AIM-120. However, the EFTR has the necessary infrastructure to support all aspects of the Counterair training mission in conjunction with our DoD Southwest Range partners. In addition the range's Command and Control System/facility has the ability to generate airborne and ground threat scenarios for distribution to participants via Link-16 and SADL. This limitation restricts certain types of training. EFTR is working to leverage partnership agreements with other DoD ranges; this is a continuing action where partnerships support activities on an as needed basis.
	Special Operations		The 412th RANS has numerous target arrays that can support aspects of the Special Operations mission area. Specific target requirements, such as urban environments and related facilities, are not available, but can be built with customer funding. However, EFTR has the necessary target systems to support all aspects of the Special Operations training mission in conjunction with its DoD Southwest Range partners. This limitation restricts certain types of training. EFTR is working to leverage partnership agreements with other DoD ranges; this is a continuing action where partnerships support range activities on an as needed basis.
Threats	Strategic Attack		EFTR has the ability to present threat scenarios using ground moving targets, such as armor and static airfield configurations with AAA sites. In addition, the range's Command and Control system/facility has the ability to generate airborne and ground threat scenarios for distribution to participants via Link-16 and SADL. EFTR does not include active threat systems, such as radar, Smokey SAMS, and IR simulators. These assets are available to range programs on a scheduled basis through the AFFTC/NAWCWPNS alliance at the Electronic Combat Range (ECR) China Lake and from other DoD Southwest Range partners. It is also possible for users to bring mission specific threat systems on range as necessary to meet their training requirements. This limitation restricts certain types of training. EFTR is working to leverage partnership agreements with other DoD ranges; this is a continuing action where partnerships support range activities on an as needed basis.
	Counterair		EFTR has the ability to present threat scenarios using ground moving targets, such as armor and static airfield configurations with AAA sites. In addition, the range's Command and Control system/facility has the ability to generate airborne and ground threat scenarios for distribution to participants via Link-16 and SADL. EFTR does not include active threat systems, such as radar, Smokey SAMS, and IR simulators. These assets are available to range programs on a scheduled basis through the AFFTC/NAWCWPNS alliance at the ECR China Lake and from other DoD Southwest Range partners. It is also possible for users to bring mission specific threat systems on range as necessary to meet their training requirements. This limitation restricts certain types of training. EFTR is working to leverage partnership agreements with other DoD ranges; this is a continuing action where partnerships support range activities on an as needed basis.
	Counterland		EFTR has the ability to present threat scenarios using ground moving targets, such as armor and static airfield configurations with AAA sites. In addition, the range's Command and Control system/facility has the ability to generate airborne and ground threat scenarios for distribution to participants via Link-16 and SADL. EFTR does not include active threat systems, such as radar, Smokey SAMS, and IR simulators. These assets are available to range programs on a scheduled basis through the AFFTC/NAWCWPNS alliance at the ECR China Lake and from other DoD Southwest Range partners. It is also possible for users to bring mission specific threat systems on range as necessary to meet their training requirements. This limitation restricts certain types of training. EFTR is working to leverage partnership agreements with other DoD ranges; this is a continuing action where partnerships support range activities on an as needed basis.

Edwards Ranges Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Threats	Air Drop	🟡	EFTR has the ability to present limited threat scenarios using ground moving targets, such as armor and static airfield configurations with AAA sites. In addition, the range's Command and Control system/facility has the ability to generate airborne and ground threat scenarios for distribution to participants via Link-16 and SADL. EFTR does not include active threat systems, such as radar, Smokey SAMS, and IR simulators. These assets are available to range programs on a scheduled basis through the AFFTC/NAWCWPNS alliance at the ECR China Lake and from other DoD Southwest Range partners. It is also possible for users to bring mission specific threat systems on range as necessary to meet their training requirements. This limitation restricts certain types of training. EFTR is working to leverage partnership agreements with other DoD ranges; this is a continuing action where partnerships support on range activities an as needed basis.
	Intelligence, Surveillance and Reconnaissance	🟡	EFTR has the ability to present threat scenarios using ground moving targets, such as armor and static airfield configurations with AAA sites. In addition the range's Command and Control system/facility has the ability to generate airborne and ground threat scenarios for distribution to participants via Link-16 and SADL. EFTR does not include active threat system, such as radars, Smokey SAMS, or IR simulators; however, these assets are available to EFTR programs on a scheduled basis through the AFFTC/NAWCWPNS alliance at the ECR China Lake and from other DoD Southwest Range partners. It is also possible for users to bring mission specific threat systems on range as necessary to meet their training requirements. This limitation restricts certain types of training. EFTR is working to leverage partnership agreements with other DoD ranges; this is a continuing action where partnerships support on range activities an as needed basis.
MOUT Facilities	Strategic Attack	🔴	MOUT capability does not currently exist on EFTR, but is available through our Alliance partnerships with the other Southwest Ranges (Nellis AFB and China Lake). This prevents MOUT training. EFTR is working to leverage partnership agreements with other DoD ranges. In addition, EFTR is evaluating a future I&M effort to build a MOUT capability to satisfy unique training requirements; soonest remedy date would be FY2016.
	Counterair	🔴	Same as above.
	Counterland	🔴	Same as above.
	Air Drop	🔴	Same as above.
	Special Operations	🔴	Same as above.
	Intelligence, Surveillance and Reconnaissance	🔴	Same as above.

Encroachment Observations

Attributes	Assigned Training Mission	Score	Comments
Threatened & Endangered Species	Air Drop	🟡	Presence of the Desert Tortoise restricts ground disturbing activities and limits training missions on EFTR which may require survey and limited use of range area. There is no known solution to this issue.
Munitions Restrictions	Counterair	🟡	The base needs to establish a Weapons Safety Footprint (WSF) that could extend beyond the Precision Impact Range Area to plan for future test/training missions using REPI funding. This area is a concern since developer encroachment is crowding the base boundary, thus creating a smaller on-base WSF due to separation distances. This limitation impacts potential expansion for future training activities; no planned remedy.
	Counterland	🟡	Same as above.
	Air Drop	🟡	Same as above.
Spectrum	Information Operations	🟡	AFFTC has limited spectrum and risks losing more each year, limiting the amount of training the range can support. This requires training activities to take the following actions: create avoidance areas, reduce usage days, reduce range access, increases personnel tempo, and increase cost and risk. Most capabilities, like the reduced range access, could be in place as soon as FY2012 if needed; others, like avoidance areas, may take much longer.
	Electronic Combat Support	🟡	Same as above.
	Command and Control	🟡	Same as above.
	Intelligence, Surveillance and Reconnaissance	🟡	Same as above.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Edwards Ranges Detailed Comments

Encroachment Observations

Attributes	Assigned Training Mission	Score	Comments
Airspace	Counterair	●	There is limited airspace with an increasing amount of users; the result is increases in cost/risks and training activity restrictions. The solution is to create avoidance areas and restrict flight altitudes and limit range access. Most capabilities, like reduced range access, could be in place as soon as FY2012, if needed, while others, like avoidance areas, may take much longer.
	Information Operations	●	Same as above.
	Command and Control	●	Same as above.
Air Quality	Counterair	●	The air quality is currently suitable for flight training, but this is expected to change if the California population models are correct and population increases.
	Counterland	●	Same as above.
	Intelligence, Surveillance and Reconnaissance	●	Same as above.
Noise Restrictions	Information Operations	●	Large wind farms produce a low-frequency audible that may cause spectrum interference in a quiet training environment; this limits training and increases cost and risk. Solutions include creating avoidance areas and restricting flight altitudes. Most capabilities, like reduced range access, could be in place as soon as FY2012, if needed, while others, like avoidance areas, may take much longer.
Cultural Resources	Air Drop	●	Presence of the Desert Tortoise restricts ground disturbing activities and limits training missions on EFTR. This may require surveys and limited use of range area; no known solution to issue.

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Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Eglin Ranges Assessment Details

Range Mission Description

The Eglin Test and Training Complex (ETTC) provides full support and infrastructure for DT&E/OT&E, and multi-Service training activities, including those supporting Air Force Special Operations Command (AFSOC), 7th Special Forces Group (Airborne), 6 Ranger Training Battalion, the Navy EOD School, Navy Training Wings 5 and 6, and the Alabama Army National Guard. The Eglin MRTFB is designated the test and evaluation center for Air Force air-delivered weapons, navigation and guidance systems, Command and Control (C2) systems, and AFSOC systems. The 46 TW also provides planning, facilities, and infrastructure support for developmental organizations, such as the Air Force Research Laboratory (AFRL) and Defense Threat Reduction Agency (DTRA).

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
Strategic Attack	PMC	PMC	FMC	FMC	FMC	PMC	PMC	PMC	FMC	FMC	FMC	PMC	PMC
Counterair	FMC	PMC	FMC		FMC	PMC	PMC	PMC	FMC		FMC	PMC	PMC
Counterspace	FMC	PMC	PMC		PMC	PMC	FMC		FMC				
Counterland	PMC	PMC	FMC		FMC	PMC	PMC	PMC	FMC	FMC	FMC	PMC	PMC
Countersea	FMC	FMC	FMC	FMC	PMC	FMC	FMC		FMC				
Information Operations	FMC	FMC	FMC		PMC		PMC	PMC	FMC				
Electronic Combat Support	FMC	FMC	FMC		FMC	PMC	FMC	PMC	FMC		FMC		
Command and Control	FMC	FMC	FMC		FMC	PMC	FMC	FMC	FMC			PMC	PMC
Air Drop	FMC	FMC	FMC			FMC	FMC	FMC	FMC				
Air Refueling	FMC	FMC	FMC					FMC	FMC				
Spacelift	PMC	FMC	FMC				FMC	PMC	PMC				
Special Operations	PMC	PMC	FMC		PMC	PMC	PMC	FMC	FMC	FMC	FMC	PMC	PMC
Intelligence, Surveillance, and Reconnaissance	FMC	FMC	FMC		FMC	PMC		FMC	FMC				

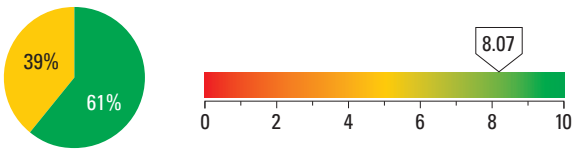
Legend: FMC PMC NMC

Encroachment Data

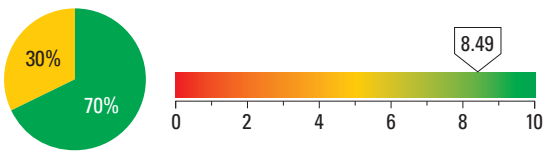
Mission Areas	Encroachment Factors												
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strategic Attack	PMC	FMC	PMC	PMC	PMC	FMC	PMC	PMC	FMC	FMC	FMC	FMC
Counterair	PMC	FMC	PMC	PMC	PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Counterspace	PMC	FMC	PMC	PMC	PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Counterland	PMC	FMC	PMC		PMC	FMC	PMC	PMC	PMC	FMC	PMC	FMC
Countersea	PMC	PMC	PMC	PMC	PMC	FMC	FMC	PMC	PMC	FMC	FMC	FMC
Information Operations	FMC	FMC	PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Electronic Combat Support	FMC	FMC	PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Command and Control	FMC	FMC	PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Air Drop	FMC	FMC	PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Air Refueling	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Spacelift			FMC		PMC	FMC	PMC	PMC	PMC	FMC	PMC	FMC
Special Operations	PMC	PMC	PMC	PMC	FMC	FMC	PMC	FMC	PMC	FMC	PMC	FMC
Intelligence, Surveillance, and Reconnaissance	FMC	FMC	PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	PMC	FMC

Legend: Minimal Moderate Severe

Capability Chart and Scores



Encroachment Chart and Scores



Eglin Ranges Assessment Details

Summary Observations	Summary Observations
1. There are no red areas under Capabilities Assessment and approximately 61% of attributes are green; Threats, Infrastructure, Scoring & Feedback Systems, Airspace, Landspace, MOUT Facilities, and Suite of Ranges are the primary attribute areas that restrict the range's training capability. 2. Strategic Attack, Counterland, and Special Operations are the mission areas most affected, with seven of the Capability Attributes graded yellow due to one or more restrictions.	1. There are no red areas, and 70% are graded green. Spectrum, T&E Species, Airspace, and Cultural Resources are the factors most frequently graded yellow. 2. Counterland, Countersea, and Special Operations are the mission areas most affected.

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Capability Scores	8.50	8.50	8.42	8.03

1. The primary cause for changes in CY2010 and CY2011 scores is improved accuracy in assessment data quality.
2. Airspace continues to be a concern. The Gulf Regional Airspace Strategic Initiative (GRASI) will provide a macro-level perspective of available airspace and will recommend approaches to use it most effectively. This should ease some of the Airspace concerns identified in this report. However, beddown of the Joint Strike Fighter (JSF) training program and significant increases in AFSOC flying activity will probably continue to stress the Airspace capacity of ETTC in the 3-5 year future.
3. When 7SFG(A) live fire ranges are completed, many of the Suite of Ranges shortfalls will be resolved, and part of the MOUT Facilities deficiency will be eliminated.

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Encroachment Scores	8.52	8.52	8.52	8.42

1. The primary cause for changes in CY2010 and CY2011 scores is improved accuracy in assessment data quality.
2. Availability of Spectrum continues to be a concern. The primary approach to reducing its impact has been to improve Frequency Management equipment and procedures, and to attempt to acquire instrumentation and communication equipment that uses less bandwidth.
3. The GRASI will provide a macro-level perspective of available airspace and will recommend approaches to use it most effectively. This should ease some of the Airspace concerns identified in this report. However, beddown of the JSF training program and significant increases in AFSOC flying activity will probably still stress the Airspace capacity of the ETTC in the 3-5 year future.
4. Overall, projected status should remain essentially the same for the future, unless Outer Continental Shelf oil and gas drilling is expanded to the point the Military Mission Line in the Gulf of Mexico must be moved eastward.

Eglin Ranges Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Strategic Attack	●	There is inadequate Landspace to conduct some large footprint weapons' training. Some long range standoff weapons currently require flight termination systems or must be released over Eglin's water range. A next generation proposal for a remote impact area in a sparsely populated area near the Florida coast is being reviewed for resubmission. This solution would provide a large water-to-land corridor that would enable the overwater launch and subsequent land impact of almost any long range standoff weapon in development or in the inventory. An anticipated date is unknown at this time.
	Counterland	●	Current Landspace available to conduct large footprint weapons has been reduced by siting of BRAC-directed 7SFG(A) support facilities near the center of the Eglin Range. The potential large number of JDAM and GBU drops during JSF training ops may seriously stress the capacity of air-to-surface impact areas on Eglin. Fewer long-range standoff weapons can be dropped over land without flight termination systems, or they must be released over Eglin's water range. The number of desired JSF munitions drops may need to be revised downward, or inert munitions may be dropped over Eglin's water range. No planned resolution for large footprint weapons. An EIS has been completed and ROD has been signed. The desired number of munitions releases during JSF training is being reviewed, but an anticipated date of completion is unknown at this time.
	Spacelift	●	Infrastructure limits potential launch locations. Launch locations are limited by resources required (e.g., serviceable roads, utilities, and size of ground area required). All potential launch sites will be evaluated for existing infrastructure and improvements/changes will be funded by the proponent.
	Special Operations	●	Restricted airspace above ground targets will become more congested from the 7th SFG(A) and JSF impact on the MRTFB. SPECOPs flight training will be restricted to smaller pieces of airspace, resulting in less realistic training and missed planned training. There is no planned action for resolution.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Eglin Ranges Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Airspace	Strategic Attack		Integration of the BRAC-directed JSF training activities at Eglin, additional training requirements at Tyndall and NAS Pensacola, expansion of oil/gas drilling, and projected growth in civilian general aviation activities are resulting in increased competition for existing airspace between training, test, and civilian use, while the amount of SUA available for weapons releases is shrinking due to oil/gas drilling in EGTTR. The GRASI will provide a macro-level perspective of available airspace and will recommend approaches to use it most effectively. Updated Mission Impact Analyses concerning oil/gas drilling in the Gulf are provided to the DoD Executive Agent for OCS activities on a regular basis. These analyses provide a basis for maintaining the current Military Mission Line and preserving DoD's ability to test and train in the Gulf of Mexico. Anticipated date of GRASI completion, final planning, and implementation is FY2012–FY2015.
	Counterair		Integration of the BRAC-directed JSF training activities at Eglin, additional training requirements of AFSOC at Tyndall and NAS Pensacola, expansion of oil/gas drilling, and projected growth in civilian general aviation activities are resulting in increased competition for existing airspace between training, test, and civilian use, while the amount of SUA available for weapons releases is shrinking due to oil/gas drilling in EGTTR. The GRASI will provide a macro-level perspective of available airspace and will recommend approaches to use it most effectively. Updated Mission Impact Analyses concerning oil/gas drilling in the Gulf are provided to the DoD Executive Agent for OCS activities on a regular basis. These analyses provide a basis for maintaining the current Military Mission Line and preserving DoD's ability to test and train in the Gulf of Mexico. Anticipated date of GRASI completion, final planning, and implementation is FY2012–FY2015.
	Counterspace		Airspace over EGTTR is inadequate for very large-scale counterspace test and training operations. Airspace over the Gulf of Mexico is adequate for many, but not all, such operations. No planned action for resolution. Pacific Missile Range can be used for very large scale counterspace operations.
	Counterland		Restricted airspace above ground targets will become more congested from the 7th SFG(A) and JSF impact on MRTFB. Other training customer flight training will be restricted to smaller pieces of airspace, resulting in less realistic training and missed planned training. Planned Action: Eglin's Central Scheduling Enterprise will be used to minimize conflicts.
	Special Operations		Same as above.
Seaspace	Counterspace		Seaspace in EGTTR is inadequate for very large-scale counterspace test and training operations. Seaspace over the Gulf of Mexico is adequate for many, but not all, such operations. No planned action for resolution. Pacific Missile Range can be used for very large scale counterspace operations.
Targets	Counterspace		Mid-to-high altitude targets are limited by net explosive weight of propellant used. Santa Rosa Island (SRI) provides launch capability for mid-to-high altitude targets. Endo-atmospheric probes have been launched from SRI, but overall capabilities are limited by net explosive weight of the propellant used. Site D-3 was selected as a candidate for a Space Port Florida launch site. No planned resolution.
	Countersea		No undersea targets are available except those provided by test and training customers for specific programs. Test and training customers must provide their own undersea targets and instrumentation. Land and sea targets are available. No planned resolution; customers will continue to supply their own undersea targets.
	Information Operations		Same as above.
	Special Operations		Target sets available to SPECOPs units are static and unrealistic. These targets do not represent what personnel will encounter during combat operations, resulting in poor reactions to real world situations. No planned resolution; customers will continue to supply their own targets.
Threats	Strategic Attack		There are few representative EC emitters. SRI has numerous EC emitters, but few are representative of those faced by military forces. Also, the range lacks OPFOR capability and battlefield effects simulators. No current program to upgrade existing EC emitters or acquire training threat simulators.
	Counterair		Same as above.
	Counterspace		There are few representative EC emitters. SRI has numerous EC emitters, but few are representative of those faced by reentry vehicles. No current program to upgrade existing EC emitters or acquire training threat simulators.

Eglin Ranges Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Threats	Counterland	●	There are few representative EC emitters. SRI has numerous EC emitters, but few are representative of those faced by military forces. Also, the range lacks OPFOR capability and battlefield effects simulators. No current program to upgrade existing EC emitters or acquire training threat simulators.
	Electronic Combat Support	●	Same as above.
	Command and Control	●	There are no viable threat emitters or simulators for this area. Net-centric weapons and UAS activities require a limited set of emitters/simulators. No action planned beyond identifying the minimum set of threats needed in this area. Customers will continue to provide their own system-specific threats.
	Special Operations	●	There are few representative EC emitters. SRI has numerous EC emitters, but few are representative of those faced by military forces. Also, the range lacks OPFOR capability and battlefield effects simulators. No current program to upgrade existing EC emitters or acquire training threat simulators.
	Intelligence, Surveillance and Reconnaissance	●	There are no viable threat emitters or simulators for this area. Net-centric weapons and UAS activities require a limited set of emitters/simulators. No action planned beyond identifying the minimum set of threats needed in this area. Customers will continue to provide their own system-specific threats.
Scoring & Feedback System	Strategic Attack	●	Scoring & Feedback Systems are inadequate to support certain training and exercise operations. There are no state-of-the-art facilities to support training reconstruction or facilities to allow for deployment of large air or ground forces into the range. Multiple sources of TSPI are currently available, but some not compatible with deployed aircraft. Joint Test and Training Operations Control Center will incorporate numerous tracking capabilities, but will not include training and exercise mission reconstruction and analysis.
	Counterair	●	Same as above.
	Counterland	●	Same as above.
	Information Operations	●	There is a lack of facilities to demonstrate effects for training audience, including a lack of targets. This limits scope of mission debriefing capabilities. No planned resolution.
	Special Operations	●	Scoring & Feedback Systems do not exist on ranges used by SOF. Personnel provide their own scoring, which can lead to errors. There is no independent record keeping and analysis, which prevents commanders from identifying trends and implementing corrective measures. No planned resolution.
Infrastructure	Strategic Attack	●	There are inadequate facilities to support deployed assets. There is less than efficient use of deployed assets due to the need to use available facilities, which may not have a full range of features needed by deployed units. Range needs an Exercise Support Facility, but is currently unfunded.
	Counterair	●	Same as above.
	Counterland	●	Same as above.
	Information Operations	●	Same as above.
	Electronic Combat Support	●	There are inadequate systems to meet needs of some training customers. As such, there is less than fully effective support for some training customers. There is no funding available for acquiring new systems. The Air Force may be able to leverage on JSF training needs to obtain some simulators that could be used by other customers, as well. Otherwise, customers must bring their own specific emitters/simulators.
	Spacelift	●	There is limited infrastructure for Spacelift. Also, there are limited site options for Spacelift operations. However, SRI sites have been used for endo-atmospheric probe launches, and D-3 was selected as a Space Port Florida site. No planned resolution; current facilities have been adequate to date.
Range Support	Spacelift	●	Same as above.
MOUT Facilities	Strategic Attack	●	There are no consolidated MOUT facility for joint training needs. Only a small number of MOUT-like facilities exist across the range. The range needs a joint, consolidated plan to install a dedicated MOUT facility to meet joint training needs. A small sophisticated MOUT capability is being constructed to specifically support 7SFG(A) training. This, in conjunction with smaller MOUTs built for AFSOC training operations, will satisfy the majority of joint training needs. The anticipated completion date is December 2011.
	Counterair	●	Same as above.
	Counterland	●	Same as above.
	Command and Control	●	Same as above.
	Special Operations	●	Same as above.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Eglin Ranges Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Suite of Ranges	Strategic Attack		There is no certified joint MOUT facility with adjacent ground maneuver areas. This causes the inability to perform maneuver and MOUT operations on a joint certified training area, which hampers effective joint training operations. A small sophisticated MOUT capability is being constructed to specifically support 7SFG(A) training. This, in conjunction with smaller MOUTs built for AFSOC training operations, will satisfy the majority of joint training needs. The anticipated completion date is December 2011.
	Counterair		Same as above.
	Counterland		Same as above.
	Command and Control		Same as above.
	Special Operations		Same as above.

Encroachment Observations

Attributes	Assigned Training Mission	Score	Comments
Threatened & Endangered Species	Strategic Attack		A proposal to establish Marine Protected Areas (MPAs) or monuments in the northern Gulf of Mexico has the potential to significantly impact Eglin's munitions test and training mission. This would restrict AFSOC overwater training munitions expenditures and the release of munitions during test missions over EGTR. The planned action is to continue to provide mission impact data to decision makers. Anticipated completion date for a solution is unknown.
	Counterair		A proposal to establish MPAs or monuments in the northern Gulf of Mexico has the potential to significantly impact Eglin's munitions test and training mission. This would restrict overwater testing of munitions, including air-to-air tests of AMRAAM/AIM-9X and other A-T-A missiles and Combat Archer A-T-A training activities over EGTR. The planned action is to continue to provide mission impact data to decision makers. Anticipated completion date for a solution is unknown.
	Counterspace		A proposal to establish MPAs or monuments in the northern Gulf of Mexico has the potential to significantly impact Eglin's munitions test and training mission. This would restrict test and deployment of theatre missile defense systems for flights over EGTR. It would also interfere with Directed Energy and Hypervelocity test activities is support of counterspace DT&E systems. The planned action is to continue to provide mission impact data to decision makers; anticipated completion date for a solution is unknown.
	Counterland		The existence of Red Cockaded Woodpeckers, Okaloosa Darters, Flatwoods Salamanders, Gopher Tortoises, marine mammals, and various sea turtles (the primary local endangered/threatened species), and designated critical habitat for certain shorebirds on Santa Rosa Island and the Gulf Sturgeon along shorelines and adjacent rivers/streams restrict the use of some land areas and littoral/riverine areas for the use of some aircraft, munitions, and targets, as well as land/water training maneuvers. The planned action is to continue to work with the local Natural Resources office to develop mitigations and procedures to minimize the impact of T&E considerations on test and training capabilities. There has been continual coordination with both the Test Wing and regulators to mitigate activities within these areas. It is not so much that the areas are restricted to use, as is that there are certain terms and conditions that have to be met in order to use these areas. The delays occur mainly during the consultation process; ample time must be given in order to complete consultation for all activities that could potentially impact protected species. An anticipated date for a solution is unknown.
	Countersea		Limitations on operations due to Gulf Sturgeon critical habitat along the coast, in the Bay, and in adjacent rivers; the presence of marine mammals along the coast and in the bays; and a proposal to establish MPAs or monuments in the northern Gulf of Mexico have the potential to significantly impact Eglin's munitions test and training mission. This restricts certain operations over EGTTR, including those that were designed/intended for countersea operations. The planned action is to continue to work with the local Natural Resources office to develop mitigations and procedures to minimize the impact of T&E considerations on test and training capabilities. The Air Force will provide mission impact analysis to decision makers concerning the proposed MPA. An anticipated date for a solution is unknown.

Eglin Ranges Detailed Comments

Encroachment Observations

Attributes	Assigned Training Mission	Score	Comments
Threatened & Endangered Species	Special Operations		Limitations on operations due to Gulf Sturgeon critical habitat along the coast, in the Bay, and in adjacent rivers; the presence of marine mammals along the coast and in the bays; and a proposal to establish MPAs or monuments in the northern Gulf of Mexico has the potential to significantly impact Eglin's munitions test and training mission. Restrictions due to Sea Turtle nesting and seasonal shorebird presence on SRI restrict certain operations over EGTTR and in littoral and riverine areas, including those that were designed/intended for SPECOPs. The planned action is to continue to work with local Natural Resources office to develop mitigations and procedures to minimize the impact of T&E considerations on test and training capabilities. There has been continual coordination with both the Test Wing and regulators to mitigate activities within these areas. It is not so much that the areas are restricted to use, as is that there are certain terms and conditions that have to be met in order to use these areas. Where the delays occur is during the consultation process, ample time must be given in order to complete consultation for all activities that could potentially impact protected species. The Air Force will provide mission impact analysis to decision makers concerning the proposed MPA. An anticipated date for a solution is unknown.
Munitions Restrictions	Countersea		Limitations on operations due to Gulf Sturgeon critical habitat along the coast, in the Bay, and in adjacent rivers restricts certain operations over EGTTR, including those that were designed/intended for Countersea operations. The planned action is to continue to work with the local Natural Resources office to develop mitigations and procedures to minimize the impact of T&E considerations on test and training capabilities. An anticipated date for a solution is unknown.
	Special Operations		Same as above.
Spectrum	Strategic Attack		There are constraints placed on training/testing due to unavailability of, or interference with, required electromagnetic spectrum. All frequencies shall be scheduled for deconfliction to prevent RFI to its users. Eglin has a Frequency Control and Analysis function with both fixed and mobile assets that find conflicting signal sources that need to be shut down. Eglin is in the process of installing three additional fixed DF sites, which will aid in finding those conflicting signals. Two of these sites are currently planned, but unfunded. They are anticipated to be funded and constructed during FY2012. Eglin has also done extensive upgrades and is continuing to purchase newer radios and equipment that have tighter control of their emissions (narrower bands) and the ability to shift to less used frequency bands. The range also actively works on shielding and noise attenuation to limit impacts to and impacts from equipment. An anticipated date for a solution for overall is unknown, but two (of three) fixed DF sites are anticipated to be constructed during FY2012.
	Counterair		Same as above.
	Counterspace		Same as above.
	Counterland		Same as above.
	Countersea		Same as above.
	Information Operations		Same as above.
	Electronic Combat Support		Same as above.
	Command and Control		Same as above.
	Air Drop		Same as above.
	Special Operations		There are constraints placed on training/testing due to unavailability of, or interference with, required electromagnetic spectrum. All frequencies shall be scheduled for deconfliction to prevent RFI to its users. Eglin is in the process of installing three additional fixed DF sites, which will aid in finding those conflicting signals. Two of these sites are currently planned, but unfunded. They are anticipated to be funded and constructed during FY2012. An anticipated date for a solution for the overall spectrum problem is unknown, but two (of three) fixed DF sites are anticipated to be constructed during FY2012.
	Intelligence, Surveillance and Reconnaissance		Same as above.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Eglin Ranges Detailed Comments

Encroachment Observations

Attributes	Assigned Training Mission	Score	Comments
Maritime Sustainability	Strategic Attack		Encroachment from oil drilling operations in the Gulf, restrictions on use of high explosives in Gulf, and increased volume of civilian boating activities in potential danger areas are all limitations to Strategic Attack. Oil drilling operations with above surface structures greatly reduce the area available to test and train with large footprint weapons over EGTTR; certain types of high explosive munitions are restricted from use in EGTTR which restricts the type of training and testing that can be done in EGTTR. Increased civilian boat traffic makes it more time consuming to clear large areas of EGTTR for large footprint weapons releases. The range plans to work with EGTTR customers to ensure updated Mission Impact Analyses are provided to the DoD Executive Agent (for Outer Continental Shelf [OCS] oil and gas development) of DoD's use of the Gulf of Mexico to protect the military's interests in maintaining the current Military Mission Line and restrictions for OCS development to enable future test and training operations in EGTTR. The range will continue to work with the local Natural Resources office to develop mitigations and procedures to minimize the impact of T&E considerations on test and training capabilities in EGTTR. The Air Force will ensure range clearance procedures are reviewed frequently and provide the most efficient process for clearing required areas of EGTTR. An anticipated date for a solution is unknown.
	Counterair		Same as above.
	Counterspace		Same as above.
	Countersea		Same as above.
	Special Operations		There are limitations on operations due to Gulf Sturgeon critical habitat along the coast, in the Bay, and in adjacent rivers and the presence of marine mammals along the coast and in the bays. This restricts the use of certain operations over EGTTR and in littoral/riverine areas, including those that were designed/intended for SPECOPs. The range will continue to work with the local Natural Resources office to develop mitigations and procedures to minimize the impact of T&E considerations on test and training capabilities. An anticipated date for a solution is unknown.
Airspace	Strategic Attack		There are limitations on operations due to Gulf Sturgeon critical habitat along the coast, in the Bay, and in adjacent rivers and the presence of marine mammals along the coast and in the bays. This restricts the use of certain operations over EGTTR and in littoral/riverine areas, including those that were designed/intended for Special Operations. The range will continue to work with the local Natural Resources office to develop mitigations and procedures to minimize the impact of T&E considerations on test and training capabilities. An anticipated date for a solution is unknown.
	Counterair		Same as above.
	Counterspace		Same as above.
	Counterland		Increased general aviation traffic in the North-South corridor and placement of the 7SFG(A) cantonment area in the north central portion of the Eglin land range restricts the capability for cross range shots, large footprint munitions test and training, and simultaneous use of east and west range areas for live weapons activity. Some safety profiles have been reengineered to include the new restrictions and some profiles have been deleted. The Gulf Regional Airspace Strategic Initiative (GRASI) has been developed to address all airspace issues. The anticipated date of GRASI completion, final planning, and implementation is FY2012–FY2015.
	Countersea		Increasing pressures for off-shore oil and gas exploration and production, and increased volume of civilian air traffic over potential danger area have caused reduced surface area and associated airspace, and reduced availability of existing Special Use Airspace for Countersea test and training operations. The range will work with EGTTR customers to ensure updated Mission Impact Analyses are provided to the DoD Executive Agent (for Outer Continental Shelf [OCS] oil and gas development) of the DoD's use of the Gulf of Mexico to protect the military's interests in maintaining the current Military Mission Line and restrictions for OCS development to enable future test and training operations in EGTTR. The GRASI has been developed to address all airspace issues. The anticipated date of GRASI completion, final planning, and implementation is FY2012–FY2015.
	Spacelift		There is insufficient land space to conduct vertical launch for delivery into space; however, space plane launch/recovery could be a viable option from within the Eglin reservation. The range is unable to support vertical launch operations. There is no known/planned solution at this time.

Eglin Ranges Detailed Comments

Encroachment Observations

Attributes	Assigned Training Mission	Score	Comments
Noise Restrictions	Strategic Attack		Land use conversion can create noise-sensitive areas near low-level routes and airfield approaches. Future JSF training and 7SFG(A) range activities will exacerbate this problem. Basing the majority of JSF training operations at Eglin Main Base has already elicited a noise-related lawsuit from the community of Valparaiso. The proximity of the 7th SFG live-fire ranges to populated areas may cause public noise complaints. A Supplemental EIS is being prepared to evaluate other JSF flight options, including moving the bulk of airfield training activities to Auxiliary Field 3. A community outreach program to disseminate noise information related to 7SFG(A) range activities will be conducted prior to the ranges becoming active. The SEIS was released to the public in September 2010.
	Counterland		Low-level routes and overwater approaches to the land range result in occasional noise complaints. This problem will increase when JSF training operations begin. Noise complaints could increase, which could cause additional restrictions to be placed on low-level and overwater approaches. The original EIS did not identify this area as a high risk issue, but if noise complaints do become a problem, local officials will develop modified procedures to address it. An anticipated date for a solution is unknown.
	Spacelift		There is noise related to space launch activities. Local communities would be affected by launch noise from larger space launch activities, and public sentiment might not support space launches if the noise levels were very high and on a frequent basis. If Eglin or Cape San Blas is ever considered for a role in space launches, the EIS will place special emphasis on the attendant noise, and all feasible mitigations and controls. An anticipated date for a solution is unknown.
	Special Operations		SOF accomplishes much of its training during the hours of darkness, frequently requiring the use of explosives. The noise of these operations will impact the local community during normal rest periods, leading to negative impressions of the military by the affected communities. No planned action/solution is known at this time.
Adjacent Land Use	Strategic Attack		The range has limited water-to-land flight access for armed weapons systems. This reduces the flexibility of making realistic water-to-land transitions with armed weapons systems or allowing water-to-land transitions by long-range standoff weapons. Potential land acquisitions and cooperative efforts with other agencies to obtain overflight privileges are always reviewed with an eye toward increasing the width of the water-to-land corridor. A next generation proposal for a remote impact area in a sparsely populated area near the Florida coast is being reviewed for resubmission. This solution would provide a large water-to-land corridor that would enable the overwater launch and subsequent land impact of almost any long-range standoff weapon in development or in the inventory. An anticipated date for resolution is unknown, since review is still in informal phase.
	Counterland		Urban sprawl, land use conversion from agriculture to residential, and new transportation corridors (on and off Eglin) restrict training. The push for use of more renewable energy sources has resulted in siting a solar farm near the eastern boundary of the land range, and there is increased use of small wind energy systems (including "turbine" designs) in the civilian areas surrounding Eglin. This can restrict future military operations on the periphery of the Eglin Range, and interfere with flight operations, and data transmission and receipt on test and training missions. The range will develop REPI projects to acquire property rights to adjoining private property in areas of expanded military use, and participate actively in local JLUS initiatives. Solar Farm coordinated the project with Eglin officials to ensure AF design concerns were addressed. Eglin is working with Santa Rosa County planners to draft a small wind energy ordinance that could become the model for the other counties surrounding Eglin. Collaboration should be completed by end of CY2011.
	Countersea		Urban sprawl, land use conversion from agriculture to residential, and new transportation corridors (on and off Eglin) can restrict future military operations on the periphery of the Eglin Range, including shore-to-ship and ship-to-shore weapons systems; and water-land test and training operations. The range will develop REPI projects to acquire property rights to adjoining private property in areas of expanded military use, and participate actively in local JLUS initiatives. A well structured Range Planning Process is in place with a Mission Impact Analysis performed on any significant proposal for range reconfiguration or mission change. The anticipated date for completion is unknown.
	Spacelift		There is noise related to space launch activities. Local communities would be affected by launch noise from larger space launch activities and public sentiment might not support space launches if the noise levels were very high and on a frequent basis. If Eglin or Cape San Blas is ever considered for a role in space launches, the EIS will place special emphasis on the attendant noise and all feasible mitigations and controls. An anticipated date for a solution is unknown.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Eglin Ranges Detailed Comments

Encroachment Observations

Attributes	Assigned Training Mission	Score	Comments
Cultural Resources	Counterland	●	There are known and suspected cultural resource sites along the coast and in the interior of the land range. Known, but undefined and suspected cultural resource sites along the Gulf/Bay coasts, and along rivers and streams impede the use of these areas for important military test and training missions. Littoral and riverine, ingress/egress training operations are restricted to several small and somewhat uncharacteristic areas along the coasts and streams. The proponent must work with the Cultural Resources office during AF Form 813 review to identify available training sites and determine what restrictions apply to the proponent's preferred sites. An anticipated date for a solution is unknown.
	Countersea	●	There are known and suspected cultural resource sites along the coast and in the interior of the land Range. Known, but undefined and suspected cultural resource sites along the Gulf/Bay coasts, and along rivers and streams impede the use of these areas for important military test and training missions. Littoral and riverine, ingress/egress training operations are restricted to several small and somewhat uncharacteristic areas along the coasts and streams. The proponent must work with the Cultural Resources office during AF Form 813 review to identify available training sites and determine what restrictions apply to the proponent's preferred sites. An anticipated date for a solution is unknown.
	Spacelift	●	There are known and suspected cultural resource sites along the coast and in the interior of the land Range. Known, but undefined and suspected cultural resource sites along the Gulf/Bay coasts could impact selection of launch location, especially on Santa Rosa Island. Potential launch areas would undergo the standard AF Form 813 review process, which would include evaluation of each launch site from a cultural resources standpoint. An anticipated date for a solution is unknown.
	Special Operations	●	There are known and suspected cultural resource sites along the coast and in the interior of the land range. Known, but undefined and suspected cultural resource sites along the Gulf/Bay coasts, and along rivers and streams impede the use of these areas for important military test and training missions. Littoral and riverine, ingress/egress training operations are restricted to several small and somewhat uncharacteristic areas along the coasts and streams. The proponent must work with the Cultural Resources office during AF Form 813 review to identify available training sites and determine what restrictions apply to the proponent's preferred sites. An anticipated date for a solution is unknown.
Wetlands	Counterland	●	There are land use restrictions in or near wetlands. Some restrictions on land use affects aircraft, munitions, and targets, as well as land maneuvers in or near wetlands. The proponent must work with the Natural Resources office during AF Form 813 review to identify available test and training sites and determine what restrictions apply to the proponent's preferred sites. An anticipated date for a solution is unknown.
	Spacelift	●	There are wetlands along the coast and in the interior of the land range. Wetlands would impact selection of launch location, especially on Santa Rosa Island. Potential launch areas would undergo the standard AF Form 813 review process, which would include evaluation of each launch site from a natural resources standpoint. An anticipated date for a solution is unknown.
	Special Operations	●	There are land use restrictions in or near wetlands. Some restrictions on land use affects aircraft, munitions, and targets, as well as land maneuvers in or near wetlands. The proponent must work with the Natural Resources office during AF Form 813 review to identify available test and training sites and determine what restrictions apply to the proponent's preferred sites. An anticipated date for a solution is unknown.
	Intelligence, Surveillance and Reconnaissance	●	Same as above.

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Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Falcon Assessment Details

Range Mission Description

Falcon Range is the primary training range (PTR) for the 301st Fighter Wing, Air Force Reserve Command. The range supports A-G sorties and electronic combat training. Secondary users include B-52, A-10, F-16 and F/A-18 aircraft from the Air Force and Marine Corps Reserve and Air National Guard. The range also provides training to the USAF AT-38 Introduction to Fighter Fundamentals (IFF) course at Sheppard AFB, TX, as well as active duty, Air National Guard, and allied joint terminal attack controller (JTAC) initial and continuation training. In addition, the range supports the Joint Fires Observer (JFO) training course at Fort Sill, which trains U.S. and allied JFOs to augment JTAC missions. The range provides laser testing and scoring for MC-12W aircraft, and supports threat reaction and weapons employment for rotary wing aircraft. The range also supports UAS training.

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
Strategic Attack	PMC	FMC			FMC	FMC	FMC	FMC	FMC			FMC	FMC
Counterair	FMC	FMC			FMC	PMC	FMC	FMC	FMC			FMC	FMC
Counterspace													
Counterland	FMC	FMC			FMC	FMC	FMC	FMC	FMC			FMC	FMC
Countersea													
Information Operations													
Electronic Combat Support	FMC	FMC			FMC	FMC	FMC	FMC	FMC			FMC	FMC
Command and Control	FMC	FMC			FMC	FMC	FMC	FMC	FMC			FMC	FMC
Air Drop	FMC	FMC			FMC	FMC	FMC	PMC	FMC			FMC	FMC
Air Refueling													
Spacelift													
Special Operations	FMC	FMC			FMC	FMC	FMC	FMC	FMC			FMC	FMC
Intelligence, Surveillance, and Reconnaissance	FMC	FMC			FMC	FMC	FMC	FMC	FMC			FMC	FMC

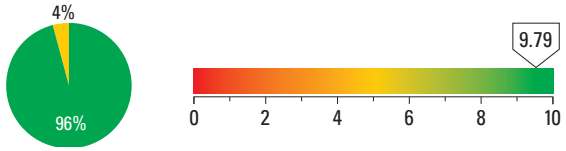
Legend: FMC, PMC, NMC

Encroachment Data

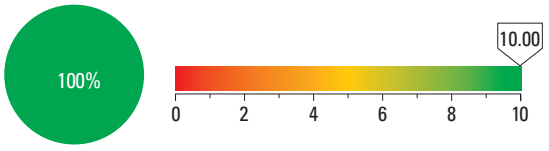
Mission Areas	Encroachment Factors												
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strategic Attack	Minimal	Minimal	Minimal		Minimal		Minimal	Minimal	Minimal	Minimal		Minimal
Counterair	Minimal	Minimal	Minimal		Minimal		Minimal	Minimal	Minimal	Minimal		Minimal
Counterspace												
Counterland	Minimal	Minimal	Minimal		Minimal		Minimal	Minimal	Minimal	Minimal		Minimal
Countersea												
Information Operations												
Electronic Combat Support	Minimal	Minimal	Minimal		Minimal		Minimal	Minimal	Minimal	Minimal		Minimal
Command and Control	Minimal	Minimal	Minimal		Minimal		Minimal	Minimal	Minimal	Minimal		Minimal
Air Drop	Minimal	Minimal	Minimal		Minimal		Minimal	Minimal	Minimal	Minimal		Minimal
Air Refueling	Minimal	Minimal	Minimal		Minimal		Minimal	Minimal	Minimal	Minimal		Minimal
Spacelift	Minimal	Minimal	Minimal		Minimal		Minimal	Minimal	Minimal	Minimal		Minimal
Special Operations	Minimal	Minimal	Minimal		Minimal		Minimal	Minimal	Minimal	Minimal		Minimal
Intelligence, Surveillance, and Reconnaissance	Minimal	Minimal	Minimal		Minimal		Minimal	Minimal	Minimal	Minimal		Minimal

Legend: Minimal, Moderate, Severe

Capability Chart and Scores



Encroachment Chart and Scores



Falcon Assessment Details

Summary Observations	Summary Observations
The range has improved its infrastructure since 2004 with multiple scoring systems. Falcon Range provides aircrews with two MOUT areas, one of which is laser-scoring capable, and one of which is kinetic-capable. Three electronic warfare threat simulators are available, and realistic self-consuming MANPAD simulators provide additional threat reaction training, while making a very minimal impact on the environment. The MANPAD simulators do not require EOD support and leave no residue. (The range has on-site EOD support, so the range is not closed for EOD cleanup.) Targets are realistic and range from large buildings to small anti-aircraft guns and mannequins. An unmanned moving target allows the full-scale delivery of weapons against a moving target, as well as combat laser employment. There are three laser scoring systems and two kinetic scoring systems available. The primary constraint to the range is the size of the impact area. It limits the employment of inertially-aided munitions due to weapons danger zone (WDZ) restrictions. The Army prohibits the intrusion of any WDZ outside the range areas with a containment or risk of greater than 1:1,000,000. Several doctrinally-accepted weapons deliveries are restricted due to WDZs extending outside the range. The range is working on a drop zone and should have one by 2012. The range also works extensively with Fort Sill environmental agencies and has helped reclaim old dump areas to their original state. Strategic Attack is most affected by the range's size; however, there are very infrequent (less than 2% of annual sorties) strategic attack missions. The majority of missions flown at Falcon Range are Counterland.	The range is part of the Fort Sill range complex. Encroachment is minimal. The Army is currently involved in the purchase of adjoining land in order to provide a larger buffer zone. There are no environmental or cultural shortfalls at the range. Frequency spectrum issues are minimal.

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Capability Scores	6.88	6.88	10.00	9.79

The range has excellent capabilities, although future employment has some limitations. These limitations are not unique to Falcon Range; as inertially-aided weapons are developed and fielded, their WDZs for some weapons parameters prove to be larger than the range boundaries. The range is limited to 1:1,000,000 risk values to manned sites by Army Regulation 385-63. Until 2007, the Army allowed sportsmen to intrude into the impact area when the range was active. This practice has been banned, and now larger WDZ weapons deliveries are allowed. The range has excellent laser scoring capability, and all personnel are highly trained in laser operations. The addition of the GPS-guided moving target allows aircrews to actively fire lasers at a moving target, a capability not found at most other ranges. This capability becomes more critical as weapons like the laser JDAM are developed, and as lead-computing impact point software is employed.

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Encroachment Scores	9.77	9.77	10.00	10.00

There are no historical issues at Falcon Range for encroachment. The range has not been affected by encroachment; in fact, the range has benefitted from the upgrades at Fort Sill as a result of BRAC 2005. Cultural sites on the range are well clear of any target areas and are set aside from the target arrays in order to preserve their integrity; Fort Sill has an active cultural trust program.
The existence of the Wichita Mountains Wildlife Refuge to the north and Fort Sill to the east preclude development nearby. To the south and west of the range there are potential encroachment areas, but the areas are rural and are being purchased by the Army for buffer zones.

Falcon Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Strategic Attack		The range impact area is not large enough to support inertially-aided munitions employment from doctrinal (high) altitudes. Training is minimally affected; most users employ these munitions in a simulated manner anyway. No solution is feasible until the WDZ Tool provides smaller weapons footprints.
Threats	Counterair		The HARM threat simulator does not provide more than one threat for SEAD missions. It does not adversely impact training; the nearest HARM-capable user is over 800 nautical miles distant, with nearby access to threat simulators. There is no upgrade requirement.
Infrastructure	Air Drop		No drop zone has been established at Falcon Range. This precludes any air drops at an established DZ. The range is currently establishing a DZ within the impact area, which will alleviate this shortfall, with an estimated completion by 2012.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Grand Bay Assessment Details

Range Mission Description

Grand Bay Range is primarily supporting the A-G training of units assigned to the 23 WG (A-10, HH-60, HC-130) and various other DoD units. The range also supports ground training requirements of the 23 WG, the 93 AGOW, and other DOD units.

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												
Strategic Attack	PMC	FMC			FMC	FMC	FMC	FMC	FMC		FMC	FMC	FMC
Counterair	FMC	FMC			FMC	FMC	FMC	FMC	FMC		FMC	FMC	FMC
Counterspace	FMC	FMC			FMC	FMC	FMC	FMC	FMC		FMC	FMC	FMC
Counterland	PMC	FMC			FMC	FMC	FMC	FMC	FMC		FMC	FMC	FMC
Countersea													
Information Operations	FMC	FMC			FMC	FMC	FMC	FMC	FMC		FMC	FMC	FMC
Electronic Combat Support	FMC	FMC			FMC	FMC	FMC	FMC	FMC		FMC	FMC	FMC
Command and Control	FMC	FMC			FMC	FMC	FMC	FMC	FMC		FMC	FMC	FMC
Air Drop	FMC	FMC			FMC	FMC	FMC	FMC	FMC		FMC	FMC	FMC
Air Refueling	FMC	FMC			FMC	FMC	FMC	FMC	FMC		FMC	FMC	FMC
Spacelift													
Special Operations	FMC	FMC			FMC	FMC	FMC	FMC	FMC		FMC	FMC	FMC
Intelligence, Surveillance, and Reconnaissance	FMC	FMC			FMC	FMC	FMC	FMC	FMC		FMC	FMC	FMC

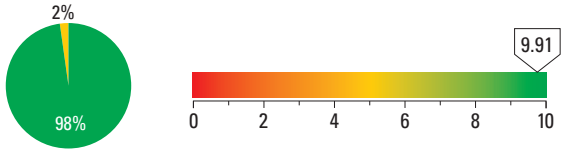
Legend: FMC, PMC, NMC

Encroachment Data

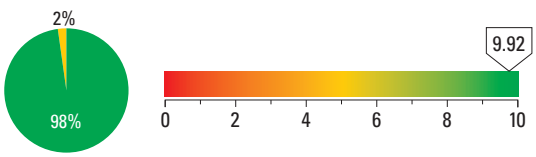
Mission Areas	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
	Encroachment Factors											
Strategic Attack	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Moderate	Minimal	Minimal	Minimal	Minimal
Counterair	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Counterspace	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Counterland	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Moderate	Minimal	Minimal	Minimal	Minimal
Countersea												
Information Operations	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Electronic Combat Support	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Command and Control	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Air Drop	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Air Refueling	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Spacelift												
Special Operations	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Intelligence, Surveillance, and Reconnaissance	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal

Legend: Minimal, Moderate, Severe

Capability Chart and Scores



Encroachment Chart and Scores



Grand Bay Assessment Details

Summary Observations	Summary Observations
Grand Bay Range is supporting most basic and intermediate training needs for units assigned to Moody AFB, as well as some tenant and transients units. The one limitation of most importance is the size of Grand Bay Range. The size limitation prevents some simultaneous operations, and larger force exercises and training events. From an encroachment perspective, the Valdosta Metro Area is experiencing steady growth. While not critical at this point, the development of previously agricultural lands may negatively impact range operations without continuous base interaction with the local communities and leadership.	Grand Bay Range is supporting most basic and intermediate training needs for units assigned to Moody AFB, as well as some tenant and transients units. The one limitation of most importance is the size of Grand Bay Range. The size limitation prevents some simultaneous operations, and larger force exercises and training events. From an encroachment perspective, the Valdosta Metro Area is experiencing steady growth. While not critical at this point, the development of previously agricultural lands may negatively impact range operations without continuous base interaction with the local communities and leadership.

Historical Information, Results, and Future Projections					Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011	**Calendar Year**	2008	2009	2010	2011
Capability Scores	9.58	9.58	9.68	9.91	**Encroachment Scores**	9.49	9.49	9.49	9.92
The capabilities of Grand Bay Range have increased to support increase training requirements. Also, units like the 93 AGOW are looking to increase utilization of the range. The range staff is continuously working to improve range capabilities in a manner relevant to realistic mission readiness training. Continued future growth of the surrounding area could negatively impact range and restricted airspace usage due to noise complaints, no-fly areas, etc. Range and base environmental officials are working closely with local communities to address issues of concern regarding range operations and future sustainability. Actions range from JLUS implementation to eventual pursuit of land acquisition for a modest range expansion that will enhance training activities and allow ground force training simultaneously with A-G operations.					The capabilities of Grand Bay Range have grown to support increasing training requirements. Also, units like the 93 AGOW are looking to increase utilization of the range. Continued future growth and development of the surrounding area could negatively impact range and restricted airspace usage due to noise complaints, no-fly areas, etc. Range and base environmental officials are working closely to address issues of concern regarding range operations and sustainment. Actions range from JLUS implementation to eventual pursuit of land acquisition.				

Grand Bay Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Counterland	●	Grand Bay Range is too small to allow large force ground exercise and movement. There is no major impact; large force movement is not needed for assigned units. Plans are being studied to acquire additional acreage east of the range boundary to better support ground exercises and mission support flexibility.
	Strategic Attack	●	Grand Bay Range is too small to allow large force ground exercise and movement. Small force movement and CAS operations can be conducted. Dry operations are conducted underneath MOA airspace for greater flexibility. There is no major impact; large force movement is not needed for assigned units. Plans are being studied to acquire additional acreage east of the range boundary to better support ground exercises and mission support flexibility.

Encroachment Observations

Attributes	Assigned Training Mission	Score	Comments
Adjacent Land Use	Strategic Attack	●	Training can be accomplished on a limited basis, due to the size of Grand Bay Range and proximity of Moody AFB. Some noise restrictions exist around the area that present a small impact the training flexibility. Only small force training can be accomplished. Discussions to restructure the airspace and the possibility of acquiring additional land towards the east are ongoing.
	Counterland	●	Same as above.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Grayling Assessment Details

Range Mission Description

Grayling Range supports ANG flying the of A10 unit 107th FS at Selfridge ANGB MI, and all units in training at Alpena CRTC. The range also supports ground force training of JTACs, security forces, and joint exercises.

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												
Strategic Attack	FMC	FMC			FMC	PMC	FMC	FMC	PMC		FMC	FMC	FMC
Counterair	FMC	FMC			FMC	FMC	FMC	FMC	FMC		FMC		FMC
Counterspace													
Counterland	FMC	PMC			PMC	FMC	FMC	FMC	PMC	FMC	FMC	FMC	PMC
Countersea													
Information Operations	FMC	FMC			FMC	FMC	FMC	FMC	FMC				FMC
Electronic Combat Support	FMC	PMC			FMC	FMC	FMC	FMC	FMC				FMC
Command and Control	FMC	FMC			FMC	FMC	FMC	FMC	FMC				FMC
Air Drop	FMC	FMC			FMC	FMC	FMC	FMC	FMC				FMC
Air Refueling	FMC	FMC			FMC	FMC	FMC	FMC	FMC				FMC
Spacelift													
Special Operations	FMC	PMC			FMC	FMC	FMC	FMC	PMC	FMC	FMC	FMC	PMC
Intelligence, Surveillance, and Reconnaissance	FMC	FMC			FMC	FMC	FMC	FMC	FMC			FMC	FMC

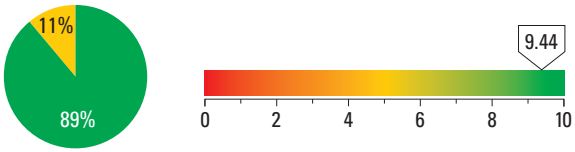
Legend: FMC, PMC, NMC

Encroachment Data

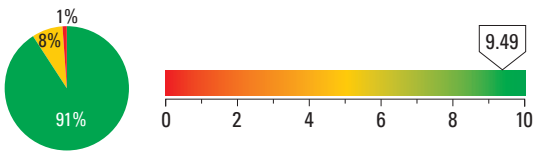
Mission Areas	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
	Encroachment Factors											
Strategic Attack	Minimal	Minimal	Minimal		Moderate	Minimal	Moderate	Minimal	Minimal	Minimal	Minimal	Minimal
Counterair	Minimal	Minimal	Minimal		Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Counterspace												
Counterland	Minimal	Minimal	Minimal		Severe	Minimal	Moderate	Minimal	Minimal	Minimal	Minimal	Minimal
Countersea												
Information Operations												
Electronic Combat Support	Minimal	Minimal	Minimal		Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Command and Control	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Air Drop	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Air Refueling	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Spacelift												
Special Operations	Minimal	Minimal	Minimal		Moderate	Minimal	Moderate	Minimal	Minimal	Minimal	Minimal	Minimal
Intelligence, Surveillance, and Reconnaissance	Minimal	Minimal	Minimal		Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal

Legend: Minimal, Moderate, Severe

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

No comments.

Summary Observations

No comments.

Historical Information, Results, and Future Projections

Calendar Year	2008	2009	2010	2011
Capability Scores	9.39	9.39	9.44	9.44

No comments.

Historical Information, Results, and Future Projections

Calendar Year	2008	2009	2010	2011
Encroachment Scores	9.49	9.49	9.49	9.49

No comments.

Grayling Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Airspace	Counterland	🟡	Airspace limits flexibility for counterland effectiveness.
	Electronic Combat Support	🟡	Airspace is limited by lateral and vertical limits. Airspace is adequate to accomplish most of the training required, but restricts a small portion of the training required.
	Special Operations	🟡	Same as above.
Targets	Counterland	🟡	Currently, the requirement for a moving strafe target are not being met. Range space and target cost have prohibited the ability to develop a moving strafe target.
Threats	Strategic Attack	🟡	No comments.
Range Support	Strategic Attack	🟡	Grayling Range staffing does not meet current mission types and requirements for fire support. Range manning is based on one shift. Current training requires approximately 30% of activities to be at night, which has driven the range to cover more time with fewer bodies.
	Counterland	🟡	Grayling Range staffing does not meet current mission types and requirements for fire support. Requirements for range JTACs, moving targets, and scenario-based CAS training outstrip staffing capabilities.
	Special Operations	🟡	Grayling Range staffing does not meet current mission types and requirements for fire support. Requirements for range JTACs, moving targets, opposing forces (OPFOR), and scenario-based CAS training outstrip staffing capabilities.
Suite of Ranges	Counterland	🟡	No comments.
	Special Operations	🟡	No comments.

Encroachment Observations

Attributes	Assigned Training Mission	Score	Comments
Airspace	Strategic Attack	🟡	Airspace is limited in size based on older aircraft and their capabilities. The Air Force is working an airspace review to re-work the airspace to meet the needs of current and future aircraft.
	Counterair	🟡	Same as above.
	Counterland	🔴	Airspace is limited in size based on older aircraft and their capabilities. CAS is a critical mission for current conflict, and airspace restrictions severely impact realistic training. The Air Force is working an airspace review to re-work the airspace to meet the needs of current and future aircraft.
	Electronic Combat Support	🟡	Airspace is limited in size based on older aircraft and their capabilities. The Air Force is working an airspace review to re-work the airspace to meet the needs of current and future aircraft.
	Special Operations	🟡	Airspace is limited in size based on older aircraft and their capabilities. The Air Force is working an airspace review to re-work the airspace to meet the needs of current and future aircraft.
	Intelligence, Surveillance and Reconnaissance	🟡	Increased need for restricted airspace for UAS training push size and structure requirements.
Noise Restrictions	Strategic Attack	🟡	Mission types have driven the type of training needed to more populated areas and weapon employment parameters have increased (e.g., LGB, Urban CAS) to push aircraft to the edge of restricted airspace. Although areas surrounding the range were built up in the 1970s and 1980s, well after the range site was established in 1948, training requirements have many residents filing habitual noise complaints and engaging local and State politicians.
	Counterland	🟡	Same as above.
	Special Operations	🟡	Mission types have created the need for larger patterns around the impact area. CAS wheels, POD usage, and LGB employment create larger noise issues with encroaching Summer residents.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Hardwood Assessment Details

Range Mission Description

Hardwood Range supports ANG and DoD aircrew and JTAC training. The range has a 2x6 mile impact area that allows a variety of munition deliveries in realistic tactical scenarios to include PGMs. The range has 5 UMTE treat emitters. Main users are 115th FW, 132nd FW, 148th FW, 114th FW, 28th BW. 934th AW, and 147th AVN. Hardwood Range is a primary training range for 6 CTS and CAF JTACs. Hardwood is also often used for major exercises at Volk Field such as NATO JTAC training (NATO Rover 2010).

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
Strategic Attack	FMC	PMC			FMC	PMC	FMC	FMC	PMC		FMC	FMC	FMC
Counterair	FMC	PMC			FMC	PMC	FMC	FMC	FMC		FMC		FMC
Counterspace													
Counterland	FMC	PMC			FMC	FMC	FMC	FMC	PMC	FMC	FMC	FMC	FMC
Countersea													
Information Operations	FMC	FMC			FMC	FMC	FMC	FMC	FMC			FMC	FMC
Electronic Combat Support	FMC	PMC			FMC	PMC	FMC	FMC	FMC			FMC	FMC
Command and Control	FMC	FMC			FMC	FMC	FMC	FMC	FMC		FMC	FMC	FMC
Air Drop	FMC	FMC			FMC	FMC	FMC	FMC	FMC		FMC	FMC	FMC
Air Refueling	FMC	FMC			FMC	FMC	FMC	FMC	FMC				FMC
Spacelift													
Special Operations	FMC	FMC			FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Intelligence, Surveillance, and Reconnaissance	FMC	FMC			FMC	FMC	FMC	FMC	FMC			FMC	FMC

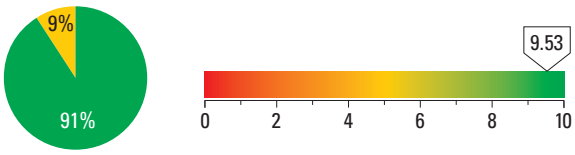
Legend: FMC, PMC, NMC

Encroachment Data

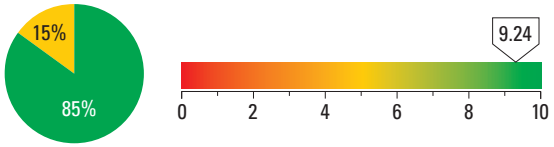
Mission Areas	Encroachment Factors												
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strategic Attack	Minimal	Minimal	Moderate		Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Moderate	Moderate
Counterair	Minimal	Minimal	Moderate		Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Counterspace												
Counterland	Minimal	Minimal	Minimal		Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Moderate	Moderate
Countersea												
Information Operations												
Electronic Combat Support	Minimal	Minimal	Moderate		Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Moderate	Moderate
Command and Control	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Air Drop	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Air Refueling	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Spacelift												
Special Operations	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Moderate	Moderate
Intelligence, Surveillance, and Reconnaissance	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal

Legend: Minimal, Moderate, Severe

Capability Chart and Scores



Encroachment Chart and Scores



Hardwood Assessment Details

Summary Observations	Summary Observations
No comments.	No comments.

Historical Information, Results, and Future Projections					Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011	**Calendar Year**	2008	2009	2010	2011
Capability Scores	9.17	9.17	9.50	9.53	**Encroachment Scores**	8.99	8.99	9.09	9.24

Volk Field/ WICRTC/ Hardwood Range has taken an aggressive approach to future sustainment and viability by constantly working on the training needs of future missions and public outreach through efforts, such as JLUS. Efforts at Hardwood are improving training and the range overall.	No comments.

Hardwood Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Airspace	Strategic Attack	●	Airspace is limited by lateral and vertical limits. Airspace is adequate to accomplish most of the training required, but restricts a small portion of the training required. Supersonic flight is not authorized within the current airspace. Airspace rework is underway to meet the needs of future aircraft. This should be accomplished by 2011.
	Counterair	●	Same as above.
	Counterland	●	Same as above.
	Electronic Combat Support	●	Same as above.
Threats	Strategic Attack	●	Next generation weapons systems require more up to date threat simulators and the landspace to properly place them within the airspace. The Air Force is working to acquire more threats and developing agreements to place the threats within the current airspace
	Counterair	●	Same as above.
	Electronic Combat Support	●	Same as above.
Range Support	Strategic Attack	●	Hardwood Range is one of the least manned ranges throughout the NGB. Current mission types and requirements for fire support etc. has placed a need for creative scheduling. Range manning is based on one shift. Current training requires approximately 40% of activities to be at night, which has driven the range to cover more time with fewer bodies.
	Counterland	●	Same as above.

Encroachment Observations

Attributes	Assigned Training Mission	Score	Comments
Spectrum	Strategic Attack	●	The range's location between two busy civilian airports means severe restrictions are placed on chaff and ECM use. Frequencies are tougher to get, based on everything moving to data links and civilian population becoming more electronic centric.
	Counterair	●	Same as above.
	Electronic Combat Support	●	Same as above.
Airspace	Strategic Attack	●	Airspace is limited in size based on older aircraft and their capabilities. Airspace expansion is difficult based on the range's location between two large civilian airports and their associated arrival and departure routes. The range is currently working an airspace review to re-work the airspace to meet the needs of current and future aircraft.
	Counterair	●	Same as above.
	Counterland	●	Same as above.
	Electronic Combat Support	●	Same as above..

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Hardwood Detailed Comments

Encroachment Observations

Attributes	Assigned Training Mission	Score	Comments
Wetlands	Strategic Attack		The range is located in an area of large quantities of wetlands. Wetland restrictions have restricted the range's ability to construct complete firebreaks, and place new targets. The range is working with the natural resource advisory team. New target development is planned around wetlands on the range.
	Counterland		Same as above.
	Electronic Combat Support		Same as above.
	Special Operations		Same as above.
Range Transients	Strategic Attack		The range boundaries are open, but marked appropriately for the activities taking place. Based on more ATV type vehicles, this increases the number of transients across the range. An effort to fence the entire range is underway. The range continually advises the public of the activities taking place through ATV clubs and other relevent outlets. Public awareness is critical. Hardwood Range has land use policies in place and active perimeter checks are done to ensure public safety.
	Counterland		Same as above.
	Electronic Combat Support		Same as above.
	Special Operations		Same as above.

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Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Holloman Assessment Details

Range Mission Description

Holloman Ranges consist of Red Rio Range, Centennial Range Oscura Range, and Casa Range. These ranges are the primary training ranges for the 49th Wing. Ranges support daily A-G sorties. These ranges also support training for F-16s, HH60s, and JTAC personnel and an assortment of other U.S., Marine, Army aircraft, and German Air Force training.

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
Strategic Attack	FMC	FMC			FMC		FMC	FMC	FMC	FMC		FMC	FMC
Counterair	FMC	FMC			FMC		FMC	FMC	FMC	FMC		FMC	FMC
Counterspace	FMC	FMC			FMC		FMC	FMC	FMC	FMC		FMC	FMC
Counterland	FMC	FMC			FMC		FMC	FMC	FMC	FMC		FMC	FMC
Countersea													
Information Operations	FMC	FMC			FMC		FMC	FMC	FMC	FMC		FMC	FMC
Electronic Combat Support	FMC	FMC				NMC	NMC	NMC	NMC				
Command and Control	FMC	FMC			FMC		PMC	PMC	PMC	FMC		FMC	FMC
Air Drop	FMC	FMC			FMC			FMC	FMC			FMC	FMC
Air Refueling	FMC	FMC			FMC			FMC	FMC	FMC		FMC	FMC
Spacelift													
Special Operations	FMC	FMC			FMC		FMC	FMC	FMC	FMC		FMC	FMC
Intelligence, Surveillance, and Reconnaissance	FMC	FMC			FMC		FMC	FMC	FMC	FMC		FMC	FMC

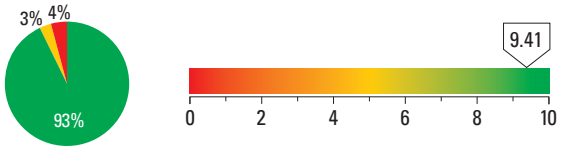
Legend: FMC PMC NMC

Encroachment Data

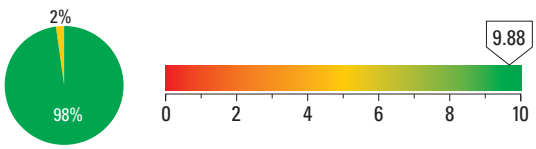
Mission Areas	Encroachment Factors												
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strategic Attack	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Counterair	Minimal	Minimal	Minimal		Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Counterspace	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Counterland	Minimal	Moderate	Minimal		Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Countersea												
Information Operations	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Electronic Combat Support												
Command and Control	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Air Drop	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Air Refueling	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Spacelift	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Special Operations	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Intelligence, Surveillance, and Reconnaissance	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal

Legend: Minimal Moderate Severe

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

Require Link16 for improved command/control, and training. Estimated install is FY2011.

Summary Observations

AGM114 produces a large footprint that will not fit on the range's live drop range. The AGM114 is HE only; no inerts are manufactured or available at this time for training. This reduces training quality for MQ1 and MQ9 aircraft.

Holloman 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	8.04	8.04	9.41	9.41	**Encroachment Scores**	8.42	8.42	10.00	9.88
Scores have varied due to changing mission requirements (F117A—F22, addition of MQ1/9).					Scores have varied due to changing mission requirements (F117A—F22, addition of MQ1/9).				

Holloman Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Threats	Electronic Combat Support	🔴	There is no electronic combat support; therefore, there is no training capability. There is currently no planned solution.
Scoring & Feedback System	Electronic Combat Support	🔴	The range is awaiting Link 16; therefore, there is limited training capability. The Link 16 installation is projected for FY2011.
	Command and Control	🟡	The range is awaiting Link 16; therefore, there is limited training capability. There is currently no solution.
Infrastructure	Electronic Combat Support	🔴	There is no electronic combat support; therefore, there is no training capability. There is currently no planned solution.
	Command and Control	🟡	The range is awaiting Link 16; therefore, there is limited training capability. The Link 16 installation is projected for FY2011.
Range Support	Electronic Combat Support	🔴	There is no electronic combat support; therefore, there is no training capability. There is currently no planned solution.
	Command and Control	🟡	The range is awaiting Link 16; therefore, there is limited training capability. The Link 16 installation is projected for FY2011.

Encroachment Observations

Attributes	Assigned Training Mission	Score	Comments
Munitions Restrictions	Counterland	🟡	The AGM114 footprint exceeds range boundaries; therefore, RPVs cannot train with AGM114. This requires the use of M-36 Captive Flight Trainer.
Airspace	Counterair	🟡	Airspace is a priority for test missions, but is restricted; therefore, training missions must be rescheduled. This requires close coordination between Air Force/Army scheduling activities.
	Counterland	🟡	Same as above.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Jefferson Range Assessment Details

Range Mission Description

Jefferson Range provides primary training for the 122nd FW, 178th FW, 180th FW, and joint training for LFEs, MEUs, SOF, SMERF, FEMA, ASOS, IW, Urban Warfare, and Homeland Defense all in conjunction with the Muskatatuck Urban Warfare Training Center (MUTC).

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
Strategic Attack	FMC	FMC			PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Counterair		FMC			FMC	FMC	NMC	FMC	FMC			FMC	
Counterspace													
Counterland	PMC	FMC			PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Countersea													
Information Operations	FMC				FMC		PMC	PMC	PMC			FMC	FMC
Electronic Combat Support	FMC				FMC		PMC	PMC	PMC			FMC	FMC
Command and Control	FMC	FMC			FMC	FMC	PMC	FMC	FMC			FMC	FMC
Air Drop	FMC	FMC			PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Air Refueling		FMC				FMC		FMC	FMC				
Spacelift													
Special Operations	PMC	FMC			PMC	PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Intelligence, Surveillance, and Reconnaissance	FMC	FMC			PMC	FMC	PMC	FMC	FMC			FMC	FMC

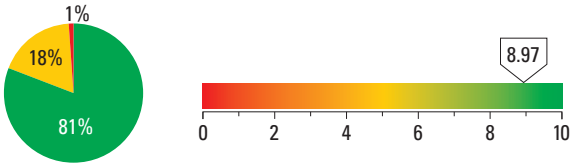
Legend: FMC, PMC, NMC

Encroachment Data

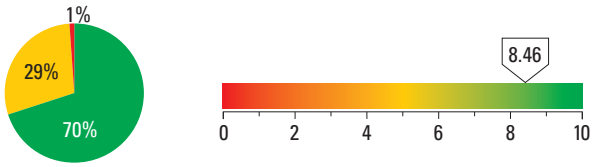
Mission Areas	Encroachment Factors												
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strategic Attack	PMC	PMC	FMC		FMC	FMC	PMC	FMC	PMC	FMC	FMC	FMC
Counterair	PMC	FMC	PMC		PMC	FMC	PMC			FMC	FMC	FMC
Counterspace								PMC				
Counterland	PMC	PMC	FMC		FMC	FMC	PMC	NMC	PMC	FMC	FMC	FMC
Countersea												
Information Operations			FMC				FMC	PMC	FMC			
Electronic Combat Support		PMC	PMC		PMC		FMC	PMC	FMC			
Command and Control	FMC	FMC	FMC		FMC	FMC	FMC	PMC	FMC	FMC	FMC	FMC
Air Drop	PMC	PMC	FMC		FMC	FMC	FMC	PMC	FMC	FMC	FMC	FMC
Air Refueling	FMC	FMC			FMC	FMC	FMC			FMC	FMC	FMC
Spacelift												
Special Operations	FMC	PMC	FMC		FMC	FMC	PMC	PMC	PMC	FMC	FMC	FMC
Intelligence, Surveillance, and Reconnaissance	FMC	FMC	FMC		FMC	FMC	FMC	PMC	FMC	FMC	FMC	FMC

Legend: Minimal, Moderate, Severe

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

UXO contamination somewhat limits Jefferson Range's placement of targets and maneuver areas. Clearance of the UXO during annual residue removal is opening new areas for small arms training and target placement, and retrieval of RPA and air drops; however, further expansion and development is prohibitive under current budget.

Summary Observations

The impact area is saturated with UXO residue, which limits the ability to conduct activities such as retrieval of dropped objects. Most requests for air drops are accompanied by a request for UXO retrieval.

Jefferson Range 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	8.75	8.75	9.14	8.97	**Encroachment Scores**	8.66	8.66	8.71	8.46
Overall capabilities of the range complex have been increased by the annual clearance of the UXO. It is a slow process, however, due to the limitations of the EOD assets and the total amount of UXO present in the impact area.					No comments.				

Jefferson Range Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Counterland	🟡	The range has approximately 100 acres for development of target arrays under the current permit and MOU.
	Special Operations	🟡	Same as above.
Targets	Strategic Attack	🟡	The range is in an Army impact field with a high volume of UXO. The cost for EOD support outside of scrapes and access roads with current budget precludes expansion and development.
	Counterland	🟡	Same as above.
	Countersea	🟡	Same as above.
	Air Drop	🟡	Same as above.
	Special Operations	🟡	Same as above.
	Intelligence, Surveillance and Reconnaissance	🟡	Same as above.
Threats	Special Operations	🟡	The range is in an Army impact field with a high degree of UXO. Cost for EOD outside of scrapes and access roads with current budget precludes expansion and development.
Scoring & Feedback System	Counterair	🔴	Feedback is currently unavailable for performance; however, a partnership with MUTC is affording opportunities for instrumentation of the range.
	Information Operations	🟡	Current scoring system does not provide AAR for IAO.
	Electronic Combat Support	🟡	Current scoring system does not provide AAR for ECS.
	Command and Control	🟡	Current scoring system does not provide AAR for C&C.
	Intelligence, Surveillance, Reconnaissance	🟡	Current scoring system does not provide AAR for ICR.
Infrastructure	Information Operations	🟡	Infrastructure does not support IO.
	Electronic Combat Support	🟡	Infrastructure does not support ECS.
Range Support	Information Operations	🟡	Infrastructure does not support IO.
	Electronic Combat Support	🟡	Infrastructure does not support ECS.

Encroachment Capabilities

Factors	Assigned Training Mission	Score	Comments
Threatened & Endangered Species	Strategic Attack	🟡	The range has several protected species surrounding the impact areas and under the MOAs.
	Counterair	🟡	Same as above.
	Counterland	🟡	Same as above.
	Air Drop	🟡	Same as above.
Munitions Restrictions	Strategic Attack	🟡	UXO limits the placement of targets. Yearly residue clearance is opening new areas for target placement.
	Counterland	🟡	Same as above.
	Electronic Combat Support	🟡	The range is bordered by CVG, SDF, and IND, which restricts the use of ECS.
	Air Drop	🟡	UXO limits the placement of targets. Yearly residue clearance is opening new areas for target placement.
	Special Operations	🟡	Same as above.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Jefferson Range Assessment Details

Encroachment Capabilities

Factors	Assigned Training Mission	Score	Comments
Spectrum	Counterair	🟡	The range is bordered by CVG, SDF, and IND, which restricts the use of potentially jamming spectrums.
	Electronic Combat Support	🟡	The range is bordered by CVG, SDF, and IND, which restricts the use of ECS.
Airspace	Counterair	🟡	There is insufficient MOA space for Counterair training.
	Electronic Combat Support	🟡	The range is bordered by CVG, SDF, and IND, which restricts the use of ECS.
Noise Restrictions	Strategic Attack	🟡	The EA assessment is limited in noise study and needs to be expanded for future weapons systems.
	Counterair	🟡	Same as above.
	Counterland	🟡	Same as above.
	Special Operations	🟡	Same as above.
Adjacent Land Use	Counterspace	🟡	Adjacent land is Army-owned and operated by USFWS. USFWS has permit for approximately 49000 acres as compared to our 1100. The Air Force's footprints are authorized outside of the range's permitted area; however, that is all. Also, much of the land is no access due to UXO.
	Counterland	🔴	Same as above.
	Information Operations	🟡	Same as above.
	Electronic Combat Support	🟡	Same as above.
	Command and Control	🟡	Same as above.
	Air Drop	🟡	Same as above.
	Special Operations	🟡	Same as above.
	Intelligence, Surveillance, Reconnaissance	🟡	Same as above.
Cultural Resources	Strategic Attack	🟡	Jefferson Range has oversight by BRAC 1988. Conducting operations outside the MOU as established by BRAC would require congressional authorization.
	Counterland	🟡	Same as above.
	Special Operations	🟡	Same as above.

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Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

McMullen Assessment Details

Range Mission Description

McMullen (Yankee) Range serves as the 149th Fighter Wing's Primary Training Range (PTR). The 149th Fighter Wing is a Formal Training Unit (FTU) for F-16 Fighter training. FTU syllabus requirements include Basic Surface Attack (BSA), Conventional & Tactical Target Attack, Close Air Support (CAS), Urban CAS, Low Altitude Air-to-Air Tactics and Surface Electronic Attack training. McMullen Range also supports two Air Education & Training Command AT-38 squadrons from Randolph AFB (435th FTS) and Laughlin AFB (434th FTS). AT-38 operations include Introduction to Fighter Fundamentals (IFF) training for BSA. Finally, McMullen Range supports the 147th Air Support Operations Squadron (ASOS) from Ellington Field, TX (TXANG) for Joint Terminal Attack Controller (JTAC) ground training requirements.

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
Strategic Attack	●	●			●	●	●	●		●		●	●
Counterair	●	●			●	●				●		●	●
Counterspace													
Counterland	●	●			●	●	●	●		●		●	●
Countersea													
Information Operations	●	●			●	●		●				●	●
Electronic Combat Support	●	●			●	●	●	●		●		●	●
Command and Control	●	●			●	●	●	●		●		●	●
Air Drop													
Air Refueling													
Spacelift													
Special Operations	●	●			●	●	●	●		●		●	●
Intelligence, Surveillance, and Reconnaissance	●	●			●	●	●	●		●		●	●

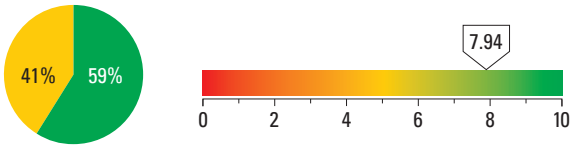
Legend: FMC ● PMC ● NMC ●

Encroachment Data

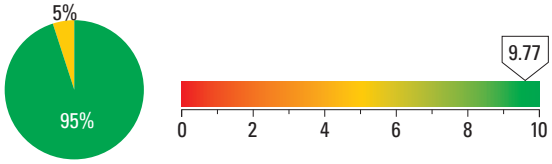
Mission Areas	Encroachment Factors												
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strategic Attack	●	●	●		●	●	●	●	●	●	●	●
Counterair	●	●	●		●	●	●	●	●	●	●	●
Counterspace												
Counterland	●	●	●		●	●	●	●	●	●	●	●
Countersea												
Information Operations	●	●	●		●	●	●	●	●	●	●	●
Electronic Combat Support	●	●	●		●	●	●	●	●	●	●	●
Command and Control	●	●	●		●	●	●	●	●	●	●	●
Air Drop												
Air Refueling												
Spacelift												
Special Operations	●	●	●		●	●	●	●	●	●	●	●
Intelligence, Surveillance, and Reconnaissance	●	●	●		●	●	●	●	●	●	●	●

Legend: Minimal ● Moderate ● Severe ●

Capability Chart and Scores



Encroachment Chart and Scores



McMullen Assessment Details

Summary Observations					Summary Observations				
No comments.					No comments.				
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	8.42	8.42	6.27	7.94	**Encroachment Scores**	8.92	8.92	9.81	9.77
No comments.					No comments.				

McMullen Limitation Details

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Strategic Attack	●	Yankee Range Landspace is insufficient for full-up training ops. Current landspace of approximately 4000 acres (with only a 400 acre impact area) precludes live weapon drops and severely limits full-scale inert weapon releases. There are currently no planned actions to remedy this issue.
	Counterland	●	Same as above.
Airspace	Strategic Attack	●	Restricted Area R-6312 over Yankee Range is inadequate for realistic maneuver. It consists of a 5nm radius circle from the surface to FL 230. R-6312 is often capped at 10K due to Houston Center and/or Navy operations. Impact to training includes limited capability for maneuver within airspace. A proposal is in process to create an ATCAA "air-bridge" for ingress to the target area by units assigned Air-to-Air training MOA.
	Counterair	●	Same as above.
	Counterland	●	Same as above.
Threats	Strategic Attack	●	Range is currently authorized and utilizes RWR-Lite threat emitters that are aging and outdated. Threat equipment maintenance and operation requires manpower above current authorizations. Due to age and limited capabilities of RWR-Lite emitters, little significant training can be accomplished with respect to EW threats. Range is continuously seeking alternatives for more robust systems, i.e., AN/VPQ-1 and (JTE) Joint Threat Emitters. No current timeline for alternatives.
	Counterair	●	Same as above.
	Counterland	●	Same as above.
	Electronic Combat Support	●	Same as above.
	Special Operations	●	Same as above.
	Intelligence, Surveillance, Reconnaissance	●	Same as above.
Infrastructure	Strategic Attack	●	Range infrastructure is comprised of portable-style buildings, which are non-permanent in nature. There is minimal communication infrastructure connectivity outside the range. There are no permanent facilities for personnel or equipment used to maintain targets, roads, fire breaks, communications equipment, structural maintenance equipment, and IT connectivity beyond minimal requirements (phone and LAN). Real property must be acquired or a lease in excess of 20 years must be executed in order to erect permanent structures/ facilities on the range. No currently planned actions to remedy this issue.
	Counterland	●	Same as above.
	Electronic Combat Support	●	Same as above.
	Command and Control	●	Same as above.
Smalls Arms Ranges	Strategic Attack	●	Range currently lacks funding for a second, full-time Range Control Officer (RCO) and authorizations for additional operators/maintainers. Absences due to health, work, or family situations are a show-stopper for Class A Range operations. Det-1 has pursued funding for a second full-time RCO and personnel through State and NGB channels for several years with no success. No current timeline for a solution.
	Counterair	●	Same as above.
	Counterland	●	Same as above.
	Electronic Combat Support	●	Same as above.
	Command and Control	●	Same as above.
	Special Operations	●	Same as above.
	Intelligence, Surveillance, Reconnaissance	●	Same as above.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

McMullen Assessment Details

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
MOUT Facilities	Electronic Combat Support	●	Range is currently authorized and utilizes RWR-Lite threat emitters that are aging and outdated. Threat equipment maintenance and operation requires manpower above current authorizations. Due to age and limited capabilities of RWR-Lite emitters, little significant training can be accomplished with respect to EW threats. The range is continuously seeking alternatives for more robust systems, i.e., AN/VPQ-1 and (JTE) Joint Threat Emitters. No current timeline for a solution.
Suite of Ranges	Strategic Attack	●	The range is limited to a single range for BSA with limited standoff attack capability. It offers no live weapons training, no urban CAS target, limited EW threats, and limited airspace for maneuver. The Air Force has ongoing initiatives to expand airspace, targets, and EW threats, but no projected timeline.
	Counterair	●	Same as above.
	Counterland	●	Same as above.
	Electronic Combat Support	●	Same as above.

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Airspace	Strategic Attack	●	Restricted Area R-6312 over Yankee Range is inadequate for realistic maneuver. It consists of a 5nm radius circle from the surface to FL 230. R-6312 is often capped at 10K due to Houston Center and/or Navy operations. The impact to training includes limited capability for maneuver within airspace. There is a proposal in process to create an ATCAA "air-bridge" for ingress to the target area by units assigned Air-to-Air training MOA.
	Counterair	●	Same as above.
	Counterland	●	Same as above.
	Special Operations	●	Same as aboe.

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Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Melrose Range Assessment Details

Range Mission Description

Melrose Air Force Range (MAFR) provides unique training capability for Air Force Special Operations airpower and Combat Air Forces. The range provides unique opportunities to build and foster improved joint air to ground integration training with joint terminal attack control (JTAC). It ensures a high quality electronic combat training environment for Air Force and other DoD assets.

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												
Strategic Attack	●	●			●	●	●	●	●	●		●	
Counterair		●				●							
Counterspace													
Counterland	●	●			●	●	●	●	●	●		●	
Countersea													
Information Operations		●											
Electronic Combat Support	●	●			●	●	●	●	●			●	
Command and Control	●				●	●	●	●	●				
Air Drop	●	●			●	●							
Air Refueling		●				●							
Spacelift													
Special Operations	●	●			●	●	●	●	●	●		●	●
Intelligence, Surveillance, and Reconnaissance	●	●			●	●	●	●	●	●		●	

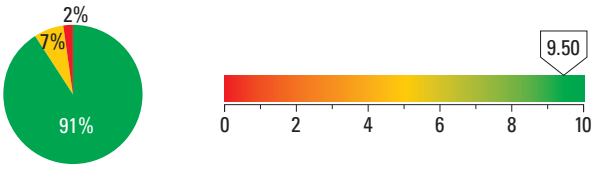
Legend: FMC ● PMC ● NMC ●

Encroachment Data

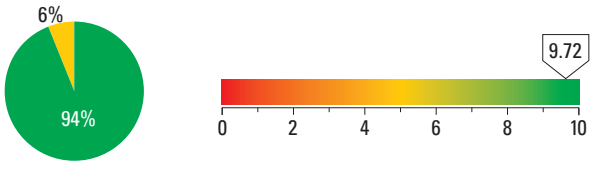
Mission Areas	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
	Encroachment Factors											
Strategic Attack	●	●	●		●	●	●	●	●	●	●	●
Counterair	●	●	●		●	●	●	●	●	●	●	●
Counterspace												
Counterland	●	●	●		●	●	●	●	●	●	●	●
Countersea												
Information Operations												
Electronic Combat Support	●	●	●		●	●	●	●	●	●	●	●
Command and Control												
Air Drop	●	●	●		●	●	●	●	●	●	●	●
Air Refueling	●	●	●		●	●	●	●	●	●	●	●
Spacelift												
Special Operations	●	●	●		●	●	●	●	●	●	●	●
Intelligence, Surveillance, and Reconnaissance	●	●	●		●	●	●	●	●	●	●	●

Legend: Minimal ● Moderate ● Severe ●

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

No comments.

Summary Observations

1. Impact areas for AC-130, MC-130W, and CV22 are the most impacted range capability due to encroachment.
2. Special Operations is the mission area most impacted by encroachment.

Melrose Range Assessment Details

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Capability Scores	9.05	9.05	10.00	9.50

No comments.

Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011
Encroachment Scores	9.32	9.32	9.75	9.60

Melrose Air Force Range has seen an increase in utilization due to changing/growing mission with the re-missioning of the 27th Fighter Wing to the 27th Special Operations Wing. There are three primary encroachment issues/areas of concern:

1. Melrose is the primary range for AC-130H training, both operational squadron and Formal Training Unit, but there is only one impact area (JOCKEY) for the AC-130. The problem will be further magnified as the MC-130W becomes fully operational in the Dragon Spear configuration, which will require the use of the same live fire range on a nightly basis. HQ AFSOC and the 27 SOW are working with JFCOM to secure JNTC funding for a second live fire area on Melrose. Initial construction of the SPIRIT impact area is expected started February 2011. Projected utilization is 10 AC-130 live fires per week and 10+ MC-130W live fires per week. MC-130W steady state utilization will increase as the number of qualified crews increase.
2. AC-130 and fighter/bomber integration training and live fire operations. The solution to facilitating practice of TTPs developed in CENTCOM AOR is twofold. First, the land allocation must be restructured to increase the AF exclusive use area. This began in July 2011 as the amount of restricted leased land is reduced and the AF converts an additional 19,000 acres for exclusive use. Once this happens, basic integration can exist on the new SPIRIT impact area mentioned above. Second, to use both impact areas (JOCKEY and SPIRIT), the range support buildings should be moved allowing greater flexibility to use the exclusive use area. The relocation of the buildings will open additional targets for fighter/bombers/CV22 as well as greater flexibility for special operations ground forces during air to ground/joint terminal attack control training and maneuver. The estimated cost of this project is $15M and is not funded at this time.
3. Increased development of wind turbines surrounding the range. Cannon AFB/Melrose Range senior leadership is fully engaged with local county commissioners to ensure the placement of wind turbines has the least possible conflict with range operations. A Joint Land Use Study (JLUS) is ongoing. If the JLUS is not successful in mitigating wind energy encroachment, the 27 SOW combat training (low-level day/night training routes) will be impacted.
4. Increased potential for wind turbine development surrounding range (AF) property. Cannon AFB/MAJCOM/HAF is cognizant of one proposal, which is being spearheaded by Greenwing Energy. Additional information has been provided in the Adjacent Land Use section below.

Melrose Range Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Targets	Special Operations	🟡	Of the two AC-130 target sites, one is operational, but the second live fire target area is in design/development and is tied to the Environmental Assessment under contract. Current training impacts limit the AC-130 to single ship operations. Scheduled EA completion is January 28, 2011.
Infrastructure	Special Operations	🔴	Power, water, communications, and roads need to be developed for planned range development. Range Administration, maintenance, and fire department buildings need to be updated and relocated out of the primary impact area. Permanent exercise facilities are needed to facilitate training of SOF forces in a realistic training environment. Training artificialities hinder SOF forces training opportunities due to administrative and travel time with no onsite facility. A development plan is in the works, but implementation is dependent on funding.
Range Support	Special Operations	🟡	Datalink capabilities do not exist. Bandwidth is limited. No SIPR available. The range is incapable of secure communications. A repair ticket was submitted to 27 SOCS, but no get well date has been given to date.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Melrose Range Assessment Details

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
MOUT Facilities	Special Operations	●	MOUT sites are incomplete. This limits ground operations training. Sites are being developed as funds become available.
Suite of Ranges	Special Operations	●	NSAv Landing Zone not built. Current temporary LZ operations are limited by weather. 3 Permanent LZ contract award estimated for 09/20/2010.

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Munitions Restrictions	Counterland	●	All weapons approved for the range cannot be employed. This has minimal training impact, however, due to alternate weapons capabilities that meet training requirements. No remedy immediately available.
	Special Operations	●	Structured Targets/Ranges/dirt LZ is funded and in the contracting process. Schedule deconfliction burden is increased resulting in lost training due to availability of resources. Funded projects will alleviate some of deconfliction issues opening up additional training opportunities. Get well date: FY2015.
Spectrum	Electronic Combat Support	●	Four frequencies are not available: 15.4 GHz earth exploration satellite (passive), 3930MHz satellite broadcast, 668, and 878 MHz White Sands Missile Range FCC restriction, per Manual of Regulations and Procedures for Federal Radio Frequency Management, U.S. footnote 246. This has minimal training impact. Workarounds are in place. No immediate remedy available. Restrictions not anticipated to change.
Adjacent Land Use	Special Operations	●	Land use in the adjacent land use area of MAFR continues to be a concern. Encroachment has received increased visibility both in the community and throughout the 27 SOW because of the efforts of the Encroachment Management Team (EMT) and because of the concerns caused by wind turbine farm proposals, both within 27 SOW managed restricted airspace, as well as in the Class E airspace controlled by Cannon RAPCON. Greenwing Energy is currently proposing a project (with two arrays) located within R-5104 which has potential to significantly impact training operations conducted at MAFR. Two of these concerns are the limitations on LZ/DZ Ops and the impact to NV ops (glare from obstruction lights). Cannon EMT conducted a preliminary consultation with the proponent to verify specifics of the proposal and to address preliminary concerns. Cannon EMT is awaiting further info / follow-up meeting with proponent. MAJCOM and HAF are aware of this potential project, but a timeline for solution is unknown at this time.
Cultural Resources	Special Operations	●	There are 232 cultural sites on the range, which require studies/coordination before range development begins. Project sites may have to be moved, which could provide "cramped" training areas due to less than optimal placement. Continued coordination ongoing with 27 SOCE offices during range development planning to alleviate training impacts.

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Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Mountain Home Ranges Assessment Details

Range Mission Description

Mountain Home Range Complex (MHRC) consists of two impact areas: Saylor Creek Range and Juniper Butte Range. It also features 5 No -Drop target areas, the main EC site at Grasmere, and multiple EC sites. The range is classified as a Primary Training Range by ACC. The primary mission of the range is to support the 366FW and ID ANG by providing both conventional and tactical targets, urban targets, and EW threats for basic surface attack, tactical surface attack missions, and CAS training with JTACs.

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
Strategic Attack	●	●			●	●	●	●	●		●		●
Counterair	●	●			●	●	●	●	●		●		●
Counterspace													
Counterland	●	●			●	●	●	●	●		●	●	●
Countersea													
Information Operations													
Electronic Combat Support	●	●			●	●	●	●	●		●	●	●
Command and Control	●	●			●	●	●	●	●		●	●	●
Air Drop	●	●				●			●		●	●	●
Air Refueling	●	●				●		●	●		●		●
Spacelift													
Special Operations	●	●			●	●	●	●	●		●	●	●
Intelligence, Surveillance, and Reconnaissance													

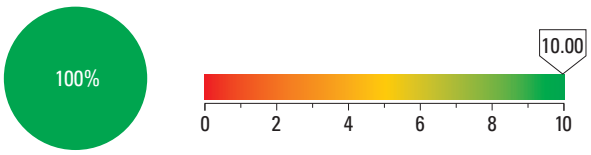
Legend: FMC ● PMC ● NMC ●

Encroachment Data

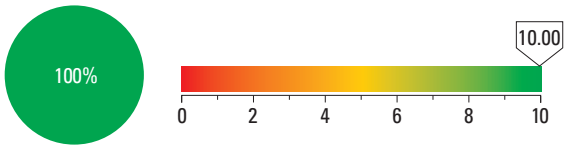
Mission Areas	Encroachment Factors												
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strategic Attack	●	●	●		●	●	●	●	●	●	●	●
Counterair	●	●	●		●	●	●	●	●	●	●	●
Counterspace												
Counterland	●	●	●		●	●	●	●	●	●	●	●
Countersea												
Information Operations												
Electronic Combat Support	●	●	●		●	●	●	●	●	●	●	●
Command and Control	●	●	●		●	●	●	●	●	●	●	●
Air Drop	●	●	●		●	●	●	●	●	●	●	●
Air Refueling	●	●	●		●	●	●	●	●	●	●	●
Spacelift												
Special Operations	●	●	●		●	●	●	●	●	●	●	●
Intelligence, Surveillance, and Reconnaissance												

Legend: Minimal ● Moderate ● Severe ●

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

1. 100% of the AF's range/range complex mission areas that are applicable to MHRC are Fully Mission Capable (FMC).
2. MHRC does not support Counterspace, Countersea, Information Operations, Spacelift, and ISR missions on a normal basis, and only rarely supports Air Drop missions.

Summary Observations

The only significant impact on operations in MHRC is caused by the existence of Slick Spot Peppergrass, a threatened species growing near the impact area at Juniper Butte Range. There is minimal impact to air and ground operations in the current target complex at Juniper Butte, but it could impact expansion efforts in the future. Saylor Creek serves as the range's primary impact area, and has no encroachment issues at this time.

Mountain Home Ranges 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	10.00	10.00	10.00	10.00	**Encroachment Scores**	9.89	9.89	10.00	10.00
The overall capability score has been steady. The only change in recent years has been the official listing of Slick Spot Peppergrass as a threatened species and the construction of a more robust MOUT target set in keeping with current CAS/JTAC requirements.					The overall encroachment score remains steady at 10. The only change has been the listing of Slick Spot Peppergrass as a threatened species. This may impact future expansion efforts at Juniper Butte Range, should they be attempted. The Air Force is currently in the process of approving strafe at Juniper Butte in addition to BDU-33 practice bombs, which should be approved, despite this listing.				

Mountain Home Ranges Limitation Details

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
No comments.			

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
No comments.			

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Nevada Test and Training Range (NTTR) Assessment Details

Range Mission Description

The mission of the 98th Range Wing (98 RANW) is to formulate concepts and advocate requirements to support DoD advanced air combat composite force training, tactics development, and electronic combat, as well as DoD and Department of Energy (DOE) testing, research, and development. To accomplish its diverse mission, the 98th RANW develops, operates, and maintains the Nevada Test and Training Range (NTTR), comprising of 2.9 million acres and 12,000 nautical square miles of airspace and 1,400 targets supporting advanced composite force training, tactics development, and testing. The 98 RANW oversees operations of two groups: 98th Operations Group and 98th Mission Support Group. Training units include Red Flag, USAF Weapons School, and the 432 OG. The 57 WG is the predominate training wing for Large Force Exercises.

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
Strategic Attack	FMC	FMC			FMC	PMC	FMC		FMC		FMC	PMC	FMC
Counterair	FMC	PMC				PMC	FMC		FMC		FMC	FMC	FMC
Counterspace													
Counterland	FMC	FMC			FMC	FMC	FMC	FMC	PMC	FMC	FMC	FMC	FMC
Countersea													
Information Operations					NMC	NMC	NMC	FMC	PMC		NMC	NMC	NMC
Electronic Combat Support	FMC	PMC			PMC	PMC	PMC	FMC			FMC	PMC	FMC
Command and Control	FMC	FMC			NMC	PMC	NMC	FMC	FMC	FMC	FMC	FMC	FMC
Air Drop	FMC	FMC			FMC	FMC		FMC	FMC	FMC	FMC	PMC	FMC
Air Refueling		FMC						FMC			FMC		FMC
Spacelift													
Special Operations	FMC	FMC			FMC	FMC		FMC	FMC	FMC	FMC	FMC	FMC
Intelligence, Surveillance, and Reconnaissance		FMC			PMC	FMC	FMC	FMC	FMC		FMC	FMC	FMC

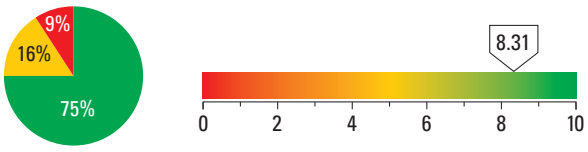
Legend: FMC, PMC, NMC

Encroachment Data

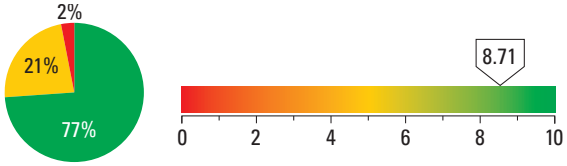
Mission Areas	Encroachment Factors												
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strategic Attack	Severe	Moderate	Moderate	Minimal	Minimal	Moderate	Minimal	Moderate	Moderate	Minimal	Moderate	Minimal
Counterair	Minimal	Minimal	Moderate	Minimal	Minimal	Minimal	Moderate	Moderate	Moderate	Minimal	Minimal	Minimal
Counterspace	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Counterland	Severe	Moderate	Moderate	Minimal	Minimal	Moderate	Minimal	Moderate	Moderate	Minimal	Moderate	Minimal
Countersea												
Information Operations	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Electronic Combat Support	Minimal	Minimal	Moderate	Minimal	Minimal	Moderate	Minimal	Severe	Moderate	Minimal	Moderate	Minimal
Command and Control	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Air Drop	Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Moderate	Minimal	Moderate	Minimal
Air Refueling	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Spacelift												
Special Operations	Moderate	Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Moderate	Moderate	Minimal	Moderate	Minimal
Intelligence, Surveillance, and Reconnaissance	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal

Legend: Minimal, Moderate, Severe

Capability Chart and Scores



Encroachment Chart and Scores



Nevada Test and Training Range (NTTR) Assessment Details

Summary Observations	Summary Observations
The attributes most impacting performance are: Threats, Targets, and Scoring & Feedback System; then Collective Ranges and Suite of Ranges, in this order. Mission areas impacted are: Command and Control and Information Operations. The FY2013 POM will include: 1. Threat Relevancy Requirements are "signature representative" and "robustness in density." Modernize to Double Digit capabilities. 2. Representative Targets including Time Sensitive Targets (TST). 3. Instrumented Battlespace with upgrades for compartmentalized debrief. 4. Throughput on Operational Hours. Extend the NTTR range hour capacity with additional shifts to handle new workload for the F-35 and Test requirements. Include Saturday operations and night shifts.	Renewable Energy (RE) proposals and project sitings surrounding the NTTR are spectrum interference impacts technically known as RF/EMI compatibility issues (also known as Electro Magnetic Environment [EM] and are of the greatest concern. In addition, land development and subsequent overflight noise issues are increasing under the Desert MOA. The potential to develop the southern ranges in concert with U.S. Fish and Wildlife approvals for co-use of the Desert National Wildlife Range per the MLWA of 1999 may further encroach upon NTTR. Key mission areas impacts include: Electronic Combat for training and test mediums; Strategic Attack mission from both renewable energy projects and in noise complaints; and Counterair and Counterland, both by developmental pressures and land use planning constraints due to Endangered Species Act (ESA), wetlands, or air quality (in Clark County).

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	8.22	8.22	8.39	8.31	**Encroachment Scores**	8.62	8.24	8.26	8.56

1. Small Arms and MOUT experienced minor change in the assessment; reflected in comments. 2. Slight decrease due to MOUT activities addressed during the NTTR RUG held in July 2010 [3] N/A [4]. 98 RANW will request additional programming capabilities in the FY2013 POM input. FY2012 POM input with the ACC PEM at A3AR for PEs 27428 and 27429. Documented these deficiencies as well as the CRP input from 98 RANW to ACC/A3A. SAF/LLP is working the legislative issues with A3O-BR, including range-wide studies (Sen. Ensign). ACC/A8 is working NTTR requirements product for 2025 planning.	1. Threatened and Endangered Species, Airspace, and Noise Restrictions are the three encroachment factors with the greatest impact at NTTR. 2. Sitings of RE proposals are being addressed in cooperative relationships locally with DOI (Bureau of Land Management) and DOE. HAF conducted a Nevada Forum in August 2010 with RE Industry and all federal agencies as well as state and county representatives from Nevada. At HQ ACC/ST, RE impact studies are in work for the 19 parameters known. The AF Scientific Advisory Board (SAB) has reviewed these impacts and has made recommendations on the proposed studies. (AF/A3O -BR and SAF/IEI are all involved at HAF, as well as ACC/A8-2/A3A at the MAJCOM.) Noise implications have to be dealt with in planning with local communities, country commissioners, and in the NTTR public outreach programs. As southern Nevada develops in Eastern Clark County and in Lincoln County, public concerns may increase from the military impacts, especially overflight as the F-22 and F-35 come into the inventory. Mitigation may include re-routing airspace use in the high use corridors that are part of the Desert MOA, as well as navigation buyouts or land use planning restrictions. The unique relationship with USFWS is necessary per the MLWA of 1999 and in the way the 1997 MOU with USFWS was established for joint use of the co-withdrawn lands. 3. 98 RANW will request additional programming capabilities in the FY2013 POM input. FY2012 POM input at the ACC PEM level for PEs 27428 and 27429 documented these deficiencies, as well as the CRP input from 98 RANW to ACC/A3A. SAF/LLP is working the legislative issues with A3O-BR to include range-wide studies (Sen. Ensign), RE Clean Energy, and Wildlife Partnerships with local government (Sen. Reid). The economic downturn in Nevada and decreased need for mass expansion in Clark Country has slowed some residential development pressures.

Nevada Test and Training Range (NTTR) Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Airspace	Counterair	●	There are increasing restrictions on the range due to noise complaints, urban encroachment, and natural lands. Supersonic, chaff, flare, and overflight restrictions continue to shrink the NTTR airspace. Avoidance Areas—Nellis has established noise sensitive area around communities under the MOA.
	Electronic Combat Support	●	There is limited capability to do full-spectrum jamming. Current FAA chaff restrictions deny employment over NTTR. Avoidance Areas—Nellis has established noise sensitive area around communities under the MOA. Since 2008, an increase in renewable energy wind farms (WGEF) has the potential to impact the range's ability to operate in a clean electronic environment. This issue is currently in study with the AF Scientific Advisory Board (SAB). Impacts are radar operations with low observable aircraft frames have degradation in analysis for weapons and tactics testing and training.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Nevada Test and Training Range (NTTR) Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Targets	Information Operations	🔴	There are no self-contained Information Operations (IO) targets on NTTR. All IO play is based on the users and the equipment that they bring to the range. There are some means of facilitating IO play, but no organic capability. The range is continuing to work with JIOR to provide a mobile service that can be deployed at the Urban Operations Complex (UOC) on Range 62.
	Electronic Combat Support	🟡	The range lacks a complete electronic target set. Electronic Attack (EA) platforms do no get real-time feedback on their capabilities and their effects during training. The range will continue to work on the Digital Integrated Air Defense System (DIADS) suite in order a real-time degradation on red systems based on real efforts of jamming platforms.
	Command and Control	🔴	No Red C2 Targetable Nodes exist on NTTR. Jamming platforms do not get real-time feedback on operations. With DIADS implementation and IO suite, the range should better simulate a degraded C2 system while maintaining safety.
	Intelligence, Surveillance and Reconnaissance	🟡	NTTR Requires High-Fidelity ISR Targets on the range. ISR is the one of the most heavily tasked functions, but the range has only minimal target support. It will continue to expand ISR targets to include the High Speed Moving Target (HSMT) and IO capabilities.
Threats	Strategic Attack	🟡	Lack of double-digit SAM capabilities. The range is still multiple years away of allowing users to train on significant double digit SAM threats—ACC tracking JTE with SPO. Workarounds are planned, but do not support full training objectives. Right now, aircrew must train on legacy single-digit SAMs.
	Counterair	🟡	Same as above.
	Information Operations	🔴	There are no self-contained IO targets on NTTR. All IO play is based on the users and the equipment that they bring to the range. There are some means of facilitating IO play, but no organic capability. The range is continuing to work with JIOR to provide a mobile service that can be deployed at the Urban Operations Complex (UOC).
	Electronic Combat Support	🟡	Lack of complete electronic target set. EA platforms do not get real-time feedback on their capabilities and their effects during training. The range will continue to work on DIADS suite to show a real-time degradation on red systems based on real efforts of jamming platforms.
	Command and Control	🟡	No Red C2 Targetable Nodes exist on NTTR. Jamming platforms do not get real-time feedback on operations. With DIADS implementation and IO suite, the range should better simulate a degraded C2 system while maintaining safety.
Scoring & Feedback Systems	Information Operations	🔴	The range has no self-contained IO targets on NTTR. All IO play is based on the users and the equipment that they bring to the range. The range has some means of facilitating IO play, but no organic capability. The range is continuing to work with JIOR to provide a mobile service that can be deployed at the UOC.
	Electronic Combat Support	🟡	Lack of complete electronic target set. EA platforms do not get real-time feedback on their capabilities and their effects during training. The range will continue to work on DIADS suite in order to show a real-time degradation on red systems based on real efforts of jamming platforms.
	Command and Control	🔴	No Red C2 Targetable Nodes exist on NTTR. Jamming platforms do not get real-time feedback on operations. With DIADS implementation and IO suite, the range should better simulate a degraded C2 system while maintaining safety.
Range Support	Counterland	🟡	There is limited Blue Force track capability and convoy support. Ground Troops are deploying without high fidelity training. The range is currently working with 99 GCTS to provide training area for robust convoy training with 99 ABW and ACC coordination.
	Information Operations	🟡	There are no self-contained IO targets on NTTR. All IO play is based on the users and the equipment that they bring to the range. There are some means of facilitating IO play, but no organic capability. The range is continuing to work with JIOR to provide a mobile service that can be deployed at the UOC.
Collective Ranges	Information Operations	🔴	Same as above.

Nevada Test and Training Range (NTTR) Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
MOUT Facilities	Strategic Attack	🟡	There are new Area Security Operations (ASO) requirement for GCTS and the range does not have the current capabilities to provide all required. It is currently employing "band-aid" fixes and trains when any time is available with minimum requirements being met. The range is trying to work with HHQ to provide specific funding, manning, and requirements to get higher priority.
	Information Operations	🔴	There are no self-contained IO targets on NTTR. All IO play is based on the users and the equipment that they bring to the range. There are some means of facilitating IO play, but no organic capability. The range is continuing to work with JIOR to provide a mobile service that can be deployed at the UOC.
	Electronic Combat Support	🟡	The range is deploying jammable infrastructure at the Urban Operations Center. Crews cannot get robust training in CAS/EA or ISR without a robust electronic threat. Right now, the range uses the UOC as low-threat area, but is working to obtain deployable systems.
	Air Drop	🟡	Currently, there are five Drop Zones (two area and three circular) near the UOC on Range 62. This is an AMC requirement that is being met. The range does NOT have an operational LZ near the UOC. This is an AMC and SOCOM requirement not being met. Training would be greatly enhanced by having an LZ near the UOC to conduct full ops. The range is working to enhance the current landing strip in the UOC complex to allow rotary wing, C-130, and C-17 assault/bare base operations.
Suite of Ranges	Information Operations	🔴	There are no self-contained IO targets on NTTR. All IO play is based on the users and the equipment that they bring to the range. There are some means of facilitating IO play, but no organic capability. The range is continuing to work with JIOR to provide a mobile service that can be deployed at the UOC.

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Threatened & Endangered Species	Strategic Attack	🔴	Placement of targets in the southern ranges is constrained by U.S. Fish and Wildlife Service (USFWS) guidance/agreements. The range must comply with ESA (Increase costs or Risks) as the NTTR southern ranges are home to the Desert Tortoise, a threatened species. The range operates under a Biological Opinion (BO) issued by USFWS. In accordance with the BO, it pays a one-time fee per acre and must implement required conditions. USFWS nominated the higher elevations in the Southern Ranges as Wilderness. This severely restricts the range's ability to place threats or targets at high elevations to provide future capabilities. USFWS recently issued interim guidance on protecting Golden Eagles. It is unknown how these rules will impact the range's ability to manage range targets. There are no open venues to mitigate these issues for increased capabilities, since ESA compliance and wilderness regulation compliance are based on Public Law. At some point, additional lands to support increase capabilities will be necessary.
	Counterland	🔴	Endangered Species Act (Increase costs or Risks)—The NTTR southern ranges are home to the Desert Tortoise, a threatened species. The range operates under a BO issued by USFWS. In accordance with the BO, the range pays a one-time fee per acre of $723 for each acre of "suitable habitat" it disturbs and must implement required conditions. There are no open venues to mitigate these issues for increased capabilities, since ESA compliance and wilderness regulation compliance are based on Public Law. At some point, additional lands to support increase capabilities will be necessary.
	Air Drop	🟡	Placement of drop zones in the southern ranges must follow USFWS guidance/agreements. The BO is the driver behind drop zone limitations. There are no open venues to mitigate these issues for increased capabilities, since ESA compliance and wilderness regulation compliance are based on Public Law. At some point, additional lands to support increase capabilities will be necessary.
	Special Operations	🟡	In the lower elevations of the southern range, Special Operations ground movements are restricted due to USFWS Desert Tortoise habitat and the BO requirements. The southern ranges at higher elevations received a Wilderness Areas designation, which prevents vehicle use for ground movements. USFWS recently issued interim guidance on protecting Golden Eagles. It is unknown how these rules will impact the range's ability to manage range targets. There are no open venues to remedy these issues, considering ESA compliance and wilderness regulation compliance.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Nevada Test and Training Range (NTTR) Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Munitions Restrictions	Strategic Attack		Placement of live and inert targets on the Southern Ranges must follow USFWS guidance/agreements. In the lower elevations of the southern range, target placement is constrained due to USFWS Desert Tortoise habitat. The southern range's higher elevation's Wilderness Areas designation eliminates this area from being used for target placement. USFWS recently issued interim guidance on protecting Golden Eagles. It is unknown how these rules will impact the Air Force's ability to manage range targets. There are no open venues to remedy these issues; ESA compliance and wilderness regulation compliance are mandatory.
	Counterland		Same as above.
	Special Operations		Placement of live and inert targets on the Southern Ranges must follow USFWS guidance/agreements. In the lower elevations of the southern range, target placement is constrained due to USFWS Desert Tortoise habitat. The southern range's higher elevation's Wilderness Areas designation eliminates this area from being used for target placement. USFWS recently issued interim guidance on protecting Golden Eagles. It is unknown how these rules will impact the Air Force's ability to manage range targets. There are no open venues to mitigate these issues for increased capabilities; ESA compliance and wilderness regulation compliance are based on Public Law. At some point, additional lands to support increase capabilities will be necessary.
Spectrum	Strategic Attack		Current and future renewable energy projects in and around NTTR and the associated MOAs will negatively impact the EM environment required for sensitive testing at the NTTR. Specifically, the Wilson Creek Wind Farm would substantially increase EM "noise" in the northern part of the Reveille MOA, which will negatively affect A-A targeting radars and A-G mapping sensors, if constructed as planned. In addition, the Crescent Dune Solar project, northwest of Tonopah, NV, will produce substantial IR spectrum overlap with many ground-based and airborne sensors, when construction is completed. (The MET is in progress with BLM.) When addressed separately, the encroachment of individual renewable energy projects might fall below the threshold. However, when addressed in combination, it is clear that the many alternative and renewable energy projects will negatively affect the viability of NTTR in the immediate and long-term. The AF Scientific Advisory Board (SAB) recognized the impacts as irrevocable to the test parameters, but substantiated the balance between renewable goals and AF TE mission.
Air Quality	Strategic Attack		Nellis has received several Notices of Violation (NOV) due to excessive dust emissions from the Southern Ranges. Violations could have included fines up to $10,000/day/violation. Funding has been requested through multiple sources to pave primary roads. Paving would also reduce wear and tear on vehicles. For the Northern Ranges, Best Practical Methods must be used at all times for any quantity of disturbance (e.g., paving, watering, revegetation, chemical stabilization, phased construction). The Title V Operating Permit has a supplemental Surface Area Disturbance Permit, # 9711-1233, which establish terms of compliance. For the Southern Ranges, Clark County rules apply. Best Available Control Methods must be used at all times for any quantity of soil disturbance, including traffic on unpaved roads (e.g., watering, dust palliative). A visible dust plume cannot exit the property or extend over 100 ft. within the property boundary. Dust permits must be purchased prior to construction if a project disturbs more than 1/4 acre of soil (including access road, storage area, parking during construction), involves mechanized trenching of greater than or equal to 100 ft. in length, or mechanical demolition of structure smaller than 1,000 square ft..
	Counterland		Same as above.
	Electronic Combat Support		Same as above.
Noise Restrictions	Counterair		Increased urban development in traditional rural areas surrounding NTTR has resulted in an increase in noise complaints from Alamo, Hiko, Caliente, Las Vegas, and Pahrump. The access from Nellis to NTTR is seeing increased pressure from development. Aircraft flight corridors from Nellis are seeing proposals for growth that will require review by Nellis and NTTR for their impacts on military operations. Nellis has an active Outreach Program. The Outreach Program includes several 99 ABW, 57 WG and 98 RANW personnel.

Nevada Test and Training Range (NTTR) Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Adjacent Land Use	Strategic Attack	🟡	Increased development of renewable energy projects in outlying rural areas adjacent to NTTR has the potential to impact the ability to operate in a relatively clean electronic environment. The combination of radar operations, employment of low observable technologies and need for unhampered feedback to the radars makes wind turbines incompatible with several critical USAFWC mission areas to include: weapons system certification, tactics validation, advanced weapon system training, realistic threat representation, and large force exercises. Nellis has an active Outreach Program. The Outreach Program includes several 99 ABW, 57FW and 98 RANW personnel.
	Counterair	🟡	Same as above.
	Counterland	🟡	Same as above.
	Electronic Combat Support	🔴	Same as above.
	Special Operations	🟡	There are numerous renewable energy projects under or adjacent to NTTR. There is also increased urban development under the MOAs (e.g., Coyote Springs, BLM Land Sales). The range is in continuous contact with federal, state, and community land managers striving for compatible development. NTTR needs an Air Staff policy directive and a update to AFI 13-201, para 6.6., that addresses all renewable energy.
Cultural Resources	Strategic Attack	🟡	Seventeen tribes have cultural affiliation to the 2.9 million acre NTTR. Cultural resources create avoidance areas, prohibit certain training, and increase operation costs. NTTR has 215 acres of archaeological avoidance areas. Most of the cultural sites are outside the OPAREAs for most ground activities. Personnel are briefed to avoid the cultural sites with ground disturbing activities. However, upon planning site-specific, mission-essential activities, cultural resources will be recorded.
	Counterair	🟡	Same as above.
	Counterland	🟡	Cultural resources affect target and threat placement on NTTR. It can take up to a year to accomplish the appropriate NEPA and NHPA consultation, and Native American coordination. The only attempt to remedy this is planning or timely identification of the need. There is no known long term solution.
	Electronic Combat Support	🟡	Seventeen tribes have cultural affiliation to the 2.9 million acre NTTR. Cultural resources create avoidance areas, prohibit certain training, and increase operation costs. NTTR has 215 acres of archaeological avoidance areas. Most of the cultural sites are outside the operating areas for most ground activities. Personnel are briefed to avoid the cultural sites with ground disturbing activities. However, upon planning site-specific, mission-essential activities, cultural resources will be recorded.
	Air Drop	🟡	Same as above.
	Special Operations	🟡	Same as above.
Wetlands	Strategic Attack	🟡	NTTR has more than 120 seeps and springs. While not classified as true "404 wetlands," they are areas range personnel should not disturb. Several are cultural sites; others are significant watering points for antelope, bighorn sheep, deer, and numerous small mammals, birds, and reptiles. Some of these sites support the Nellis Wild Horse herd. The significant sites are fenced to exclude inadvertent ground activities. Most of the springs and seeps are outside the OPAREAs for most ground activities. Personnel are briefed to avoid the seeps and springs with ground disturbing activities, when practical.
	Counterland	🟡	Same as above.
	Electronic Combat Support	🟡	Same as above.
	Air Drop	🟡	Same as above.
	Special Operations	🟡	Same as above.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Oklahoma Range Assessment Details

Range Mission Description

Oklahoma R-2202 is managed by the U.S. Army. The USAF is a user; thus, there is no formal USAF mission statement. The range does, however, support both live and inert freefall ordnance deliveries, both offensive and defensive electronic combat operations, and small arms and indirect fire missions. It is one of two key target areas utilized for RED FLAG-Alaska and NORTHERN EDGE exercises.

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
Strategic Attack	G	G			Y	G	G	G	G			G	G
Counterair	G	G			G	G	G	G	G			G	G
Counterspace	G	G			G	G	G	Y	G			G	G
Counterland	Y	G			G	G	G	G	G			G	G
Countersea													
Information Operations	G	G			G	G	G	Y	G			G	G
Electronic Combat Support	G	Y			Y	Y	G	Y	G			G	G
Command and Control	G	G			G	G	G	G	G			G	G
Air Drop	Y	Y			Y	G	G	Y	G			Y	Y
Air Refueling	G	G			G	G	G	G	G			G	G
Spacelift													
Special Operations	G	G			G	G	G	G	G			G	G
Intelligence, Surveillance, and Reconnaissance	G	G			Y	Y	G	Y	G			G	G

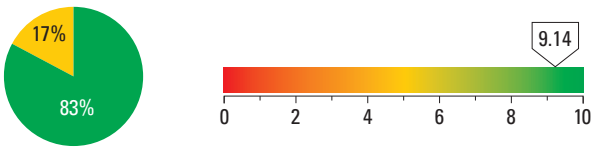
Legend: FMC (G) PMC (Y) NMC (R)

Encroachment Data

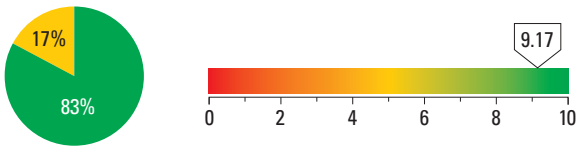
Mission Areas	Encroachment Factors												
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strategic Attack	G	Y	Y		G	G	G	Y	G	G	Y	G
Counterair	G	Y	Y		G	G	G	Y	G	G	G	G
Counterspace	G	G	Y		G	G	G	G	G	G	G	G
Counterland	G	G	G		G	G	G	Y	G	G	Y	G
Countersea												
Information Operations	G	G	G		G	G	G	G	G	G	G	G
Electronic Combat Support	G	G	Y		Y	G	G	Y	G	G	G	G
Command and Control	G	G	G		G	G	G	G	G	G	G	G
Air Drop	G	Y	G		Y	G	G	Y	G	G	Y	G
Air Refueling	G	G	G		G	G	G	G	G	G	G	G
Spacelift												
Special Operations	G	G	Y		Y	G	G	Y	G	G	G	G
Intelligence, Surveillance, and Reconnaissance	G	G	G		G	G	G	G	G	G	G	G

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

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

Oklahoma is a sub-set of R-2202. It is the name for USAF's only allowed impact area. The lands of R-2202, including Oklahoma Impact Area, are managed by the U.S. Army; USAF is only a user group. Access is limited to helicopter year-round, and/or an over-water ice bridge (if built) every other year. Capabilities are primarily impacted by its isolated nature, and its surrounding terrains, along with self-imposed Army+M29 and USAF regulatory restrictions.

Summary Observations

There are few encroachment issues. Oklahoma Impact Area with R-2202 is more remote and isolated than all other ranges in Alaska. The first encroachment concern is from multiple agencies—U.S. Army and USAF desiring simultaneous usage. When Army units are not deployed, this scheduling conflict can be significant, but is generally handled well with proactive scheduling. The second concern centers on full spectrum ordnance deliveries of JDAM and GBU/SDB. The final concern relates to limits/prohibitions on live ordnance, chaff, and flare expenditures during the dry summer months.

Oklahoma Range 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	7.31	7.31	9.19	NA	**Encroachment Scores**	9.09	9.09	8.88	NA
No comments.					No comments.				

Oklahoma Range Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Counterland	●	Oklahoma is isolated from live ground maneuver capability most of the year. Access in the summer requires helicopter lift. In winter, access is only via ice bridge (if built). JCAS operation can be conducted if JTACS are flown into the range. Ground maneuver is simulated.
	Air Drop	●	Oklahoma Impact Area (within R-2202) does not have an LZ/DZ; it is simply an impact area. There is no remedy. If including some of the surrounding restricted lands of R-2202, there are adequate DZ/LZs. The main LZ/DZ is lies within Donnely Training area, approximately 20 miles east of Oklahoma Impact Area.
Airspace	Electronic Combat Support	●	Same as above.
	Air Drop	●	Same as above.
Targets	Strategic Attack	●	Poor range access (winter-only if ice bridge built) limits the type of targets/materials. The range is unable to achieve EOD in 7 month winter periods. The short EOD and target build season conflicts with summer flight operations. There is sensitive tundra in most areas surrounding existing target sets. There is very good target variety, but the range is still limited in target replenishment/expansion capability. There is no remedy.
	Electronic Combat Support	●	Due to the isolated nature and fact that Oklahoma is designated as an Impact Area only, threats are emplaced in land/air spaces surrounding the impact area—there is no significant degradation to training.
	Air Drop	●	There is no LZ/DZ in the Oklahoma Impact Area. The range relies on eastern R-2202 training lands.
	Intelligence, Surveillance and Reconnaissance	●	Due to its isolated nature and fact that Oklahoma is designated as an Impact Area only, temporary C4ISR targets are generally not emplaced. They can be, but at high logistical costs.
Threats	Electronic Combat Support	●	Due to its isolated nature and fact that Oklahoma is designated as an Impact Area only, threats are emplaced in land/air spaces surrounding the impact area. There is no significant degradation to training, other than systems are generally unmanned and are older/less sophisticated in nature.
	Intelligence, Surveillance and Reconnaissance	●	Due to its isolated nature and fact that Oklahoma is designated as an Impact Area only, temporary C4ISR targets are generally not emplaced. They can be, but at high logistical costs.
Infrastructure	Counterspace	●	Due to Oklahoma Impact Area's isolated nature, limited infrastructure in its classic sense exists. All systems requiring power are provided by remote operated generators. Communications are via microwave. There is no rail access; road access is via winter ice bridge (if built).
	Information Operations	●	Same as above.
	Electronic Combat Support	●	Same as above.
	Air Drop	●	Same as above.
	Intelligence, Surveillance and Reconnaissance	●	Same as above.
MOUT Facilities	Air Drop	●	There is no LZ/DZ in Oklahoma Impact Area. The range relies on eastern R-2202 training lands.
Suite of Ranges	Air Drop	●	Same as above.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Oklahoma Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Munitions Restrictions	Strategic Attack		Though robust in size, R-2202 remains a challenge to employ full spectrum JDAM/SDB and some deliveries of GBU munitions. Occasional scheduling conflicts between Army/USAF hampers training. Solutions include more detailed and accurate WDZ footprints, allowing more realistic ordnance deliveries as well as better coordination with R-2202 range managers aiding scheduling conflicts. Summer ordnance restrictions (via BLM directives) in place to limit fire hazards preclude large numbers of live ordnance training events. There is no known remedy.
	Counterair		There is no capability to employ live air-to-air missiles. There is some capability for employment of forward firing 20mm cannon. There is no known remedy to these limitations.
	Air Drop		Oklahoma Impact Area (within R-2202) does not have an LZ/DZ; it is simply an impact area. There is no known remedy. If including some of the surrounding restricted lands of R-2202, there are adequate DZ/LZs.
Spectrum	Strategic Attack		The remote nature of range limits threat spectrum to lower fidelity unmanned threats; there is no known remedy. See also Electronic Combat Support immediately below.
	Counterair		Same as above.
	Counterspace		There are severe GPS jamming restrictions. These are not crippling, if planned and scheduled well in advance.
	Electronic Combat Support		Limitations to use of spectrum hampers threat engagement and C4ISR training; the range is unable to exercise full systems usage. A remedy to this limitation is detailed and persistent application procedures and processes through AFFMA in order to garner more spectrum approvals. Some gains have been made to allow use of two previously non-allowed systems.
	Special Operations		Due to the isolated nature and limited infrastructures, there is no SATCOM or special waveforms resident year-round. Units are required to provide their own accesses. Otherwise, there are no limits to this spectrum usage.
Airspace	Command and Control		The Oklahoma Impact Area is a relatively small restricted area. It is too small for large scale exercises with multiple platforms/weapons. If combined with other surrounding restricted spaces and MOA airspaces, the area would be more than adequate. There is no remedy.
	Air Drop		There is no air drop DZ available in the Oklahoma Impact Area. The fact it is an Impact Area only (right now), and that it is isolated, limits air drop capability.
	Special Operations		Same as Electronic Combat Support.
Adjacent Land Use	Strategic Attack		Eastern lands are Army military land off-limits to USAF. Western lands are state/federal and private in-holdings. Large tracks of western lands are prime hunting areas. Without a greater restricted area buffer of Oklahoma Impact Area, full spectrum ordnance deliveries are hampered.
	Counterair		Same as above.
	Counterland		Same as above.
	Electronic Combat Support		Same as above.
	Air Drop		There is no DZ/LZ in Oklahoma Impact Area. The main LZ/DZ is in Eastern R-2202 and is bordered by civilian flyway and a main highway to its west, Ft. Greeley, and its airfield to the north, and sensitive and culturally significant lands to the south.
	Special Operations		Same as Strategic Attack.
Wetlands	Strategic Attack		There are sensitive tundra areas in and around range. The range is unable to emplace realistic targets and/or EC training equipment. There is no remedy.
	Counterland		Same as above.
	Air Drop		There is no DZ/LZ in Oklahoma Impact Area. Due to sensitive tundra areas in and around range, it is difficult to develop any. There is no remedy.

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Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Patrick Assessment Details

Range Mission Description

Given that most of the training types identified in the call do not occur here, the Air Force has answered the questions asked within the framework of whether Patrick Range could support training of the types shown. The other difference from the previous year's submittal is that the Air Force has looked at munitions from an MMRP perspective, rather than an operational perspective.

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
Strategic Attack													
Counterair													
Counterspace													
Counterland													
Countersea													
Information Operations													
Electronic Combat Support													
Command and Control													
Air Drop													
Air Refueling													
Spacelift	●	●	●	●	●	●	●	●	●	●	●	●	●
Special Operations													
Intelligence, Surveillance, and Reconnaissance													

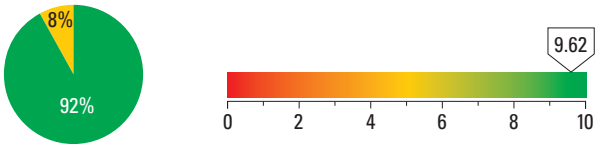
Legend: FMC ● PMC ● NMC ●

Encroachment Data

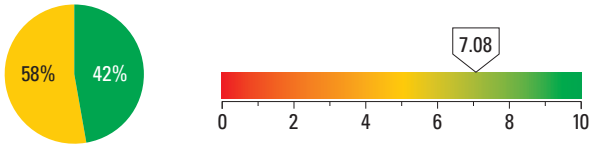
Mission Areas	Encroachment Factors												
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strategic Attack												
Counterair												
Counterspace												
Counterland												
Countersea												
Information Operations												
Electronic Combat Support												
Command and Control												
Air Drop												
Air Refueling												
Spacelift	●	●	●	●	●	●	●	●	●	●	●	●
Special Operations												
Intelligence, Surveillance, and Reconnaissance												

Legend: Minimal ● Moderate ● Severe ●

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

Aging utility infrastructure is a major concern.

Summary Observations

Spectrum encroachment is a growing concern on TM spectrum availability. Normal environmental processes related to endangered species and cultural sites are workable.

Historical Information, Results, and Future Projections

Calendar Year	2008	2009	2010	2011
Capability Scores	NA	NA	NA	9.62

No comments.

Historical Information, Results, and Future Projections

Calendar Year	2008	2009	2010	2011
Encroachment Scores	NA	NA	NA	7.08

No comments.

Patrick Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Infrastructure	Spacelift	●	Aging utility infrastructure impacts day to day processing for spacelift operations. There is potential for electrical and water outages. A waterline replacement project is in works. New electrical transformers have been installed and/or ordered. High voltage electrical distribution system is under review for contracted maintenance.

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Threatened & Endangered Species	Spacelift	●	There are 15 listed endangered species on the range, which requires continuous species monitoring. USAF recommends terrain avoidance and species analysis with no anticipated remedy or end date.
Spectrum	Spacelift	●	There is spectrum encroachment via windmills on NEXRAD weather systems, and on telemetry and communication transmitters. There have been two recent executive decisions to open up more spectrum for public use that can impact TM systems. Also, there is spectrum encroachment on the FM band, primarily impacting availability to support spacelift operations, due to frequency conflict with flight termination signals. There is currently no anticipated remedy or end date.
Noise Restrictions	Spacelift	●	There are impacts due to rocket noise on marine mammals. This requires special monitoring and potential mitigation due to regulatory requirements. There is currently no anticipated end date or remedy for this issue.
Cultural Resources	Spacelift	●	Cultural resources present basewide restrictions, causing delays and avoidance. This may require SHPO consultation and monitoring/mitigation. There is currently no anticipated remedy or end date.
Water Quality/ Supply	Spacelift	●	Industrially-generated wastewater from launch operations must be managed and disposed of in accordance with Federal and State permits and regulations, incurring costs for compliance. There is currently no anticipated remedy or end date.
Wetlands	Spacelift	●	There are several wetlands containing endangered species. This requires time consuming mitigation and permitting. There is currently no anticipated end date for this issue.
Range Transients	Spacelift	●	Range transients enter into restricted safety zones prior to launch. This can cause launch scrubs, resulting in several hundred thousand dollar recycle costs. Remedy requires training, surveillance, and risk assessment and mitigation.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Pilsung Assessment Details

Range Mission Description

Pilsung Range provides a venue for tactical skill development and recurring proficiencies in A-G ordnance delivery operations.

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												
Strategic Attack	FMC	FMC			FMC	PMC	FMC	FMC	FMC				PMC
Counterair	PMC	PMC			FMC	FMC	FMC	FMC	FMC				FMC
Counterspace													
Counterland	PMC	PMC			PMC	PMC	PMC	NMC	NMC				PMC
Countersea													
Information Operations													
Electronic Combat Support	FMC	FMC				NMC							NMC
Command and Control													
Air Drop													
Air Refueling													
Spacelift													
Special Operations	FMC				FMC	FMC	FMC		FMC				FMC
Intelligence, Surveillance, and Reconnaissance													

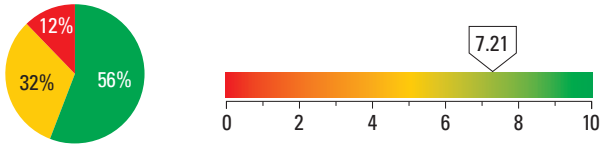
Legend: FMC, PMC, NMC

Encroachment Data

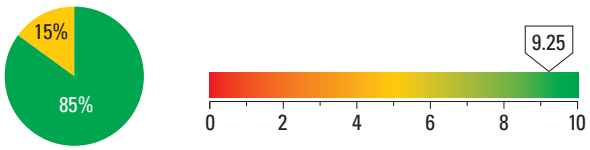
Mission Areas	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
	Encroachment Factors											
Strategic Attack	Minimal	Moderate	Minimal		Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Counterair	Minimal	Moderate	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Counterspace												
Counterland	Minimal	Moderate	Minimal		Moderate	Minimal	Moderate	Minimal	Minimal	Minimal	Minimal	Minimal
Countersea												
Information Operations												
Electronic Combat Support			Moderate		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Command and Control												
Air Drop												
Air Refueling												
Spacelift												
Special Operations	Minimal	Moderate	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Intelligence, Surveillance, and Reconnaissance												

Legend: Minimal, Moderate, Severe

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

1. The primary capability that is currently lacking at Pilsung Range is Electronic Warfare (EW) training. There currently are no threat emitters on range or on the Korean Peninsula. This capability gap has a significant impact on the ability of 7AF units to meet training requirements.
2. Due to the terrain, low altitude training is limited. The only alternative is Jik-Do, which has an over-water range, but is often restricted due to poor wx/visibility/discernible horizon.
3. M37 discussions of ROKAF building a new range to replace Kooni-range is ongoing. There is no anticipated resolution.

Summary Observations

1. The main operational constraint from encroachment is related to munitions usage. Due to its limited size, JDAM, Maverick, and Hellfire munitions are heavily restricted from expenditure on Pilsung Range. To employ said ordnance, extensive prior coordination is required with ROKAF.
2. Due to noise abatement issues, night strafe is prohibited, leaving Jik-Do as the only option.
3. There is potential for ROK to build a new range and replace Kooni-Rock. However, there is no anticipated date for associated decisions.

Pilsung 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	7.12	7.12	7.12	NA	**Encroachment Scores**	9.34	9.34	9.34	NA
No comments.					No comments.				

Pilsung Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Counterair	🟡	Target Valley Training Complex limits low-level maneuvering, and vegetation on range drives fire codes too high for most ordnance usages. F-16s low altitude training is limited; fire codes often limit training to cold spots only (not scorable at night). Discussions of request for ROKAF to build a new U.S.-only range to replace Kooni are ongoing; no anticipated date of resolution.
	Counterland	🟡	Same as above.
Airspace	Strategic Attack	🟡	Airspace is small for B-52; it requires coordination with adjacent MOAs, taking training opportunities away from other units (7AF and ROKAF) who normally use the airspace. There is no planned resolution.
	Counterair	🟡	Adjoining MOAs are required to operate Opposed SAT; resulting in competition for airspace time with other units. There is no planned resolution.
	Counterland	🟡	Restricted Area is surrounded by MOAs requiring aircraft to enter low of "fly the line" dividing MOAs; this increases coordination required to enter range, and can impact total time on range. There is no planned resolution.
Targets	Counterland	🟡	There is not a target in the live ordnance area and there is no moving target for moving target strafe; this limits fidelity of realistic training for live ordnance. 7AF/A3A can coordinate upon request for inert weapons on tactical targets in the Target Valley Training Complex.
Threats	Strategic Attack	🟡	No EW emitter; therefore, no EW training is available on Korean Peninsula. ROKAF system planned for 2011.
	Counterland	🟡	Smokey SAMs are often limited by fire code; this limits threat reaction training. No planned solution.
	Electronic Combat Support	🔴	Same as Strategic Attack.
Scoring & Feedback System	Counterland	🟡	Lack of fire response at night leads to "cold-spot" BDUs only; there is no IR camera installed to score "cold-spot" BDUs, so there is no night scoring. Only night scoring is available at Jik-Do, which is not sufficient to meet 7 AF annual requirements. The range is considering a request for ROK to build new range to replace Kooni. No anticipated date of resolution.
Infrastructure	Counterland	🔴	There is no fire break around the live ordnance area. This often leads to fires after live ordnance employment, shutting down the range until on-scene ROKAF fire department can extinguish. No planned solution.
Range Support	Counterland	🔴	Range management of brush near targets drives fire codes higher. There is no fire response after 1600L (winter), and 1700L (summer). Higher fire codes result in "cold spot" only procedures, which are not scoreable at night. The range is considering a request for ROK to build new range to replace Kooni. No anticipated date of resolution.
Suite of Ranges	Strategic Attack	🟡	Airspace is small for B-52s; requires coordination of adjacent MOA's taking training away from other units (7AF and ROKAF) who normally use the airspace. No planned solution.
	Counterland	🟡	Fire codes lead to drop restrictions. Higher fire codes result in "cold spot" only procedures which are not scoreable at night. The range is considering a request for ROK to build new range to replace Kooni. No anticipated date of resolution.
	Electronic Combat Support	🔴	No EW emitter, therefore, no EW training is available on Korean Peninsula. A ROKAF system is planned for 2012.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Pilsung Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Munitions Restrictions	Strategic Attack	●	Small range space limits live weapons deliveries. i.e., no JDAM, Hellifire, or Maverick. Inert JDAM and live Hellfire can be employed at Jik-Do with extensive prior coordination with ROKAF. No Maverick available on ROK. Training impact is primarily to A-10s with goal of one Maverick every three years/pilot. There is consideration to request permission to build a new range to replace Kooni-Rock. No anticipated date of resolution.
	Counterair	●	Same as above.
	Counterland	●	Same as above.
	Special Operations	●	Same as above.
Spectrum	Electronic Combat Support	●	As with all robust economies, use of available spectrum for commercial (non-military) uses has increased dramatically in the past several years, with availability for threat systems and electronic attack activities being severely restricted. Hosts for maintaining limited training capabilities resulted in elimination of EC training in CY2005/2006, denying aircrews ability to complete EA events on-station. In response to Realistic Training Review Board (RTRB) submissions, PACAF/A3OZ is re-evaluating use of the Joint Deployable Electronic Warfare Range (JDEWR) from RED FLAG Alaska to Korea on temporary or semi-permanent basis. A total of 13 assignments are being requested and appears at least 7 will be approved and accommodations will be made to relocate the systems in FY2012.
Airspace	Strategic Attack	●	Surrounding MOAs limit use by B-52. Requires coordination with adjacent MOAs, taking training away from other units (7AF and ROKAF) who normally use the airspace. No planned actions.
	Counterland	●	Terrain limits low level usage. Impact to training is primarily to F-16s and their low altitude requirements. Jik-Do is primary alternative; however, it is also often limited due to poor weather/visibility/discernible horizon when over-water.
Noise Restrictions	Counterland	●	Noise complaints restrict night strafing and strafing during ROK holidays. Primary training impact is to A-10s, which have night strafe requirements. Jik-Do is the only alternative, which has less scheduled time allocated to U.S. (30%) and is often impacted by civilian boat incursions. Best solution is for ROK to build a new U.S.-only range to replace Kooni. No anticipated date of resolution.

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Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Poinsett Assessment Details

Range Mission Description

Poinsett Range provides realistic electronic combat (EC) and bombing and gunnery (B&G) training for the 20 FW, USAF and DoD aircrews.

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
Strategic Attack	FMC	PMC			FMC	PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Counterair	FMC	PMC			FMC	PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Counterspace	FMC	FMC			FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Counterland	FMC	FMC			FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Countersea													
Information Operations	FMC	FMC			FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Electronic Combat Support	FMC	FMC			FMC	PMC	PMC	FMC	FMC	FMC	FMC	FMC	FMC
Command and Control	FMC	FMC			FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Air Drop	FMC	FMC			FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Air Refueling	FMC	FMC			FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Spacelift	FMC	FMC			FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Special Operations	FMC	FMC			FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Intelligence, Surveillance, and Reconnaissance	FMC	FMC			FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC

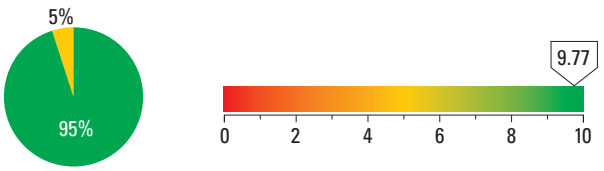
Legend: FMC, PMC, NMC

Encroachment Data

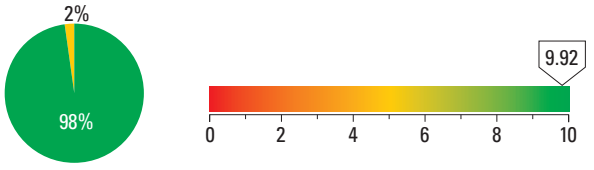
Mission Areas	Encroachment Factors												
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strategic Attack	Minimal	Minimal	Minimal		Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Counterair	Minimal	Minimal	Minimal		Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Counterspace	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Counterland	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Countersea												
Information Operations	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Electronic Combat Support	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Command and Control	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Air Drop	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Air Refueling	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Spacelift	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Special Operations	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Intelligence, Surveillance, and Reconnaissance	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal

Legend: Minimal, Moderate, Severe

Capability Chart and Scores



Encroachment Chart and Scores



Poinsett Assessment Details

Summary Observations	Summary Observations
1. Gamecock D airspace is geographically too small to do any opposed training, but is the best airspace with respect to the quantity of threat emitters. It is usable airspace as long as the Poinsett Transition Area (PTA) is active, but the PTA is too restrictive with respect to maneuvers within PTA and the lack of ability for fighters to release ordnance on R-6002 and return to Gamecock D. 2. The best SEAD airspace is W177/161 over water, which contains no actual threat emitters. The airspace is usable for SEAD with the ability of the F-16 to create a training simulation; however, there is no ability to be targeted from simulated threats to allow for threat reactions. 3. Bulldog airspace has a high altitude shelf that does not allow for descent in the case of weather or to PID threat emitters with DEAD training limiting training. The elimination of this shelf or the addition of more threat emitters in the all altitude portion of Bulldog airspace would eliminate this problem.	1. W177B and 161B airspace is routinely restricted to less than its published altitude of 30,000 ft., leaving significantly less airspace for high altitude tactics.

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	10.00	10.00	9.81	9.77	**Encroachment Scores**	10.00	10.00	9.92	9.92

1. There is no proposed action to allow fighters to defensively threat react within PTA or release weapons inside R-6002, due to a LOA between Jacksonville Center and Shaw AFB. 2. There is a plan in place with no current timeline to put some threat emitters along the coast. Three locations have been identified and site surveys to be conducted 1st quarter of FY2011. 3. The elimination of this shelf or the addition of more threat emitters in the all altitude portion of Bulldog airspace would eliminate this problem; however, there is no proposed capability to eliminate the shelf. There is a proposed plan to add additional threat emitters into Bulldog airspace. Currently, two additional sites are in the leasing process with construction planned for FY2011.	There is no planned action/capability to prevent ATC from capping the airspace.

Poinsett Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Airspace	Strategic Attack	●	Gamecock D airspace is geographically too small to do any opposed training, and that is also the best airspace with respect to the quantity of threat emitters. It is usable airspace as long as PTA is active, but PTA is too restrictive with respect to maneuvers within PTA, and the lack of ability for fighters to release ordnance on R-6002 and return to Gamecock D. There is no proposed action to allow fighters to defensively threat react within PTA nor release weapons inside R-6002 due to a LOA between Jacksonville Center and Shaw AFB.
	Counterair	●	Same as above.
Threats	Strategic Attack	●	The best SEAD airspace is W177/161 over water, which contains no actual threat emitters. The airspace is usable for SEAD with the ability of the F-16 to create a training simulation; however, there is no ability to be targeted from simulated threats to allow for threat reactions. There is a plan in the works with no current timeline to put some threat emitters on the coast. Bulldog airspace has a high altitude shelf that does not allow for descent in the case of weather or to PID threat emitters with DEAD training limiting training. The elimination of this shelf or the addition of more threat emitters in the all altitude portion of Bulldog airspace would eliminate this problem. There are no proposed capabilities to eliminate the shelf. There is a proposed plan to add additional threat emitters into Bulldog. Currently, two additional sites are in the leasing process with construction planned for FY2011.
	Counterair	●	Same as above.
	Electronic Combat Support	●	Same as above.
Scoring & Feedback System	Electronic Combat Support	●	The current system to provide aircrew feedback is inadequate for EC missions. This does not allow 20 FW pilots to accurately debrief SEAD and DEAD missions with actual emitter "truth" data. ACC/A3AR is aware of the problem and an EW Server have been discussed. This server would provide emitter data directly to aircrews for ICADS playback. ECD: TBD

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Poinsett Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Airspace	Strategic Attack		W177B and 161B airspace is given less than 50% of the time up to the normal altitude of 30,000 ft. leaving significantly less airspace for high altitude tactics. There is no planned action/capability to prevent ATC from capping the airspace.
	Counterair		Same as above.

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Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Polygone Assessment Details

Range Mission Description

No mission description provided.

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
Strategic Attack													
Counterair	●	●			●	●	●	●	●				
Counterspace													
Counterland	●	●			●	●	●	●	●				
Countersea													
Information Operations													
Electronic Combat Support	●	●			●	●	●	●	●				
Command and Control													
Air Drop													
Air Refueling													
Spacelift													
Special Operations													
Intelligence, Surveillance, and Reconnaissance													

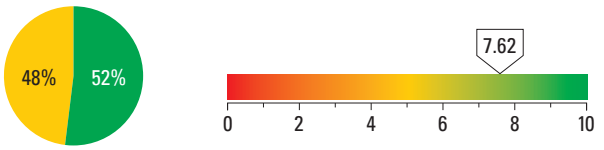
Legend: FMC ● PMC ● NMC ●

Encroachment Data

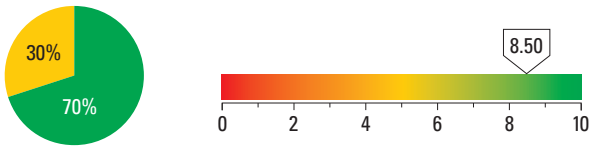
Mission Areas	Encroachment Factors												
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients	
Strategic Attack													
Counterair	●	●	●		●		●	●	●	●	●	●	
Counterspace													
Counterland													
Countersea													
Information Operations													
Electronic Combat Support	●	●	●		●		●	●	●	●	●	●	
Command and Control													
Air Drop													
Air Refueling													
Spacelift													
Special Operations													
Intelligence, Surveillance, and Reconnaissance													

Legend: Minimal ● Moderate ● Severe ●

Capability Chart and Scores



Encroachment Chart and Scores



Polygone Assessment Details

Summary Observations	Summary Observations
The greatest impact is to the available frequency spectrum. The use of radio and radar threat simulators is becoming more time constrained for authorization with reduced operating areas. The next greatest impact is the increase of surrounding civilian airways and lack of dedicated Military OPAREA for aircrew training against surface threats IAW realistic TTP's. All mission areas are equally impacted by the frequency authorization issues. The Counterland missions are most impacted by the airspace limitations. Further limitations occur in the areas operating EW threat simulators throughout Europe and increased cost for deployments to areas with appropriate airspace.	The greatest impact is to the available frequency spectrum. The use of radio and radar threat simulators is becoming more time constrained for authorization with reduced operating areas. The next greatest impact is the increase of surrounding civilian airways and lack of dedicated Military OPAREA for aircrew training against surface threats IAW realistic TTPs. All mission areas are equally impacted by the frequency authorization issues. The Counterland missions are most impacted by the airspace limitations. Further limitations occur in the areas operating EW threat simulators throughout Europe and increased cost for deployments to areas with appropriate airspace.

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	4.38	4.38	NA	7.62	**Encroachment Scores**	5.25	5.27	NA	8.50
No comments.					No comments.				

Polygone Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Airspace	Counterair	●	There are extensive scheduling issues attributed to high demand and profound weather impacts. The availability of training is consequently limited; corrective actions are not planned to address the issues.
	Counterland	●	There is high demand for range use (U.S. and international partners) and profound weather impacts present scheduling challenges. The availability of training is consequently limited; corrective actions are not planned to address the issues.
	Electronic Combat Support	●	Scheduling challenges result from high range demand and problematic weather conditions. The availability of training is consequently limited; corrective actions are not planned to address the issues.
Threats	Electronic Combat Support	●	Two of the available threat simulators are outdated and can be used for CJ training only; the rest are aging and approaching irrelevance. EW training is limited to single-digit SAM simulation in an autonomous acquisition scenario. There is no capability to provide training against the newer real-world threats or integrated IADS scenario. Current capability is sufficient for 80% of the customer training requirements. Improvements are only possible at the current rate of next generation EW simulator production. Joint Threat Emitter (JTE) is behind milestone development. The range would like to acquire double digit capability (XMS-11 or similar), but availability and funding are current constraints.
Scoring & Feedback System	Counterair	●	Near real-time feedback does not exist at the range. Installation of the new P5 CTS in USAFE over the next year will enhance this integration, but necessitates integration of emitter data at a higher fidelity than currently available for analysis during debrief. Aircrew EW training will suffer if range results can't be integrated. Installation of the P5 RUU and EW server is scheduled to occur in Summer 2011 timeframe. The plan is to leverage the CTS backbone to provide the means of integrating threat data. The range will require the engineering of a solution for getting digitized system data from threats/simulators back to PCC for real-time feedback integration.
	Counterland	●	Same as above.
	Electronic Combat Support	●	Same as above.
Range Support	Counterair	●	Communication network/engineering support is not resident at Polygone. The O&M contractor does not have an engineering flight. As a GSU, Polygone must rely on HHQ comm/engineering support for design and installation of needed upgrades/enhancements. Expertise/familiarity with PCC operations by supporting CE/ COMM is nonexistent. Status as a GSU leads to limited or no support from Ramstein. Under the WPC, support has improved; however, further increases in needed support are anticipated. Installation of the new P5 CTS in USAFE over the next year will necessitate integration of emitter data for analysis during debrief. The plan is to leverage the CTS backbone to provide the means of integrating threat data. The range will need to engineer a solution for getting digitized system data from threats/simulators back to the PCC. Without this solution in place, the range will not be capable of fully exploiting any DMO/LVC initiative for integration of Polygone Range data. Aircrew EW training will suffer if range results can't be integrated. With the inclusion of Polygone in the P5 CTS upgrade, plans are in place to leverage engineering/comm expertise to establish a working group dedicated to solving the feedback problem and follow on LVC capability by linking up with the DMO portal located at the WPC, Einsiedlerhof AS.
	Counterland	●	Same as above.
	Electronic Combat Support	●	Same as above.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Polygone Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Munitions Restrictions	Counterair	●	Use of Chaff and flares is restricted in Germany. This has a negative aircrew training, which lack the inability to train as they would in fight. No planned action—as the Air Force doesn't "own" any airspace and must abide by host nation restrictions.
	Electronic Combat Support	●	Same as above.
Spectrum	Counterair	●	Authorizations for required frequency bands are, at times, not attainable in several European countries: The Air Force is unable to support customer requests for EW threat training, which affects training capability <10% of the time. Spectral management is becoming more restrictive as commercial spectrum requirements increase. There is no fix in sight.
	Electronic Combat Support	●	Same as above.
Airspace	Counterair	●	Problematic weather, and high demand for range use cause scheduling challenges. Training availability is negatively impacted. Corrective actions are not currently planned to address the issue.
	Electronic Combat Support	●	Extensive scheduling issues and attributed to high demand and profound weather impacts. The availability of training is consequently limited. Corrective actions are not planned to address the issues.

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Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Razorback Assessment Details

Range Mission Description

No mission description provided.

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
Strategic Attack	FMC	FMC			FMC	FMC	FMC	FMC	FMC			FMC	FMC
Counterair	FMC	FMC			FMC	FMC	FMC	FMC	FMC			FMC	FMC
Counterspace													
Counterland	PMC	FMC			FMC	FMC	FMC	PMC	PMC	FMC	FMC	FMC	FMC
Countersea													
Information Operations	FMC	FMC				FMC		FMC	FMC				FMC
Electronic Combat Support	FMC	FMC			FMC	PMC	FMC	FMC	FMC				FMC
Command and Control	FMC	FMC			FMC	FMC		FMC	PMC				FMC
Air Drop	FMC	FMC			FMC	PMC	FMC	FMC	FMC		FMC	FMC	FMC
Air Refueling		NMC				FMC							
Spacelift													
Special Operations	FMC	FMC			FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Intelligence, Surveillance, and Reconnaissance	FMC	FMC			FMC	FMC	FMC	FMC	FMC		FMC	FMC	FMC

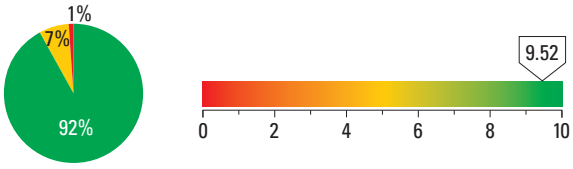
Legend: FMC, PMC, NMC

Encroachment Data

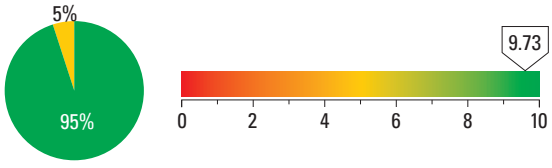
Mission Areas	Encroachment Factors												
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strategic Attack	Minimal	Moderate	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Counterair	Minimal	Moderate	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Counterspace												
Counterland	Minimal	Moderate	Minimal		Minimal	Minimal	Minimal	Moderate	Minimal	Minimal	Minimal	Minimal
Countersea												
Information Operations	Minimal	Minimal	Minimal						Minimal		Minimal	Minimal
Electronic Combat Support	Minimal	Minimal	Minimal		Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Command and Control	Minimal	Minimal	Minimal		Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Air Drop	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Air Refueling												
Spacelift												
Special Operations	Minimal	Moderate	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Intelligence, Surveillance, and Reconnaissance	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal

Legend: Minimal, Moderate, Severe

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

No comments.

Summary Observations

No comments.

Historical Information, Results, and Future Projections

Calendar Year	2008	2009	2010	2011
Capability Scores	9.88	9.88	9.52	9.52

No comments.

Historical Information, Results, and Future Projections

Calendar Year	2008	2009	2010	2011
Encroachment Scores	9.78	9.78	9.73	9.73

No comments.

Razorback Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Counterland	🟡	Small landspace restricts allowable precision guided weapon deliveries.
Airspace	Air Refueling	🔴	Airspace is too small for air refueling operations; adjoining MOA is used for air refueling.
Threats	Electronic Combat Support	🟡	The current threat simulator has limited range and cueing capabilities.
	Air Drop	🟡	The range has no stimulator for IR self protection flares.
Infrastructure	Counterland	🟡	The range is awaiting funding for range residue holding area construction.
Range Support	Counterland	🟡	Limited by manpower and O&M funding. Additional RCO has been requested. The range cannot support 2-shift operations.
	Command and Control	🟡	The range's current telephone line is unreliable. Connectivity to Air Force systems is often not available. Range pursuing the installation of new fiber optic lines. The situation is improving due to the guard-wide GSU connectivity initiative.

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Munitions Restrictions	Strategic Attack	🟡	Live munitions not allowed
	Counterair	🟡	Same as above.
	Counterland	🟡	Same as above.
	Special Operations	🟡	Same as above.
Adjacent Land Use	Counterland	🟡	Army Surface Danger Zones from adjacent small arms ranges frequently limit minimum altitude deliveries or prevent mission entirely.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Shelby Ranges Assessment Details

Range Mission Description

Shelby Range is a Class A Primary Training Range for Basic Surface Attack (BSA), Close Air Support (CAS), and Electronic Warfare (EW) for the 187th FW Montgomery AL, 238th ASOS Meridian MS, and multiple CRTC deployed units. The range serves as the primary Drop zone and Assault Landing Zone for 172nd AW Jackson, MS, 815th AW Keesler AFB, and CRTC deployed AMC units. Range supports USAF 40th FTS and 85th TES located at Eglin AFB conducting BSA and CAS training; supports aerial gunnery training for the 4th and 19th SOS, Hurlburt AFB, FL; supports the 153rd ARS Meridian MS for Intelligence, and Surveillance and Reconnaissance (ISR) Training; supports multiple MS Army National Guard aviation units for door gunnery training; supports two Large Force Exercises annually Magnolia Warrior MS Air National Guard and Emerald Warrior AFSOC.

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
Strategic Attack	FMC	PMC			FMC	FMC	FMC	FMC	PMC	FMC	FMC	FMC	FMC
Counterair	FMC	PMC			FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Counterspace													
Counterland	FMC	FMC			FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Countersea													
Information Operations	FMC	FMC			FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Electronic Combat Support	FMC	FMC			FMC	FMC	FMC	FMC	PMC	FMC	FMC	FMC	FMC
Command and Control	FMC	FMC			FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Air Drop	FMC	FMC			FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Air Refueling													
Spacelift													
Special Operations	FMC	FMC			FMC	FMC	FMC	FMC	PMC	FMC	FMC	FMC	FMC
Intelligence, Surveillance, and Reconnaissance	FMC	FMC			FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC

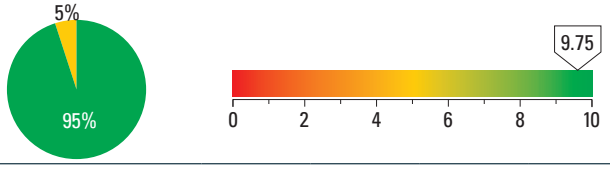
Legend: FMC, PMC, NMC

Encroachment Data

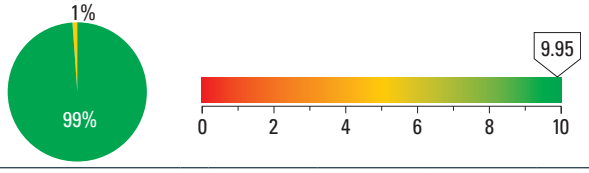
Mission Areas	Encroachment Factors												
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strategic Attack	Minimal	Minimal	Moderate		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Counterair	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Counterspace												
Counterland	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Countersea												
Information Operations	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Electronic Combat Support	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Command and Control	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Air Drop	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Air Refueling	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Spacelift												
Special Operations	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Intelligence, Surveillance, and Reconnaissance	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal

Legend: Minimal, Moderate, Severe

Capability Chart and Scores



Encroachment Chart and Scores



Shelby Ranges Assessment Details

Summary Observations					Summary Observations				
No comments.					No comments.				
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	8.04	8.04	9.90	9.75	**Encroachment Scores**	8.90	8.90	9.80	9.95
No comments.					No comments.				

Shelby Ranges Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Airspace	Strategic Attack		There is inadequate airspace volume, both vertically and horizontally. This limits the number of aircraft and types of maneuvers allowed. An airspace proposal is in the works to increase vertical airspace in Desoto MOA I and II.
	Counterair		Same as above.
Range Support	Strategic Attack		There are limited authorized manpower levels. This limits the amount of operations that can take place, and limits the amount and type of target area maintenance and improvement that can be conducted. An upcoming manpower study, date TBD, may alleviate this issue.
	Electronic Combat Support		There are limited authorized manpower levels. This limits the amount of operations that can take place. Electronic AFSC personnel are currently stretched thin, and the addition of new EW threats will place an even larger workload on these troops. An upcoming manpower study, date TBD, may alleviate this issue.
	Special Operations		Same as above.

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Spectrum	Strategic Attack		Proximity to Eglin and Tyndall training areas causes overlap in frequency assignments. Threat Emitter frequency authorizations are limited and subject to a lengthy approval process. This limits SADL operations, and results in occasional A-G and A-A frequency overlaps. SADL use must be coordinated with the Joint Gulf Spectrum Manager prior to use, with limited frequencies and power settings. Radio frequency overlaps are coordinated with the NGB Spectrum Manager for frequency reassignment.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Siegenberg Assessment Details

Range Mission Description

Siegenburg Range has made many improvements over the last 12 months, the main improvement affecting capability vs. capabilities offered in July 2009 is the addition of a second target, which enables USAFE A-10 and F-16s to drop BDU-33s as well as BDU-50s using normal delivery parameters. The addition of the target 600 ft. downrange from the primary target puts a second target on a wider portion of the range. It complies with WDZ and AFI 13-212 requirements and makes no significant change to the current flight path of user aircraft, eliminating any potential of additional noise complaints. The long-term solution (which is being pursued) would be to add more land to the north of the range and use just one target for all aircraft. A work order is currently in the 52CES Real Estate Working Group. The estimate for action from the German Administrative office concerning the area in question is 3-5 years. Over the last 13 months, many of the facilities have been renovated and all are currently functioning as intended. Roads have been improved with gravel and compacting.

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
Strategic Attack													
Counterair													
Counterspace													
Counterland	PMC	PMC			PMC		FMC	FMC	PMC				
Countersea													
Information Operations													
Electronic Combat Support													
Command and Control													
Air Drop													
Air Refueling													
Spacelift													
Special Operations													
Intelligence, Surveillance, and Reconnaissance													

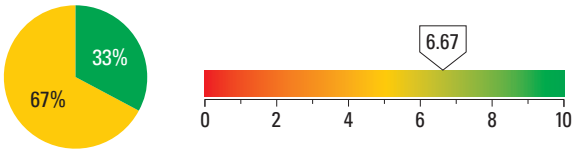
Legend: FMC, PMC, NMC

Encroachment Data

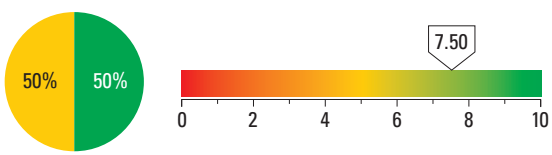
Mission Areas	Encroachment Factors													
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strategic Attack												
Counterair												
Counterspace												
Counterland	Minimal	Moderate			Moderate	Minimal	Moderate	Moderate		Minimal		Minimal
Countersea												
Information Operations												
Electronic Combat Support												
Command and Control												
Air Drop												
Air Refueling												
Spacelift												
Special Operations												
Intelligence, Surveillance, and Reconnaissance												

Legend: Minimal, Moderate, Severe

Capability Chart and Scores



Encroachment Chart and Scores



Siegenberg Assessment Details

Summary Observations	Summary Observations
Siegenburg Range provides a functional and scoreable A-G range for NATO aircraft. It also provides a demolition training area for the German Army EOD (7.5 kg max) and USAFE EOD personnel (50 lb max). There is limited ground training on range. The infrastructure in its current state supports operations; however, the ageing phone lines are starting to cause communication problems.	Siegenburg Range complies with safe/accepted standards and operations. Weapons Safety zones have been reviewed and are in compliance with WDZ and AFI 13-212. The airspace limitation is a hindrance, but does not impact the main mission of Siegenburg, which is to provide NATO aircraft with a score able A-G bombing range.

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	4.03	4.03	6.67	6.67	**Encroachment Scores**	5.52	5.52	7.50	7.50
Siegenburg Range has made many improvements over the last 12 months. The main improvement affecting capability vs. capabilities offered in July 2009 is the addition of a second target. The second target enables USAFE A-10 and F-16s to drop BDU-33s as well as BDU-50s using normal delivery parameters. The addition of the target 600 ft. downrange from the primary target puts a second target on a wider portion of the range. It complies with WDZ and AFI 13-212 requirements and makes no significant change to the current flight path of user aircraft, eliminating any potential of additional noise complaints. The long-term solution (which is being pursued) would be to add more land to the north of the range and use just one target for all aircraft. A work order is currently in the 52CES Real Estate Working Group. The estimate for action from the German Administrative office concerning the area in question is 3-5 years. Over the last 13 months, many of the facilities have been renovated and all are currently functioning as intended. Roads have been improved with gravel and compacting.					Over the last year, there have been improvements to the encroachment factors. Amendments to the range regulation will make it more user friendly for USAFE A/C and will not impact noise abatement procedures. During the last environmental survey (Spring 2009), it was noted and documented that the care of the land mass that is Siegenburg Range by 52OSS personnel (in coordination with the assigned Forester) supports many diverse plants and animals, to include some endangered species of both. The ability to strafe would enhance the use of Siegenburg Range and increase usage; however, the range in its current condition does support the range's main mission A-G bombing, along with the ability to score the shots.				

Siegenburg Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Counterland	●	Landspace restrictions curtail the scope of available training. Aircrews are unable to train with PGMs or live munitions. 52 CES Real Estate Working Group is working to purchase land north of the range.
Airspace	Counterland	●	Range is in close proximity to German Airport, Manching. A/C making bombing passes must be on a 235 heading for deliveries and make immediate left turnouts after release. No corrective actions available, RCO and ATC facility maintain close coordination while range is active to eliminate safety of flight issues.
Targets	Counterland	●	The range only supports point targets and not a tactical array. This does not support training beyond basic surface attack. Efforts to purchase additional land remain ongoing.
Range Support	Counterland	●	Deteriorating phone line from main building to range complex. Limitation on bandwidth from range complex to adjacent facilities. 52CES is trying to solve the problem through workarounds/patches. The eventual/long-term solution is to install fiber optic cable and make the change from analog to digital throughout facilities.

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Munitions Restrictions	Counterland	●	Munitions restrictions preclude live munitions and PGMs. There are restricted delivery headings due to the footprint. The restrictions limit aircrew familiarity with fuzing and exposure to PGMs and live munitions. Corrective actions are not feasible without land purchases (currently being pursued by 52 CES).
Airspace	Counterland	●	The range is in close proximity to German Airport, Manching. A/C making bombing passes must be on a 235 heading for deliveries and make immediate left turnouts after release. No corrective actions available. RCO and ATC facility maintain close coordination while range is active to eliminate safety of flight issues.
Noise Restrictions	Counterland	●	Missions need to navigate (zig-zag) around small towns in the area. For instance, USAFE A/C making 30+ degree passes optimum base turn would be on the southern end of the town of Siegenburg vs. before or after the town. The range proposes making an adjustment/amendment to the range regulation showing a hard base of 4500' above the town of Siegenburg along with the advisory to avoid overflying it if possible. This will allow USAFE A/C to make standard patterns. If there is an increase in noise complaints from the town, it will be removed. This does not affect GAF Tornados as they fly a different delivery pattern and avoid the town of Siegenburg.
Adjacent Land Use	Counterland	●	There are several towns and protected forests surround the area. The limited size does not meet the requisite for PGMs, precluding training with these munitions. Remedies are not available.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Smoky Hill Assessment Details

Range Mission Description

Major Missions include 4 ANG flying units (132FW, 114FW, 138FW & 139AS), 2 Reserve AF flying units (303FS & 93BS) and 14 Active Duty AF flying units (49TES, 11BS, 20BS, 96BS, 340WS, 23BS, 69BS, 9BS, 337BS, 28BS, 37BS, 34BS, 509BW & 48AS), SHANGR supports daily A-G sorties and electronic combat training. ASOS units CAF wide visit monthly if not weekly. 284th ASOS (Kansas ANG) and 10th ASOS (Active Duty) are frequent users. SHANGR supports a variety of Kansas Army guard units including PTAE and 108th Aviation units (door gunnery). SHANGR also provides training for Ft Riley aviation units (OH-58D, AH-64, UH-47 and HH-60) and various ground training for infantry. Lastly, the range supports Canadian JTAC training course three times a year which includes CF-18, Alpha Jet and Griffon A-G attack.

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												
Strategic Attack	●	●			●	●	●	●	●		●	●	●
Counterair	●	●			●	●	●	●	●		●	●	●
Counterspace													
Counterland	●	●			●	●	●	●	●		●	●	●
Countersea													
Information Operations													
Electronic Combat Support	●	●											
Command and Control													
Air Drop	●	●				●	●	●	●		●	●	●
Air Refueling		●				●		●	●				
Spacelift													
Special Operations	●	●			●	●		●	●	●	●	●	●
Intelligence, Surveillance, and Reconnaissance	●	●			●	●			●		●	●	●

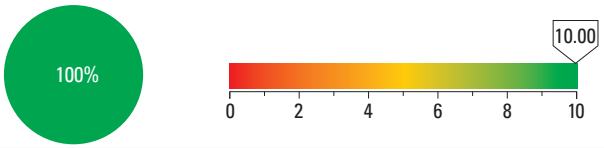
Legend: FMC ● PMC ● NMC ●

Encroachment Data

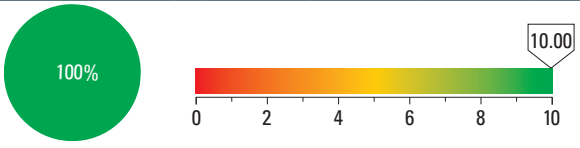
Mission Areas	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
	Encroachment Factors											
Strategic Attack	●	●	●		●	●	●	●	●	●	●	●
Counterair	●	●	●		●	●	●	●	●	●	●	●
Counterspace												
Counterland	●	●	●		●	●	●	●	●	●	●	●
Countersea												
Information Operations												
Electronic Combat Support	●	●	●		●	●	●	●	●	●	●	●
Command and Control												
Air Drop	●	●	●		●	●	●	●	●	●	●	●
Air Refueling	●	●	●		●	●	●	●	●	●	●	●
Spacelift												
Special Operations	●	●	●		●	●	●	●	●	●	●	●
Intelligence, Surveillance, and Reconnaissance	●	●	●		●	●	●	●	●	●	●	●

Legend: Minimal ● Moderate ● Severe ●

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

Army Ranges on SHANGR have been improved to provide support for 5.56, 7.62 and .50 cal firing.

Summary Observations

No comments.

Smoky Hill Assessment Details

Historical Information, Results, and Future Projections					Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011	**Calendar Year**	2008	2009	2010	2011
Capability Scores	9.85	9.85	9.85	10.00	**Encroachment Scores**	10.00	10.00	10.00	10.00
Army Ranges on SHANGR have been improved to provide support for 5.56, 7.62 and .50 cal firing.					No comments.				

Smoky Hill Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
No comments.			

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
No comments.			

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Torishima Assessment Details

Range Mission Description

Torishima is a live A/G Bombing Range that supports low & medium-altitude A-G weapons employment. Typical missions include [day & night] bombing (all conventional munitions up to 2,000 lbs including JDAM & LGB), strafe, rockets, door gunnery, hellfire/TOW, air interdiction, and CAS. Typical range users are F/A-18C/D from MAG-12; UH/AH-1, CH-53 and CH-46 from the 1st MAW, HH-60 & F-15C from the 18 WG, and F-18C/E/F from CVW-5.

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
Strategic Attack	PMC	NMC	FMC		NMC	NMC	NMC	NMC	FMC			NMC	PMC
Counterair													
Counterspace													
Counterland	PMC	NMC	FMC		NMC	NMC	NMC	NMC	FMC			NMC	PMC
Countersea													
Information Operations													
Electronic Combat Support	NMC					NMC	NMC						
Command and Control													
Air Drop													
Air Refueling													
Spacelift													
Special Operations													
Intelligence, Surveillance, and Reconnaissance													

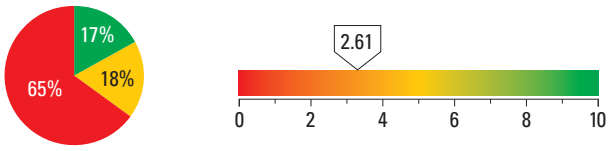
Legend: FMC PMC NMC

Encroachment Data

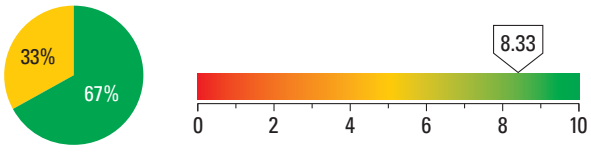
Mission Areas	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strategic Attack		Minimal		Minimal	Moderate		Minimal		Minimal			Moderate
Counterair												
Counterspace												
Counterland		Minimal		Minimal	Moderate		Minimal		Minimal			Moderate
Countersea												
Information Operations												
Electronic Combat Support												
Command and Control												
Air Drop												
Air Refueling												
Spacelift												
Special Operations												
Intelligence, Surveillance, and Reconnaissance												

Legend: Minimal Moderate Severe

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

Despite being used very often for live bombing, the W-176 marginally meets training requirements for range users (there is a very small land area for targeting, and no ability to lay out tactical targets or scoring equipment). Encroachments are rare, and consist solely of fishing boat traffic trespassing inside of the lateral confines of the range. There is an ongoing effort by the local government to return the range back to Japan.

Summary Observations

Despite being used very often for live bombing, the W-176 marginally meets training requirements for range users (there is a very small land area for targeting, and no ability to lay out tactical targets or scoring equipment). Encroachments are rare, and consist solely of fishing boat traffic trespassing inside of the lateral confines of the range. There is an ongoing effort by the local government to return the range back to Japan.

Torishima 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	2.0	2.0	4.09	NA	**Encroachment Scores**	7.5	7.5	7.5	NA
No comments.					Boat encroachments are rare in Torishima, thanks to efforts of the Okinawa Defense Bureau (ODB). The range is a series of islands of rock and sand with varying land area based on tidal conditions.				

Torishima Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Strategic Attack	🟡	Land size is very small; therefore, aircrews have little to target of tactical significance. There is no feasible action to remedy this situation.
	Counterland	🟡	Same as above.
	Electronic Combat Support	🔴	There is no way to put EW emmitters on the range due to the small land area, and no power sources; therefore, aircrews cannot train to electronic warfare. There is no feasible action to remedy this situation.
Airspace	Strategic Attack	🔴	The airspace is extremely small for modern standards; therefore, aircraft are severely limited in attack profiles and weapon employment. The airspace is defined by bi-national agreements from 1972 that are unlikely to change.
	Counterland	🔴	Same as above.
Targets	Strategic Attack	🔴	The small land area, tidal conditions, relative remoteness, rough terrain, UXO danger, and typhoon-prone area prevent permanent equipment/targets from being installed. Range users have nothing of tactical significance to target. There is no planned fix for this problem.
	Counterland	🔴	Same as above.
Threats	Strategic Attack	🔴	Same as above.
	Counterland	🔴	Same as above.
	Electronic Combat Support	🔴	Same as above.
Scoring & Feedback System	Strategic Attack	🔴	Same as above. In addition, no power sources are available to operate cameras, range-finders, and hit detectors.
	Counterland	🔴	Same as above.
	Electronic Combat Support	🔴	Same as above.
Infrastructure	Strategic Attack	🔴	Same as above.
	Counterland	🔴	Same as above.
MOUT Facilities	Strategic Attack	🔴	Same as above.
	Counterland	🔴	Same as above.
Suite of Ranges	Strategic Attack	🟡	Same as above. In addition, the range minimally supports current AF use but does not fully support sister Service needs in region nor next generation aircraft requirements. These restrictions are primarily due to range land size and airspace size.
	Counterland	🟡	Same as above.

Encroachment Observations

Factors	Assigned Training Mission	Score	Comments
Airspace	Strategic Attack	🟡	The airspace is extremely small for modern standards; therefore, aircraft are severely limited in attack profiles and weapon employment. The airspace is defined by bi-national agreements from 1972 that are unlikely to change.
	Counterland	🟡	Same as above.
Range Transients	Strategic Attack	🟡	Though rare, the greatest issue with the range is transient boat traffic preventing ordnance use. Since this is a Class C remote island range, it is nearly impossible to police the area to keep boats out. Users are required to cease fire if a boat enters the 3 nm impact area. The range mitigates this risk by putting out notices to mariners to remain clear of the area, and by working with ODB and booking a backup range (W-174) in case the range can not be fired on, so users can quickly switch without significant training loss. Note: If the range is being used as a simulated range only, this does not impede range use.
	Counterland	🟡	Same as above.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Townsend Assessment Details

Range Mission Description

No mission description provided.

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
Strategic Attack	PMC	PMC			FMC	FMC	FMC	FMC	FMC			FMC	
Counterair	FMC	PMC			FMC	FMC	FMC	FMC	FMC			FMC	
Counterspace													
Counterland	FMC	FMC			FMC	FMC	FMC	FMC	FMC	FMC		FMC	
Countersea													
Information Operations	FMC	FMC			FMC	FMC	FMC	FMC	FMC			FMC	
Electronic Combat Support	FMC	FMC			FMC	FMC	FMC	FMC	FMC			FMC	
Command and Control	FMC	FMC			FMC	FMC	FMC	FMC	FMC	FMC		FMC	
Air Drop													
Air Refueling	FMC	PMC				FMC		FMC	FMC				
Spacelift													
Special Operations	FMC	FMC			FMC	FMC	FMC	FMC	FMC			FMC	
Intelligence, Surveillance, and Reconnaissance	FMC	FMC			FMC	FMC	FMC	FMC	FMC			FMC	

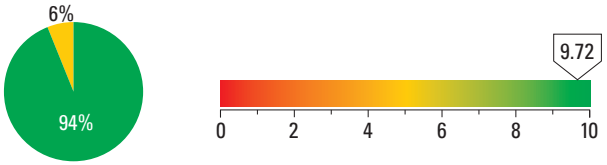
Legend: FMC PMC NMC

Encroachment Data

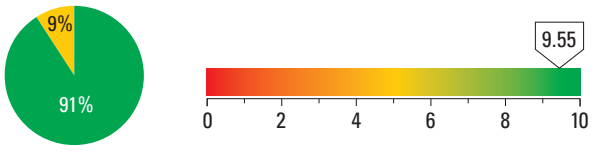
Mission Areas	Encroachment Factors												
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strategic Attack	FMC	PMC	FMC		PMC	FMC	PMC	FMC	FMC	FMC	FMC	FMC
Counterair	FMC	FMC	FMC		PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Counterspace												
Counterland	FMC	FMC	FMC		FMC	FMC	PMC	FMC	FMC	FMC	FMC	FMC
Countersea												
Information Operations	FMC	FMC	FMC		FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Electronic Combat Support	FMC	FMC	FMC		FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Command and Control	FMC	PMC	FMC		FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Air Drop												
Air Refueling	FMC	FMC	FMC		PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Spacelift												
Special Operations	FMC	FMC	FMC		FMC	FMC	PMC	FMC	FMC	FMC	FMC	FMC
Intelligence, Surveillance, and Reconnaissance	FMC	FMC	FMC		PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC

Legend: Minimal Moderate Severe

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

No comments.

Summary Observations

No comments.

Historical Information, Results, and Future Projections

Calendar Year	2008	2009	2010	2011
Capability Scores	9.85	9.85	9.72	9.72

No comments.

Historical Information, Results, and Future Projections

Calendar Year	2008	2009	2010	2011
Encroachment Scores	9.72	9.72	9.55	9.55

No comments.

Townsend Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Strategic Attack	●	No comments.
Airspace	Strategic Attack	●	No comments.
	Counterair	●	No comments.
	Air Refueling	●	No comments.

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Munitions Restrictions	Strategic Attack	●	No comments.
	Command and Control	●	No comments.
Airspace	Strategic Attack	●	No comments.
	Counterair	●	No comments.
	Air Refueling	●	No comments.
	Intelligence, Surveillance, Reconnaissance	●	No comments.
Noise Restrictions	Strategic Attack	●	No comments.
	Counterland	●	No comments.
	Spacelift	●	No comments.
	Special Operations	●	No comments.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Utah Test and Training Range (UTTR) Assessment Details

Range Mission Description

UTTR is a Primary Training Range with infrastructure to support large footprint testing; primarily OT&E.

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
Strategic Attack	PMC	PMC			PMC	PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Counterair	FMC	PMC			FMC	PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Counterspace													
Counterland	FMC	FMC			FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Countersea													
Information Operations													
Electronic Combat Support	FMC	PMC			FMC	PMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Command and Control													
Air Drop	FMC	FMC			FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Air Refueling	FMC	FMC			FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Spacelift													
Special Operations	FMC	FMC			FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC
Intelligence, Surveillance, and Reconnaissance	FMC	FMC			FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC	FMC

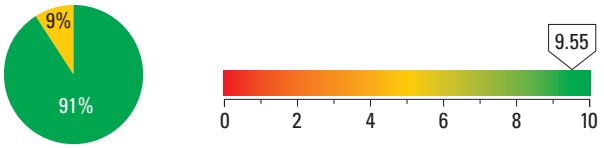
Legend: FMC PMC NMC

Encroachment Data

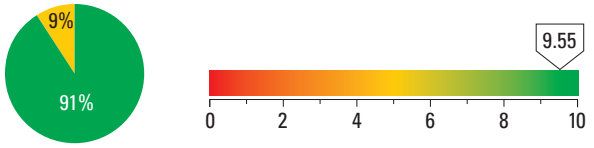
Mission Areas	Encroachment Factors												
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strategic Attack	Minimal	Minimal	Minimal		Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Counterair	Minimal	Minimal	Minimal		Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Counterspace												
Counterland	Minimal	Minimal	Minimal		Moderate	Minimal	Minimal	Minimal	Moderate	Minimal	Minimal	Minimal
Countersea												
Information Operations												
Electronic Combat Support	Minimal	Minimal	Moderate		Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Command and Control												
Air Drop	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Moderate	Minimal	Minimal	Minimal
Air Refueling	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Spacelift												
Special Operations	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Moderate	Minimal	Minimal	Minimal
Intelligence, Surveillance, and Reconnaissance	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal

Legend: Minimal Moderate Severe

Capability Chart and Scores



Encroachment Chart and Scores



Utah Test and Training Range (UTTR) Assessment Details

Summary Observations	Summary Observations
1. 91% of UTTR's range/range complex mission areas are Fully Mission Capable (FMC). 2. Airspace Support is impacted as a direct result of the U.S. Army expansion of Dugway Proving Ground (DPG) beyond operations as a Chem/Bio MRTFB into the realm of Unmanned Aerial Systems (UAS). The majority of these issues can be controlled through cooperative scheduling among DoD users, but continued uncontrolled Army UAS mission expansion will have dire impacts to all mission areas involving UTTR airspace. Additional limitations are also placed on airspace support during cruise missile, WSEP testing. 388 FW is forced to use White Elk ATCAA, which does not support Strategic Attack or Electronic Combat. 3. Landspace support may also be impacted as the Army further restricts Air Force operation on DPG property, which underlies UTTR airspace. 4. Targets and Threats are not available to support next generation aircraft and weapons (F-22, JSF).	1. 91% of the range/range complex mission is free from encroachment factors 2. Overall external encroachment for UTTR is minimal. However, internal encroachment is a direct result of the U.S. Army expansion of DPG beyond operations as a Chem/Bio MRTFB into the realm of UAS. The majority of these issues can be controlled through cooperative scheduling among DoD users, but continued uncontrolled Army UAS mission expansion will have dire impacts to all mission areas involving UTTR airspace. 3. Cultural Resources Encroachment involves a few very small archeological sites, which require avoidance. 4. UTTR has one jurisdictional wetland area of 16,000 acres. It is located in the buffer zone to UTTR, on the western boundary of the range, and has not created encroachment because of its close proximity to the boundary.

Historical Information, Results, and Future Projections					Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011	**Calendar Year**	2008	2009	2010	2011
Capability Scores	9.89	9.89	9.89	9.55	**Encroachment Scores**	9.83	9.83	9.83	9.55
No comments.					No comments.				

Utah Test and Training Range (UTTR) Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Strategic Attack	●	Landspace and all associated operations may be severely restricted or eliminated as the Army further restricts Air Force operation on DPG property, which underlies UTTR airspace. Primary impact is to ground operations and AF target complexes on DPG property underlying UTTR airspace.
Airspace	Strategic Attack	●	Operations can be limited during cruise missile WSEP testing, forcing 388th to use White Elk ATCAA, which does not support surface attacks.
	Counterair	●	Same as above.
	Electronic Combat Support	●	Operations can be limited due to rapidly increasing Army UAS usage and, to a lesser degree, during cruise missile. WSEP testing, forcing 388th to use White Elk ATCAA, which does not support surface attacks. The Air Force is aggressively pursuing cooperative scheduling processes; however, continued Army UAS mission expansion is expected to push beyond the limits of efficient scheduling.
Targets	Strategic Attack	●	Landspace and all associated operations may be severely restricted or eliminated as the Army further restricts Air Force operations on DPG property, which underlies UTTR airspace. Primary impacts are to ground operations and AF target complexes on DPG property underlying UTTR airspace.
Threats	Strategic Attack	●	Threat systems and all associated operations may be severely restricted or eliminated as the Army further restricts Air Force operations on DPG property which underlies UTTR airspace. The primary impact will be reduced threat availability. The range is presently coordinating with the Army and seeking alternative threat locations on AF property.
	Counterair	●	Same as above.
	Electronic Combat Support	●	Same as above.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Utah Test and Training Range (UTTR) Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Spectrum	Electronic Combat Support	●	Competing frequency spectrum usage from adjoining U.S. Army DPG requires ever greater vigilance to ensure non-interference. Army users typically schedule frequency usage by days or weeks instead of specific hourly requirements, which greatly limits utilization. Increases in the density of spectrum dependent equipment operating in the same bands result in increased operational conflict and a higher potential for interference. A DoD-wide prioritization would be beneficial. Additionally, public and private development, to include energy initiatives, are increasingly utilizing COTS wireless equipment. This is beginning to cause spectrum encroachment issues, which will only increase in future years.
Airspace	Strategic Attack	●	Competing airspace usage from adjoining U.S. Army DPG requires ever greater vigilance to ensure non-interference. Army usage has greatly increased limiting utilization by other users. The expanding mission of DPG outside the scope of its MRTFB Chem/Bio T&E capabilities will significantly impact UTTR operations.
	Counterair	●	Same as above.
	Counterland	●	Same as above.
	Electronic Combat Support	●	Same as above.
Cultural Resources	Counterland	●	Archeological sites require avoidance. This avoidance has not and is not expected to limit access to training, because they are very small areas within the UTTR and avoidance is easily achieved.
	Air Drop	●	Same as above.
	Special Operations	●	Same as above.

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Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Vandenberg Assessment Details

Range Mission Description

Vandenberg Range provides range and launch services to spacelift and strategic missile processing and launch operations while ensuring public safety.

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
Strategic Attack	●	●	●	●			●		●				
Counterair													
Counterspace													
Counterland													
Countersea													
Information Operations													
Electronic Combat Support													
Command and Control													
Air Drop													
Air Refueling													
Spacelift	●	●	●	●			●	●	●				
Special Operations													
Intelligence, Surveillance, and Reconnaissance													

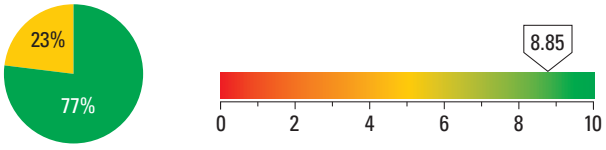
Legend: FMC ● PMC ● NMC ●

Encroachment Data

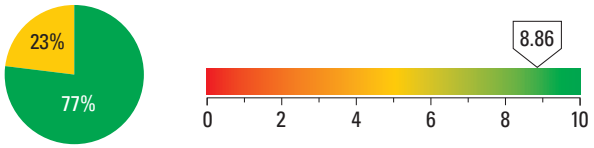
Mission Areas	Encroachment Factors													
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strategic Attack	●		●	●	●	●	●	●	●	●	●	●
Counterair												
Counterspace												
Counterland												
Countersea												
Information Operations												
Electronic Combat Support												
Command and Control												
Air Drop												
Air Refueling												
Spacelift	●		●	●	●	●	●	●	●	●	●	●
Special Operations												
Intelligence, Surveillance, and Reconnaissance												

Legend: Minimal ● Moderate ● Severe ●

Capability Chart and Scores



Encroachment Chart and Scores



Summary Observations

No comments.

Summary Observations

No comments.

Historical Information, Results, and Future Projections

Calendar Year	2008	2009	2010	2011
Capability Scores	NA	NA	NA	8.85

No comments.

Historical Information, Results, and Future Projections

Calendar Year	2008	2009	2010	2011
Encroachment Scores	NA	NA	NA	8.86

No comments.

Vandenberg Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Infrastructure	Spacelift	●	No comments.
Range Support	Strategic Attack	●	No comments.
	Spacelift	●	No comments.

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Threatened & Endangered Species	Strategic Attack	●	No comments.
	Spacelift	●	No comments.
Spectrum	Strategic Attack	●	No comments.
	Spacelift	●	No comments.
Adjacent Land Use	Spacelift	●	No comments.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Warren Grove Assessment Details

Range Mission Description

Warren Grove Range (WGR) is a 9,416 acre Primary Training Range (PTR), located in central Southeastern New Jersey Pinelands Preserve. The range's mission is to deliver the most realistic, relevant and safe environment to train air and ground warfighters for victory in today and tomorrow's joint combat operations arena. The range supports federal, state, local, and first responder personnel for homeland defense operations, and national and world-wide tasking. Primary training units include: 119FW (F-16, ACY), 113FW (F-16, ADW), 175FW (A-10, BAL), VX23/Test Pilot School (F-18, NHK), 1/150th (H-60, MAG-49 (UH-1/CH-53D, NXX), 106 RQW (H-60, FOK), 227 ASOS (JTAC, ACY), and numerous ground and special forces units around the globe.

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												
Strategic Attack	PMC	PMC			PMC	PMC	PMC	PMC	FMC			FMC	FMC
Counterair	FMC	PMC			FMC	PMC	FMC	FMC	FMC			FMC	FMC
Counterspace		NMC											
Counterland	FMC	PMC			PMC	PMC	PMC	FMC	FMC	PMC	NMC	FMC	FMC
Countersea			NMC										
Information Operations	FMC	FMC			FMC			FMC	PMC				FMC
Electronic Combat Support	FMC	FMC			FMC	PMC		FMC	FMC				FMC
Command and Control	FMC	FMC			FMC		FMC	PMC	PMC				FMC
Air Drop	FMC	FMC			FMC	FMC	FMC	FMC	FMC				FMC
Air Refueling		NMC											
Spacelift		NMC											
Special Operations	FMC	FMC			FMC	FMC	FMC	FMC	FMC	PMC	PMC	PMC	FMC
Intelligence, Surveillance, and Reconnaissance	FMC	FMC			FMC	PMC	FMC	FMC	PMC			FMC	FMC

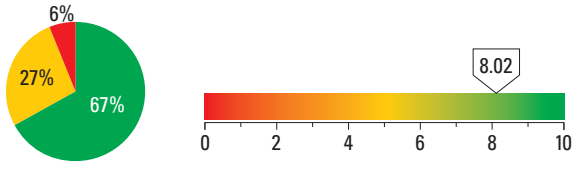
Legend: FMC, PMC, NMC

Encroachment Data

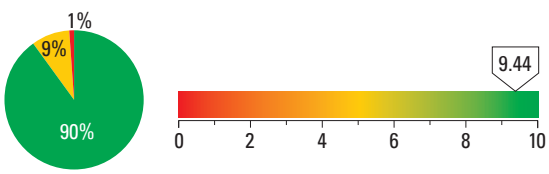
Mission Areas	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
	Encroachment Factors											
Strategic Attack	Minimal	Moderate	Moderate		Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Counterair	Minimal	Moderate	Minimal		Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Counterspace												
Counterland	Minimal	Moderate	Minimal		Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Countersea												
Information Operations	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Electronic Combat Support	Minimal	Moderate	Severe		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Command and Control	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Air Drop	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Air Refueling												
Spacelift												
Special Operations	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Intelligence, Surveillance, and Reconnaissance	Minimal	Minimal	Minimal		Moderate	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal

Legend: Minimal, Moderate, Severe

Capability Chart and Scores



Encroachment Chart and Scores



Warren Grove Assessment Details

Summary Observations	Summary Observations
1. Munitions restrictions and airspace limits are the largest factors affecting WGR's ability to provide best training environment in given areas. 2. A no-drop scoring/feedback system would eliminate restrictions imposed by munitions restrictions. 3. Outstanding MOUT facility is tremendous asset in indicated areas (4). WGR does not have a suite of ranges, so does not provide added benefit to these areas, but does not detract as it is not a competing issue.	No comments.

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	NA	NA	9.81	8.02	**Encroachment Scores**	NA	NA	9.74	9.44
No comments.					No comments.				

Warren Grove Range Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Strategic Attack	🟡	Evaluating if range-owned land is large enough to permit use of IAMS weapons. Currently, the range has limited use of LGBs. Actively pursuing additional land acquisition via REPI and partnerships with local conservations organizations IAW RAICUZ. Ongoing.
Airspace	Strategic Attack	🟡	Limited airspace restricts types and tactics of Strategic Attack (SA) training. A high altitude expansion initiative of R-5002 airspace is currently under FAA review. When the expansion is approved, this will greatly enhance the type and tactics of SA training available to meet the needs of current and future aircraft.
	Counterair	🟡	Same as above.
	Counterspace	🔴	There is insufficient airspace to conduct any Counterspace training. There is no feasible solution proposed.
	Counterland	🟡	Limited airspace restricts types and tactics of Counterland training. A high altitude expansion initiative of R-5002 airspace is currently under FAA review. When the expansion is approved, it will greatly enhance the type and tactics of Counterland training available to meet the needs of current and future aircraft.
	Air Refueling	🔴	There is insufficient airspace to conduct any Air Refueling training.
	Spacelift	🔴	There is insufficient airspace to conduct any Spacelift training.
Seaspace	Countersea	🔴	There is no Seaspace at WGR; it is an exclusive land range; therefore, the range cannot conduct Countersea training.
Targets	Strategic Attack	🟡	The range does not posses targets with fidelity sufficient for 5th generation aircraft training.
	Counterland	🟡	The requirement for a moving strafe target is currently not being met. Target costs have prohibited the ability to develop a moving strafe target. A moving target of local design is currently under development and the efficacy of the design should be validated by late CY2010/early CY2011.
Threats	Strategic Attack	🟡	There is a lack of available frequency authorization, which limits the ability of WGR to present tactical threat array for threats present in these areas. There is no known date for a solution.
	Couterair	🟡	Same as above.
	Couterland	🟡	Same as above.
	Electronic Combat Support	🟡	Same as above.
	Intelligence, Surveillance and Reconnaissance	🟡	Same as above.
Scoring & Feedback System	Strategic Attack	🟡	A lack of IR scoring capability limits the ability to score night weapon impacts or provide valid aircrew feedback. The range is awaiting funding for night/IR WISS scoring capability.
	Counterland	🟡	Same as above.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Warren Grove Range Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Infrastructure	Strategic Attack	🟡	The lack of a target fabrication facility limits the range's ability to construct a multitude of targets for extensive Strategic Attack training. This limits fabrication and versatility of the target array. A package has been submitted to the base civil engineer for construction of a target fabrication facility, but the facility is currently unfunded.
	Command and Control	🟡	The current main tower and communications suite is antiquated and in need of replacement by a building of greater functional configuration, visibility, and cost-effective construction. A package was submitted to the base civil engineer for construction of a new main tower, but construction of the facility is currently unfunded.
Range Support	Information Operations	🟡	WGR is not currently connected to DTOC, limiting the ability to train in the Decide and Assess areas of the war fighting cycles. The range is pursuing SADL/Gateway connectivity, but remedy date is unknown.
	Command and Control	🟡	Same as above.
	Intelligence, Surveillance and Reconnaissance	🟡	Same as above.
Small Arms Ranges	Counterland	🟡	WGR does not currently have a Small Arms range, although one is in development. The lack of range limits training opportunities of ground force employment.
	Special Operations	🟡	Same as above.
Collective Ranges	Counterland	🔴	WGR is not a collective range; there is no land mass to accommodate a collective range.
	Special Operations	🟡	WGR is not a collective range; there is no land mass to accommodate large unit level battlefield operations. The range has the ability to train team size JTAC units for battlefield operations.
MOUT Facilities	Special Operations	🟡	MOUT targets are outstanding from the air, but are not the best for special operations forces. New area for ground forces is under development. The targeted construction completion date is summer FY2011.

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Munitions Restrictions	Strategic Attack	🟡	The ability to expend weapons with marking charges may be restricted in the future, restricting the type of training munitions available for Strategic Attack, Counterair, and Counterland training.
	Counterair	🟡	Same as above.
	Counterland	🟡	Same as above.
	Electronic Combat Support	🟡	Chaff is not permitted. Aircrews are unable to expend chaff during self-protect maneuvering. No relief anticipated.
Spectrum	Strategic Attack	🟡	Based on the size of restricted airspace and proximity to high volume civil airways, chaff is not permitted. Aircrews are unable to expend chaff during self-protect maneuvering. No relief anticipated.
	Electronic Combat Support	🔴	The lack of approved WGR temporary or permanent frequency authorization limits the range's ability to execute EC (EA or EP) training. The range cannot provide threat simulations for aircrew. There is no known relief date.
Airspace	Strategic Attack	🟡	The vertical and horizontal limits to R-5002 airspace limit the ability to provide a tactical training environment for operations. A high altitude expansion initiative of R-5002 airspace is currently under FAA review. When the expansion is approved, it will greatly enhance type and tactics of SA training available to meet the needs of current and future aircraft.
	Counterair	🟡	Same as above.
	Counterland	🟡	Same as above.
	Intelligence, Surveillance and Reconnaissance	🟡	Same as above.

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Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Yukon Assessment Details

Range Mission Description

Yukon R-2205 is managed by the U.S. Army. The USAF is a user; thus, there is no formal USAF mission statement. The range does, however, support both live and inert free-fall ordnance deliveries, and both offensive and defensive electronic combat operations, as well as small arms and indirect fire missions. It is one of two key target areas utilized for RED FLAG-Alaska and NORTHERN EDGE Exercises.

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
Strategic Attack	FMC	FMC			PMC	FMC	FMC	FMC	FMC			FMC	PMC
Counterair	PMC	PMC			FMC	FMC	FMC	FMC	FMC			FMC	FMC
Counterspace	FMC	FMC			FMC	PMC	FMC	FMC	FMC			FMC	FMC
Counterland	FMC	PMC			PMC	FMC	FMC	FMC	FMC			FMC	PMC
Countersea													
Information Operations	FMC	FMC			FMC	FMC	FMC	FMC	FMC			FMC	FMC
Electronic Combat Support	FMC	PMC			FMC	FMC	FMC	FMC	FMC			FMC	FMC
Command and Control	FMC	FMC			FMC	FMC	FMC	FMC	FMC			FMC	FMC
Air Drop	FMC	PMC			PMC	FMC	FMC	FMC	FMC			FMC	FMC
Air Refueling	FMC	FMC			FMC	FMC	FMC	FMC	FMC			FMC	FMC
Spacelift													
Special Operations	FMC	FMC			FMC	FMC	FMC	FMC	FMC			FMC	PMC
Intelligence, Surveillance, and Reconnaissance	FMC	FMC			PMC	PMC	FMC	FMC	FMC			FMC	FMC

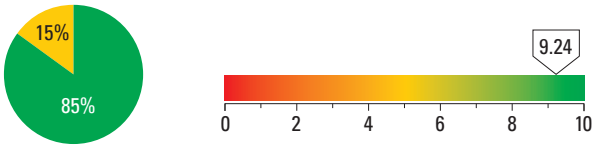
Legend: FMC PMC NMC

Encroachment Data

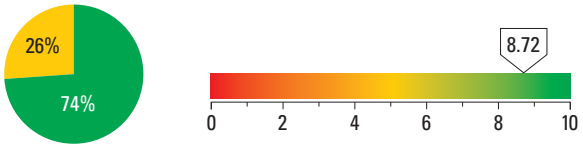
Mission Areas	Encroachment Factors												
	Threatened and Endangered Species	Munitions Restrictions	Spectrum	Maritime Sustainability	Airspace	Air Quality	Noise Restrictions	Adjacent Land Use	Cultural Resources	Water Quality/Supply	Wetlands	Range Transients
Strategic Attack	Minimal	Moderate	Moderate		Moderate	Minimal	Moderate	Moderate	Minimal	Minimal	Moderate	Moderate
Counterair	Minimal	Moderate	Minimal		Moderate	Minimal	Minimal	Moderate	Minimal	Minimal	Minimal	Minimal
Counterspace	Minimal	Moderate	Moderate		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Counterland	Minimal	Minimal	Minimal		Moderate	Minimal	Moderate	Moderate	Minimal	Minimal	Moderate	Moderate
Countersea												
Information Operations	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Electronic Combat Support	Minimal	Minimal	Moderate		Moderate	Minimal	Minimal	Moderate	Minimal	Minimal	Minimal	Moderate
Command and Control	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Air Drop	Minimal	Moderate	Minimal		Moderate	Minimal	Minimal	Moderate	Minimal	Minimal	Moderate	Moderate
Air Refueling	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Spacelift												
Special Operations	Minimal	Moderate	Moderate		Moderate	Minimal	Minimal	Moderate	Minimal	Minimal	Minimal	Moderate
Intelligence, Surveillance, and Reconnaissance	Minimal	Minimal	Minimal		Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal

Legend: Minimal Moderate Severe

Capability Chart and Scores



Encroachment Chart and Scores



Yukon Assessment Details

Summary Observations	Summary Observations
The Capability of Yukon - R-2205 to meet its missions can be summarized into three main areas of concern: (1) its size, (2) scheduling/usage conflicts, and (3) the nature of terrain (vegetation/topography/climate) and resulting ordnance restrictions. R-2205 lays within remote arctic mountains, tundra plains, and steep valleys. As such, developing and maintaining road access is logistically challenging. Therefore, targets, infrastructures, and threats can be confined. The second limiting factor is the U.S. Army and the Air Force desiring use at the same time. Rarely is joint use granted. If it is, it is rarely in a cohesive joint training manner as the Air Force is only a user group and does not manage the lands. The impact areas of R-2205 may be sensitive to forest fires, and/or the nearness to FAA terminals may impact expendable usages.	Encroachment in its classic sense has an overall minimal impact on R-2205. It is bordered on the west by other military lands, and to the south and east by rugged and remote terrains. These rugged and remote lands are still accessible by the civilian population, but require aircraft, boats, and/or ATVs to access. The land immediately to the north is rugged, but only provides a modest buffer. There is civilian build up 5-10 miles north and northwest, but it is not much of an impact. The range is road-accessible and can see heavy civilian access during hunting seasons. Chaff can be restricted when winds aloft drift chaff plumes into FAA-controlled airspaces. Flares can be severely restricted during dry summer months. The most prevalent encroachment issue centers on the two main Services, the Army and the Air Force, and their desires to use these small restricted spaces (air/ground) simultaneously and without mutually inclusive goals. Training events rarely are joint in nature and, as such, conflict in overall compatibilities and use of the range.

Historical Information, Results, and Future Projections					Historical Information, Results, and Future Projections				
Calendar Year	2008	2009	2010	2011	**Calendar Year**	2008	2009	2010	2011
Capability Scores	9.17	9.17	9.24	NA	**Encroachment Scores**	8.90	8.90	8.88	NA
No comments.					No comments.				

Yukon Detailed Comments

Capability Observations

Attributes	Assigned Training Mission	Score	Comments
Landspace	Counterair	●	The landspace does not necessarily correspond to effective Counterair training and is too small for large scale operations. There is no remedy.
Airspace	Strategic Attack	●	The range has excellent targets sets, but they are in confined areas. The land/air spaces are too small to support large-scale operations. Small unit tactics of 4-ships or less is possible. If combining with surrounding MOA airspaces, then the range is more than adequate for said operations. Dual use with Army range managers is still a challenge without a foreseeable solution.
	Counterair	●	Same as above.
	Counterland	●	Same as above.
	Electronic Combat Support	●	There is small restricted airspace for large-scale exercises with multiple platforms; chaff is limited by restrictions as noted in observations. Dual use with Army land managers is challenging. There is no current solution, but the Air Force continues to work with the Army to improve dual use issues.
	Air Drop	●	The Airspace is too small on its own to support large scale operations. If combining with surrounding MOA Airspaces, then it is more than adequate for said operations. Dual use with Army range managers is still a challenge without a foreseeable solution.
Targets	Strategic Attack	●	Poor road conditions and range access limit type of targets/materials. The range is unable to achieve EOD in 7 month winter periods, so there is a short target build season that conflicts with summer flight operations. There is a sensitive tundra in most areas surrounding existing target sets; hence, there is limited target variety/replenishment/expansion capability. There is no remedy.
	Counterland	●	Same as above.
	Air Drop	●	Same as above.
	Intelligence, Surveillance, and Reconnaissance	●	Same as above.
Threats	Counterspace	●	GPS jamming is severely restricted.
	Intelligence, Surveillance, and Reconnaissance	●	The range offers high O&M/manpower intensive IR/mobile threats and excellent EW/EC threats. The Air Force continues to procure easier/more modular IR/EO/mobile threat systems.
Suite of Ranges	Strategic Attack	●	There is an overall limitation on the size of areas available for current weapon types, which limits full spectrum ordnance deliveries. The Air Force continues to work WDZ products via ACC to refine footprint accuracy, and with the Army for realistic imposed restrictions.
	Counterland	●	Same as above.
	Special Operations	●	Same as above.

Figure 3-39 Air Force Capability and Encroachment Assessment Detail (continued)

Yukon Detailed Comments

Encroachment Observations

Factors	Assigned Training Mission	Score	Comment
Munitions Restrictions	Strategic Attack		Chaff and flare are limited by restrictions as noted in observations. Significant ordnance restrictions due to Army-directed footprint overlayment of manned threat sites and range infrastructure. This limits full spectrum self defense EC procedures and/or forward firing and free-fall munitions training. There is no remedy.
	Counterair		The small size of R-2205 limits full spectrum counterair training. Tactics and training are limited to small numbers. No live air-to-air ordnance deliveries. There are moderate chaff and flare restrictions in summer months.
	Counterspace		GPS jamming is highly restricted.
	Air Drop		There are limited air land/air drop zones, which restricts variety and presents tactical challenges. There is no remedy.
	Special Operations		There are restricted door gunnery patterns and highly restricted personnel movements for OPFOR during simultaneous JCAS/live fire/free-fall ordnance delivery events, which limits realistic TTP practice. There is no remedy.
Spectrum	Strategic Attack		Limited spectrum is available for IO and IW warfare. There is no remedy.
	Counterspace		GPS jamming is highly restricted.
	Electronic Combat Support		There are limitations to the use of spectrum hampers threat engagement and C4ISR training. The range is unable to exercise full systems usage. The solution to this is detailed and persistent application procedures and processes through AFFMA to garner more spectrum approvals. Some gains have been made to allow use of two previously non-allowed systems.
	Special Operations		Limited spectrum is available for unique communications needs. There is no resident SATCOM or GPS-burst capability.
Airspace	Strategic Attack		There is a relatively small restricted area for large-scale exercises with multiple platforms/weapons with no remedy. This is suitable if combining R-2205 with surrounding MOA airspaces. There are good target sets once inside airspace.
	Counterair		Same as above.
	Counterland		Same as above. In addition, the range can be optimized for JCAS operations, but is limited to 4-ships if no MOA airspaces.
	Electronic Combat Support		There is a relatively small restricted area for large scale exercises with multiple platforms/weapons; no remedy.
	Air Drop		There is limited tactical airlift/airdrop capability due to limited airspaces. This requires the surrounding MOA activations to provide enough maneuver spaces. There may be conflicts if Army UAV operations are ongoing for specified DZ/LZs.
	Special Operations		Same as above.
Noise Restrictions	Strategic Attack		The Fairbanks population is near the western border of area. There is no remedy.
	Counterland		Same as above.
Adjacent Land Use	Strategic Attack		The Fairbanks area, MOA edge, and airways border the western and northern borders. The southern border is a critical flyway for waterfowl and civilian aviation. There is no remedy.
	Counterair		Same as above.
	Counterland		Same as above.
	Electronic Combat Support		Same as above.
	Air Drop		Same as above.
	Special Operations		Same as above.
Wetlands	Strategic Attack		There are sensitive tundra areas in and around the range, limiting emplacement of realistic targets and/or EC training equipment to small impact areas. There is no remedy.
	Counterland		Same as above.
	Air Drop		Same as above.
Range Transients	Strategic Attack		Army restrictions on USAF/other Joint personnel movements/siting on-range inhibits or hampers realistic training. In addition, civilian access during hunting season impacts usage of equipment and ordnance expenditures.
	Counterland		Same as above.
	Electronic Combat Support		Same as above.
	Air Drop		Same as above.
	Special Operations		Same as above.

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Table 3-13 Air Force Range Capability and Encroachment Assessment Comparison

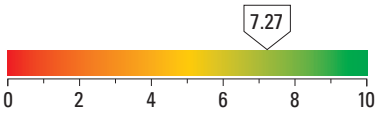
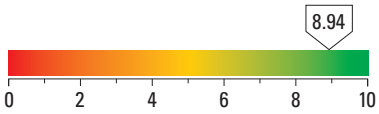
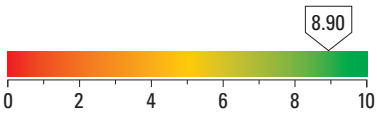
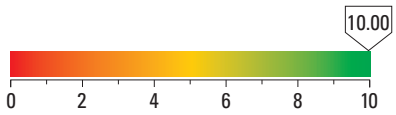
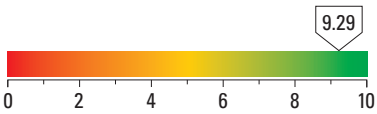
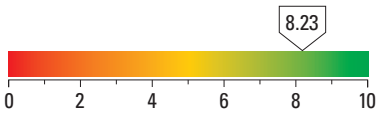
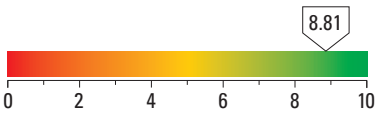
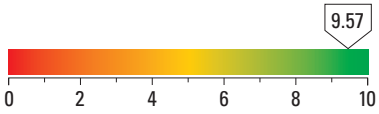
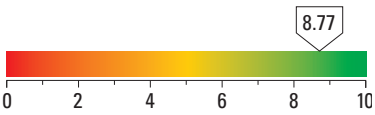
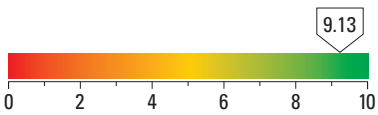
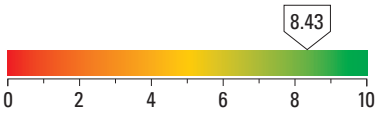
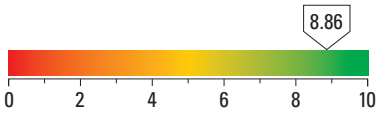
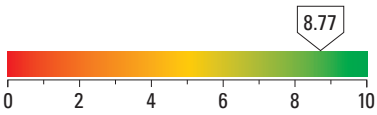
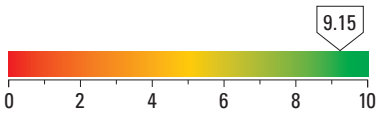
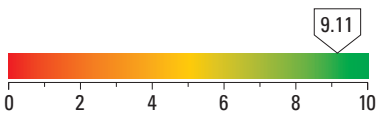
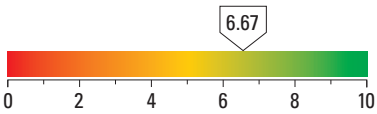
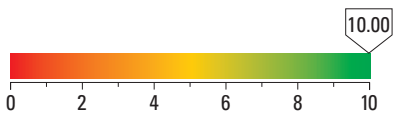
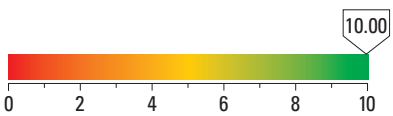
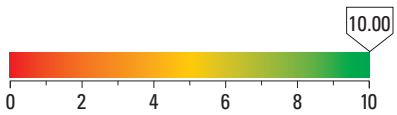
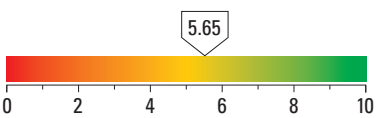
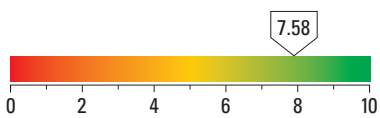
Range Name	Capability Score	Encroachment Score
Adirondack		
Airburst		
Atterbury		
Avon Park		
Barry M. Goldwater Range		
Blair Lake		
Bollen		
Cannon		
Claiborne		
Dare County Ranges		
Draughon		

Table 3-13 Air Force Range Capability and Encroachment Assessment Comparison (continued)

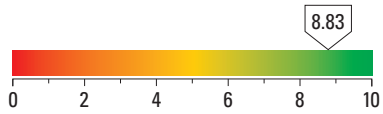
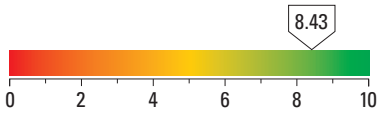
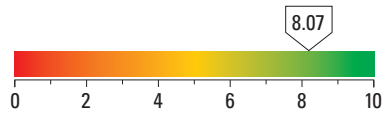
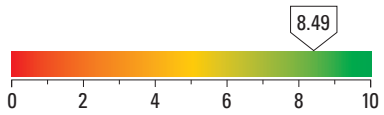
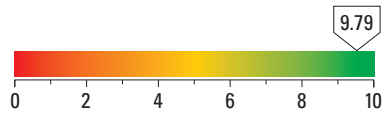
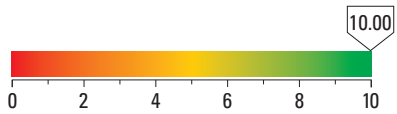
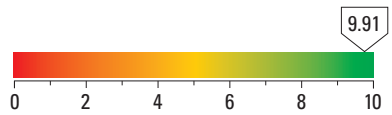
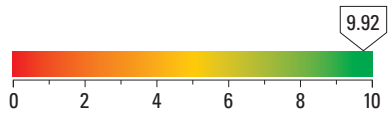
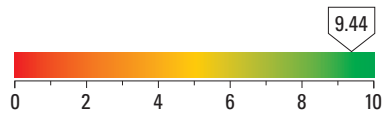
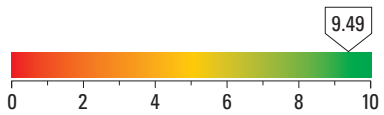
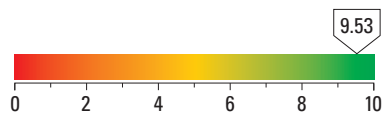
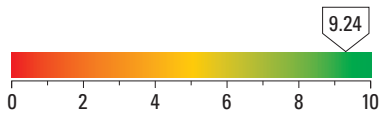
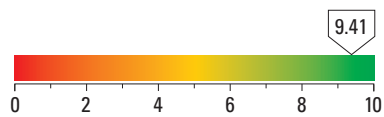
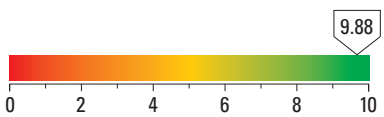
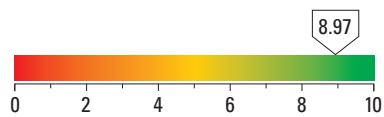
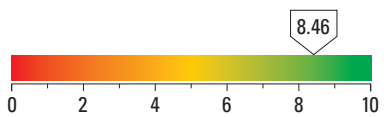
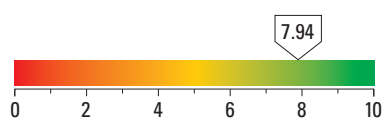
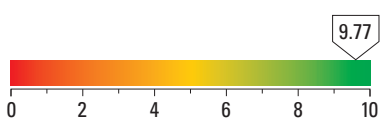
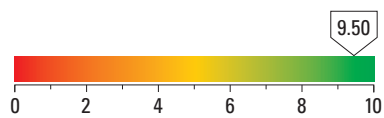
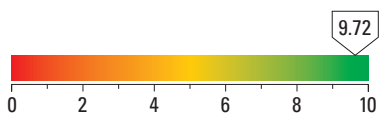
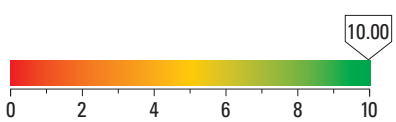
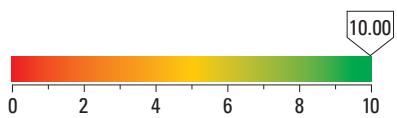
Range Name	Capability Score	Encroachment Score
Edwards Ranges		
Eglin Ranges		
Falcon		
Grand Bay		
Grayling		
Hardwood		
Holloman		
Jefferson		
McMullen		
Melrose		
Mountain Home Ranges		

Table 3-13 Air Force Range Capability and Encroachment Assessment Comparison (continued)

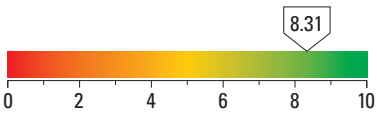
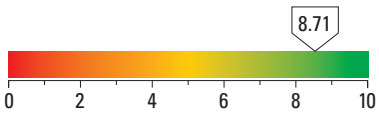
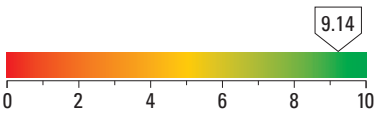
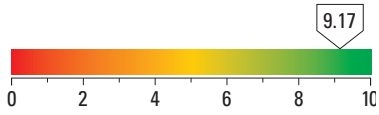
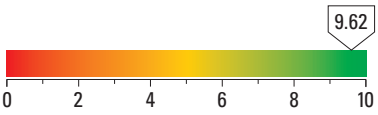
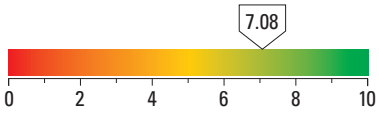
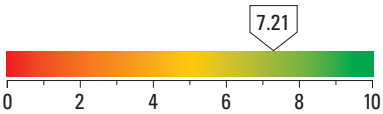
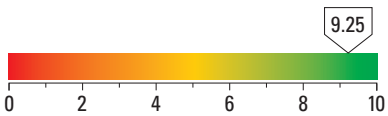
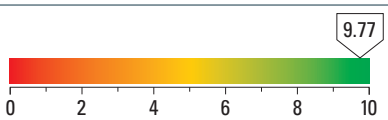
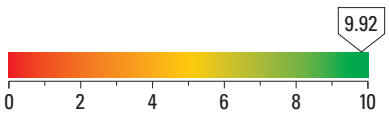
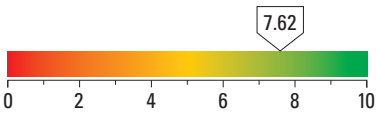
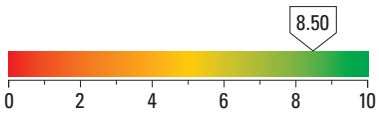
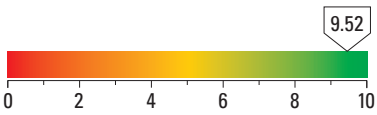
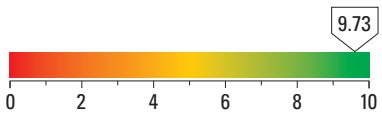
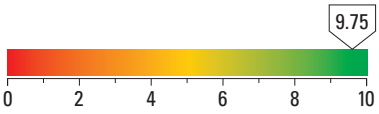
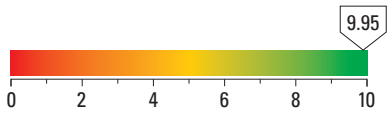
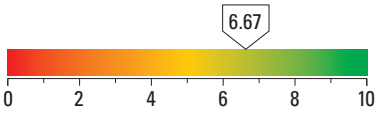
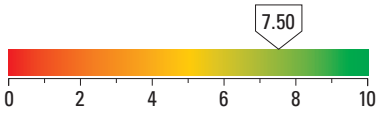
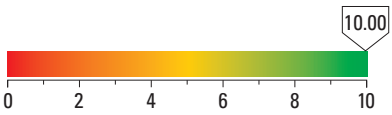
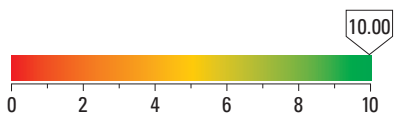
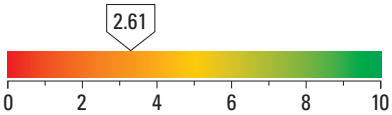
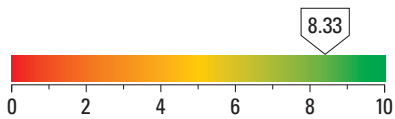
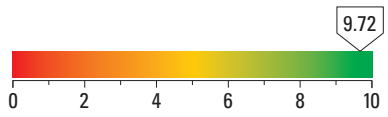
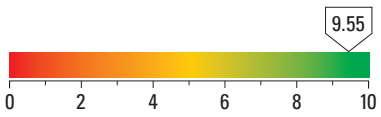
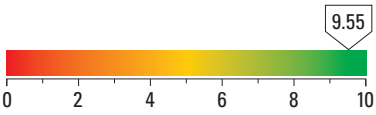
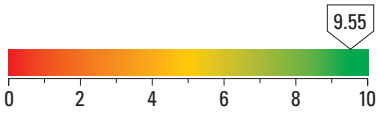
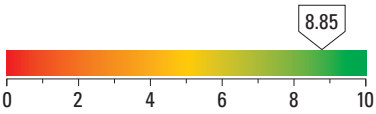
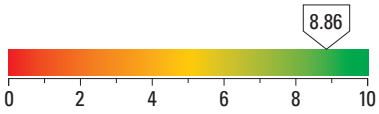
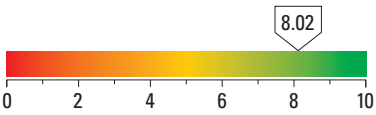
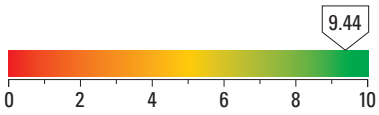
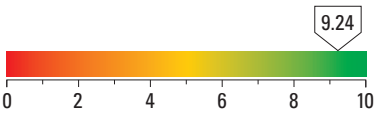
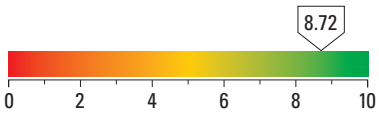
Range Name	Capability Score	Encroachment Score
NTTR		
Oklahoma		
Patrick		
Pilsung		
Poinsett		
Polygone		
Razorback		
Shelby Ranges		
Siegenburg		
Smoky Hill		
Torishima		

Table 3-13 Air Force Range Capability and Encroachment Assessment Comparison (continued)

Range Name	Capability Score	Encroachment Score
Townsend		
UTTR		
Vandenberg		
Warren Grove		
Yukon		

3.3 Summary and Conclusion

DoD and the Military Services have continued to improve their ability to evaluate the status of training ranges in a consistent and reliable manner that is comparable over time, thereby enhancing informed decision making. Decision makers, planners, and analysts can use the capabilities and encroachment data to develop strategies to mitigate range and training area shortfalls, bring required capabilities to standards, and address negative impacts from encroachment. These benefits will help improve range sustainment plans and investment priorities.

The ability to aggregate data in a common framework across Military Service mission areas will allow OSD and the Military Services to analyze range data in a number of ways and at various levels, which will help decision makers identify trends and assess range sustainability. DoD will continue to provide necessary guidance to improve assessment methods, data quality, and reliability, and to exercise its oversight responsibilities to ensure ranges and operational areas meet training requirements.

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