United States
Department of Defense

Report to Congress On Sustainable Ranges

Submitted by
The Office of the Secretary of Defense
Under Secretary of Defense
(Personnel and Readiness)

February 2006

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EXECUTIVE SUMMARY

INTRODUCTION

This report addresses Congressional interest and reporting requirements on the impacts of encroachment and environmental regulation on the operation of military installations and ranges. Specifically, Congress, in Section 366 of the Bob Stump National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2003, required the Department of Defense (DoD) to submit annual reports on the operational condition of training and test ranges; current and future training range requirements; and the ability of DoD resources to meet those requirements. Further, Congress in Section 320 of the FY 2004 NDAA required DoD to report on the impacts of civilian encroachment on military installations and operational ranges as well as the impact of environmental compliance. This report is intended to meet these requirements as well as describe the Department's overall progress in developing a comprehensive plan to address constraints that limit its use of military lands, water, airspace, and communication spectrum.

BACKGROUND

Today, our military forces are deployed in Iraq, Afghanistan, and other locations around the world. When our nation sends its military forces into combat it has the responsibility to ensure they are properly prepared and trained. Training provides our soldiers, sailors, airmen, and Marines with the combat skills they require to be successful and to ensure their safety. Realistic training increases their success and survivability in combat by providing practical, hands-on experience. Realistic testing enhances the reliability and effectiveness of weapons systems to be used in combat. Ranges are critical to DoD's ability to conduct realistic live-fire training and realistic weapons systems testing, which ultimately protects our military personnel and improves military operations and readiness. Thus, the Department's range capability contributes to an overall military capability that is unsurpassed in the world today.

Compounding the demands for ranges are advances in military hardware and the complexity of warfare. Changes in weapons systems, communication systems, and force structure will enable future operations over larger areas, which in turn creates requirements for increasingly larger test and training areas to reflect realistic combat conditions. Warfare also requires increased joint training and interoperability among the Military Services, combatant commands, and other DoD and non-DoD organizations. Further, combat missions are conducted in many different theatres of war and environments, making the diverse training landscapes provided by our training ranges a vital component to preparing our military personnel.

Increasing demands for military training and testing, however, require substantial air, land, and water resources. To maintain the readiness of our military we must preserve and manage these critical training and test range resources. More and more, the growth of communities around DoD installations and ranges strains the Department's ability to conduct realistic testing and training essential in preparing forces for combat.

IMPACT OF ENCROACHMENT AND ENVIRONMENTAL PRESSURES ON DOD

Growing encroachment pressures, such as development adjacent to ranges, restrictions imposed by environmental regulations, and competition for airspace and communication spectrum, are increasingly impeding DoD's ability to conduct training and testing in realistic environments. Open space around the United States continues to decrease as development keeps pace with population growth. In many cases, communities have grown around once-remote DoD installations and ranges. This growth places unforeseen restrictions on the use of natural resources for military testing and training, in addition to limiting the times and conditions under which these activities can be conducted. The Department realizes

that there are limits to its ability to expand and enhance its ranges. The Department must manage competing pressures for larger ranges with increasing limitations from factors such as encroachment and environmental limitations.

Military installations and ranges in the United States are subject to various federal environmental laws and regulations governing a wide array of environmental concerns. The Department of Defense is also required to comply with many state and local environmental statutory and regulatory requirements. Many of these laws and regulations were developed with little consideration of military training and testing, and the operation of ranges. As a result, application of the requirements under these laws can have unintended consequences that adversely affect the military's ability to conduct realistic training and testing.

DoD's Response to Encroachment and Environmental Pressures

In conjunction with the Office of the Secretary of Defense (OSD), each of the Military Services has initiated a comprehensive range planning and management process as part of the Department's Sustainable Ranges Initiative (SRI). The SRI includes policy, organization, leadership, programming, outreach, and legislative efforts that work collaboratively to foster range sustainment. New policy directives promote a long-term, sustainable approach to range management. To address range sustainability issues on a continual basis, DoD established the Sustainable Ranges Integrated Product Team. The Department is taking a proactive role in developing programs to protect facilities from the effects of nearby urbanization, and working with state governments and nongovernmental organizations to promote compatible land use. The sustainable ranges outreach effort provides stakeholders with an improved understanding of readiness needs, addresses concerns of state and local governments and surrounding communities, works with nongovernmental organizations on areas of common interest, and partners with groups outside DoD to reach common goals. In addition, where possible, DoD is working with other federal and state agencies to develop administrative and regulatory solutions to encroachment pressures.

DoD has a broad range of efforts underway to promote compatible land use around its military installations, working in cooperation with the surrounding communities and governments. DoD is expanding programs such as Joint Land Use Studies (JLUS) to promote active Service planning and coordination for land use at the local and regional levels, and developing action plans for ranges already under pressure from private development and growth. The Office of Economic Adjustment, working with the military services, is exploring ways to expand application of its JLUS program around test and training ranges. This effort will help communities plan the development around DoD ranges more effectively before urban growth encroachment begins to affect testing or training.

Compatible land use partnerships, which establish conservation buffers, have become an increasingly important tool for DoD to ensure that land outside the military installations and ranges is used in ways that are consistent with the military operations within the fence line. As residential, commercial, or other types of development near military installations increases, DoD has taken an increased interest in using this tool to protect its military bases and ranges. Partnering efforts aimed at achieving easements have accelerated since the authorization of their use by Congress.

The Department has established a suite of policies and directives that require installations to assess the environmental impacts of munitions use on ranges, including the potential off-range migration of munitions constituents, and begin any necessary remediation by 2008. These policies require multi-tiered (e.g., national, regional, and local) coordination and outreach programs that promote sustainment of ranges. A DoD directive requires that inventories of training ranges are completed, updated every five years, and maintained in a geographical information system (GIS) that is readily accessible by installation

and range decision-makers. The military departments are actively executing policy guidance to ensure our ranges are assessed and remediation, where necessary, is initiated.

The Department recently revised a directive on DoD policy for the management of natural infrastructure assets (air, land, water, and frequency spectrum) to support operational capability. This Directive establishes a policy of evaluating current and emerging environmental safety and occupational health requirements in terms of resource capability to support the mission, in addition to the existing measures of readiness, compliance, reduced injury and illness, and pollution prevention. Actions at both the headquarters and installation levels demonstrate the Department's commitment to advance environmental programs beyond compliance to the protection of natural infrastructure assets needed both now and in the future.

The Department is developing analytical models and tools aimed at quantifying encroachment, evaluating encroachment impacts at installations, and prioritizing incompatible land use issues. These measures can be used to assess the severity of encroachment on training and to prioritize mitigation efforts. In addition, as models are developed that link encroachment issues to training, scenarios can be created to anticipate constraints prior to restationing or realignment of troops.

DoD's outreach and communication efforts ensure the involvement of the communities, conservation experts, and other stakeholders to protect military missions. Continued sharing of information will present new opportunities both locally and regionally that will benefit the military, communities, land-owners, and a wide variety of stakeholders.

Finally, each military department has developed its own approach within the general framework of the SRI. Each of the Services' approaches is defined by its overall strategy, current and future requirements, data collection and management systems, assessment tools and quantification of encroachment impacts, and documentation and implementation plans. Each of the Services' approaches is marked by their ability to work with regions, states, and local communities across the country to address each party's interests.

CONCLUSION

The overall goal of developing and promoting sustainable ranges is to support military readiness—the preparation of forces to fight and win conflicts on a moment's notice anywhere in the world. Our military capability is unsurpassed in the world in part because we train more often, to higher standards, and under more realistic combat conditions than our adversaries. A sustainable range capability is key to maintaining an unsurpassed global military capability.

Over the past several years, the Department has become increasingly aware of the broad array of encroachment pressures and environmental interests that are constraining its ability to conduct testing and training. Many of the observations presented in prior years' Sustainable Range Reports remain valid today.

Today, the Department is aggressively addressing encroachment and its impacts. The issues that surround encroachment will continue for some time to come. Changes in technologies and tactics will continue to create military requirements for more training and testing space. Pressures to develop open space in areas near installations, ranges, and military flight routes will likely continue. The Department is committed to continuing to work with the Congress, states, local communities, and nongovernmental organizations to facilitate range sustainment in ways that are cost effective and compatible with the broader social interests and goals.

Being the steward of approximately 30 million acres of land in the United States, DoD is fully committed to responsible environmental management. The location of many of our training and testing ranges in ecologically sensitive areas makes it imperative that military activities are planned and executed in harmony with the environment.

The 21st century has brought with it a cultural shift within the Department of Defense in how it approaches environmental, installation and range management. Achieving long term sustainability requires actions that simultaneously improve and preserve readiness and the environment. The Department's Sustainable Ranges Initiative will allow it to preserve military readiness while protecting the environment and improving compatibility with regional, state, and local priorities.

1. INTRODUCTION

1.1. PURPOSE

In an effort to understand the extent to which encroachment impacts the training of our armed forces, the Congress, in Section 366 of the Bob Stump National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2003, required the Department of Defense (DoD) to submit annual reports (during FYs 2005–2008) on the operational condition of training and test ranges.[1] These annual Sustainable Ranges Reports are intended to provide progress updates on DoD's comprehensive plan to address operational constraints that could potentially affect training and testing missions and limit the use of, or access to, military lands, water, airspace, and communication spectrum. The Department submitted its first and second Sustainable Ranges Reports to Congress in February 2004 and July 2005, respectively. This report—DoD's third Sustainable Ranges Report—provides an update to the previous two reports.

This year's Sustainable Ranges Report differs from the previous two reports because, in addition to addressing Section 366 requirements, it also addresses requirements under Section 320 of the FY 2004 NDAA. Section 320 requires the Department to report on the impacts of civilian community encroachment on military installations and operational ranges. It also requires the Department to provide information on compliance issues resulting from several laws, including the Clean Air Act (CAA), the Resource Conservation and Recovery Act (RCRA), and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), which may affect military training and testing.

Section 366 also requires the Government Accountability Office (GAO) to provide Congress with an evaluation of DoD's annual Sustainable Ranges Reports. GAO provided its assessment of DoD's 2005 Sustainable Ranges Report in October 2005.[2]

Since this report represents an update to the previous two Sustainable Ranges Reports, this report does not address topics previously addressed in the February 2004 and July 2005 reports. Accordingly, all three annual reports form the Department's most current reporting under the combined requirements of Section 366 and Section 320.

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[1] Section 366 was enacted in the Bob Stump National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2003, Public Law 107-314. The terms "range" and "operational range" were given statutory definitions in the FY 2003 NDAA. Consequently, the terms and coverage of Section 366, from FY 2003, are not entirely consistent with the later enacted definitions. Because DoD interprets Congress' intent for Section 366 to encompass more than operational ranges (as defined in the law), and because it is our sincere objective to provide Congress with an accurate and definitive statement of our test and training requirements, this report does not apply to the statutorily defined terms of "range" or "operational range." While this report does use the term "range," it does so in the context of that term's usage in Section 366, which is clearly broader than provided for in the statutory definition in 10 U.S.C. 101(e).

[2] Government Accountability Office (GAO). Some Improvements Have Been Made in DoD's Annual Training Range Reporting but It Still Fails to Fully Address Congressional Requirements. GAO-06-29R, October 25, 2005, at http://www.gao.gov/cgi-bin/getrpt?GAO-06-29R

1.2. BACKGROUND

Training and testing ranges exist throughout the United States and overseas, and vary in size from a few acres for small arms training to over a million acres for large weapons training, munitions and weapons system testing, and off-shore testing and maneuvering of weapons systems. Ranges are critical to DoD's ability to conduct realistic live-fire training, simulation, and weapons systems testing. Live-fire training and testing activities are, and will remain, the cornerstone of military readiness. Realistic training activities increase the survivability and success of our military personnel in combat; test the maneuverability, reliability, and effectiveness of weapons systems; and provide the armed forces with the practical, hands-on experience needed to ensure success in combat.

Residential, commercial, and industrial development continues to expand around once-remote military training installations. As a result, there are ever increasing limitations and restrictions on land, water, and airspace needed for military readiness activities, as well as restrictions on the times and conditions under which these activities can be conducted. Growing encroachment pressures—such as private development adjacent to ranges, restrictions imposed by environmental regulations, competition for airspace and communication spectrum frequencies—are increasingly impeding DoD's ability to conduct training and testing in realistic environments. These pressures limit low-altitude flight training, over-the-beach operations, nighttime and all-weather training, live-fire training, maneuver training, the application of new weapon technologies, multi-service strike simulation, and various other critical military activities. In addition, as civilian development consumes open space around test and training ranges, DoD's compliance with state and federal environmental regulations also becomes more complex.

Current world events highlight the importance of our testing and training ranges. Encroachment constraints that limit the effective use of training areas and weapons systems can have serious, detrimental consequences on our armed forces' survivability and effectiveness. Encroachment must be addressed with a comprehensive plan for protecting the environment while concurrently assuring the availability of resources for Service-specific and joint training and testing.

1.2.1. Reporting to the Congress on Sustainable Ranges

To address many of the challenges described above, this year's Sustainable Ranges Report responds to the respective requirements of Section 366 and Section 320 of the FY 2003 and FY 2004 defense authorization acts (see text box and Appendix A).

FY 2003 NDAA, Section 366 (*Training Range Sustainment Plan, Global Status of Resources and Training System, and Training Range Inventory*) requires the DoD to develop

- a comprehensive plan for addressing training constraints caused by limitations on the use of military lands, marine areas, and airspace;
- a plan to modify the global status of resources and training system to better reflect the impact of such training constraints; and
- a training range inventory for each of the Military Services.

FY 2004 NDAA, Section 320 (*Report Regarding Impact of Civilian Community Encroachment and Certain Legal Requirements on Military Installations and Ranges and Plan To Address Encroachment*) requires the DoD to develop

- a study on the impacts of civilian community encroachment and investigate current and future requirements for operational buffer areas;
- an assessment of compliance issues regarding State Implementation Plans (SIPs) under section 110 of the CAA (42 U.S.C. 7410), the Solid Waste Disposal Act (including the Resource Conservation and Recovery Act) (42 U.S.C. 6901 et seq.), and CERCLA (42 U.S.C. 9601 et seq.); and
- a comprehensive plan to respond to encroachment issues affecting military installations and operational ranges.

Section 366 requires DoD to assess current and future training range requirements and project the adequacy of DoD resources to meet these requirements. Specifically, Section 366 requires annual reporting on the progress of comprehensive plans to address operational constraints on training and readiness activities caused by limitations on the use of military lands, marine areas, and airspace. Under the requirements of Section 366, the Department is also required to implement and report on the development of a training range inventory.

Section 320 requires the Department to study the effects of civilian encroachment on military facilities, as well as the impact of environmental compliance on readiness activities. Under the requirements of Section 320, the Department is required to develop a plan to respond to the issues documented in the study on civilian community encroachment. In response to the requirements under Section 320, the Department is to assess how provisions under the CAA, RCRA, and CERCLA can potentially affect readiness activities.

This report describes efforts to sustain and enhance range capabilities to ensure adequate training and testing for our armed forces. It also discusses the Department's requirements for ranges, the adequacy of current and future resources to meet training requirements, and the Military Services' plans for addressing resource gaps between requirements and resources. This report presents information on the progress and plans for range-related information systems; goals and milestones for sustainable range efforts; efforts to improve visibility of funding for range sustainability; and various overseas range sustainability considerations. In addition, this year's report contains an updated inventory of DoD ranges and range complexes (see Appendix B).[3]

[3] The term "range complex" refers to an informal grouping of ranges or range areas (e.g., separate impact areas on a large range) and associated airspace. This term reflects the Military Services' longstanding practice and use of the term to enable the grouping of ranges or range areas and associated airspace for internal management purposes. The term is used differently by each armed service (and is thus reflected in this report): Army and Marine Corps range complexes represent the range portions of the larger Army and Marine Corps installations, excluding, e.g., cantonment areas; Navy range complexes are defined as regional groupings of various land, air, and sea ranges; Air Force range complexes are defined as the airspace and land area. It is critical for readers to note that the term "range complex" has no particular relationship to the term "operational range."

1.2.2. DoD Range Management Organization

DoD's range management continues to reflect a collaborative approach between the Office of the Secretary of Defense (OSD), the Military Services, and the combatant commanders. Range operations and management require cooperation among many professional communities within DoD such as training, testing, instrumentation, communications, frequency spectrum management, airspace management, security, safety, installations, environment, acquisition, unexploded ordnance disposal, threat intelligence and systems/operational forces (OPFOR), personnel management, legal, public affairs, and community outreach. Since the Military Services are responsible for most range activities and requirements, they have established Service-specific policies and procedures to manage their ranges. These policies and procedures involve cooperation among range users, range managers, and the different professional communities. While higher-level organizations exercise their responsibilities for oversight, day-to-day range management and operations are appropriately decentralized. Though some may advocate a more centralized management approach, the Department believes that the current decentralization of range management activities more appropriately captures the operating realities and imperatives of each Service's unique training mission and range management requirements, while facilitating joint training.

1.2.2.1. Organizational Principles

The Department has organized range management efforts under two key principles to help ensure the success of range sustainment efforts.

The first principle, as enumerated in Title 10 of the United States Code (USC) and in DoD Directive (DoDD) 3200.15, *Sustainment of Ranges and Operating Areas (OPAREAs)*, ensures that the sustainable range management framework is consistent with the decentralized range management practices, roles, and responsibilities previously established by the Department. In practice, this means that OSD and DoD-wide organizations provide management oversight, develop over-arching policies, and facilitate cross-service and joint activities, while the Military Services, subject to the authority, direction, and control of OSD, develop training, testing, and range requirements; schedule and conduct training and testing; develop implementing policy and guidance; design and implement programs and information systems; and develop funding plans, programs, and budgets.

The second principle is that range sustainment activities should be managed as a long-term effort that focuses on incremental progress, rather than radically enforcing changes that could be problematic to implement or derail the continued progress of the sustainable ranges management framework. The Department has made a conscious decision to pursue continuous improvement of its range management and sustainment efforts at a measured pace. DoD and the Services are implementing carefully considered programs devoted to sustainable ranges management. In so doing, the Department is making tangible progress in many areas, including enhanced cooperation among the Services, the identification of training and testing range requirements, the development of range complex management plans, range information management systems and inventories, encroachment assessments, outreach to a wide variety of stakeholders, and the establishment of new buffer areas and compatible land use zones.

1.2.2.2. Organizational Roles and Responsibilities

Under Title 10, the Military Services are responsible for training and equipping forces, and the construction, repair, and maintenance of installations, including ranges. DoDD 3200.15 establishes policy and assigns Title 10 responsibilities for the sustainment of test and training ranges and operating areas. The Directive assigns the majority of responsibilities for range sustainment to the Under Secretary of Defense for Personnel and Readiness (USD(P&R)); the Under Secretary of Defense for Acquisition, Technology, and Logistics; Director of Operational Test and Evaluation; the Military Services; and

Defense Agencies. DoDD 3200.15 also assigns responsibilities to the Chairman of the Joint Chiefs of Staff, the Under Secretary of Defense for Policy, the Assistant Secretary of Defense for Public Affairs and the Assistant Secretary of Defense for Legislative Affairs.

The Department has taken additional steps to ensure sound management, implementation, and coordination of sustainable range responsibilities. The Senior Readiness Oversight Council (SROC) reviews range sustainment policies and issues. Based on direction from the SROC in November 2000, DoD created an Overarching Integrated Product Team (OIPT), which reports to the SROC, to act as the DoD's coordination forum for developing strategies to preserve the military's sustainable range agenda. A Working Integrated Product Team (WIPT), co-chaired by the Office of the Deputy Under Secretary of Defense for Readiness, Office of the Deputy Under Secretary of Defense for Installations and Environment, and Office of the Director of Operational Test and Evaluation, meets regularly and reports to the OIPT. Both the OIPT and the WIPT work collaboratively with other DoD organizations on issues related to sustainable ranges.

1.3. SUSTAINABLE RANGES INITIATIVE

The Department's Sustainable Ranges Initiative includes policy, organization, leadership, programming, outreach, legislative clarification, and related efforts that work collaboratively to foster range sustainment. To address range sustainability issues on a continual basis, DoD established the previously mentioned Sustainable Ranges WIPT. New policy directives have been promulgated that promote a long-term, sustainable approach to range management. Additionally, the Department continues to take a proactive role in developing programs to protect facilities from the effects of nearby urbanization, and work with state, local, and tribal governments and nongovernmental organizations to promote compatible land use. The sustainable ranges outreach effort provides stakeholders with an improved understanding of readiness needs, addresses concerns of state, local, and tribal governments and surrounding communities, works with nongovernmental organizations on areas of common interest, and partners with groups outside DoD to reach common goals. In addition, where possible, DoD is working with other Federal and state agencies to develop administrative and regulatory solutions to encroachment pressures.

Range and Operating Area (OPAREA): Specifically bounded geographic areas that may encompass a landmass, body of water (above or below the surface), and/or airspace used to conduct operations, training, research and development, and test and evaluation of military hardware, personnel, tactics, munitions, explosives, or electronic warfare systems. Those areas shall be under strict control of the armed forces or may be shared by multiple agencies.

Range Encroachment: External influences threatening or constraining range and OPAREA activities required for force readiness and weapons research, development, test, and evaluation (RDT&E). These external influences include, but are not limited to, issues such as endangered species and critical habitat; unexploded ordnance and munitions; electronic frequency spectrum interference; maritime and airspace restrictions; air quality; airborne noise; and urban growth.

Sustainable Ranges: Ranges that are managed and operated to support their long-term viability and utility to meet the national defense mission.

Source: DoD Directive 3200.15 (Jan 2003)

One of the promising efforts underway to help guide the myriad of activities that make up the sustainable ranges initiative is the development of a sustainable ranges strategic plan. Although, in the early stages of development, it is hoped that this plan will communicate the focus of activities and serve as the basis for periodically reviewing progress towards a set of goals and objectives.

Test and training ranges are located throughout the United States and overseas, providing diverse topography and climatic conditions to satisfy specific training and testing needs. They consist of land, airspace, sea surface, and undersea areas. These ranges include all types of terrain in which our forces may have to fight—deserts, mountains, coastal areas, urban areas, swamps, forests, plains, and water. Our forces train and test at hundreds of training ranges around the world that are equipped to support a

wide variety of offensive and defensive training missions including land-based maneuver; urban operations; naval operations on the sea surface, undersea, amphibious operations; air-to-air, air-to-ground, surface-to-air, and space operations; and electronic warfare, as well as live fire with the full spectrum of weapon systems–from small arms to guided missiles.

1.3.1. Range Sustainability and Operational Readiness

The United States military's experience around the globe demonstrates that our armed forces are conducting more and more complex wartime operations that require increased joint training and interoperability among the Military Services, combatant commands, and other DoD and non-DoD organizations. Combat missions are conducted in many different theaters of war and environments, making the diverse training landscapes provided by our training ranges a vital component to preparing our military personnel.

Ranges represent important national assets for the development and sustainment of our military forces. The Department requires ranges for a variety of training scenarios including airspace for air-to-air, air-to-ground, drop zone, and electronic combat training; live-fire ranges for artillery, armor, small arms, and military munitions training; ground maneuver ranges to conduct realistic force-on-force and live-fire training at various unit levels; and sea ranges to conduct surface and subsurface training maneuvers. However, we have increasingly lost and continue to lose range capabilities due to encroachment that, if left unchecked, could limit training and testing to an even greater extent in the future.

Compounding the operational readiness concerns is the fact that military hardware continues to advance. Changes in weapons systems, communication systems, and force structure will enable future operations over larger areas, which in turn creates requirements for larger test and training areas to reflect realistic combat conditions. Yet the Department realizes that there are limits to its ability to expand substantially the size of existing ranges. Thus, the Department must manage its military readiness activities in the face of competing pressures for larger ranges on the one hand (from a variety of technical and tactical advances), and increasing limitations on its existing ranges on the other (from development, environmental regulation, and other factors).

1.3.2. DoD Efforts to Address Encroachment Issues

The SROC convened in June 2000 to assess challenges to military readiness resulting from civilian encroachment on DoD training and testing ranges. Each Service presented its encroachment concerns and discussed the impacts of encroachment on force readiness. The SROC concluded that encroachment presents an increasing limitation on our capability to conduct realistic and effective live training and testing, and that outreach programs must communicate the importance of training ranges to the readiness of forces. The SROC agreed that a comprehensive and coordinated approach to the problem of encroachment is needed and directed that a strategy be developed. In November 2000, the SROC approved key elements of a long-term strategy for addressing encroachment of DoD training and testing ranges. Initiatives presented to the SROC included the establishment of a Sustainable Ranges Working Group (SRWG), with Service and OSD membership, and the development of draft action plans addressing encroachment issues with potentially significant readiness implications.

The SROC acknowledged that DoD must emphasize cooperative land use planning around test and training ranges, expanding programs such as the DoD Joint Land Use Studies (JLUS) to promote the community's planning and coordination for land use at the local and regional levels, and developing action plans for ranges already under pressure from rapid urban growth. The Office of Economic Adjustment, working with other OSD activities and the Services, is exploring ways to expand application of its JLUS program around test and training ranges. This effort will help communities plan more

effectively the development around DoD ranges before urban growth encroachment begins to impact testing and training. The Army supports similar partnerships with federal, state, local, and private resource groups to promote programs, such as Partners in Flight, the North American Waterfowl Management Plan, Wetlands Protection and Enhancement, and Watchable Wildlife.

DoD has implemented, and continues to refine, a comprehensive range sustainment program. The overarching policy for this program is DoD Directive 3200.15, *Sustainment of Ranges and Operating Areas*, signed in January 2003, which requires that the DoD components identify range and OPAREA encroachment concerns, environmental considerations, financial obligations, and safety factors that may influence current or future range activities and uses. It requires multi-tiered (e.g., national, regional and local) coordination and outreach programs that promote sustainment of ranges. The directive requires that inventories of training ranges are completed, updated every five years, and maintained in a geographical information system that is readily accessible by installation and range decision-makers.

The Department has also established policy and guidance that require installations to assess the environmental impacts of munitions use on ranges, including the potential off-range migration of munitions constituents, and begin any necessary remediation by 2008. In FY 2003, the Navy began active Range Condition Assessments (RCAs) at several ranges. The Air Force is conducting investigations, initially focusing on test and training ranges, where the majority of military munitions uses occur. The Army has completed Regional Range Assessments on eight installations that included studies of groundwater, surface water, and soils, and will begin conducting range assessments of all installations beginning in FY 2006. In FY 2004, the Marine Corps began to develop a process to assess their operational ranges and are currently conducting assessments at several ranges.

Maritime range operations are impacted by environmental restrictions on the use of sonar and the need to maintain marine sanctuaries and protected coral reefs. The Navy is the executive agent for the joint-service Maritime Sustainability Working Group. This working group will lead a cooperative effort among involved Services to establish consistent impact standards for marine mammals, improve consideration of environmental impacts in weapon systems design, and facilitate additional marine species data collection efforts.

1.4. TRAINING TRANSFORMATION INITIATIVE

> *"As we prepare for the future, we must think differently and develop the kinds of forces and capabilities that can adapt quickly to new challenges and to unexpected circumstances. We must transform not only the capabilities at our disposal, but also the way we think, the way we train, the way we exercise and the way we fight."*
>
> *Secretary Donald Rumsfeld, Transformation Planning Guidance, April 2003.*

The Department's SRI proceeds while it undergoes a parallel effort – Training Transformation – to ensure that training meets the emerging warfighting requirements of the 21st Century. The Training Transformation Initiative is the result of a dramatic shift in America's strategic environment that has had a major impact on our military forces, thereby demanding an equally dramatic transformation in how we prepare our armed forces for combat and noncombat operations. Emphasis has shifted from deliberate to adaptive war planning and from permanent organizations and large hierarchies to smaller, highly-distributed joint and combined forces and standing joint task forces that integrate Service capabilities at the lowest levels. The new strategic environment requires increased coordination among all our Services, enabling a broader, more inclusive definition of "jointness." To transform the total force and meet combatant commanders' needs in this new environment, we need to transform the way we conduct training. Training must now prepare the force to learn, improvise, and adapt to constantly changing threats in addition to executing doctrine to standards. To achieve this challenge, the Department issued a *Training Transformation Implementation*

Plan[4] that provides a systematic and ongoing process for training transformation. The Training Transformation Initiative is designed to provide dynamic, capabilities-based training for DoD in support of national security requirements across active and reserve components of the Services; federal agencies; international coalitions; international organizations; and state, local, and nongovernmental organizations.

The *Training Transformation Strategic Plan* and the corresponding annual implementation plans include specific goals, planned actions, performance metrics, and milestones for transforming DOD's training.[5] As part of DoD's approach to managing training transformation, OSD has taken action to establish accountability and authority early in the program, and performance metrics are being continuously developed and revised in an attempt to better measure training transformation's impact on joint force readiness and guide future investments in training transformation.

1.4.1. Organizational Principles

The Training Transformation Initiative is organized around the following three capabilities, which are designed to prepare military individuals, units, and staffs for the new strategic environment and to provide enabling tools and processes to carry out missions:

Joint Knowledge Development and Distribution Capability will prepare future decision makers and leaders to know, understand, and employ joint operational art, understand the common operational picture, and respond innovatively to adversaries. It will develop and distribute joint knowledge via a dynamic, global-knowledge network that provides immediate access to joint education and training resources.

Joint National Training Capability will prepare forces by providing units and command staffs with an integrated live, virtual, and constructive training environment that includes appropriate joint context, and allows global training and mission rehearsal in support of specific operational needs.

Joint Assessment and Enabling Capability will assist leaders in assessing the value of transformational initiatives on individuals, organizations, and processes by assessing training value, training environment integration, and the overall training transformation vector to meet validated combatant commander readiness requirements. It will also provide essential support tools and processes to enable and enhance the Joint Knowledge Development and Distribution Capability and the Joint National Training Capability.

1.5. REPORT ORGANIZATION

This chapter provided a brief introduction to range sustainment. The remainder of this report provides greater detail on the topics briefly covered in the Introduction. Chapter 2 addresses challenges facing DoD's ranges. Chapter 3 analyzes specific compliance issues related to CAA, RCRA, and CERCLA that could potentially affect DoD's training and testing activities. Chapter 4 discusses DoD's compatible land use programs and on-going range management and sustainability efforts. Chapter 5 addresses goals and milestones established for DoD's sustainable ranges program; funding for range sustainability initiatives; information technology efforts to improve range management and sustainability; and overseas training capabilities; and. Chapters 6, 7, 8, and 9 contain reports from each Military Service that address Service-specific sustainable ranges issues and reporting requirements under Section 366 and Section 320. Chapter 10 provides the Department's overall observations and recommendations for the future.

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4 Department of Defense, Office of the Under Secretary for Personnel and Readiness, Training Transformation Implementation Plan, June 10, 2003, and June 9, 2004.

5 Department of Defense, Office of the Under Secretary for Personnel and Readiness, Strategic Plan for Transforming DOD Training, Mar. 1, 2002.

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2. CHALLENGES FOR SUSTAINABLE RANGES

The need for military training and testing has also increased to meet the challenges of modern combat. Military ranges and range complexes are imperative to the success and survival of our Service members. Their continued accessibility and usability is threatened by an increase in development outside their fence lines.

Open space around the United States continues to decrease as development keeps pace with sustained population growth. In many cases, communities have grown around once remote DoD ranges. The growth of civilian communities and populations around military installations results in heightened competition for air, land, water, and frequency spectrum. Urban growth places unforeseen restrictions on the use of natural resources for military testing and training, in addition to limiting the times and conditions under which these activities can be conducted. Through the SRI, the Department of Defense endeavors to execute its present missions without compromising either its ability to accomplish future missions or the ability of its neighboring communities to realize their aspirations.

2.1. ENCROACHMENT CHALLENGES AND THEIR EFFECTS

The overall goal of developing and promoting sustainable ranges is military readiness: Readiness - The ability of US military forces to fight and meet the demands of the national military strategy.[6]

We are the best military in the world because we have the best military personnel, due in part because we train more often, to higher standards, and under realistic combat conditions, including and emphasizing live-fire training and extensive testing of our weapons systems. The DoD mission is heavily dependent on the availability of adequate training "space." This space is comprised of natural resources such as land, airspace, frequency spectrum, and sea. The SRI's overall goal is to "manage and operate ranges and OPAREAs to support their long-term viability and utility to meet the national defense mission."[7] This initiative includes policy, organization, leadership, programming, outreach, legislative clarification, and a suite of internal changes to foster range sustainment. The Department is focused on a long-term, sustainable approach to range management that defines current and future goals, acknowledges the issues that challenge those goals, and implements a plan of action for resolution and success. The encroachment issues discussed in prior Sustainable Range Reports remain valid today, and include the following 11 major issues:

- **Endangered Species and Critical Habitat.** Military ranges often become the only large undeveloped areas available to support threatened and endangered species.
- **Unexploded Ordnance and Munitions (UXO).** Application of environmental laws and regulations to unexploded ordnance and munitions in ways unanticipated or unintended when first enacted can reduce range access, availability, capacity, and capability.
- **Frequency Encroachment.** Commercial spectrum uses are increasingly coming into conflict with military requirements.
- **Maritime Sustainability.** Training and testing at sea is complicated by the demands of regulatory compliance, which can adversely affect the ability of naval forces to sustain operations, training exercises, and testing in the maritime requirement.

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6 DoD Dictionary , JP 1-02

7 DoD Directive 3200.15, dated 10 January 2003, section 4.1

- **Air- and Land-space Restrictions.** Special use airspace is vital to military training and testing, but is in conflict with the growing demands of the deregulated commercial airlines and general aviation that compete with military aviation activities for the same airspace.
- **Air Quality.** Readiness limitations can arise due to application of the Clean Air Act to emissions generated on military installation and ranges.
- **Airborne Noise.** Noise associated with military readiness activities is an issue at installations, under low-level flying routes, and at training and testing ranges.
- **Urban Growth.** Urban growth in close proximity to military installations can lead to operational challenges, and may constitute health and safety threats to the community. Urban growth is the root cause of many other encroachment concerns.
- **Cultural Resources.** Military installations and ranges must accommodate cultural sites by protecting or mitigating interference with them in accordance with federal and state requirements.
- **Clean Water.** Water quality remains an important issue for DoD and all stakeholders near testing and training ranges.
- **Wetlands.** Range management and operations must consider the impacts of wetlands on current training and testing and must develop sustainment strategies to accommodate future training and testing requirements.

These encroachment issues will degrade testing and training in numerous ways. Encroachment brings concerns with noise, light, and safety that directly effect many training methods and scheduled events. For instance, an increase in avoidance areas changes flight patterns, altitudes, speeds and even the time of day or night training exercises can occur on land, and in air and sea space. Roads with street lights, neighborhoods with lights, and schools or businesses with street and parking lot lighting can fully diminish a military unit's ability to train with Night Vision Devices safely or effectively. Encroachment can also affect the number of hours a particular flight path or training corridor is available for military use, reducing training effectiveness and regularity. When range access, approach, and usage is reduced or altered it results in segmented training exercises that degrade realism and training value, as they cannot mirror a sequence of events that would occur in combat.

Encroachment also presents long term challenges, with comprehensive impacts to military missions: Critical training tasks and exercises required prior to deployment cannot be conducted at certain installations due to the impacts of encroachment on training. Fort Drum, the National Training Center, and Fort Stewart, for example, are discouraged from using graphite smoke in training due to local air quality restrictions. Smoke enhances realism, and provides a safe environment in which soldiers face the physical and mental challenges of actual combat. Encroachment from community development, endangered species, environmental regulations and other factors often restricts units and personnel from conducting required live fire training, which reduces proficiency and affects combat readiness. Additionally, encroachment can increase the cost of training and testing. Costs increase when personnel and units must travel to less restrictive areas. Costs also increase when test and training activities must be aborted and rescheduled due to encroachment factors. Encroachment is one of the greatest and enduring challenges the Department of Defense faces, and the Sustainable Ranges Program is designed to help cope with its effects.

2.2. THE WAY FORWARD

Long-term sustainability of ranges is essential to protecting and sustaining military training and testing. The 21st century has brought with it a cultural shift within the Department of Defense in how it

approaches environmental impacts and management. The Department's SRI will ensure DoD can preserve military readiness while protecting the environment and improving compatibility with local communities. Changing operational environments will dictate changes in training and testing that, in turn, will increase requirements for land, airspace, sea space, and frequency spectrum. At the same time, the pressures of residential, commercial, and industrial development will continue to impose limits on the use of our ranges. The Department is committed to continuing to work with the Congress, states, tribal Governments, local communities, and nongovernmental organizations to take actions that facilitate compatible land use to reduce the impact of encroachment on our ranges.

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3. COMPLIANCE ISSUES RELATED TO CAA, RCRA, AND CERCLA

3.1. APPLICABILITY OF ENVIRONMENTAL REGULATIONS ON TRAINING, TESTING, AND READINESS ACTIVITIES AT OPERATIONAL RANGES

The Military Services face various encroachment pressures resulting from the civilian development of areas adjacent to military installations. Encroachment pressures generally fall within three broad categories: (1) competition for resources (e.g., access to land, water, air, and key frequencies in the communications spectrum); (2) civilian community objections to military training exercises (e.g., complaints about noise); and (3) heightened shift in focus on environmental enforcement and compliance issues.[8] This chapter discusses the third category of encroachment pressures—the environmental regulatory aspects of encroachment that DoD is currently experiencing at our ranges.

Operational ranges and installations in the United States are subject to applicable provisions of various federal environmental laws and regulations governing a wide array of environmental concerns. These laws include the Safe Drinking Water Act (SDWA), Clean Water Act (CWA), Clean Air Act (CAA), the Solid Waste Disposal Act, commonly known as the Resource Conservation and Recovery Act (RCRA), and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). DoD is also required to comply with applicable state and local environmental statutory and regulatory requirements on installations and operational ranges. Many of these laws and regulations were developed with little consideration of military training, testing, and readiness activities and the requirements associated with the management, operation, and use of operational ranges. As a result, application of the requirements under these laws can have unintended consequences that adversely affect the military's ability to conduct realistic testing and training.

In this chapter, we address DoD's compliance requirements under the CAA, RCRA, and CERCLA and discuss their impacts on DoD's current readiness needs. Specifically, we focus on three explicit provisions under the CAA, RCRA, and CERCLA that pose challenges to the Department's training and testing activities on operational ranges, in addition to affecting decisions regarding the basing of forces to maximize military efficiency and effectiveness:

- General conformity provision under CAA,
- Definition and determination of "solid waste" under RCRA, and
- Definition and determination of a "release" under CERCLA.

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8 Department of Defense installations are required to comply with applicable federal and state environmental laws and regulations. Compliance with these requirements is not considered an encroachment on military training and readiness to the extent that the compliance requirements apply to the routine conduct of installations' operating support functions, such as administrative offices, military exchanges, commissaries, water treatment facilities, storage, schools, housing, motor pools, industrial activities, or the construction or demolition of such facilities. Encroachment may become a problem when requirements are applied to uniquely military activities, i.e., what DoD does that is unlike any other governmental or private activity, such as the use of munitions on operational military test and training ranges.

3.1.1. Clean Air Act (CAA)

The CAA is the primary federal air quality management statute that authorizes regulations to improve the nation's air quality. Under the CAA, the United States Environmental Protection Agency (EPA) determines the health-based levels of pollutants that are allowed in the air throughout the country. The primary objective of the CAA is to establish federal standards for various pollutants emitted from both stationary and mobile sources and to provide for the regulation of emissions via State Implementation Plans (SIPs).

State Implementation Plan – a state air quality plan that contains enforceable provisions to attain or maintain compliance with NAAQS and other Federal emissions limitations.

Attainment area – an area designated or re-designated by EPA as having attained the relevant NAAQS for a given criteria pollutant.

Non-attainment area – an area that the EPA currently designates as not meeting one or more of the NAAQS for criteria pollutants.

Maintenance area – an area, which remains subject to a maintenance plan, that the EPA previously designated as a non-attainment area and subsequently re-designated as an attainment area (for a probationary period) due to meeting the NAAQS.

Unclassified area – an area that cannot be classified on the basis of available information as meeting NAAQS for one or more pollutants.

EPA uses six criteria pollutants (i.e., sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, lead, and particulate matter) as indicators of air quality. For each of these criteria pollutants, EPA has established a maximum air concentration level above which adverse human health effects may occur. These threshold air concentration levels are referred to as the primary National Ambient Air Quality Standards (NAAQS). *Primary* NAAQS are set on the basis of protecting public health. *Secondary* NAAQS are intended to protect public welfare (i.e., visibility, aesthetics, property, and crop protection). EPA uses the primary NAAQS to determine whether an air quality region is within compliance with the CAA and to subsequently classify the region as being an attainment, non-attainment, maintenance, or unclassified area (definitions provided in the text box).

Under the "general conformity" provision of Section 176(c)(1) of the CAA, federal agencies are precluded from engaging in any federal action in a designated non-attainment or maintenance area unless it conforms to the applicable SIPs for achieving and maintaining the NAAQS for criteria pollutants. The term federal action has a very broad meaning and includes anything that a federal agency engages in, supports, provides financial assistance for, licenses, permits, or approves. For there to be conformity with a SIP, a federal action must not contribute to new violations of the standards for ambient air quality, increase the frequency or severity of existing violations, or delay timely attainment of standards in the area of concern (i.e., a state or a smaller air quality region).[9]

Currently, when new actions, such as replacing weapon systems, are undertaken in non-attainment or maintenance areas, the CAA conformity requirement prohibits initiating replacement without first demonstrating that the action conforms to the SIP requirements. Conformance may be achieved in one of several ways: (1) by fully offsetting emissions from the proposed action by reductions in emissions elsewhere on the installation; (2) by obtaining emissions reduction credits; or (3) by accommodation of the increased emissions in the SIP. Where emission reductions from elsewhere on the installation are not sufficient to offset emissions from the new action, or where the emissions credit market does not exist or is extremely limited and competitive (e.g., California), the increased emissions must be accommodated by the SIP. Emissions can be accommodated by the SIP in one of three ways: (1) the emissions were already expressly budgeted for or fit within a previously approved growth allowance; (2) the air regulatory agency certifies that the emissions from the action, though not expressly budgeted for, fit within the existing budget; or (3) the state's Governor agrees to revise the SIP to include the emissions in the budget.

[9] CAA Section 176(c)(1)(b) (i), (ii), and (iii).

If the existing SIP cannot accommodate these emissions, the lengthy process to accommodate them could significantly delay or disrupt the Department's readiness activities. The Department could potentially face this situation whenever we seek to replace or realign forces and equipment to improve military efficiency and effectiveness, to modernize our current capabilities, or to meet the requirements of legally-mandated realignments and closures within nonattainment or maintenance areas.

While the general conformity requirement has not yet prevented military readiness actions, it has the potential to threaten the deployment of new weapons systems, for example:

- The planned realignment of F-14s from Naval Air Station (NAS) Miramar to NAS Lemoore in California was possible due to offsets created by the prior closing of neighboring Castle Air Force Base, which is located in the same airshed.
- The offsets created by the prior closing of Castle Air Force Base also enabled the homebasing of new F/A-18 E/Fs at NAS Lemoore.
- The realignment of F/A-18 C/Ds from Cecil Field, Florida to NAS Oceana, Virginia was possible only because Virginia was in the midst of revising its SIP and accommodated the new emissions. The Hampton Roads area, in which NAS Oceana is located, will likely impose more stringent limits on ozone in the future, thus reducing the state's flexibility.

Under existing regulations, a full conformity determination on all aspects of a proposed or new action must be completed before any portion of that action can begin, even if emissions are not projected to equal or exceed the *de minimis* level for several years. In addition, any SIP provision necessary to determine conformity must be approved by the EPA before any emissions from the activity can occur. To comply with these requirements, additional time may be needed to: (1) contract with third parties in the air quality region to create any necessary emission offsets; (2) develop SIP–based measures to demonstrate conformity, such as approving inter-pollutant trading or to obtain the state's Governor's written commitment to revise the SIP to accommodate the emissions; and/or (3) obtain a final promulgated rule from EPA approving the new or revised SIP containing measures upon which the conformity determination is based.

3.1.2. Resource Conservation and Recovery Act (RCRA)

RCRA gives EPA or authorized states the authority to control waste from its point of generation through disposal ("cradle-to-grave"). Specifically, RCRA defines solid waste; identifies which solid wastes should be also classified as hazardous wastes; sets standards for generators and transporters of hazardous wastes; sets standards for treatment, storage, and disposal facilities; and authorizes states to manage their own RCRA programs as long as the state requirements are equivalent to or more stringent than the federal requirements.

In 1992, RCRA was amended by the Federal Facilities Compliance Act (FFCA), which explicitly waived federal sovereign immunity to ensure that federal agencies are subject to the same requirements regarding the control and abatement of solid and hazardous waste as private entities; this includes subjecting federal activities to fines and penalties for non-compliance. In addition to

Solid waste – Under RCRA, solid waste is defined as any garbage, refuse, or sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility. The RCRA definition of solid waste also includes any other discarded material in the form of a solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities.

Hazardous waste – Hazardous waste, a subset of solid waste, is regulated under RCRA Subtitle C. Hazardous wastes fall into two broad categories: characteristic wastes or listed wastes. A characteristic waste is considered hazardous if it exhibits a characteristic (i.e., toxicity, corrosivity, ignitability, and reactivity) of a hazardous waste. A listed waste is found on a list of over 500 specific hazardous wastes that was developed by EPA, which includes discarded commercial chemical products and hazardous wastes from specific industries/sources and non-specific sources.

expanding the waiver of sovereign immunity, the FFCA directed EPA, in consultation with DoD and the states, to propose and promulgate regulations identifying when military munitions become hazardous wastes subject to regulation under RCRA.

In response to this mandate, DoD worked extensively with EPA to develop the Military Munitions Rule (MR) (62 FR 6621, February 12, 1997). The MR went into effect at the federal level on August 12, 1997. Many states have adopted the MR with minor or no changes, while other states have significantly changed the rule. Moreover, some states have not adopted the MR and continue to operate under regulations that were in effect prior to February 12, 1997, i.e., in states that have not adopted the MR, training and testing operations at ranges are governed by state regulations that were in place prior to the MR as long as these state regulations are at least as stringent as the federal MR. Typically, these state regulations make no reference to military munitions and contain no exemptions for active range clearance or conditional exemptions, or exclusion clauses for generator and transporter standards for explosives or munitions emergency responses.

The MR defines when military munitions become solid wastes potentially subject to RCRA hazardous waste regulations and establishes procedures and management standards for waste military munitions. The MR establishes the regulatory definition of solid waste as it applies to military munitions within three specific categories: (1) unused military munitions, (2) munitions used for their intended purpose, and (3) other used or fired munitions:

> **Unused military munitions.** The MR states that unused military munitions become solid waste when any of the following occurs: "(1) The munition is abandoned by being disposed of, burned, detonated (except during intended use …), incinerated, or treated prior to disposal; or (2) The munition is removed from storage in a military magazine or other storage area for the purpose of being disposed of, burned, or incinerated, or treated prior to disposal, or (3) The munition is deteriorated or damaged … to the point that it cannot be put into serviceable condition, and cannot reasonably be recycled or used for other purposes; or (4) The munition has been declared a solid waste by an authorized military official."[10] Unused munitions that are repaired, reused, recycled, reclaimed, disassembled, reconfigured, or otherwise subject to materials recovery activities are not considered to be solid waste.
>
> **Munitions used for their intended purpose.** According to the MR, military munitions are not considered to be solid waste when (1) they are used for their intended purpose, which includes: (i) training military personnel or explosives and munitions emergency response specialists (including training in the proper destruction of unused propellant or other munitions); or (ii) research, development, testing, and evaluation of military munitions, weapons, or weapon systems; or (iii) recovery, collection, and on-range destruction of unexploded ordnance and munitions fragments on operational ranges. However, the "use for intended purpose" clause does not include the on-range disposal or burial of unexploded ordnance and contaminants when the burial is not a result of product use.[11]
>
> **Other used or fired munitions.** Used or fired munitions are classified as solid waste and potentially subject to RCRA regulations: "(1) When transported off range or from the site of use, where the site of use is not a range, for the purposes of storage, reclamation, treatment, disposal, or treatment prior to disposal; or (2) If recovered, collected, and then disposed of by burial, or

[10] 40 CFR §266.202(b).

[11] 40 CFR §266.202(a)(1).

landfilling either on or off a range; [or (3)] if the munition lands off-range and is not promptly rendered safe or retrieved."[12]

Existing ambiguity regarding the applicability of the RCRA statutory definition of "solid waste" to military munitions located on operational ranges could threaten training and readiness. Although the MR provides that the use of military munitions for their intended purpose on operational ranges is not itself a waste management activity subject to RCRA regulation, it did not clarify that munitions remaining on operational ranges after their initial use/release are not classified as solid wastes. At least one commenter on the Military Munitions Proposed Rule stated that munitions become a solid waste upon impacting the ground because they have no further purpose. Such an interpretation would clearly jeopardize training and readiness by potentially triggering the corrective and remedial action requirements of RCRA at ranges while they are still operational. This ambiguity has previously generated litigation by private plaintiffs seeking to curtail or terminate munitions-related training at operational ranges. Future litigation of this nature, if successful, could force remediation at operational ranges, effectively precluding live-fire training. More importantly, if successful, such litigation could set a precedent fundamentally affecting military training and testing at virtually every test and training range in the United States.

3.1.3. Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)

CERCLA, commonly known as Superfund, was enacted by Congress in December 1980. This law created a tax on the chemical and petroleum industries and provided broad federal authority to respond directly to *releases* or *threatened releases* of hazardous substances, pollutants, or contaminants, and special studies wastes[13] that may endanger public health or the environment. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites; provided for liability of entities responsible for releases of hazardous waste at these sites; and established a trust fund to provide for cleanup when no responsible party could be identified. The law authorizes two kinds of response actions: (1) short-term removals, where actions may be taken to address releases or threatened releases requiring prompt response and (2) long-term remedial response actions, that permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening. Section 120 of CERCLA states that federal agencies must comply with substantive and procedural requirements to the same extent as any nongovernmental entities and are subject to CERCLA Section 107 liability. In addition to making federal facilities subject to the same mandates that apply to nongovernmental entities, Section 120 imposes additional requirements on federal facilities. CERCLA Section 310 also contains a waiver of sovereign immunity, allowing individuals and states to bring citizens suits if a federal agency is not adhering to a CERCLA mandate.

CERCLA governs the cleanup of releases or threatened releases of hazardous substances, pollutants, or contaminants. Therefore, CERCLA's authority is triggered by either an actual release or a substantial threat of a release of a hazardous substance, pollutant, or contaminant into the environment. This is a two-pronged test: (1) the event must meet the definition of a "release" or a "substantial threat of a release;" and (2) the material must meet either the definition of a "hazardous substance" or a "pollutant" or

> **CERCLA releases** – emissions that occur whenever there is escaping, leaching, dumping, or disposing into the environment, including abandonment or discarding of barrels, containers, and other closed receptacles containing any hazardous substance, pollutant, or contaminant.
>
> *40 CFR §302.3 and CERCLA §101(22)*

[12] 40 CFR §266.202(c) and (d).

[13] "Special studies wastes" are discussed in CERCLA § 105(g) (42 U.S.C. § 9605(g)). Since the special studies waste provisions of CERCLA are not applicable to operational ranges or military munitions, the remaining discussion in this chapter addresses only CERCLA hazardous substances and CERCLA pollutants or contaminants.

"contaminant." Under CERCLA, the terms "release" and "substantial threat of a release" are defined broadly to include almost any situation where a hazardous substance escapes into the environment. According to Section 101 of CERCLA, a release occurs whenever there is "any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing any hazardous substance or pollutant or contaminant)…"[14] Under CERCLA Section 101(14), the term "hazardous substance" is broadly defined to include substances regulated under various other federal environmental laws, including the RCRA, CAA, CWA, and the Toxic Substances Control Act (TSCA). Under CERCLA, the definition of pollutant or contaminant is equally broad, including "…any element, substance, compound, or mixture, including disease-causing agents, which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformations, in such organisms or their offspring."[15]

Similar to the analysis provided above regarding RCRA, ambiguities in CERCLA could jeopardize activities at operational ranges, potentially threatening training and readiness requirements. The current definition of "release" under CERCLA does not clearly exclude the deposition or presence of military munitions on operational ranges due to normal and expected use. Despite the Department's longstanding policy requiring the Military Services and components to take appropriate and immediate action when munitions constituents migrate off-site from operational ranges, DoD is concerned that CERCLA can be misinterpreted to classify the use of military munitions on operational ranges as actions that result in "releases" and subsequently, trigger CERCLA authorities. Furthermore, CERCLA relies on the definitions of solid waste and hazardous waste as contained within other federal regulations, including the current RCRA statute. The combined ambiguity in the current RCRA and CERCLA statutes regarding the definitions of a "release," "solid waste," and "hazardous waste" could give rise to requirements to conduct CERCLA responses (e.g., removal actions, remedial actions, or a combination of removal and remedial actions) on operational ranges, even when there is no indication that the use of military munitions is contributing to or causing the migration of munitions constituents from the operational range to an off-range area. The Department is concerned that application of CERCLA within the boundaries of operational ranges will lead to a degradation in force readiness by restricting the Department's ability to conduct realistic military training and weapons testing. The current situation leaves DoD and regulatory agencies vulnerable to citizen suits that could threaten our ability to use operational ranges for critical readiness testing and training.

3.2. CONCLUDING OBSERVATIONS

Over the past several years, the Department has become increasingly aware of the broad array of encroachment pressures at our operational ranges and installations that are increasingly constraining our ability to conduct testing and training, modernization, and force realignments. These activities are essential to maintaining the technological superiority, efficiency, and combat readiness of our military forces, especially given current world events. Encroachment resulting from civilian development and private litigation that seeks to interpret environmental laws in ways unintended by Congress escalates the pressures on our armed forces and could adversely impact our training and readiness. Future testing,

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[14] U.S. Environmental Protection Agency (EPA). Introduction to CERCLA and EPCRA Release Reporting Requirements (CERCLA §103 and EPCRA §304), EPA540-R-98-022, June 1998, at http://www.epa.gov/superfund/contacts/sfhotlne/cerep.pdf

[15] U.S. Environmental Protection Agency (EPA). CERCLA Hazardous Substances at http://www.epa.gov/superfund/programs/er/hazsubs/cercsubs.htm

training, and force structure requirements will further exacerbate these issues as the speed and range of our weaponry improve; training scenarios expand to address real-world situations; and our forces realign to modernize and increase efficiency.

The Department will continue to face encroachment challenges on its installations and operational ranges that can limit the Services' ability to conduct realistic training and testing, and to modernize and transform their forces. The implications and requirements for land, sea, and airspace in response to the Integrated Global Presence and Basing Strategy (IGPBS) and BRAC add to DoD's encroachment challenge. A DoD moratorium on land acquisition is in effect, so the Services must focus on sound environmental management of their current training and testing areas. Access to training and testing ranges must be ensured in conjunction with addressing environmental concerns and minimizing encroachment-based restrictions on readiness. The Department of Defense's primary mission is maintaining the current and future readiness of our nation's armed forces and its live-fire ranges and training lands are national assets that allow the Services to meet their Title 10 missions.

Being the steward of approximately 30 million acres of land in the United States, DoD and all of its military services are fully committed to responsible environmental management. The location of many of our training and testing ranges in ecologically sensitive areas makes it imperative that the various military missions are planned and executed in harmony with the environment. Therefore, at the core of DoD's policy is sustainable development of our facilities and infrastructure to ensure compatibility of the built environment with the natural environment. It allows the armed services to meet mission needs, while conserving resources, avoiding unacceptable environmental impacts, and creating healthy workplaces. There are approximately 650 million acres of public land in the United States and Congress has set aside about 30 million acres of this land – which is approximately 1.1 percent of the total land area in the United States – for defense purposes. [16] Championing environmental stewardship of public lands under our cognizance is a high priority. In executing these responsibilities, we are committed to more than just compliance with the applicable laws and regulations; we are committed to protecting, preserving, restoring, and enhancing the quality of the environment.

[16] DuBois, Raymond. Deputy Under Secretary for Installations and Environment, DoD. Testimony to the Subcommittee on Energy and Air Quality, Subcommittee on Environment and Hazardous Materials, April 21, 2004, at http://energycommerce.house.gov/108/Hearings/04212004hearing1252/DuBois1935.htm

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4. DOD COMPATIBLE LAND USE AND OUTREACH PROGRAMS

This chapter responds to Section 320's requirement to evaluate the need for safety and operational buffer areas in response to civilian community encroachment. DoD has a broad range of initiatives to combat encroachment that are addressed in this and prior year Sustainable Range Reports. Compatible land use is explored in this chapter to highlight the history and growth of these initiatives, to describe the positive successes that resulted from the 10 USC § 2684a partnering authority, and to emphasize the need to continue to pursue safety and operational buffer areas in order to sustain essential military training and testing missions.

4.1. DOD PHILOSOPHY ON COMPATIBLE LAND USE

Effective land management on and around military installations must satisfy many priorities, which includes meeting military training and testing mission requirements, addressing local community needs, and protecting and sustaining the environment. Years ago, most of the nation's military installations existed in rural areas far from urban centers. But a growing population and shifting land development patterns are increasingly consuming America's open spaces and closing in on military lands vital to testing and training. As these installations merge with growing metropolitan and suburban areas, satisfying these multiple priorities becomes more challenging. Land development can consume precious open space, affect the consumption and sustainability of the region's natural resources and impact the installation's operational capability. Land development adjacent to military installations can produce serious conflicts:

- Increased interference with air routes and communications through construction of cell towers, wind turbines, power lines, and other structures,
- Increased competition for data and communication frequencies ,
- Displacement of threatened and endangered species to the remaining open space, including military ranges,
- Increased need to alter training and testing due to residential neighbors' concerns about noise and safety,
- More rapid depletion of critical ground or surface water supplies, water treatment capacity, and other necessary resources,
- Increased air emissions in areas that may have finite air emission thresholds.

In recent years, the Department has expanded its attention to include areas outside the installation fence line that are impacted by military operations or that provide habitat to sensitive species found on the base. It has become increasingly clear that what happens to land, water, and air resources more broadly outside the fence line has significant impact on operations within the installation. The accelerating pace of development is exacerbating such impacts, and timely action is needed to protect the military's ability to test and train. To address these regional issues and sustain natural resources that serve both the military and the broader community, DoD is strongly pursuing open and productive dialogue with federal, state, inter-state, Indian tribal, and local officials; the public; private organizations; and foreign governments, as appropriate. Continued efforts in cooperation, collaboration in future planning, and partnerships are essential for managing the nation's valuable resources for the long-term.

DoD has a broad range of efforts underway to promote compatible land use around its military installations, and each contains the important elements of outreach, communication, and working in cooperation with the surrounding communities and governments. Some of these programs, such as the

Air Installations Compatible Use Zones (AICUZ) date back to the 1970's, and recently authorized programs that encourage conservation buffer partnerships are already proving successful. This chapter discusses several DoD-wide data collection and analysis tools being used across the Department to quantify encroachment impacts on operational capability, and then describes DoD programs and initiatives that promote compatible land use, highlighting selected success stories within these programs.

4.2. DoD Policy

In March 2005, the Deputy Secretary of Defense issued an updated directive, Directive 4715.1E, entitled, "Environmental, Safety, and Occupational Health." The directive reflects the Department's vision of sustainable resources needed for mission support, which includes issues of incompatible land use outside the fence line. These resources are called natural infrastructure, which refers to the air, land, water and frequency spectrum resources needed by DoD to perform its mission. This directive establishes a policy of evaluating current and emerging requirements in terms of resource capability to support mission, in addition to the existing measures of readiness, compliance, reduced injury and illness, and pollution prevention. Actions at both the headquarters and installation levels demonstrate the Department's commitment to advance environmental programs beyond compliance to the protection of natural infrastructure assets needed to support mission both for now and into the future.

DoD Directive 3200.15, Sustainment of Ranges and Operating Areas (OPAREAs) establishes policy and assigns responsibilities for the sustainment of DoD's operational ranges and OPAREAs. It encompasses all aspects of range sustainment initiatives including operational and mission requirements, encroachment concerns, data needs, planning and budgeting, range management plans, and stakeholder involvement. Many of these areas are addressed in this chapter in relation to compatible land use programs.

To manage the various Service programs that address civilian community encroachment, the Deputy Secretary of Defense formed an Overarching Integrated Product Team (OIPT) to address sustainability issues. The OIPT is supported by a Working Integrated Product Team (WIPT), under which a subgroup on land use was created. This subgroup provides a forum for the military services to coordinate various programs, share success stories and lessons learned, and work together on policy and legal issues of mutual interest. Issues that arise in this subgroup are coordinated through the WIPT and then, if needed, to senior DoD leadership.

4.3. Encroachment Analysis, Visualization, and Decision Tools

The Department is supporting the development of analytical models and tools aimed at quantifying encroachment, evaluating encroachment impacts at installations, and prioritizing incompatible land use issues across the country. These measures can be used to assess the severity of encroachment on training and to prioritize funding. In addition, as models are developed that link encroachment issues to training by combat unit or training exercise, scenarios can be created to anticipate constraints prior to restationing or realignment of troops.

4.3.1. Army Encroachment Condition Model (ECM)

The Army is developing an ECM to quantify environmental impacts on the training mission. The ECM is an objective, centralized Geographic Information System (GIS) based data model that quantifies internal and external encroachment on Army training lands and ranges. It will collect GIS data on seven encroachment factors and will capture encroachment impacts to training such as digging, bivouacs, live fire training, heavy and/or light maneuver training, use of smoke and pyrotechnics, and fly-overs. This methodology provides a quantifiable evaluation of encroachment on training that will be integrated with

the existing Army Range and Training Land Requirements Module (ARRM). The Army completed the prototype of the new ECM at Fort Riley, Kansas, in September 2005. See also Chapter 6.

4.3.2. Navy Encroachment Management Program

The Navy recognizes that testing and training ranges are an important national asset and continues to strive to better evaluate the adequacy of its ranges. Range Complex Management Plans (RCMPs), a cornerstone of the Tactical Training Theater Assessment and Planning Program (TAP), are produced for each Navy Range Complex. The RCMP process produces a detailed breakdown of each range's current ability to meet mission requirements. Each document gives a list of the specific warfare areas that a range is required to support. Based on detailed encroachment and capability/capacity analyses for each complex, the document then assigns a low, medium, or high risk rating by warfare area to the training currently available at the complex. The Navy is on schedule to complete RCMPs for all of its ranges worldwide by 2007. See also Chapter 7.

The Navy builds upon the RCMP analysis by developing an Encroachment Action Plan (EAP). An EAP is the blue print for an installation or range's Encroachment Management program. The EAP identifies encroachment challenges that negatively impact military activities and documents the nature and degree of degradation of testing or training activities. The EAP also assesses the effectiveness of current Navy management, planning, or outreach activities to minimize negative mission impacts and associated additional costs. It examines regulatory and community frameworks that support or exacerbate encroachment challenges, while providing short-, mid-, and long-term strategies to address and correct or prevent the identified encroachment impacts.

4.3.3. Marine Corps Encroachment Management Tools

The Marine Corps has initiated detailed Range Complex Management Plans (RCMPs) for its installations and ranges. The RCMPs provide insight into how encroachment affects training by correlating encroachment issues with training impacts. The Marine Corps guards against encroachment in a number of ways and prepares Encroachment Control Plans (ECPs) as roadmaps for taking action. Tools, such as the Training Range Encroachment Information System (TREIS), and Range Environmental Vulnerability Assessment (REVA) programs; identify, analyze, and report to decision makers on encroachment and its impacts on the installations' abilities to support mission essential tasks. See also Chapter 8.

4.3.4. Natural Infrastructure Capability Resource Management

Natural Infrastructure Capability Resource Management (NICRM) assessments evaluate the environmental resources that are needed to train and perform the mission. Developed by the Air Force, NICRM assesses the adequacy or inadequacy of resources by quantifying resource availability compared to actual requirements in the areas of airspace, air emissions availability, water supply, water discharge availability, surface land and seaspace, energy, and frequency spectrum. Losses due to encroachment are quantified and subtracted from the total resource to determine the remaining amount available. The resource available is then compared to the amount required, and the magnitude of the resulting resource deficiency or opportunity is determined. In addition to quantifying deficiencies, NICRM quantifies the "headroom" available to support increased mission.

DoD is supporting several NICRM pilots in order to demonstrate its ability to capture information on natural infrastructure capability that is timely, standardized, and can be collected across the installations with a reasonable amount of time and effort. See also Chapter 9.

4.3.5. Sustainable Installation Regional Resource Assessment (SIRRA)

One tool developed under the Army's SERM/Fort Future program is the Sustainable Installation Regional Resource Assessment (SIRRA). Developed by the U.S. Army Corps of Engineers Construction Engineering Research Laboratory (CERL), with support from the Services and OSD, SIRRA accomplishes the goal of standardized data collection with a reasonable amount of effort by relying on national databases of information that provide regional trends. For example, census data are used to indicate areas of population growth, and EPA databases are used to identify waterways of degraded quality or area of nonattainment in air quality. The SIRRA framework contains 54 indicators in ten issue areas: (1) air quality, (2) airspace, (3) energy, (4) urban development, (5) threatened and endangered species, (6) locational issues, (7) water, (8) economic, (9) quality of life, and (10) infrastructure.

This methodology has been applied to 400 installations and ranges so far, and was successful in quantifying results for each of the encroachment indicators, and in assessing the degree of vulnerability for each of the installations. Of the 400 ranges and installations used in the analysis, the results indicate that 111 (about 28 percent) are vulnerable or have high vulnerability. Another 152 were rated as moderately vulnerable. The remaining 137 (34 percent) were rated as having low or very low vulnerability.

The SIRRA study has provided a list of installations and ranges that may be vulnerable to encroachment issues and require further study. SIRRA is a helpful screening tool that organizes numerous external (to the range or installation) sustainability data and provides relative characterizations of installations and ranges based on that information.[17] Decisions relevant to a specific range or location should be further informed using local data, as well as input and participation from the installation and surrounding communities.

4.4. COMPATIBLE LAND USE PARTNERSHIPS

Partnerships to establish conservation buffers have become an increasingly important tool for DoD to ensure that land outside the military installations and ranges is used in ways that are consistent with the military operations within the fence line. As residential, commercial or other types of development near military installations increases, DoD has taken an increased interest in using this tool to protect its military bases and ranges. Partnering efforts aimed at protecting land and securing easements have accelerated since enactment in the NDAA for FY 2003, Sections 2684a and 2694a of Title 10, United States Code.

Partnerships can achieve greater results by leveraging multiple organizations and funding. The Services have had many early successes in establishing partnership agreements, and the number of projects submitted for funding each year is quickly increasing. Examples highlighted later in this section include the Camp Blanding and Camp Ripley Army Compatible Use Buffer (ACUB) projects, the Northwest Florida Greenway project, and Camp Lejeune and Pensacola Naval Air Station Encroachment Partnering projects.

Compatible land use partnerships achieve the following important objectives of DoD's compatible land use strategy: 1) support operational requirements; 2) consider environmental impacts and sustainability, 3) preserve habitat and other valuable sites; 4) involve a high level of participation from community representatives and other stakeholders; and 5) strengthen important long-term working relationships.

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[17] A Characterization of Land Use Trends around the Perimeter of Military Ranges, October, 2005, ERDC/CERL SR-05-DRAFT

The increased interest in and success of these partnership agreements as a tool for compatible land use reflects a growing recognition of the broad impacts of urban sprawl and competition for limited natural resources, the efficiencies of partnerships in serving multiple goals, and the mutual interests that DoD shares with many non-DoD organizations. All of these factors point to an increasing need for cooperation and investment in compatible land use partnerships.

4.4.1. Sikes Act

The acquisition of easements to protect land has been in use for many years by private organizations and other federal agencies engaged in land conservation programs. Prior to 2003, the Sikes Act was the primary authority for the Secretary of Defense to enter into cooperative agreements with states, local governments, non-governmental organizations and individuals to maintain and improve natural resources. This authority was primarily directed to protection of resources within the boundaries of DoD installations. Partnerships took the form of working relationships with private and public organizations and individuals to protect and revitalize species through various on-installation habitat and species enhancement efforts. Increasingly, it became apparent that acquisition of land or easements in the vicinity of military installations and ranges added essential flexibility to wildlife protection efforts, and ultimately, was needed for the sustainability of DoD's ability to train and test.

4.4.2. Legal Authorities under 10 U.S.C. § 2684a

In FY 2003, the National Defense Authorization Act provided the military with an important new tool for investing in or disposing of property in a manner to prevent incompatible land use. Section 2684a of Title 10, U.S.C., provides authority to DoD to enter into agreements with private conservation organizations or state and local governments to cost-share acquisition of land or interests in land to preserve valuable habitat and limit incompatible land use.

Camp Blanding, Florida was the first installation to use new legislative authority in September 2003, with the establishment of a Cooperative Agreement (CA) between the Army National Guard Bureau (ANG) and the State of Florida Department of Environmental Protection (DEP). The area around Camp Blanding is a thriving habitat for more than 60 rare species, including the Florida scrub jay, Eastern indigo snake, and the red-cockaded woodpecker, but is threatened by development. Multiple land parcels belonging to six different owners are identified in the CA as potential buffer areas to pursue. In March 2004, the Florida DEP contributed $19.5 million, with $500,000 from ANG to establish 8,500 acres of mainly black bear habitat as a conservation buffer area. The CA was amended in 2004 to supplement the funding amount, and extend the agreement to 30 September 2008. In addition to the advantages offered to the military training mission by the buffer zone, the project contributed to the Florida Forever conservation initiative and the Northwest Florida Greenway project described in the next section.

Multiple Launch Rocket System (MLRS) and artillery units require large areas to train soldiers in realistic live fire exercises.

Soldiers trained at Camp Ripley have been deployed in support of Operation Enduring Freedom, European Watch, Iraqi Freedom and other peacekeeping missions.

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Within a few months, a second CA was signed at Camp Ripley, Minnesota, where a 3-mile conservation buffer consisting of 110,000-acres of land was proposed around the post. Using funding from the new DoD Conservation Buffer Program and from other partners, Camp Ripley is working to secure conservation easements on key parcels in its proposed buffer area.

Camp Ripley is one of the largest National Guard training sites in the United States, unique in its large training areas that allow for live-fire and realistic conditions. Camp Ripley is also home to 17 federal and state threatened, endangered or otherwise protected plant and animal species, and hundreds of species, many of which are unique to Central Minnesota.

The 3-mile buffer area was chosen based on an analysis of historical noise complaints and a noise contour study that was conducted as part of Camp Ripley's Environmental Noise Management Plan. The proposed buffer area encompasses much of the outer noise contour created from live-fire training. The Minnesota Department of Natural Resources and local conservation groups share the installation's objectives to provide additional natural habitat for Threatened and Endangered (T&E) species.

Camps Blanding and Ripley represent early success stories of DoD partnering with non-government organizations to achieve conservation of buffer land in the vicinity of military installations. The momentum for these projects continues to grow, with the identification of high priority installations to prevent incompatible development, the formation of regional conservation forums, and the pursuit of new buffer partnerships across the country. The authority in § 2684a is a significant step forward in encouraging open communications and collaboration between stakeholders: military, environmental groups, and the local communities, leading to successful conservation partnerships. These projects are allowing DoD to make clear-cut gains in achieving conservation and protecting military mission by leveraging funds to accomplish the protection of land and habitat across entire regions.

4.4.3. Regional Success: Northwest Florida Greenway Project

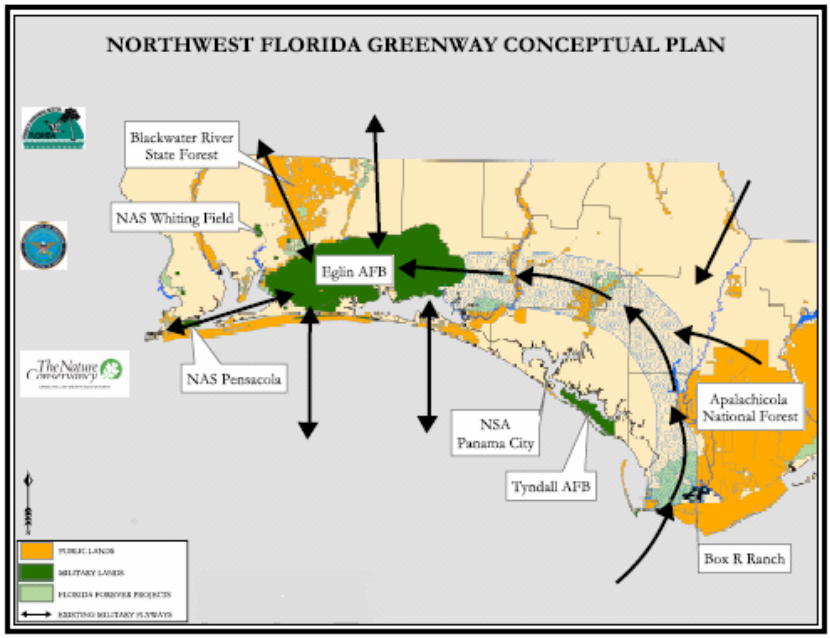
An important regional success story following the passage of the DoD partnering authority is the Northwest Florida Greenway project-- an innovative partnership established in November 2003, between DoD, the state of Florida, and The Nature Conservancy. The goal of the project is to establish a 100-mile buffer corridor extending across the Florida panhandle to preserve habitat amidst rapid population growth, and maintain an important flight path for five U.S. Air Force and Navy installations in the area that support important service and joint testing and training missions.

The project leverages a spectrum of interests and resources, including: Florida acting under its Florida Forever Program to acquire environmentally significant lands through acquisition; DoD entering a partnership under 10 USC § 2684a to preserve military flexibility; and The Nature Conservancy pursuing its mission to preserve plants, animals, and natural communities. These partners are working to:

- Protect one of the Nation's six most biologically diverse regions;
- Protect an area that is host to five Air Force and Navy installations;
- Prevent uncontrolled incompatible development that could hinder realistic military training;
- Prevent habitat fragmentation that could threaten biodiversity, and threatened and endangered species and;
- Strengthen the regional economy by sustaining the mission capabilities of the military in the region and enhancing recreation and tourism.

Figure 4-1 shows the Greenway Plan extending from the Apalachicola National Forest and waters of the Gulf of Mexico to Eglin Air Force Base. The first acquisition under the project was the 7,579-acre Box R Ranch, which serves as the "gateway" to the greenway from the Gulf Coast and provides habitat for many threatened and endangered plant and animal species, including the Florida black bear and bald eagle.

Figure 4-1. The Florida Greenway Plan



4.4.4. DoD Conservation Buffer Program

Congress provides DoD with funding for compatible land use efforts under the Conservation Buffer Program. In FY 2005, Congress appropriated $12.5 million to the Deputy Under Secretary of Defense (Installation & Environment (DUSD(I&E)) to allocate funds to Military Service conservation buffer projects that meet the requirements of 10 USC § 2684. To receive funding, the Services must identify partnering projects that meet the specific authorizing criteria (see box). Under OSD oversight, this FY 2005 funding was allocated to the Services to help implement compatible land use projects at the following locations:

- Fort Carson, Colorado
- Marine Corps Air Station Beaufort, South Carolina
- Marine Corps Base Camp Lejeune, North Carolina
- US Army Garrison Hawaii
- Army National Guard Camp Ripley, Minnesota
- La Posta Mountain Warfare Training Facility, California
- Outlying Landing Field, Whitehouse, Florida

Projects like these may result in the acquisition of property, or in acquiring land interest or water rights to ensure land or water use that is compatible with the installation's mission. The partners for these projects may be a State or political subdivision of a State, or a private organization that has the conservation, restoration, or preservation of land and natural resources as its goal.

The DoD Conservation Buffer Program is administered by DUSD(I&E), which provides management, oversight, and coordination over funding allocated to the Services for specific projects. The Services

submit project proposals to the I&E office annually. The proposals are reviewed against the eligibility criteria and funded based on their relative priorities.

DUSD(I&E) is developing a program guide that will describe the objectives, elements, and implementation of the Conservation Buffer Program and the framework and process for funding decisions to the Services for buffer projects utilizing the § 2684a authority. The guide will set forth factors to be taken into consideration in assessing Service project proposals, including the project's benefit to military readiness, its ability to limit incompatible growth, its enhancement to preserving habitat, and its financial viability and partner commitments. These guidelines and the Service project information generated in response, will be used to support future Congressional reporting on the DoD Conservation Buffer Program.

§ 2684a Project Criteria

(a) Agreements Authorized.— The Secretary of Defense or the Secretary of a military department may enter into an agreement with an eligible entity described in subsection (b) to address the use or development of real property in the vicinity of a military installation for purposes of:

(1) Limiting any development or use of the property that would be incompatible with the mission of the installation; or

(2) Preserving habitat on the property in a manner that:

(A) is compatible with environmental requirements; and

(B) may eliminate or relieve current or anticipated environmental restrictions that would or might otherwise restrict, impede, or otherwise interfere, whether directly or indirectly, with current or anticipated military training, testing, or operations on the installation.

DUSD(I&E) integrates its conservation buffer efforts with existing efforts such as the Integrated Natural Resource Management Plans (INRMP), Legacy Resource Management, and JLUS by coordinating activities under the Sustainable Ranges WIPT.

DoD expects to receive $37 million as part of the DOD FY 2006 Defense Appropriations Bill to support this successful and growing program. The individual Service programs and example successes under the § 2684a authority are discussed in the following section.

4.5. SERVICE PROGRAMS

The Services each have their own tailored conservation buffer initiatives that are designed to promote compatible land use and implement the 10 USC § 2684a conservation buffer authority. The Army, Navy, and Marine Corps have created programs centering around the authority, while the Air Force is integrating the use of the authority into existing strategies. The Army program is known as the Army Compatible Use Buffer program (ACUB). The Navy and Marine Corps both title their efforts as Encroachment Partnering (EP) programs.

4.5.1. Army Compatible Use Buffers (ACUB)

Under the Army's ACUB Program, installations implement the 10 USC § 2684a authority by entering into a cooperative agreement with a partner to acquire easements or real estate interests from a willing seller with funds contributed by the Army and other partners. The overall goal of the ACUB program is to purchase land or interest in the land and/or water rights from willing sellers to help the Army protect its training and testing requirements as well as achieve its land stewardship objectives. This program allows the Army to work with partners to protect habitat, training, and testing land without using the lengthy and complicated acquisition process.

Using a Cooperative Agreement, the title to the deeded interest in the land is held by the partner, or the partner may transfer management responsibilities for the conservation easement to an eligible party, as specified in the agreement. As required by 10 USC § 2684a and stipulated in agreements made under this

authority, the military retains the right to request transfer back to the United States. Final approval for projects is given by the Assistant Chief of Staff for Installation Management (ACSIM).

Fort Carson

The Fort Carson Regional Partnership (US Army, Nature Conservancy, US Fish and Wildlife Service, willing landowners) negotiated a 3-year lease with the owner of a privately-held ranch which is adjacent to 7 miles of Carson's southern boarder that restricted development on approximately 30,000 acres. This agreement will help to ensure that adjacent land use will be compatible (i.e. agricultural, green space, habitat conservation, etc.) with the military training missions of Fort Carson and will not contribute to additional training pressures resulting from dust and noise complaints which frequently accompany training exercises. It also provides continued protection of Shortgrass Prairie Ecoregion, along with four globally rare plant species. The partnership will purchase the property for an already agreed upon price, when funds become available. In February 2005, funding was secured from the Department of the Army to implement the first phase of acquisition toward the ultimate target of over 60,000 acres of conservation easements on Fort Carson's southern and eastern boundaries. To date, this is the single, most expansive, conservation easement acquired by the Department of the Army to mitigate encroachment on a major military installation.

4.5.1.1. Description of ACUB Process

The primary Army authority for the ACUB program is the Army's Policy Guidance Memorandum of May 19, 2003 from the HQDA Deputy Chief of Staff G3 Director of Training, and ACSIM, entitled, "Army Range and Training Land Acquisitions and Army Compatible Use Buffers." Overall management responsibility for the ACUB programs resides within the OACSIM. Proposals for Active Army Installations are first validated by the Army Range Sustainment Integration Council (ARSIC). Proposals for National Guard installations are validated by the National Guard Bureau.

The 2003 guidance memo encourages the establishment of good working relationships with stakeholders, and the cultivation of relationships with potential ACUB partners. In addition, the guidance memo encourages the establishment of working teams at the installations participating in ACUB, and establishes an ARSIC working group at the headquarters (HQ) level to review proposals. The installation working teams include representation from natural resources, range operations, master planning, and legal counsel.

4.5.1.2. Criteria and Prioritization

The Army developed a matrix methodology to evaluate an installation's ability to benefit from ACUB, and then to prioritize the ACUB effort. The matrix evaluates the installations' project proposals against five weighted factors:

1) SROC Sustainability Considerations,
2) Availability of Land,
3) Time Sensitivity,
4) Level of Regulatory Support, and
5) Level of Public Support.

This process identifies high priority training sites with the greatest potential to reduce or prevent encroachment through implementation of an ACUB. The ACSIM and G3 review and validate proposed ACUBs against this matrix and then develop a prioritized list for action and funding.

4.5.2. Marine Corps Encroachment Partnering (EP)

The Marine Corps exercises 10 USC § 2684a authority by acquiring real property in the vicinity of military installations, including ranges and training areas for purposes of (1) limiting development or use of property that would be incompatible with the mission of the installations and (2) preserving habitat on properties that would relieve current or anticipated ecosystem habitats for the installations.

The Marine Corps enters into agreements with State and local agencies and private environmental organizations by participating in Conservation Forums led by States or NGOs. The primary purpose of these Forums is to identify mutually agreeable criteria for land acquisition, identify land available for acquisition, develop a real estate process that meets all participants' legal requirements for property acquisition, and bring together interested members of the Forum to conduct real estate transactions. This approach has proven successful, resulting in the establishment of partnering teams at a number of Marine Corps installations.

Onslow Bight Conservation Forum – Camp Lejeune

In 2002, MCB Camp Lejeune joined the Onslow Bight Conservation Forum. Forum participants include The Nature Conservancy (TNC), North Caroina Coastal Land Trust, Endangered Species Coalition, several North Carolina state agencies, the USFWS, and the U.S. Forest Service.

In 2003, The Nature Conservancy purchased 2,500 acres adjacent to tank and rifle ranges at Camp Lejeune slated for a golf course and a 3,000 unit housing development. The North Carolina Wildlife Resources Commission (NCWRC) took fee title of the land for inclusion into the state hunting lands system and the Marine Corps acquired a restrictive easement governing development, thus ensuring any land use of the parcel must be in accordance with Marine Corps training requirements. In 2005, using its own funding as well as that of the NCWRC and from the new DoD Conservation Buffer Program, the Marine Corps received restrictive easements on three parcels totaling another 1,065 acres of buffer land. The Marine Corps and the NCWRC are currently collaborating on several additional projects.

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4.5.2.1. Marine Corps Encroachment Partnering Process

Encroachment Partnering is the Marine Corps' term for a shared strategy of working with state or local agencies and private conservation organizations to acquire real estate interests in the vicinity of Marine Corps installations to prevent incompatible land use or loss of habitat that could affect current or future military operations.

Established Marine Corps Conservation Forums

North Carolina Onslow Bight (MCB Camp Lejeune and MCAS Cherry Point)
California South Coast (MCB Camp Pendleton and MCAS Miramar)
California Walker River (MC Mountain Warfare Training Center Bridgeport)
South Carolina Low Country (MCAS Beaufort)
Georgia Altamaha River (Townsend Range-MCAS Beaufort)
O'ahu Conservation Partnership (OCP MCB Hawaii)

The process begins with the establishment of a regional Conservation Forum, consisting of local and regional community planners, conservation groups, and other non-government stakeholders. The Conservation Forum develops a conservation plan with regional goals, and maps areas of key areas of mutual interest and opportunity. The group works collaboratively to identify willing sellers and initiate projects. EP projects are based on the premise that the Marine Corps and its partners have a common interest in protecting land from incompatible development and that both are willing to contribute to the cost of acquiring these interests.

Beaufort Low Country Conservation Forum

In 2003, MCAS Beaufort joined the Low Country Conservation Forum. Members of this forum include Beaufort County, the Beaufort Open Space Land Trust, and Trust for Public Land. In 2004, Beaufort County and the Marine Corps partnered to acquire a restrictive easement on 69 acres of land near MCAS Beaufort. In 2005, using its own funding, that of Beaufort County, and from the new DoD Conservation Buffer Program, Beaufort County and the Marine Corps split the cost of three more acquisitions near MCAS Beaufort totaling 162 acres. Additional parcels are being considered for restrictive easement acquisition.

4.5.3. Navy Encroachment Partnering Program

The Navy Encroachment Partnering (EP) program is part of a broader Encroachment Management Program implemented by the Chief of Naval Operations (CNO) to address encroachment pressures in fifteen areas such as private development in the vicinity of the installation, range, or OPAREA, restrictions imposed by environmental regulations, and growing competition for waterfront areas, airspace, and frequency spectrum. Partnering opportunities may be explored under 10 USC § 2684a to secure land and water rights that could affect the training requirements or even access to Navy's installations. To-date, the Navy practice has been to acquire a recordable interest in the property in the form of a restrictive use or conservation easement that limits development of property to specific compatible uses and/or densities.

La Posta Mountain Warfare Training Range

The La Posta Mountain Warfare Training Range is a critical component of the Naval Special Warfare, Southern California complex of ranges, which includes San Clemente Island (maritime), Chocolate Mountain Aerial Gunnery Range (desert), NAB Coronado (amphibious), Camp Pendleton (urban), and La Posta (mountain). Under its EP Program, the Navy acquired easements on 3 parcels totaling 370 acres using DoD Conservation Buffer Program funds ($695K). The Navy partnered with the State of California and The Nature Conservancy (TNC), which acquired the deeds of the properties as an agent for the State and provided the Navy with an easement preventing incompatible development.

The Navy EP Program was initiated by a memorandum issued from the ASN (I&E) in January 2003, which encompasses the Navy and Marine Corps programs followed by a memorandum from the Deputy Chief of Naval Operations (DCNO (Fleet Readiness and Logistics-N4)) in November 2003.

Office of the Chief of Naval Operations (OPNAV) Instruction (11010.40) describes the Navy's overall Encroachment Management Program of which Encroachment Partnering is an important element. The instruction describes installation-level Encroachment Action Plans (EAP) that will serve as key planning documents for EP initiatives, including short, medium, and long-term strategies and an action plan for each installation. Naval Air Station (NAS) Fallon developed the first EAP to be used as a model for others that will follow. The Fallon EAP resulted in a comprehensive long-term strategy including proposals to use the conservation buffer authority to acquire interests in over 90 parcels of land surrounding NAS Fallon. The EAPs will capture potential encroachment challenges and propose a list of potential projects and funding needs.

Outlying Landing Field (OLF) Whitehouse, Florida

OLF Whitehouse is a critically important training resource for the local Navy community. It provides a close proximity to the East Coast commands and offers day and nighttime fleet carrier landing practice conditions, a unique natural environmental, relative isolation, few weather delays, and offers a low-light ground training capability. Under its EP Program, the Navy partnered with the State of Florida in September 2005 to acquire 1,650-acres of buffer land on the eastern and northeastern border of the OLF for $13,500,000. The Navy contributed $1,695,000 of Navy funds and $305,000 of DoD funds to the project and acquired permanent deed restrictions on the property limiting its use to light recreational activities. The State of Florida contributed $11,000,000 and placed the property in their conservation program. Most of the property lays within accident potential zones and high noise contours.

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The DCNO (Fleet Readiness and Logistics) (N4) will validate submitted projects to ensure that they relieve encroachment, or environmental constraints, and are consistent with mission requirements as well as Navy environmental and natural resource policy. The ASN (I&E) retains approval authority for all programmatic and specific encroachment partnering agreements.

Project prioritization should link to the Tactical Training Theater Assessment and Planning (TAP) Program. In general, projects that are eligible for encroachment partnering need to show the following:

1) Need in terms of military operations.

2) Existence of partners.

3) Contribution amount from partners; required DoD contribution.

Since FY 2004, the Navy has invested $3.2 million in Encroachment Partnering, protecting 2,068 acres of land from incompatible land use. In its POM for FY 2006, the Navy requested $9.2 million in funding for EP projects.

4.5.4. Air Force

The Air Force philosophy on compatible use is based on cooperative planning with local communities, combined with intergovernmental coordination and community partnering. Compatible use considerations have historically been integrated into the Air Force comprehensive planning strategy. As a result, much of the Air Force's direct land needs for mission are identified, but new developments and trends demonstrate a need to evolve the approach to enhance the focus on managing airspace beyond just acquiring interest in land. The Air Force is currently in the process of enhancing its strategy and identifying additional opportunities for partnering that will limit encroachment issues associated with installations, ranges, and the use of needed airspace.

Kern County Wind Energy

The Tehachapi area of California, near Edwards Air Force Base, is one of the most productive wind resource areas in the country. Increasing pressure to expand wind generation capacity threatened aircraft operations by encouraging the installation of taller wind turbines near restricted airspace routes. Wind turbine farms of increasing heights would present serious encroachments upon training and testing mission within the R-2508 Restricted Airspace Complex, which is used by multiple military users and represents the largest single area of overland Special Use Airspace (SUA) within the United States.

The Air Force convened a joint group of operators, airspace experts, and sustainability professionals, and worked closely with the Kern Wind Energy Assocation and local planners. The result was unanimous passage of height restrictions within the county's zoning ordinances, which allow for increased energy capacity while protecting important military flying routes. The new zoning ordinance was unanimously adopted by the Kern Country Board of Supervisors in January, 2005, and is guided by color-coded, GIS-based maps that indicate height restrictions on cell towers, wind turbines, or meterological towers.

The Air Force laid out guiding principles for managing its natural Infrastructure (air, land, and water resources) to support operational requirements in the Air Force's Natural Infrastructure Management and Encroachment Prevention Policy, November 23, 2004. In this policy, the Air Force articulates the need to more broadly manage its natural infrastructure to not only ensure environmental protection but also to protect and enhance the Air Force mission. Sustainability is a key focus of the Air Force's guiding principles.

As part of its sustainability efforts, the Air Force has a suite of tools and strategies that are being integrated into the sustainability management system. New strategies, such as those provided for under 10 USC § 2684a, will be integrated into the suite of tools to further enhance current efforts. Any compatible use or other encroachment prevention initiatives should be an outgrowth of a routine sustainability/comprehensive planning strategy. The Air Force frames compatible use efforts as part of overall planning to counter encroachment, as a program or tool in the sustainability toolbox. The current suite of tools and programs in the Air Force toolbox include the Air Installations Compatible Use Zones (AICUZ) program, Joint Land Use Study Program (both described later in this chapter) and the Interagency and Intergovernmental Coordination for Environmental Planning (IICEP).

IICEP was originally created to respond to the coordination requirements outlined in the Intergovernmental Cooperation Act of 1968 and E.O. 12372, *Intergovernmental Review of Federal Programs*. However, the Air Force saw a greater potential to use this strategy as a way to gain public support and understanding of the Air Force Mission, and develop and maintain reciprocal planning procedures between the Air Force and other federal, state, regional and local governments and agencies. New strategies or tools to achieve compatible use such as the authority granted under USC § 2684a are being incorporated into a comprehensive strategy.

The Air Force's ongoing strategy for compatible use is to continue to work with local communities and other stakeholders to achieve compatible development through the use of zoning or through other land use strategies the community may desire such as: transferring development rights, tax incentives, bond issues, or acquisition of easements by the community. A second no-cost strategy the Air Force has been able to use is land swaps involving other federal land management agencies. If these strategies either fail or do not provide sufficient protection and mission is manifestly threatened, easements can be pursued, either through traditional authorities or through partnering, or finally, using authorities to acquire a fee simple interest in the land in question.

4.6. OTHER PROGRAMS ADDRESSING COMPATIBLE LAND USE

The Department has been working to encourage compatible land use efforts for decades. Many of our military installations were built in the late 1940s and early 1950s in locations at least 10-15 miles from urban population centers. These installations became centers of employment and attracted urban growth to support both the employee's needs and the logistical/supply/construction needs of the military. As the public moved closer to these installations, problems with complaints over the effects of military operations often caused operational changes that negatively impacted the mission. As these problems grew, the Services began efforts to address growing incompatible development.

These efforts ranged from the Air Force's "greenbelt" program (i.e., creating a buffer zone that was a generalized rectangle around the installation) to other more durable compatible land use programs like the DoD Air Installations Compatible Use Zones (AICUZ) program, DoD Noise Program, and Joint Land Use Studies (JLUS), all in use today. Most recently, Congress has provided a new authority to partner with non-government organizations (NGOs) to acquire conservation easements on lands in the vicinity of military installations or ranges.

The primary philosophy behind the compatible land use programs is not "no-growth," but promoting growth that is compatible with the military mission on public and private lands neighboring our military installations. The purpose of the program is to:

- Minimize the effects of military operations on land areas near installations;
- Prevent incompatible development in high noise exposure and accident potential areas;
- Prevent threats to operational capability through compatible land use planning and control; and
- Prevent threats to pilot safety from flight hazards, bird strikes, visual interference from light, smoke, or steam, and electromagnetic interference.

While early DoD land use compatibility efforts were focused primarily on air installations, these concepts are also now being applied to military ranges.

4.6.1. Air Installations Compatible Use Zones (AICUZ)

The objectives of the AICUZ program are two-fold: 1) Assist local, regional, state and federal officials in protecting the public health, safety, and welfare by promoting compatible development within the AICUZ area of influence and, 2) Protect the installation's operational capability from the effects of land use which are incompatible with aircraft operations.

The key to the success of the program has been the participation of military installations in the local land use planning process; and outreach to local civic groups, realtors, and other key stakeholders in local government decision-making. Education of the neighboring communities, as well as state and regional planning bodies on the military mission has been an essential element of the AICUZ program. The AICUZ study is the primary means by which this is accomplished. The study contains an analysis of

accident potential, and noise produced by military operations. The aircraft noise is analyzed using computer modeling that produces noise compatibility zones. The study also identifies areas of current and future incompatible land use based on local land use plans, and provides local communities with compatible land use recommendations for consideration in development of their comprehensive plans and zoning ordinances. The compatible land use recommendations for aircraft noise have been endorsed and adopted by FAA, EPA, HUD, and VA, and are used nation-wide for military and commercial airfields.

Implementation of compatible land use planning based on the AICUZ study results is the most critical element of the program. The key element of implementation is establishing a positive long-term relationship and open dialogue with the nearby governments at all levels. On the military's part, this requires constant monitoring of land development patterns, participation in local land use planning and zoning board meetings. Education of local civic organizations, realtor organizations, and developers is critical. At the state level, efforts to enact enabling legislation to allow counties and cities to enact zoning ordnances have been a key element to successful AICUZ implementation.

The AICUZ program is an established program that provides the fundamental information needed to pursue compatible land use strategies. DoD Instruction 4165.57 establishes the AICUZ program and is currently being updated to reflect current responsibilities and procedures.

4.6.2. Range Air Installations Compatible Use Zone (RAICUZ)

The Navy and Marine Corps' RAICUZ program is an extension of the AICUZ program for air-to-ground ranges and is comprised of detailed analyses of current and proposed range utilization, restricted airspace, range safety zones including weapons impact areas, aircraft noise, land use compatibility, risk areas, and mitigation alternatives for air-to-ground ordnance activities at Navy and Marine Corps ranges. The studies result in land use recommendations that are compatible with range safety zones and noise levels associated with range operations. RAICUZ land use recommendations are used to support collaborative planning efforts with state, local, regional, and tribal governments to foster compatible development outside installation boundaries and minimize both military and community encroachment impacts.

RAICUZ studies at the following ranges have either been completed or are in progress: Fallon Range Training Complex, Nevada; El Centro, California; Dare County, North Carolina; Meridian, Mississippi; McMullen, Texas; Jacksonville Complex, Florida; Searay Range, Mississippi; and Bob Stump Range, Arizona. At Fallon Range Training Complex, RAICUZ studies resulted in withdrawal of additional public lands by the Bureau of Land Management that is now managed to protect public safety and sustain the military mission at Fallon.

4.6.3. DoD Noise Program

DoD recently issued a new Instruction, DoDI 4715.13, establishing the DoD Noise Program. This program establishes policies and provides for coordinated efforts among the Services and OSD offices to address sound generated from military operations. The overriding premise of the program is to reduce adverse effects from the noise associated with military testing and training operations consistent with maintaining military readiness. The program aims not only to take into account noise from the operation of weapon systems, but also in their development and production. In addressing noise issues the Department will seek to use sound scientific research and methods. It will also seek to train and educate DoD as well as non-DoD personnel on noise issues through outreach efforts and coordinate and partner with other Federal Agencies on various initiatives.

A DoD Noise Working Group (DNWG) has been established under the Deputy Under Secretary of Defense for Installations and Environment (DUSD(I&E)). It is composed of representatives from all the

Military Departments. The DNWG serves to advise the DUSD(I&E) on noise related issues and to serve as the Departments coordinating body for technical and policy issues concerning noise associated with military testing and training activities and the impacts of such noise. The DNWG will also interface with other Federal and State Agencies, nongovernmental organizations, professional organizations, educational institutions, and industries on noise issues of mutual interest. This new Instruction builds upon existing Service noise management initiatives as well as the past efforts of joint-service working groups on the subject.

For example, the Army's Installation Operational Noise Management Program (IONMP) provides a strategy for noise management at installations and facilities. Elements of the IONMP include quantifying the installation noise environment, education, complaint management, noise and vibration mitigation, accident potential zones, and noise abatement procedures.

The IONMP provides a methodology for analyzing exposure to noise and safety hazards associated with military operations, and provides land use guidelines for achieving compatibility between the Army and the surrounding communities. The Army has an obligation to citizens to recommend uses of land around its installations that will: (a) protect citizens from noise and other hazards; and (b) protect the public's investment in the installation.

Under IONMP, the noise impact on the community is translated into noise zones. The program defines four noise zones. Zone I is compatible with most noise-sensitive land uses. Zone II is normally incompatible with noise-sensitive land uses. The Land Use Planning Zone provides the installation with a better means to predict possible complaints, and meet the public demand for a better description of what will exist during a period of increased operations. Zone III is incompatible with noise-sensitive land uses.

4.6.4. Joint Land Use Study Program (JLUS)

The JLUS Program, administered by DoD's Office of Economic Adjustment (OEA), is a cooperative land use planning effort between an affected local government and a military installation. This program was established in 1985 as an effort to work with local jurisdictions to ensure compatible development around installations and ranges particularly with respect to noise, safety, and operationally sensitive areas.

The JLUS Program addresses existing and potential conflicts between community growth and installation operations to achieve compatibility between the military and local communities through planning and land use control processes. The program works to raise awareness at the state and local levels for the sustainability requirements of local military installations, and provide technical or community planning assistance to support compatible land use efforts through grants authorized under Title 10 USC § 2391.

The JLUS Program Guidance Manual (August 2002) presents guidance in establishing and implementing a JLUS Study. It addressees project selection, OEA roles such as meeting with the base and community to evaluate encroachment issues, levels of commitment, availability of data (i.e., AICUZ, IONMP, noise), and resources to support the study. Organization behind the project involves establishing a local or regional study sponsor, policy committee to oversee the study, and a working group to study the technical issues. Guidance on implementing the study results, such as the establishment of a permanent advisory board, is also provided in the manual.

JLUS studies last approximately 12 months. Approximately 25 percent of the financial resources needed to support a JLUS study are contributed by non-government sources. The recommendations from a JLUS Study provide a framework for land use policies or laws, state legislation, and public outreach/education programs to promote mutually compatible land use around military ranges and installations.

In recent years, JLUS studies have been increasing in number and scope. The Arizona Military Regional Compatibility Project is a state-sponsored leadership project to address land use compatibility efforts around the State's four military installations: Luke Air Force Base, Davis-Monthan AFB, Yuma Proving Ground, Yuma Marine Air Corps Station, Fort Huachuca, and the Barry M. Goldwater Range Complex. The State of Arizona recognized the enormous economic contribution from its military bases, as shown in a state-sponsored economic impact study conducted in 2002. Each of the areas surrounding the four largest bases was identified as centers of high population growth that needed to be addressed under the State's Compatible Land Use legislation. The project was initiated in 2002 through state legislation that appropriated funding to develop comprehensive land use plans in the noise and accident potential zones around military airfields. In January 2003, OEA joined this collaborative effort with state agencies, local governments, business and land development groups, community representatives, installation staff, educational institutions, and private landowners to conduct and incorporate recommendations from JLUS studies. JLUS studies have been completed at Luke's auxiliary airfield, Davis-Monthan AFB, and the Barry M. Goldwater Range Complex, with compatible land use recommendations developed by jurisdiction.

A JLUS study conducted by the Eastern Carolina Council of Governments aims to modify existing comprehensive plans and land use plans to ensure regional compatibility in the areas around Marine Corps Air Station (MCAS) Cherry Point and Bogue Field in the state of North Carolina. It recommends enacting regulations to guide growth in areas vulnerable to uncontrolled growth. In addition, the AICUZ study conducted by the county and MCAS Cherry Point recommends limiting density of housing in certain flight zones near the base. The Cherry Point JLUS won two awards from the North Carolina American Planning Association: the first award for the study and the second for the implementation strategy.

Santa Rosa County, Florida, with joint participation from Naval Air Station (NAS) Whiting Field and DoD, prepared a JLUS that establishes land use recommendations regarding development and population concentrations. In September 2003, the Santa Rosa County Board of Commissioners approved the *Santa Rosa County JLUS* report and its recommendations. Since its approval, Santa Rosa County, with cooperation from NAS Whiting Field, began implementing the growth management recommendations contained in the report, including the county purchase of land adjacent to the airfield and receipt of $477,000 in the U.S. Department of Agriculture (USDA) Farmland Preservation Grants for purchase of agricultural easements. The Santa Rosa County JLUS won the 2004 Florida Chapter of the American Planning Association (FAPA) Award of Excellence.

DoD's Office of Economic Adjustment has sponsored and completed 43 JLUS studies from 1985 through 2005, and an additional 38 studies are currently underway. JLUS recommendations may include military operational changes, changes to the community's comprehensive land use plan, rezonings, modifications to building code regulations, and establishment of community oversight committees, which together provides the process needed to successfully integrate the installations' operational needs with local jurisdictions' comprehensive plans for development. OEA recently worked with the National Governors Association to develop the "Practical Guide to Compatible Civilian Development Near Military Installations." The purpose of the guide is to acquaint civilian and military authorities with the variety of land use control tools available at the federal, state and local government levels that promote compatible land use near military installations. The guide is available at the OEA website (www.oea.gov) under Encroachment Programs.

4.7. OUTREACH AND COMMUNICATION

Involvement of communities, conservation experts, and other stakeholders is paramount to DoD's continued success in acquiring the buffers needed to protect access to military test and training ranges. It

is also essential that the Department concurrently engage with communities near installations to promote compatible land use and zoning. Continued sharing of information will present new opportunities both locally and regionally that will benefit the military, communities, land-owners and conservation organizations. This section describes a number of initiatives that are underway or just beginning within DOD's DUSD (I&E) office.

4.7.1. White House Conservation Conference

On August 26 2004, President Bush signed Executive Order 13352, entitled "Facilitation of Cooperative Conservation" to promote cooperative conservation within the Federal Agencies. The executive order instructs the Departments of the Interior, Agriculture, Commerce, and Defense and the Environmental Protection Agency to implement laws that encourage cooperative conservation, and to involve local participation in Federal decision-making related to conservation efforts.

The Executive Order also established the White House Cooperative Conservation Conference, the first of which was held August 29-31 2005, in St. Louis, Missouri. The event was attended by over 1,000 leaders in conservation from across the nation, and proved a huge success in information exchange and collaboration. Attendees represented conservation groups; private-sector companies; local, state, tribal, and federal agencies; recreation enthusiasts; ranchers, farmers, hunters, and anglers.

Participants in the conference provided information and ideas on innovative ways to work with others to promote mutually compatible conservation. For DoD, the information and ideas exchanged there identified new opportunities to help secure critical test and training ranges.

4.7.2. Partnering with States and the USFWS on Sikes Act Implementation

Since the original Sikes Act of 1960, the Act has been updated on two occasions with the Sikes Amendments of 1986 and Sikes Improvement Act of 1997. The 1997 amendments to the original Sikes Act require DoD to prepare and implement an INRMP for each installation in the United States with "significant natural resources."

An INRMP provides management guidance and sets priorities for natural resource protection, improvement, and restoration. Installations use INRMPs to manage and maintain natural resources, fish and wildlife conservation, forestry, land management, and outdoor recreation. An INRMP should integrate military operations and conservation activities, and serve as the management plan for planners and facility managers in identifying and prioritizing conservation initiatives at the installation. Installations develop the INRMP in cooperation with the United States Fish and Wildlife Service (FWS) and the State, which makes them good sources for projects to be submitted for funding under 10 USC § 2684a. DoD is also initiating efforts to integrate INRMPs with the State Wildlife Conservation Strategies. By the end of FY 2004, DoD completed the revision of 98 percent of its INRMPs. Implementation and updates to these plans is now the focus.

In October 2002, ODUSD (I&E) updated its 1998 policy memo to emphasize coordination with stakeholders, improve efficiency of the review process, and increase ties between natural resources and military readiness, which supports DoD's focus on broader, multi-stakeholder initiatives.

DoD is also developing a training course to enhance the interface with the USFWS and States as INRMPs are revised and updated. The course is being designed as a three-day class based on experiences of those involved in developing hundreds of INRMPs. The course will review the requirements for implementing the Sikes Act, particularly as it was amended to address natural resources beyond the earlier focus on fish and game. The training will also address each of the elements of an INRMP, including annual reviews

and updates, and the public comment process. DoD is planning to hold this course regionally or locally, targeting approximately 500-600 people in the first 1–2 years. All parties involved in INRMP development are targeted to attend the training: Installations, DOI/FWS, and State fish and wildlife agencies. The underlying goal of this effort is to enhance the working relationships among the various parties to ensure that each party's goals, including the enhancement and protection of the DoD mission, are appropriately considered and addressed.

4.7.3. Additional Outreach Initiatives

The Department of Defense recognizes that the key to maintaining access to our test and training ranges into the future depends on better overall land use planning in the vicinity of our installations, as well as in areas where we need access to air and sea space. The Department has embarked on an extensive internal and external outreach program.

DoD is initiating additional outreach efforts aimed at information exchange, partnering, and leveraging complementary efforts of outside organizations. For example, DoD is meeting with local government organizations, organizations that represent local developers, academic and research centers that study conservation issues, and state organizations such as the National Council of State Legislators (NCSL). DoD is also developing, in cooperation with NCSL, the American Farmland Trust, Land Trust Alliance, and the International City/County Management Association (ICMA), a series of guidebooks on how military installations and local governments and conservators can work together to promote compatible land use. Several pilot programs are planned for 2006 that will use these primers and help set the stage for how installations partner with communities in the future.

Partnerships have been established with national environmental and conservation non-governmental organizations (NGOs). The Department has participated in many national conferences, such as the National Conference of State Legislators and the International City/County Managers Association, to engage stakeholders in the issues of maintaining military readiness. These efforts have led to 21 states passing legislation that will lead to better zoning and future planning near military installations. To enhance information sharing about laws to protect military installations, DoD developed a web-based interactive map that contains information on state legislative and administrative actions to support the military mission within their borders. The NCSL and ICMA have promoted the web site at in-house events and added links to the DENIX web-site:
https://www.denix.osd.mil/denix/Public/Library/Sustain/Ranges/StateLeg/usamap.html.

A number of Conservation Forums have been formed with state, local and NGO partners at many of our installations to better plan for buffer zone programs, and have been very successful in such places as Hawaii, California and Colorado. The Services continue to work with their installations on creating these forums where they will be useful.

As population statistics show exponential growth near many installations, particularly in the South and West, it is apparent that regional solutions must be found for land use planning. Therefore, the Department has worked with four southeast states, North Carolina, South Carolina, Georgia and Florida, to develop a Southeast Regional Partnership for Planning and Sustainability pilot project. This will be a first time that the department has partnered with multiple states to look at regional needs into the future and attempt to plan for maintaining military readiness in a four state area. Thus far two meetings have been held and projects on a regional basis are being developed.

Another project has involved the Environmental Council of the States (ECOS). The Department spearheaded the formation of an ECOS/Federal Facilities Sustainability Work Group within ECOS that looks at solutions to State/Federal issues on sustainability. The ECOS/DoD Task Group has had regular

meetings and formed a sustainability committee that has been very active in promoting state-wide military/community planning.

This continued sharing of information with our stakeholders at all levels will present new opportunities both locally and regionally that can benefit all partners involved and lead to the long term sustainment of military readiness.

5. REVIEW OF KEY ISSUES

Under the leadership of the Office of the Secretary of Defense (OSD), each of the Military Services has initiated a comprehensive range planning and management process as an integral part of the Department's SRI. It is a long-term process to sustain training and testing capability while actively engaging in environmental stewardship and mitigating encroachment concerns. For developing the DoD-wide framework, the Sustainable Ranges Working Integrated Product Team (SR WIPT) turned to programmatic guidance and DoD Directives (e.g., DODD 3200.15 on Sustainment of Ranges and Operating Areas) to identify common goals and milestones across the Services, [18] aligned with funding requirements needed for program execution, long term Range Information Enterprise objectives, and overseas planning for ranges and installations. Ultimately, the Department's goal is to integrate the SRI's objectives and associated funding requirements into one comprehensive planning process that can be maintained well into the future.

5.1. GOALS, ACTIONS AND MILESTONES (UPDATE)

In the 2005 Sustainable Ranges Report to Congress, the Department listed several objectives it was working towards as part of the implementation of its Training Range Comprehensive Plan. The Sustainable Range program goals, actions, and milestones are organized under four main programmatic categories: 1) Modernization and Investment; 2) Operations & Maintenance; 3) Environmental; and 4) Encroachment. The categories and the definitions are based on the DoD programmatic guidance. For each category, a set of actions and milestones has been identified for fulfillment during 2005-2011 fiscal years. For the purposes of this FY 2006 Sustainable Ranges Report, DoD has provided an update on those goals and milestones, with respect to actions taken in 2005, in the tables below:

Modernization and Investment Goal:

Resource for standardized land management structure and operations that mitigate encroachment and provide for range sustainment. Maximize and sustain the availability of military range infrastructure and land assets.

Table 5-1. Modernization and Investment Actions and Milestones

2005 Actions and Milestones	Progress to Date
OSD, USJFCOM, and Services establish global JNTC infrastructure requirements	As part of the JNTC concept, sites and systems will be required to create a realistic joint environment for training/mission rehearsal of joint tasks. These sites and systems will require certification of their capability to support their joint training role. Certification of sites and systems will be event independent and ensure the technical infrastructure is capable of supporting the selected event with the evolving standards and architectures.
OSD, US Joint Forces Command (JFCOM), and Services establish JNTC technical standards to ensure future interoperability between JNTC systems	The Office of the Deputy Under Secretary of Defense (Readiness) has initiated an effort to develop a set of Open Net-Centric Interoperability Standards for Test and Training (ONISTT) to enable interoperability across systems. This effort has laid the standards framework and is currently pursuing

[18] "Guidance for Fiscal Years 2006-2011 Sustainable Ranges Programs," memorandum from the Under Secretary of Defense for Personnel and Readiness, June 26, 2003.

2005 Actions and Milestones	Progress to Date
	the air-to-air piece. In the meantime, a Test and Training Enabling Architecture (TENA) is being pursued as a middleware solution to enable range interoperability for existing systems. A DoD Training Community of Interest has been chartered to, among other things, be the umbrella point of contact for Service Oriented Architecture efforts involving the Training community.
Services continue to develop and annually update Service Range Complex Plans	Although at different stages of development, all the Services are actively working on developing standardized Range Complex Plans. While the Army and Air Force are in the process of developing templates to ensure standardization across their ranges, the Marine Corps is currently working on completing its sixth plan and the Navy is scheduled to complete its initial set of plans by the end of FY 2007.
Services identify and document management processes for determining range requirements	In development.
OSD and Services develop requirements for a web-based library of best practices	In progress.

Operations and Maintenance Goal:

Resource for standardized land management structure and operations that mitigate encroachment and provide for range sustainment. Maximize and sustain the availability of military range infrastructure and land assets.

Table 5-2. Operations and Maintenance Actions and Milestones

2005 Actions and Milestones	Progress to Date
Conduct at least 6 WIPT meetings and report to Senior Readiness Oversight Council (SROC)	Complete
Services ensure that plans for new ranges consider the entire lifecycle	Complete
Services brief WIPT on range sustainment funding	Complete
DoD begins to develop requirements for career program	Requirements not yet fully defined.
OSD and services continue to develop range clearance policy	DoD Instruction 4715.14, “Operational Range Assessments” issued on November 30, 2005

Environmental Goal:

Focus the environmental management systems to fully support sustained access to ranges.

Table 5-3. Environmental Actions and Milestones

2005 Actions and Milestones	Progress to Date
Services continue to assess off-range migration	DoD has finalized DoD Instruction, DoDI 4715.14, “Operational Range Assessments” providing implementing instructions for DoDD 4715.11.

2005 Actions and Milestones	Progress to Date
	Services have begun performing assessments at operational ranges to determine if munitions constituents are migrating to off range areas in concentrations that give rise to an imminent and substantial endangerment to human health or the environment. To date, none of these assessments have shown MC migration to off range areas in concentrations that pose an imminent and substantial endangerment. All assessments are scheduled to be complete by the end of FY 2010. In a separate unrelated action, the Army is conducting an investigation and cleanup of MCs in the groundwater underlying the operational range on Massachusetts Military Reservation (MMR), under various Administrative Orders issued by USEPA using the authority of the Safe Drinking Water Act and the Resource Conservation and Recovery Act.
Services conduct required remediation	Continuing
Services complete more than 80 percent of required reviews and updates of INRMPs and ICRMPs	Approximately 75 percent completion has been accomplished.
Services brief the WIPT on selected RDT&E projects	Continuing.

Encroachment Goal:

Maximize the accessibility of DoD ranges by minimizing restrictions brought about by encroachment factors. Implement sustainment outreach efforts that will improve public understanding of DoD requirements for training and testing, and support coalition-building and partnering on range sustainment issues that are important to DoD readiness.

Table 5-4. Encroachment Actions and Milestones

2005 Actions and Milestones	Progress to Date
OSD and Services coordinate encroachment quantification efforts	OSD coordinates with Services through bi-weekly meetings of Sustainable Ranges Working Integrated Product Team (SRWIPT) and meetings of the DoD Natural Infrastructure Capability Working Group. Encroachment quantification efforts and progress are discussed when applicable.
OSD to report on encroachment quantification developments in Sustainable Ranges Report, annually	Continuing to develop the following quantitative analysis tools: Resource Capability Methodology- pilot tested at over 30 Air Force installations OSD's Natural Infrastructure Capability Working Group (NIC WG) has sponsored several pilot tests of quantitative analysis tools for Army and Navy installations, with Marine Corps and other locations to be incorporated in 2006 Army Installation Status Report on Natural Infrastructure

2005 Actions and Milestones	Progress to Date
	Capability is under redesign to incorporate impacts of environmental management and natural infrastructure on ranges
OSD and Services continue to identify candidate locations for buffer initiatives and execute agreements subject to funding limits to support Range Operations	The Services are developing programs to support new authority under 10 USC § 2684a on conservation buffer partnerships, for example: Army Compatible Use Buffers (ACUB) program Navy and Marine Corps Encroachment Partnering (EP) program OSD is developing a Program Guide to provide an overarching structure to these already successful Service-based programs.
OSD to develop Service-wide range inventory and database using Geographic Information System (GIS)	Currently, OSD maintains a Service wide inventory of ranges and installations using GIS, which is provided in list and Map format in the appendixes of this report.
OSD and Services participate in at least two national or regional meetings with key stakeholders on range sustainability issues	OSD and Services participated in several national and regional meetings with key stakeholders on Range Sustainability issues in 2005, for example: • White House Conference on Cooperative Conservation • Joint Services Environmental Management Conference • National Range Sustainability Conference • Southeast Regional Partnership on Planning and Sustainability • Southeast Sustainable ranges Workshop
Conduct periodic updates to AICUZ and RAICUZ studies	In progress. Services are actively tracking and updating the currency of their plans.
Issue Outreach Policy	In progress.

5.2. DoD Funding

Section 366 of the National Defense Authorization Act for Fiscal Year 2003 calls on the Department to report on funding requirements associated with implementing its plans for addressing training restraints caused by encroachment. In the July 2005 report to Congress on sustainable ranges, the Department described the creation of a Funding Subgroup under the Sustainable Ranges WIPT, and its efforts to develop a common framework for consistent and accurate reporting of sustainable range funding. Last fall, a sustainable ranges program review was conducted to see just how the framework would work. The results were mixed. What was learned from this trial run is that funding for sustainable range efforts continues to be spread among many different appropriations and program elements and is managed differently among the Services, making this task extremely challenging. This conclusion was also apparent from a recent OSD effort aimed at better defining standards for common levels of installation support services for range operations. The Subgroup will continue to meet periodically to iron out differences among the Services reporting abilities in an effort to further develop and refine the proposed funding framework, and evaluate its usefulness.

5.3. RANGE INFORMATION ENTERPRISE

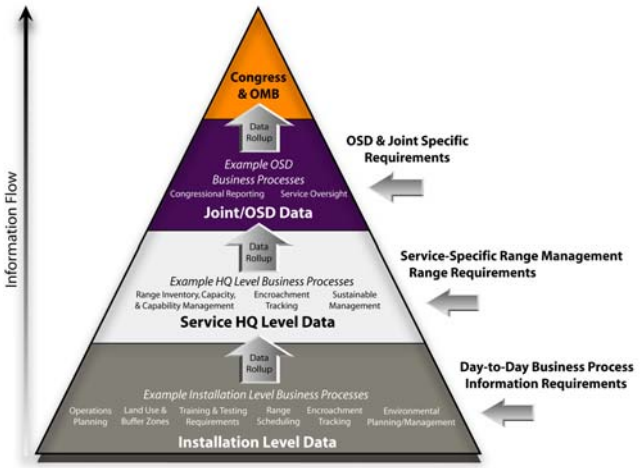
This section describes the DoD's current and future efforts to work towards a more integrated Range Information Enterprise that supports and facilitates range management, operation, and sustainment. The Range Information Enterprise initiative encompasses the business areas, processes, users, information, and systems supporting the management, operation, and sustainment of range missions across the Department of Defense.

As the Department moves towards a more integrated information enterprise, cross-service and cross-functional capabilities at both the business process and system levels have become increasingly important. The flow of information on a training or testing range is a critical factor directly affecting both the ability to successfully meet training and testing requirements at the range level and the ability of the Services and OSD to manage training and testing issues at the management level of the enterprise. Therefore, the development of these capabilities presents significant opportunities for the Department to increase its ability to manage and integrate the range training and testing domain.

Conceptually, the Range Information Enterprise is a framework for integrating or sharing multiple sets of data and systems capabilities to realize increased efficiencies (i.e., joint system development, reduce information duplication, standardized data, sharing of tools and capabilities) associated with the training and testing mission while increasing information flow throughout the enterprise. To accomplish this, the enterprise will identify joint business processes and requirements at each level of the range business, and establish a process for rolling up information from the range level through the levels of the enterprise to OSD and Congress.

Figure 5-1 depicts the conceptualized layers of the Range Information Enterprise. These four tiers show the locations at where data exist and how the data are "rolled up" within the enterprise. Each layer of the triangle represents a level of data and the associated range business processes and the interfaces between tiers. These levels are Installation, Service HQ, Joint/OSD, and Congress and OMB. At the base of the pyramid is the Installation level, which represents the most detailed data in the enterprise. The data are used for the day-to-day operation of ranges and represents the point at which operational data are needed throughout the entire enterprise and where the data will be collected. The next level of the Range Enterprise pyramid, Service HQ, represents a smaller data set. This level encompasses higher order information used to manage a number of ranges collectively. The third level of the enterprise, the Joint/OSD level, represents data derived from the lower tiers that is used to support broad strategic management decisions related to Congressional and Service oversight for the range mission area. The fourth and final level represents data used to report to Congress and OMB, where funding decisions are made. Each of these levels has a business requirements component that drives processes and procedures throughout the Range Enterprise framework as well as the data needed to support those processes and procedures. These requirements are essential to maintain a data migration from one level to the next.

Figure 5-1. Range Information Enterprise Information Flow Diagram



The Department is working toward achieving this range enterprise vision by facilitating change related to business processes and information systems to ensure the Departments can maximize the use of range assets at dedicated ranges, ocean operating areas, and in special use airspace to meet training and testing requirements. The Department recognizes the need to lay a foundation for successfully capturing and reporting information associated with range business processes. The range enterprise domain is comprised of a number of multifaceted functional business areas, each of which has multiple, highly complex business processes associated with it. These functional areas are shown in Figure 5-2 below.

Figure 5-2. Range Information Enterprise Functional Areas Diagram

As stated above, information associated with each of these areas is required by users at the range level, some at the Service HQ level, and some at the OSD level of the Department. This information is continually refined to address the needs of stakeholders at each tier of the information triangle. Each tier includes multiple user groups requiring access to range-related information across multiple Department functions, particularly in Installations and Environment as well as Personnel and Readiness and Operational Test and Evaluation. Furthermore, users outside the Department have needs for range information. Some of these users include state and federal agencies, partnering organizations, and the public.

5.3.1. Range Enterprise Architecture

Traditionally, range information systems have been developed, utilized and supported by individual services and thereby hindering the propagation of information across the enterprise. To resolve this issue, the Department is beginning work to create a Range Enterprise Architecture that will support and manage the training and testing range mission based on the functional domains of air, ground, and sea as well as the range types associated with each of these functional domains. This approach will allow range information systems and tools to be aggregated into the functional domains rather than by Service ownership. Initially these functional domains will represent high level views of all range types and the missions associated with each functional domain, regardless of Service. Fundamentally, common mission requirements (i.e., training on a land-based range) results in common information requirements and these similarities can be capitalized on to create joint and cross-Service training opportunities.

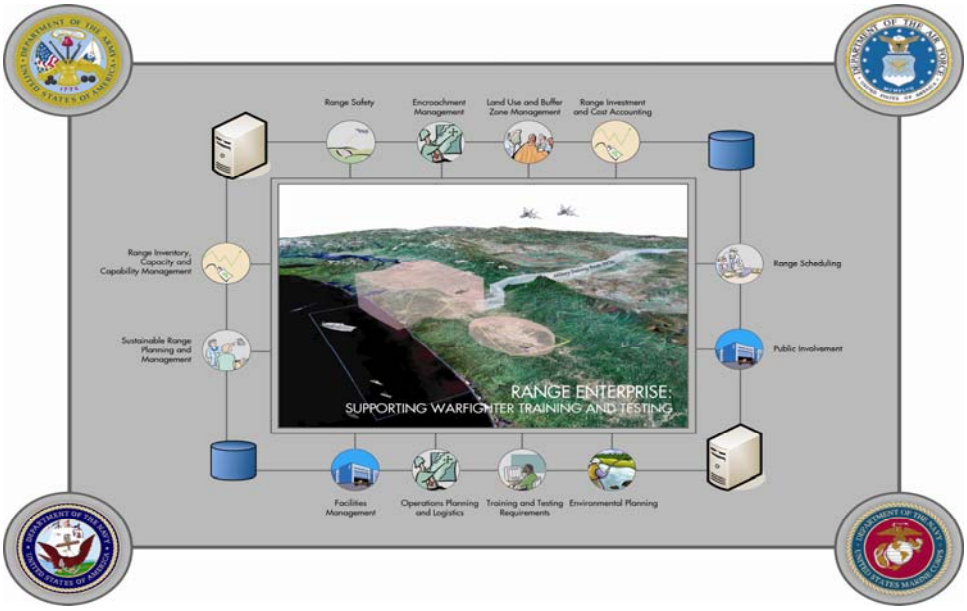
In building the foundation for a range enterprise, the Department faces a number of challenges that will require innovative solutions, a strong commitment to cross-Service collaboration, and a strategic plan. The most significant challenges involve emerging requirements, evolving business processes, and changing information technologies. Further, advances in systems technologies, such as net centric operations and the Global Information Grid (GIG) Architecture as well as geospatial technologies, have provided new methods for data organization, visualization and analysis that could serve as a common platform and capability supporting multiple business processes and user groups at many levels of the range enterprise.

The Range Enterprise Architecture will seek to overcome these challenges by identifying commonalities based on the functional domains of air, ground, or sea. By identifying and integrating the business processes, current and future information systems, and data and technology associated with these domains, the Range Enterprise Architecture will enable cross-Service and cross-functional capabilities within the Services and DoD. Further, the Range Enterprise Architecture will —

- Establish and govern a Range Mission Area that aligns with BMMP efforts to articulate the range's processes, systems, and standards;
- Provide a repository of current functional processes and information systems that functions as an enabler of cross-functional capabilities;
- Provide guidance for system developers and program managers to ensure interoperability, functional reuse, coordination, and standardization during information system development;
- Assist with standardization, system interoperability, and process improvement within and across the Services; and
- Provide a decision-making tool for portfolio managers to evaluate current and future investments' compliance with the range architectures and BMMP IRB concept of operations.

The Range Enterprise Architecture is being described using the DoD Architecture Framework (DoDAF), including the Operational (OV), Technical (TV), System (SV), and All View (AV) products. The Range Enterprise Architecture's scope, mission, domains, and primary components are depicted in Figure 5-3, the DoDAF OV-1 artifact. The range enterprise architecture involves interactions with internal and external systems. In addition, the architecture contains functional areas highlighted above, such as safety, scheduling, and investment, which support range management, operations, and sustainment. Finally, architecture encompasses the requirements of range users, planners, managers, and support staff within each tier of the enterprise.

Figure 5-3. Range Information Enterprise Operational View (DoDAF OV-1)



5.3.2. Cross-Service Cooperation and Enterprise-Level Planning

This section highlights DoD's cross-service and enterprise-level efforts to develop comprehensive, interoperable, and networked range information systems to meet requirements for range sustainment, management, and operations. The Department is making significant progress in several key range functional areas: Range Scheduling, Range Safety, Range Management, and Encroachment Management. These efforts are focused on creating systems that are common or compatible across the services, are web-based and networked with external systems, apply best practices for system development and sustainment, and enforce data and metadata standards to facilitate information sharing. The results of these efforts have supported range training and testing by realizing efficiencies and improved the information available to range users and managers.

5.3.3. Range Scheduling

DoD's is improving range scheduling systems to support the Services' ability to identify and schedule ranges to meet training and testing requirements. The Department is making significant progress in the development of range scheduling solutions that are web-based, geospatially enabled, and standardized within and across Services. The Department is continuing to work towards consolidating and standardizing range scheduling systems and better integrating scheduling systems with other range systems. Significant challenges in this process are due to differences in range missions, scheduling requirements organization, and processes. However, the Department is focused on continually improving these systems to maximize the use of range capabilities to meet our military's readiness requirements.

The Army and Marine Corps have achieved successes in the cooperation GIS databases, range safety tools, and a common range scheduling system. The consolidation of doctrine and inter-Service partnership created an opportunity to develop the Range Facilities Management Support System (RFMSS). The joint implementation of RFMSS resulted in improved training opportunities within both

Services. These joint efforts have allowed for increased functionality and greater efficiency during training and war fighter preparations.

Another example of Department's web-based, enterprise range scheduling success is the Air Force's Center Scheduling Enterprise (CSE). Developed by Eglin Air Force Base and jointly funded by Eglin and Edwards Air Force Base, CSE uses enterprise-level principles in its modular systems architecture. This architecture allows the system to be configured and implemented across a spectrum of ranges, supporting various missions, with a minimum effort.

5.3.4. Range Safety

DoD has several efforts underway to improve range safety systems through policy development, working groups, and the use of information systems using geospatial technologies. The improvements have focused on ensuring safe range operations, while providing capabilities that include web components, GIS-based analysis and mapping, and cross-Service interoperability. The Services are developing these capabilities to improve range safety and gain further efficiencies by using common or interoperable systems.

A notable story within the Department is the Air Force and the Navy's partnering effort to enhance a range safety system for air-to-ground weapons delivery that meets the mission requirements of both Services. Currently the Air Force and the Navy use SAFE RANGE to calculate safety footprints for air-to ground targets. This system uses statistical reasoning to calculate Weapons Area Footprints using previous footprints generated by a weapon. SAFE RANGE displays these footprints using a GIS display to visualize and analyze weapon safety footprints in relation to sensitive areas and range boundaries. The Air Force has designed the system to support all types of traditional air-to-ground ordnance, including joint weapons. The flexible design of this tool and the partnership between the Services has facilitated the safety planning portion of training operations.

The Marine Corps and the Army are also partners in the development and enhancement of a common set of web-enabled, GIS-based tools for ground range safety. This toolset, the Range Managers Toolkit (RMTK), provides a comprehensive set of capabilities to analyze the safety of all types of ground weapons and ordnance types. The toolset has benefited the Services in both cost and time-savings while improving the accuracy and efficiency of the range safety process through automation. Cross-Service coordination between the Army and the Marine Corps and the development of a joint range safety instruction are keys to the success of this tool.

5.3.5. Range Management

This section describes the current and future efforts to plan, manage, and develop enterprise-level range management systems through system integration and development. These systems are designed to support multiple range management business areas such as range safety, investment, environmental planning, and inventory. Common features of these systems include web-based interfaces, enterprise databases, GIS capabilities, and integration of systems across multiple range functional areas.

As an example, the Marine Corps has developed a robust range management system named the Range and Training Area Management System (RTAMS). RTAMS provides a central location for Marine Corps and other Service users to access information and services for all Marine Corps ranges. The core of the system is a comprehensive GIS database of range data that is based on an inventory of ranges and capabilities. As an example of the unique functions of this system, the RTAMS has a tool that allows users to query the range inventory based on the range type. This tool provides range users the ability to

search for range types that meet their training requirement needs. Users can then view interactive GIS maps of the range and schedule the range through a link to the web-based module of RFMSS.

The Navy is another example of the Department's enterprise approach to build comprehensive information systems to support range management. The Navy is developing a database, business rules, and functional set of tools to support range management, operations, and sustainment as part of their Tactical Training Theater Assessment and Planning (TAP) Program. The system that supports this program is called the TAP Repository (TAP-R). TAP-R is intended to support a complete set of range stakeholders including range managers, operators, environmental planners, and investment planners. A unique feature of the system is its integration of range functional areas including inventory, operations, environmental planning, encroachment, range capabilities, and investment.

5.3.6. Encroachment Management

The Department is developing information system capabilities to support encroachment quantification and management. These systems implement methods for collecting encroachment data, analyzing impacts to range resources, and tracking encroachment issues and actions. As with other range information systems, these are being developed with common capabilities such as GIS visualization, GIS analysis, and web-based access. These systems are being integrated into range management systems to support range sustainment and assure future readiness.

As an example of the Department's success in this area, the Marine Corps is developing tools within their range management system, RTAMS, that will track range capabilities and encroachment impacts on those capabilities. These tools, when deployed, will establish a range encroachment baseline across all Marine Corps ranges and training areas. The success of this approach is based on its field-tested methodology, rigorous data collection process, and ability to tie encroachment issues to training impacts.

5.3.7. Geospatial Information and Tools

The Department is committed to taking an enterprise approach to range GIS data and tools to further enable and maximize the use of range assets to meet readiness requirements. The Department has several ongoing efforts aimed at leveraging GIS data and tools to support training, testing and long-term range sustainment. These efforts range from cross-Service working groups, new mission capabilities, and developing tools and data.

5.3.7.1. Cross-Service Range GIS Sub-Group

The Department formed a working group to examine range GIS data and tools to further enable and maximize opportunities for cross-service and cross-functional use of ranges. The group is referred to as the Range GIS Sub-Group which is subordinate to the Range Use Standardization Working Group (RUSWG) and part of the DoD Training Transformation initiative. The Range GIS Sub-Group, which consists of members from all four Services, focuses its efforts to determine how GIS technology can enable cross-Service (and possibly cross-functional) use of DoD Ranges by recommending a common enterprise GIS and standardized range GIS tools. The group, chaired by the Army, is composed of GIS professionals and subject matter experts in range GIS data and tools. The scope of the sub-group encompasses operational ranges to include air, ground, and sea domains. Also, the group is exploring all aspects of range GIS including common data standards, tools/applications, training courses, policies, procedures, and interfacing with stakeholders across the Department and within the individual Services.

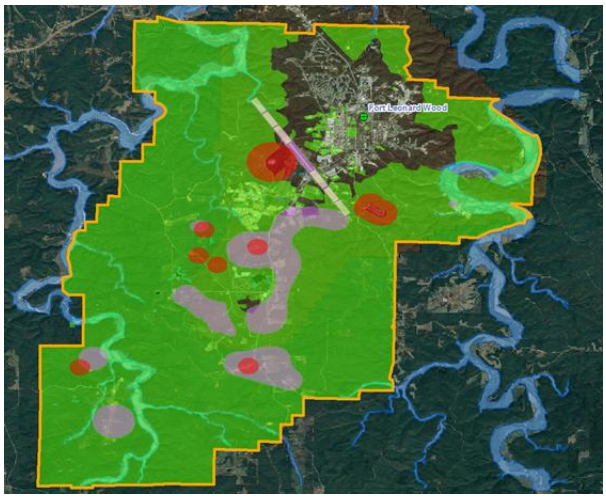
5.3.7.2. Defense Installation Spatial Data Infrastructure (DISDI)

Another success has been the establishment of a new mission capability, DISDI. DISDI is comprised of those people, policies, and practices necessary to acquire, steward, and share installation, environmental, and range spatial data assets in support of defense, federal, and national goals. 'Acquire once, share many' is a common goal shared by DISDI as well as many federal IT reform efforts. As the Department improves its operational effectiveness and efficiency through Business Transformation, DISDI will ensure that quality geospatial data and capabilities are integrated, where appropriate, into the new common business processes. It is envisioned that the DISDI architecture will address both personnel and business process for the purpose of ensuring sustained availability and access to current, authoritative defense installation geospatial information.

5.3.7.3. The Installation Visualization Tool (IVT)

The Department has also successfully developed the Installation Visualization Tool (IVT) to support the Base Realignment and Closure (BRAC) 2005 as a means of viewing imagery and geospatial data in a consistent fashion for all installations meeting BRAC 2005 threshold criterion. The BRAC Joint Cross Service Groups (JCSGs) utilized IVT as a situational awareness tool to assist development and communication of DoD's BRAC recommendations. For those installations meeting BRAC criteria, IVT included a satellite image, installation and range boundaries, floodplains, wetlands, noise zones, accident potential zones, and explosive safety quantity distance arcs. The following figure illustrates the portrayal of these data in IVT. The green shaded areas represent the areas categorized as "range" for the installation.

Figure 5-4. Installation Visualization Tool (IVT) Geospatial Data Including Range Complex Boundaries (in green)



Range complex boundaries were included as a key IVT layer. Installations with range management missions were required to provide the outermost boundaries of those lands owned, leased, or protected with other restriction (e.g., withdrawn lands) by the DoD supporting range operations. These included both air-to-surface range boundaries and range boundaries for ground ranges, military training routes (MTRs), and other Special Use Airspace (SUA) associated with DoD ranges.

5.3.8. Range Information Enterprise Analysis

In an effort to baseline and document range information systems currently used or in-development within the range community, the Department initiated a study of range information systems. The study examined 16 range information systems, databases, and programs used for scheduling, management, munitions tracking, safety, and reporting. This sampling of range information systems was provided by the Range Sustainment Working Integrated Product Team (WIPT) and does not account for all range information systems currently in use by the Services for range related activities. The information systems, databases, and programs have a number of capabilities and tools such as, GIS, report generation, management query and decision tools, and enterprise level databases. These systems included developing, mature, and legacy systems identified by the Department as having key roles that met the range functional areas, or business processes.

The study consisted of a survey, interviews, and analysis of the systems data collected for each range information system. This section describes the approach, the data collected, systems analysis, best practices/lessons learned from previous information systems development, and summary of the results.

5.3.9. Approach

The Range Information Enterprise Analysis approach was implemented in three parts: range functional area identification, survey, and systems analysis.

Initially, 12 functional areas (illustrated in figure 5-2) were identified and used in the Range Information Enterprise Analysis. However, in some cases, systems points of contact identified additional functional areas based on the systems unique business rules and requirements. The functional areas served as identifiers for range information systems and the business processes fulfilled by each system. This list is neither exhaustive nor conclusive and more functional areas were added after the interviews. These functional areas provided a useful foundation to organize and compare the range information systems in a survey format.

The survey was created as a tool to guide questions and gather consistent range information systems data. The Department of Defense Architecture Framework (DoDAF) was used to guide the design of survey questions and data categories. There are ten survey categories that organize the survey data. These categories are listed below:

- General Systems Description
- Points of Contact
- System Functionality
- User Community
- Data Collection and Distribution
- Data Standards
- System Interface
- System Architecture
- Network and Documentation
- Best Practices/Lessons Learned

Some questions in the survey categories were specifically designed for the users and developers of range information systems. These questions were grouped into sets that were directed towards certain types of users and developers to eliminate data redundancy and target the appropriate group. For the purpose of the analysis, users and developers were divided into three groups: Range Manager, System Administrator, and System Developer.

After the questions were appropriately divided among the groups, the survey was used by interviewers to collect data during face-to-face interviews with points of contact provided by the Range Sustainment Working Integrated Product Team. The survey acted as a tool to guide and prepare interviewers and interviewees during the interview process. The survey helped to collect the data in an efficient, concise, and consistent manner.

Interviews were normally conducted at the installation with the Service points of contact. In most cases, the interviews included a demonstration of the system, database, and program.

5.3.10. Data

Range Information Enterprise data pertaining to information systems was collected by teleconference and face-to-face interviews. The data are comprised of four types: textual descriptions, checkboxes, numerical quantities, and yes or no answers. Overall the data provides a high level scope and business view of the information systems. The extent of technical detail does not exceed the system model level of the DoD Enterprise Framework. However, data collected at the system model level does reflect some basic enterprise values pertaining to the technical capabilities of the information systems analyzed. For example, some databases used by range information systems have the potential for linking and integrating with other enterprise levels or enterprise capable information systems. In other cases, the databases used by range information systems are closed systems and do not lend themselves to integration with other enterprise level information systems. The data in this part of the effort provides a summary of range information systems that have the potential to be extended to other range information systems. Knowing that an information system is capable of sharing and integrating into other systems allows range information system managers, developers, and system administrators access to a greater amount of data for range use and management. This information provides these insights, and more, about information systems' cross-Service and cross-functional capabilities.

5.3.11. Results

The analysis of 16 range information systems in the preliminary baseline provides the Department with an evolving set of data about existing range information systems capabilities. This preliminary baseline evaluates several key components of an enterprise and provides observations from the range community about lessons learned during the development of information systems.

The results of the analysis highlight four key areas that illustrate the capability for range information systems to integrate into a more comprehensive range information enterprise. The four sections include range functional areas and cross functional capabilities, range information system users, range geospatial capabilities, and systems architecture distributions. Each of these sections demonstrates a capability of the current range information systems used by the Services at all levels of the Range Information Enterprise. These capabilities are critical functions needed to achieve an integrated range enterprise for range management, operations, and sustainment.

5.3.11.1. Range Functional Areas and Cross Functional Capabilities

The range functional areas and cross-functional capabilities analysis compared systems to the functional areas used in the survey. Each range information system point of contact was given the option to categorize the range functional areas as a direct, indirect, or not supported process. The results showed that supporting a functional area directly also meant supporting other functional areas indirectly.

In addition to functional areas, three cross-functional capabilities were identified. Cross-functional capabilities are functional processes or tools that meet multiple functional areas using an efficient suite of

technologies. The cross-functional capabilities are GIS, Range Database Capabilities, and Management Query and Decision Tools.

The preliminary baseline analysis found that all information systems in the study supported at least one cross functional capability. Of the sixteen systems identified, seven support all three of the cross functional capabilities and five systems developed, jointly support all three cross functional capabilities. The initial results of the functional area analysis indicate that cross-functional capability leads to extensible systems with joint applications and are commonly found in jointly developed systems.

Additionally, other functional areas were identified and added to the list as the baseline evolved during the survey. These functional areas are specific to one or two systems but were not universal in the systems functional area distribution. These functional areas are Munitions Management and Munitions Tracking.

5.3.11.2. Range Information System Users

Another integral part of range information systems is the user profile. The user profile and user type demonstrates the community of users accessing range information systems. The user profile and the user type are key components in understanding who are the most frequent users of information systems and the level in the range information enterprise that these users repeatedly access. The 16 range information systems identified and analyzed have an even distribution of user types. The data from several information systems necessitated defining and grouping users into the following categories:

- Range Planners are the group of users that plan missions and de-conflict any potential problems with range scheduling.
- Administration Users include system developers, information flight chiefs, information officers, etc. that are responsible for the overall maintenance and upkeep of the range information system.
- Range Managers are the user groups that manage the range from facilities maintenance to range missions completed. They are responsible for the overall function and management of the range.
- Range Users are the actual users of the range. These are the users that conduct, schedule, and complete training missions on the range.
- Public Users include the public at large, or anyone who access a public portion of the range information system as a public service provided by the information system. These users usually interface with the system through a public website or a web-enabled component of the information system.

Of these user types the largest group of users for range information systems identified is Range Planners followed by Administration Users, Range Managers, and Range Users. The smallest user group is Public Users.

Additionally, data pertaining to the user profile was categorized into four groups: Single Organizational or Installation, Multiple Organizational or Installations, Service Wide, and Cross-Service. Of the systems sampled the data collected about user profiles showed that Single Organization or Installations and Service-wide users were the largest user profile group for range information systems. The largest user profile is also supported by jointly developed systems such as Range Facilities Management Support System and SAFE Range.

For the systems sampled user type and profile analysis shows that users of range information systems are most commonly Range Planners and Managers accessing an information system that is used by Multiple

Organizations or Installations or distributed across the Service. Therefore, the greatest use of information systems are by those users planning and managing ranges rather than those using the range to conduct missions. These observations provided valuable insight into the range information enterprise needs by illustrating the level of development needed for information systems. In order to develop effective policies and information systems that will move an enterprise forward, the Department must know the community of users that will be most affected.

5.3.11.3. Range Geospatial Capabilities

Range geospatial capabilities provided another key component to the Range Information Enterprise. As range information systems evolve, the use of geospatial technologies plays an increasingly important role. Geospatial technologies developed standards for data, centralized databases, and extensible tools that can be modified for use within other information systems. Geospatial technologies are bridging the information systems gaps for integrating multiple systems. For the preliminary baseline, range geospatial capabilities were analyzed in three sections: Geospatial Capabilities, Spatial Data Standard for Facilities, Installation, and Environment (SDSFIE) Compliance, and Data Type. This analysis shows the extensibility and importance of geospatial technologies for range information systems.

The study found that eleven of the sixteen systems analyzed are geospatially enabled at some level (i.e. a viewer up to a tool that produces some analysis). Seven of the eleven systems with geospatial capabilities have some form of SDSFIE compliance. SDSFIE is a data standard for developing geospatial data in a consistent format that can be universally applied and organized for use in several information system architecture types.

Data types were analyzed in three sections: Environmental, Range, and Infrastructure. These data types appeared the most during the data collection effort. They represent three of the most important data components for range information systems. Analysis of these types showed that systems lacking geospatial capabilities required or used fewer data types. Notably, four of the seven systems that are SDSFIE compliant contained data within all three data types.

Most importantly, the analysis shows that geospatially enabled systems, tools, and technologies are aiding enterprise information system development and integration through standards based, centralized databases for range information systems. These standardized data sets in centralized databases are part of building a successful enterprise within any domain. Because geospatially enabled systems and tools thrive on standardized data that is readily accessible to multiple users, geospatial technologies are building one of many foundations for enterprise architecture in the range community.

5.3.11.4. Systems Architecture Distributions

The final component of the range information enterprise analysis is the architecture of the systems that make up the enterprise. Without knowledge of the current information systems architecture, integrating information systems and data would not be feasible. For the baseline, a section of questions were dedicated to system architecture to collect data on the architectural development of range information systems. Four definition of systems architecture were developed. The purpose of the architecture analysis is to show the extensibility of information systems and account for the distribution of architecture types in the Range Information Enterprise. A clear analysis of systems architecture and distribution is needed to properly understand current information systems capacity.

The following definitions of system architecture were developed for the Range Information Enterprise system architecture analysis:

- **Closed, Work Group Solution:** These systems support 1 to 15 users, are not open to connections from other system systems, and are highly consolidated (i.e., the entire system was built in MS Access).
- **n-Tier, closed systems:** These systems are composed of multiple tiers (i.e., database tier, application tier, and presentation tier technologies) and thus are scalable to support large user communities. They do not, however, support other systems connecting to their data and/or functionality.
- **n-Tier, open systems:** These systems are composed of multiple tiers (i.e., database tier, application tier, and presentation tier technologies) and thus are scalable to support large user communities. They also support other systems connecting to their data and/or functionality.
- **Portalized, n-tier systems:** These systems are integrated into a system of systems that are accessed via a common interface (or portal) to support broad requirements of multiple user communities.

Of the 16 systems analyzed nine have n-Tier, open systems architectures that are capable of connecting to other systems data and/or functionality. This distribution highlights the potential for further linking and integrating of systems into a larger information management framework. The findings also reveal an evolving range information enterprise with increasing capabilities from the architecture component.

5.3.11.5. Summary of results

As the range information systems development advances, so does the evolution of capabilities. Data from the baseline study indicates that range information systems are geospatially enabled, supporting and increasing cross-functional capabilities, providing services to a large user group, and developing extensible, standards based architectures that can integrate into other systems or databases.

5.3.12. Best Practices

An additional section of the analysis captured best practices or lessons learned. In this section, information systems points of contact were asked to identify best practices learned during the information systems development. Four best practices were most common among the systems that were surveyed:

- Cross-Service Cooperation: Joint Service development of range information systems to meet common mission requirements
- Enterprise-Level System Planning: Enterprise approach to range information development that flows from the range management and operations requirements
- Standards Based, Modular Development: Range information systems development with modular style architecture based on industry standards
- System Development Working Groups: Establishing executive and working group teams comprised of subject matter experts and stakeholders to plan and manage Service information system efforts and support system development

5.3.13. Looking Forward

Currently, OSD and the Services are beginning the development of an enterprise plan that will provide a path forward for the Range Information Enterprise. As efforts to implement changes from the Training Transformation (T2) and Business Transformation continue, enterprise planning will play a key role in helping OSD and the Services develop an interoperable, joint training, and testing environment. Current

enterprise planning efforts are focused on three approaches that include: a baseline of the current range information systems capabilities, four-Service development of a range enterprise plan and architecture, and stakeholder involvement from all levels of the range community.

The first approach includes an ongoing baseline summary for all Service range information systems used to manage, operate, and sustain ranges. In 2005, the department conducted the initial baseline summary of range information systems. These systems covered a wide range of functional areas within the range community which includes scheduling, munitions tracking, geospatial capabilities, range reporting, safety, and range management. The 2006 baseline effort will include additional range information systems identified but not analyzed during the 2005 baseline, as well as any updates or enhancements of systems previously documented.

The second approach includes an enterprise plan that outlines common requirements and mission processes, potential for joint use and joint development of information systems, and provides the beginnings of a DoDAF compliant architecture. This architecture will focus on the As-Is architecture for the Departments Range business. As part of this year's effort an All Views product (AV-1) and an Operational View (OV-1; 5-3) will be developed for the Range Enterprise Architecture. The Range Enterprise Architecture views will include the scope, goals, objectives, the enterprise vision and mission, and operational range view.

To accomplish an effort of this size the Department recognizes the need for several working groups which include stakeholders from all levels of the range community. Thus, the third approach includes stakeholders from working groups like the Range Sustainment WIPT and the Range Standardization Working Group. These groups provide a multitude of perspectives about range operations, management, and sustainment. These perspectives transcend all levels of the range community and business.

5.4. OVERSEAS RANGES

In last year's report, the Department presented information on overseas ranges and the Department's need for these ranges to ensure our forces stationed overseas maintain a high state of readiness. Both topics were set against the Global Posture Review (GPR) to realign and update the nation's defense posture and the pending (at the time) decisions to realign facilities and restation military forces here in the United States and abroad. Information was presented about various areas of interest (e.g., Europe, the Middle East, Asia). The report also described specific overseas ranges where U.S. forces train.

During the last year three significant events occurred that relate to the sustainment of overseas ranges:

- The Commission on Review of the Overseas Military Facility Structure of the United States [commonly called the Overseas Basing Commission (OBC)] completed an assessment of the Department's plans for changing the deployment of U.S. forces overseas
- The Department began an examination of factors influencing the sustainment of overseas ranges, in particular those that U.S. forces plan to use to meet future training requirements
- The Department began an analysis of existing Departmental policy applicable to sustaining those overseas ranges that U.S. forces plan to use to meet future training requirements.

> The overseas basing structure as envisioned by the Secretary of Defense holds great potential for protecting and securing the nation, its interests and its allies…
>
> Final Report of the Overseas Basing Commission
> August 15, 2005

5.4.1. The Overseas Basing Commission

In 2003, the United States Congress established the OBC as an independent Commission charged with "… conducting a thorough

study of matters relating to the overseas military facility structure of the United States."[19] After more than a year's work, on May 9, 2005, the OBC submitted an interim report to the President and the Congress. After additional discussion with DoD and other entities and further refinement of the interim report, on August 15, 2005, the OBC submitted its final report to the President and the Congress.

As stated in the final report "The Commission was impressed by the many initiatives being taken by the Department of Defense the Joint Chiefs of Staff, the individual services, and the combatant commanders to adapt to a changing world… The overseas basing structure as envisioned by the Secretary of Defense holds great potential for protecting and securing the nation, its interests, and its allies in the post 9-11 world." The Commission also recognized the need for many of the changes to the overseas basing structure and deployment of U.S. forces already underway, noting "The expansion of Cooperative Security Locations (CSL) and Forward and Operating Sites (FOS) in key strategic locations around the globe adds to operational flexibility, preserves a presence abroad, and serves to strengthen alliance relationships."

While the Department agreed with many of the Commission's observations and recommendations, the Department noted that the most significant observation by the Commission is that it is the combined effect of multiple influences, rather than the effect of any individual influence, which must be considered as the Department crafts the nation's strategy for continued deployment of U.S. forces overseas.

5.4.2. Influences Affecting Overseas Ranges

With respect to the sustainment of overseas ranges, the Department observes a trend: it is the effects of a combination of influences that is shaping the direction and specific actions needed to sustain the overseas ranges. While individually each of these influences presents a significant challenge to the sustainment of overseas ranges, it is the interaction of these influences that makes sustaining overseas ranges an especially important and complex challenge.

First among these influences is the continuing trend where changes in economic, political, and social conditions are increasing competition for the frequency spectrum, land, airspace, water, and other natural resources that military forces require for training. As with operational ranges here in the U.S., overseas ranges are being increasingly affected by external forces, primarily urbanization and its accompanying challenges (e.g., environmental and safety considerations, noise, unwanted light at night, community opposition). This trend will undoubtedly continue given the shifts in political and economic alignments occurring across the globe and the increased competition for key natural resources. For example, as a condition for admittance to the European Union (EU), nations in eastern Europe are compelled to adopt more stringent environmental standards. Another example are those Asian countries with limited developable land, where restrictions on live fire training are likely to increase or ranges will be closed, simply due to the competitive resource needs of a growing population.

The second of these influences is the emergent changes in U.S. military strategy. As is discussed elsewhere in this report and in other Departmental publications, to meet the national security challenges of the 21st century, the Department continues making significant changes in the organization, equipment, doctrine, and deployment of U.S. forces. These changes are placing an increased emphasis on expeditionary deployment of forces equipped with lighter, more lethal, and longer range weapon systems. In addition to these changes the Department plans to return to the U.S. a significant number of military personnel, primarily from Europe and eastern Asia, with an accompanying change in the associated supporting infrastructure used by those forces that remain overseas. As a result, the Services are

[19] See Public Law 108-132 Section 128, as amended by Public Law 108-324, Section 127.

changing training requirements to ensure our forces are fully capable of executing new doctrine and are proficient with the new weapon systems with which they are equipped. In turn, this requires an evolution in the specific capabilities of overseas ranges where U.S. forces will train. One such change is that U.S. forces are seeing an increased emphasis on conducting rotational expeditionary deployments to locations geographically separate from their permanent "home" installation (e.g., units in Germany are deploying to locations in eastern Europe, the Balkans, and southwest/central Asia). For example, in 2004, about 5,000 U.S. servicemen and servicewomen participated in "Operation Victory Strike," a joint training exercise in Poland. The Department intends to continue to increase the number of bilateral military training exercises occurring at ranges and other locations belonging to our allies. Table 5-5 provides a summary of several recent exercises where U.S. and allied forces conducted bilateral training.

Table 5-5. Recent Overseas Training Exercises

Operation	Date	Country	Summary of Exercise
ROMEX 05	July 18-31, 2005	Romania	A two-week exercise involving several hundred US military and Romanian Ministry of National Defense Romania personnel conducted aviation exercises including low level flight, air-to-ground and air-to-air missions. Exercise also provided opportunity to anchor ties and improve NATO partnership
Exercise Immediate Response 2005	July 5-23, 2005	Bulgaria	A three week exercise in which over 700 U.S. military and Bulgarian military personnel conducted live fire training including platoon gunnery training, execution of ground, air and rail movements from Germany to Bulgaria.
Talisman Saber (TS05)	June 10-30, 2005	Australia	TS05 is a mid- to high-intensity exercise involving about 15,000 U.S. and Australian personnel. TS05 is a Combined Task Force (CTF), short warning, power projection, forcible entry scenario that includes a Command Post Exercise (CPX), a force on force and live fire Field Training Exercise (FTX), Maritime Preposition Offload FREEDOM BANNER, a strategic air drop and SOF training modules.
Hong Kong SAREX 2005 (HKS 05)	May 15-21, 2005	People's Republic of China	HKS05 is a multinational exercise practicing peacetime search and rescue (SAR) operations with the Hong Kong Civil Aviation Department (CAD) and the Peoples Liberation Army - Navy. The U.S. Air Force, Navy and Coast Guard have been participants in this exercise since 1976. This exercise promotes regional security and interoperability.

Operation	Date	Country	Summary of Exercise
New Horizons Haiti (NHH)	February-March 1, 2005	Haiti	Exercise to conduct humanitarian construction and medical assistance operations in Haiti. Started in the mid-1980s NEW HORIZONS is a Joint Chiefs of Staff-directed program with the primary objective of providing joint readiness training for U.S. military engineering and medical units. Sponsored by the SOUTHCOM, NHH involves the deployment of U.S. military personnel to countries in Central and South America and the Caribbean to conduct humanitarian and civic assistance missions. The program brings together U.S. military units with their host-nation counterparts to build military to military cooperation while fostering goodwill between the United States and its neighbors.

The last influence is from changes in the U.S. operating paradigm that will inevitably result from restationing and redeployment of U.S. forces, both here in the U.S. and overseas. Accompanying the changes in force structure, equipment, and deployment is a lessened focus on U.S. ownership or control of installations, logistical infrastructure, and training infrastructure. Currently, the DoD has a significant controlling interest in most main operating locations and smaller installations, as well as at the ranges and other areas used by these forces to train; however, there are plans for increasing use of facilities belonging to and controlled foreign nation partners to meet U.S. strategic planning and readiness training requirements. The Secretary of Defense has stated that the U.S. will seek to establish several new types of facilities overseas [e.g., Forward Operating Sites and Locations (FOS/FOL)] to provide rotational training, to preposition equipment and other materiel needed for deploying an expeditionary force, or to serve as strategic "lily pads" for contingency operations. This is a departure from the Department's current operating paradigm in that the host nation, not the U.S., will largely or entirely control and operate the range, and will be responsible for sustainment activities.

5.4.3. Departmental Actions to Sustain Overseas Ranges

This combination of influences and the importance of the changes in force structure, deployment, and equipment to the overall military strategy prompted the Department to conduct a preliminary analysis of the Department's policies addressing sustainable management of overseas ranges and other training areas, with a focus on sustaining such facilities when the U.S. does not have a controlling interest. The focus of this preliminary analysis was whether current policies are adequate ensure the long-term viability of the gamut of ranges and operating scenarios (e.g., U.S. controlled, host nation controlled) envisioned for overseas training areas the U.S. does not operate or control.

The preliminary analysis suggests that current DoD policy, including policies issued during the last year, provide a sound basis for sustainment of overseas ranges where the U.S. has a controlling interest, for example, the ranges associated with U.S. installations in the Federal Republic of Germany. DoD has an equally robust series of policies governing operational deployment of forces. In contrast, the use of overseas ranges controlled by allies is not addressed in sufficient depth to ensure the long-term sustainability of the U.S. military's use of these ranges.

There are a variety of reasons for the lack of depth in this area. First, our knowledge of the effects of encroachment and our depth of experience in range sustainment is difficult to translate into actions by the nation who owns the range, since it is our ally, not the U.S., which must take any required actions. The ability of our allies to take such actions is a function of their governmental structure and societal

expectations, topical areas in which the U.S. military typically does not engage the host nation. Second, in many cases our allies do not have the fiscal resources to implement some of the proactive solutions to encroachment that DoD has undertaken (e.g., purchase of buffer zones around ranges), and our ability to provide fiscal assistance is limited both by U.S. law and current fiscal realities. Given current funding, there is a natural reluctance to expend resources improving a range that may unexpectedly become inaccessible to U.S. forces.

The Department is continuing its examination the various issues associated with the long-term sustainment of those overseas ranges owned or controlled by other nations that will be important to ensuring U.S. forces meet training and readiness requirements. Given the large differences among the situations where U.S. forces rely on an overseas range controlled by an ally, one concept that has come from the work thus far is the is the idea of a scalable policy, wherein the level of effort associated with U.S. support of sustainment would reflect factors such as the importance of the range to ensuring the readiness of U.S. forces, required investments in infrastructure by the U.S., and the degree to which access or use of a specific range is important in terms of factors such as readiness and diplomacy. Given the complexity of this topic, it is expected that this analysis will take more than a year to conduct, coordinate, and act upon, and may identify additional issues that would require additional action to fully explore and resolve.

5.4.4. Summary

The sustainable management of overseas ranges continues to evolve with the advent of the DoD's plans for changing the deployment of U.S. forces overseas, new classes of overseas facilities, and a new operating paradigm envisioned by the senior leadership in the Department. The reasons are simple: the same forces impacting domestic training (i.e., encroachment) are not unique to the U.S. Especially in Europe, but also in developed areas in Australia, Asia, South America, and Africa, predictable impacts of economic expansion and urban growth coupled with changes in societal views on protection of the environment and the sustainable management and use of natural resources are forever changing the relationship of the military and the communities that surround military installations.

Coupled with the DoD plan to place greater emphasis of use of facilities operated and controlled by our allies to meet U.S. training and other operational needs, DoD is assessing the actions needed to ensure continued access to the overseas ranges needed for training U.S. forces. Any policies developed as a result will focus on maintaining force readiness, protecting the health of military personnel, sustainment of the natural and man-made infrastructure that supports readiness, securing, protecting U.S. interests and investments, and advancing military and diplomatic relationships.

SERVICE UPDATES

Army, Navy, Marine Corps, and Air Force Service Chapters

Chapters 6 through 9 present individual reports submitted by the Army, Navy, Marine Corps, and Air Force, respectively. The goal of these reports is to highlight the encroachment issues and management approaches within each of the Services. In some cases, encroachment concerns such as urban growth and residential development near installation fence lines are common issues across the Services. In other cases, one Service may be uniquely impacted. For example, the Air Force is particularly concerned with height obstructions such as cell towers and wind farms that obstruct flight routes, and the Navy has specific concerns regarding waterways that channel to the sea. This chapter contains the Services' individual responses to the Section 366 requirements, highlighting the importance of decentralized systems and individualized approaches that the Services employ to support the Department's overall goals and objectives.

In 2004, the Department of Defense (Installations and Environment) updated its strategic plan for managing installation and assets in support of DoD mission. The updated plan reflects new policy addressing natural assets on defense installations, and better correlates installations and ESOH activities directly to military mission support. It contains specific stated objectives, performance deliverables, and assigned responsibilities. The objectives address transformation within the Services, management of real property assets, operational capability, natural infrastructure assets, ESOH requirements, and encroachment issues under the following five overarching goals:

1) Right Size and Place
2) Right Quality
3) Right Safety and Security
4) Right Resources
5) Right Tools and Metrics

The Defense Installations Strategic Plan contains 29 objectives supporting these five overall goals. Five objectives address specific requirements within Section 366. Specifically, over the next five years, the Department has performance deliverables associated with the objectives of managing land, water, and air space resources to preserve range and operational capabilities, and improving land use compatibility to satisfy training and readiness requirements. Development of criteria and implementation of study results will address the objective of improving joint use and utilization rates of physical assets and related base services. Actions to improve land use compatibility to satisfy training and readiness requirements, under DoD programs such as AICUZ, JLUS, and the 10 USC § 2684a authority will be identified in installation INRMPs. Lastly, the plan calls out for the development of a macro-level standardized tool to model and analyze the existing "footprint" versus foot print requirements, and to identify shortfalls or overages in the capacity of installation assets.

The I&E Strategic Plan provides a framework under which the components will develop their own service-specific plans. These chapters contain the Service submissions under Congressional reporting requirements, which address the strategic objectives related to encroachment that are described above. Specific elements that will be addressed by each of the Services include the following:

Range Sustainment Program and Strategy

Overarching Range Sustainment Programs and Strategies drive and integrate various range sustainment efforts within the Services. The Marine Corps provides four primary milestones to support their overall Mission-Capable Ranges Vision for sustainability. New policy is being finalized under the Navy Sustainability Program, which is implemented through the Tactical Training Theater Assessment and Planning Program (TAP). New Army Regulation, 350-19, was published this year to define Sustainable Range Program focusing on capability, availability, and accessibility of training ranges, as well as

outreach to better inform the public of the Army's mission. The Air Force Sustainable Range Program and NICRM policy continued to be implemented at over thirty facilities.

Current and Future Requirements

The Services describe documentation and data systems that house training requirements needed to address the challenges of the current and future military mission.

Data Collection and Management Systems

The Marine Corps and Army are using the Range Facilities Management Support System (RFMSS) to schedule training events on ranges. Air Force describes its Range Manager's Software Tool (RMAST) for managing ranges more effectively and efficiently. The Navy's encroachment data discussions address service-unique issues related to marine species density and an encroachment database.

Assessment Tools and Quantification of Encroachment Impacts

The Marine Corps uses the following assessment tools to identify, analyze, and report on encroachment and its impacts: Range Complex Management Plans (RCMP), Training Range Encroachment Information System (TREIS), and Range Environmental Vulnerability Assessment (REVA).

Within Navy, one component of encroachment assessment is the Range Sustainability and Environmental Program Assessments (RSEPAs). Each range's ability to meet mission requirements is documented in a Range Complex Management Plan (RCMP).

The Army is developing and using a variety of tools to measure encroachment and provide a complete picture on encroachment issues. These include the Environmental Condition Model (ECM), the Installation Status Report – Natural Infrastructure (ISR-NI), Fort Future – Sustainability, Encroachment and Room to Maneuver (SERM) and the Training Center Sustainment Initiative (TCSI).

The Air Force Natural Infrastructure Capability Resource Management (NICRM) Assessments were conducted at over thirty installations across multiple Air Force Commands. Together with Resource Valuation assessments that provide economic consideration to risk management alternatives, these standardized assessments provide the input needed to support installation and MAJCOM decision-making.

Documentation and Implementation Plans

Across the Services, implementation and action plans to combat encroachment include Range Capabilities Documents (RCD), Range Complex Master Plans (RCMP), Encroachment Action Plans (EAP), Encroachment Plans (EP) and Encroachment Control Plans (ECP). These plans are used to document assessment results and strategies at individual installations, and to provide input for funding and investment in range sustainability and modernization.

6. ARMY RESPONSE TO ENCROACHMENT

6.1. FORCES INFLUENCING THE SUSTAINABLE RANGES FOR THE ARMY

6.1.1. Army Campaign Plan

The Army is pursuing the most comprehensive transformation of its forces since the early years of World War II, but the Soldier remains the centerpiece of combat systems and formations. The Army Campaign Plan (ACP) provides direction for detailed planning, preparation, and execution of the full range of tasks necessary to provide relevant and ready land power to the Nation and our continuing engagement in the Global War on Terrorism while maintaining the quality of the all-volunteer force.

The future direction of the Army is to increase its capabilities for a wide range of missions whether the Army is at war, keeping the peace, deterring aggression, or providing humanitarian assistance around the globe. To prepare for these missions, the Army is redesigning the organization by transforming to smaller, brigade-based units that are standardized and can be tailored to meet operational demands.

6.1.2. Army Modularity

The Army is restructuring to the Future Force by divesting itself of Cold War structure and headquarters to enhance its global war on terrorism capability. The Army is creating a "brigade based," modular Army that is capabilities-based in order to meet the requirements of combatant commanders. The Army Modular Force will create units that are more stand-alone with a broad spectrum of capabilities. These Brigade Combat Teams (BCT) will support offensive or defensive operations.

The total number of available brigades will increase to 77 with 10 active component brigades being added by the end of 2006. This will enable the Army to generate forces in a rotational manner that will support two years at home following each deployed year for active forces, four years at home following each deployed year for the Army Reserve, and five years at home following each deployed year for the National Guard,

6.1.3. Integrated Global Positioning and Basing Strategy (IGPBS) and Base Realignment and Closure (BRAC)

One of the Army's near-term transformational challenges is better use of the forces we have to provide needed capabilities to the combatant commander. This strategy enables rapid power projection and expands global presence and theater security programs by combining quick deployment of CONUS-based forces with strategically positioned overseas-based forces. The IGPBS will establish a small forward-deployed permanent presence at Joint Main Operating Bases in Europe and Korea, have selected units on rotation to austere Joint Forward Bases, and have some level of training at Joint Forward Operating Locations. The transformed Army will have Brigade Combat Teams (BCT) rotating to Europe, Korea, Southwest Asia, or where ever they are needed in the world.

The requirements of IGPBS along with the decisions made by the BRAC 05 Commission will require the acquisition of land for new ranges and training land, changing the current configuration and use of existing ranges, and construction of new ranges and training facilities.

6.1.4. Encroachment

The challenge to meeting the requirements for new ranges and training land assets that are being influenced by the ACP, IGPBS, and BRAC are compounded by the continuing challenges of

encroachment. Encroachment is exacerbated if not triggered by urban sprawl and incompatible land use which places increased pressure on Army installations as we endeavor to meet increased training requirements. Urban development is increasing rapidly around the country and is the most significant factor affecting the quality of live training. With more than 50 percent of Americans living in the suburbs, millions of acres of once rural land are now urbanized. Many suburbs are rising up near Army installations that were once far from public view. More than 40 percent of installations report encroachment issues.

6.1.5. The Army's Land Requirements

Land power remains an indispensable element in meeting the nation's global security requirements. New Army doctrinal requirements dictate increases in speed, range, and mobility of combat units. This capability has taken the doctrinal maneuver footprint for a Brigade Combat Team from 8km x 12km during World War II, to a staggering 50km x 50km footprint for today's digital heavy brigade. The Area of Operations for the Future Force will have a radius of up to 75km. With the increase requirement in doctrinal maneuver footprint as well as weapon system capabilities, the majority of Army installations are experiencing training land shortfalls.

The cumulative weight of these doctrinal training requirements as well as the increased pressures of encroachment continues to impact the capability, availability, and accessibility of Army ranges and training lands. The Army's roadmap for meeting this challenge is through execution of its Sustainable Range Program (SRP) and the many programs and initiatives which are underway to support the sustainability of the Army's ranges and training lands.

6.2. THE ARMY'S ROADMAP: THE SUSTAINABLE RANGE PROGRAM (SRP)

In August 2005, the Office of the Deputy Chief of Staff (ODCS) G3, published Army Regulation 350-19, *The Army Sustainable Range Program,* which defines responsibilities and prescribes policies for implementing the SRP on Army controlled training ranges and lands. The regulation assigns responsibilities and provides policy for programming, funding, and execution of the Army's SRP which is made up of its two core programs: the Range and Training Land Program (RTLP), which includes range modernization and range operations; and the Integrated Training Area Management (ITAM) Program for land maintenance and repair. The regulation also provides policy and guidance on integrated planning to support sustainable ranges at the installation level, a focused Outreach Communications Campaign, and tools for identifying and assessing current and future encroachment challenges.

The Army's requirement for proficiency across a broad spectrum of operations and the demand for ranges and training land will continue to strain our available assets. This situation, coupled with continued encroachment, demands strategic planning and aggressive execution. The Army's SRP sets the framework for meeting these challenges both in policy and implementation. The following section describes in more detail the encroachment challenges and the programs and tools set in place to meet them.

6.3. THE ARMY'S ENCROACHMENT CHALLENGES

6.3.1. Threatened and Endangered Species (TES)

TES impacts on operational ranges remain one of the Army's major encroachment challenges. The Army has 177 threatened and endangered species on 100 installations. In addition, the Army has recorded over 250 species at risk of becoming threatened or endangered on or adjacent to 72 installations. Fifteen installations contain designated critical habitat for 13 species. The legal requirement under the

Endangered Species Act to conserve listed species and critical habitat has and continues to conflict with Army land use and constrains the Army's ability to train as we fight.

Nearly 40 Army installations have reported training restrictions associated with endangered species and/or their habitats. Limitations associated with red-cockaded woodpecker nesting clusters, occurring on nine Army installations in the southeastern United States, include no bivouacking or occupation for more than 2 hours, no use of camouflage netting, no weapons firing other than 7.62mm and .50 cal blank (e.g., no artillery, rockets, etc.), no use of generators, no use of riot agents, no use of incendiary devices, no use of HC smoke, and no digging tank ditches or fighting positions. During maneuver, vehicles cannot come closer than 50 feet of nesting trees. At Army installations in Hawaii, over 90 threatened and endangered species impose restrictions on training, access to training areas, and the intensity of use. Seventy-two percent of Fort Lewis, WA, is designated as critical habitat for the northern spotted owl, even though no spotted owls exist on the installation. This requires the installation to manage the forested landscape for owl habitat versus for training requirements.

To meet these challenges, the Army continues to evolve from reactive management to proactive management using long term planning, utilizing recent critical habitat legal clarifications to the Endangered Species Act, employing focused research, establishing partnerships, and maintaining coordination between Army biologists and military operators.

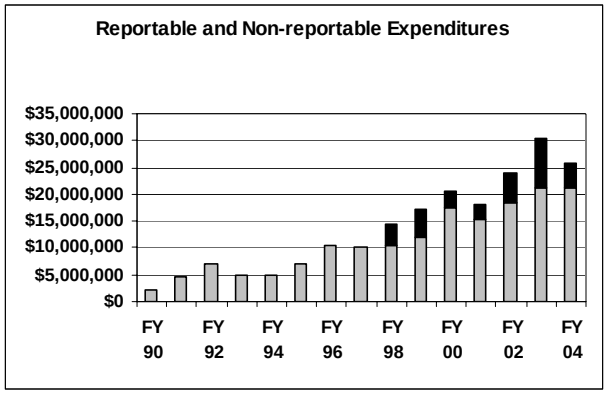
The Army also adopted a policy to manage species at risk in an attempt to prevent key species from needing protection under the Endangered Species Act. Currently, the Army is developing guidance to implement this policy at installations.

6.3.1.1. Integrated Natural Resource Management Plans (INRMP)

Congress amended the Endangered Species Act in the National Defense Authorization Act for FY 2004 to preclude designation of critical habitat on Department of Defense (DoD) lands that are subject to an INRMP when the plan provides a benefit to the species. It also requires consideration of “the impact on national security” when designating a critical habitat. During FY 2005, the Army used this amendment to avoid designation of critical habitat for 10 species on seven installations. Currently, there are 10 training and test installation where critical habitat is designated.

The INRMP containing TES management components are continuing to improve and be implemented. Planning level surveys to identify TES and surveys to monitor them are receiving funding and implementation emphasis. The chart below shows the expenditures the Army has incurred over the years in managing TES. Reportable expenditures are those required to be reported by the Endangered Species Act. Non-reportable expenditures are those that do not fit the criteria for reporting under the Endangered Species Act. These are strictly species management expenditures - they do not reflect the costs incurred by military operations or military construction for work-arounds and avoidance.

Figure 6-1. Reportable and Non-Reportable Expenditures



6.3.1.2. TES Research and Development

The absence of TES knowledge and science often results in incorrect assumptions that military actions have adverse effects on species survival, which results in mandatory species protection measures. In order to provide the necessary information to address these issues, the Army has implemented a research program designed to quantify the effects of training on high priority species found on military lands. This research program has focused on quantifying the relationship among such military unique activities as artillery noise, vehicular training, and smokes and obscurants with species viability. In addition, the Army research program has supported installation land managers in their execution of endangered species management programs. These combined research and resource management efforts have significantly reduced training restrictions. For example, at Fort Bragg, NC, and Fort Stewart, GA, training restrictions that were previously imposed to protect the red-cockaded woodpecker have been reduced. At Fort Hood, TX, training restrictions due to the presence of two endangered song birds have been reduced significantly.

6.3.1.3.

Nationally the number of TES is increasing, and this trend is expected to continue. The essential tools for managing in the future are (1) more flexible land acquisition policies, (2) continued national financial support for superior TES efforts by other major federal and state land agencies motivated by the recognition that their conservation role is also essential to national defense. The Army anticipates that TES constraints on training will continue to be significant.

Army installations were originally sited in remote locations with sparse populations. However, today, nearly 19 million acres of once rural land in the United States is now urbanized with suburban populations exploding and encroaching on many Army installations making noise levels generated by military training a leading cause of community complaints and damage claims which leads to restrictions on training. Such restrictions take the form of nighttime and weekend curfews, reduced explosive weights, increased aircraft altitudes, and relocation/closure of firing points or entire ranges. For the Army, noise remains one of its leading encroachment challenges. For instance, at Fort Campbell, KY, flight routes on the south end of the installation boundary are restricted to 500 feet due to noise prompted by new housing developments. At Fort Rucker, AL, Fort Stewart, GA, Fort Knox, KY, and many other installations, noise restrictions imposed due to new housing developments and community encroachment severely limit hours of live fire and/or demolition training. At Fort Bragg, NC, noise impacts on a new

residential development forced the closing of the Ste. Mere Eglise Drop Zone to heavy equipment parachute drops, which is a primary training event for units stationed there.

6.3.1.4. Tools for Assessing and Mitigating Noise

One element of an effective noise management strategy is the ability to accurately forecast and assess community noise exposure. Evaluation of impacts of weapons noise on humans and animals requires knowledge of both physiological and psychological reactions to weapons noise. Assessment of these effects in any given scenario requires algorithms for prediction of the noise field around the weapon, from small to large distances. One such tool is BNOISE (Blast Noise), developed by the Army and distributed and supported by the U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM). BNOISE calculates and displays blast noise exposure contours resulting from specified large weapons and explosive charges. Another such tool is the Small Arms Range Noise Assessment Model, SARNAM, a software program (now being beta tested) that provides the capability to calculate and display noise level contours for firing operations at small arms ranges. The noise module of the Range Manager's Tool Kit, an automated tool used by the Army and the Marine Corps to display the safety impacts associated with live fire training, enables range officers to assess noise impacts on a day-to-day basis.

Operational Noise Management Plans are also used by many Army installations to manage noise and its impacts on training. Noise plans include quantification of the current and projected noise environment, education and public outreach, complaint management, noise and vibration mitigation, noise abatement procedures, and land use planning.

6.3.2. Clean Air Act (CAA)

The Clean Air Act requires EPA to set National Ambient Air Quality Standards (NAAQS) for wide-spread pollutants from numerous and diverse sources considered harmful to public health and the environment requiring the control of emissions commonly generated on installations. The most serious encroachment problems that come from the NAAQS are generated from compliance with opacity and particulate matter (PM) 2.5 rules.

Army installations have been successful in reducing restrictions on training by demonstrating the emissions from smokes and obscurants do not share the suspension and transport characteristics associated with emissions from industrial or commercial operations. Examples of such successes can be found at Fort Carson, CO, where Fort Carson staff worked with state regulators to modify their regulation to remove the three-kilometer buffer zone restriction allowing the use of substantially more training land around the installation and allows limited use of graphite smoke.

In Georgia, several Army installations are working with the state regulators to develop procedures under their Smoke Management Plan to apply for permits to conduct prescribed burns to meet requirements of the Endangered Species Act for red-cockaded woodpecker while minimizing the impact on training.

However, a number of major installations: Fort Drum, NY, Fort Lewis, WA, and the National Training Center (NTC), CA, are prohibited from using graphite smoke under air quality restrictions, and at Yakima Training Center, WA, the use of graphite smoke is discourage under the Smoke Generator Policy agreed to by state and local officials. Air quality regulations also restrict the generation of smoke from fog oil at the NTC for maneuver training within dust conditions.

Prescribed burning is required on some Army installations at frequent intervals to maintain habitats of threatened and endangered species protected under the Endangered Species Act or reduce fuel loads to prevent the occurrence of catastrophic wildfires. This prescribed burning temporarily produces smoke

which contributes to opacity and particulate matter encroachment issues. In Georgia, several Army installations are working with the state regulators to develop procedures under their Smoke Management Plan to apply for permits to conduct prescribed burns to meet requirements of the Endangered Species Act for red-cockaded woodpecker while minimizing the impact on training.

6.4. ARMY INITIATIVES TO RESPOND TO ENCROACHMENT

The Army has responded to the encroachment challenge by developing new program and initiatives that focus on long-term strategies to sustain ranges. The following are Army initiatives to meet these challenges.

6.4.1. The Range and Training Land Strategy (RTLS)

The DoD's Training Transformation (T2) initiative requires the Army to adopt a strategic view of range and training land assets in order to posture itself for long-term sustainability of training readiness. The Army Range and Training Land Strategy (February 2004) was developed to support the Army's SRP as well as T2 and Army Transformation initiatives and is being updated to reflect the actions in the ACP, AMF, IGBPS, and BRAC. It identifies priorities for installations needing resources to modernize ranges and mitigate encroachment through the acquisition of buffers and training land. The strategy serves as the mechanism to prioritize investments for installations and seeks to optimize the use of all range and land assets.

6.4.2. Integrated Planning – The Range Complex Master Plan (RCMP)

In order to meet the requirement for ensuring that management plans at the installation or responsible activity level include planning for sustainable ranges, the Army is developing a tool for installations to use to create Installation Range Complex Master Plans (RCMP). The RCMP will serve as the master plan for the range that include both current and future ranges and training land assets, and will integrate all installation planning requirements and constraints that can impact the ranges. The RCMP is being designed to provide installations with an automated planning tool using a Geographical Information System (GIS) platform that will allow not only for long range planning, but for day-to-day integrated decision making to support sustainable ranges. A prototype of the RCMP template was developed during a week long workshop held at Fort Bliss, TX, in October 2004 to support the major mission change under IGPBS and the ACP. The Army is planning to beta test the RCMP tool at two installations in FY 2006. Fielding of the final RCMP tool is expected in FY 2007.

6.4.3. Army Compatibility Use Buffer (ACUB)

The ACUB program represents a powerful tool and unique opportunity to work in partnership with state and local governments, and/or conservation groups to achieve a common goal of sustainability by establishing buffer areas outside the installation boundary. This program continues to grow as word of successful cooperative agreements spreads to Army installations and their neighbors. In 2005, the Army increased its number of approved ACUBs from three to nine, six of which are currently being executed. The Army expects to double the number of approved ACUBs in 2006. Current partners include: the State of Florida's Department of Environmental Protection, other state and local natural resources departments, non-governmental agencies like The Nature Conservancy and the Trust for Public Lands , and local land trusts like Land Legacy. Examples of successful ACUBs and other cooperative conservation partnerships follow.

The Fort Carson Area Partnership

The Fort Carson, CO, Area Partnership is a joint effort by The Nature Conservancy, U.S. Fish and Wildlife Service, private landowners, Colorado Department of Natural Resources, and Fort Carson to obtain buffer parcels on private lands bordering Fort Carson to prevent future listing of identified species at risk and mitigate urban encroachment.

The Fort Hunter-Liggett (FHL) Grasslands Restoration

The FHL Grassland Restoration is a joint effort among FHL and other state and federal agencies to control the yellow star thistle, an invasive species, in the grasslands of FHL and increase availability of training lands.

The North Carolina Sandhills Conservation Partnership

Fort Bragg, U.S. Fish and Wildlife Service, The Nature Conservancy, and North Carolina state agencies develop resource protection strategies to meet conservation goals for the red-cockaded woodpecker and promote compatible uses on private and state land surrounding Fort Bragg.

The Oahu Conservation Partnership

The Army's ranges in Hawaii are both strategically vital and environmentally sensitive. Army forces forward deployed in Hawaii are units that may respond to the crisis in the Pacific region. Sensitive environmental resources are centered on both TES as well as cultural resources. Because of both its strategic importance and environmental and cultural richness, the Army, Hawaii, various; federal, state, and local agencies; and private organizations have joined together to identify land for buffers and conserve lands vital to TES and protect vital training assets.

6.4.4. Joint Land Use Studies (JLUS)

A JLUS is a cooperative land use planning effort between affected local governments and a military installation. The recommendations of the JLUS present a framework to support the adoption and implementation of compatible development measures that are designed to prevent urban encroachment; safeguard the military mission; and protect the public health, safety, and welfare.

JLUS have been successfully utilized as a means to safeguard the military mission at several Army installations. One such example is the cooperative JLUS developed between Fort Stewart, GA, and the surrounding local governments and non-government entities. The JLUS assessed the current and foreseeable impacts of Fort Stewart on adjacent land, developed options for promoting collaborative decision making between the community and military, and identified tools to resolve issues such as eliminating land use incompatibilities through voluntary transactions in the real estate and improving communication with local communities.

6.4.5. SRP Outreach

6.4.5.1. SRP Program Outreach Communication Campaign

To improve public support and the Army's understanding of public concerns related to live training, the Office of the Deputy Chief of Staff, G-3, in coordination with the Office of the Chief of Public Affairs and the Office of the Director of Environmental Programs, developed the SRP Outreach and Public Involvement Communications Campaign. The Campaign provides installations with a strategy to easily and effectively communicate with the public regarding live fire training and encroachment challenges. The campaign is composed of the SRP Outreach core message and Installation Training Support Package (TSP), which assist installations in communicating with and educating the public. The TSP was designed

to assist installations in launching a SRP Communications and Information Campaign with stakeholders (government and non-government) and the local community.

6.4.5.2. Sustainable Range Program Range Tours

As a part of its overall SRP Outreach Program, the Army hosted range tours at Fort Carson, CO, Schofield Barracks, HI, and Fort Hood, TX, in 2005. These tours provided an opportunity for partners and stakeholders to visit an Army installation and witness, first-hand, the types of training conducted and the encroachment challenges faced. These tours allow stakeholders to view live fire training exercises; learn how Army land conservation strategies can protect agricultural land, open space, and serve as important buffers for the military installations; and discuss state and local policy options to more effectively manage growth to protect neighboring residents, preserve natural resources, and sustain the military mission.

6.4.5.3. Sustainable Range Program Web Portal (SRPWeb)

The SRPWeb provides an outreach mechanism between the public and the Army providing the public the opportunity to learn about and understand Army ranges, training, and mission. The portal provides information for the public on the Army's SRP and its components, discusses what an Army range is, how the Army uses and maintains its training land, and its encroachment challenges. The portal also provides a mechanism for interactive discussion of Army live-training and its importance to solider preparedness. Additional SRPWeb tools are being developed for public outreach that includes an interactive map which provides information and statistics on Army installations throughout the United States and their individual importance in helping achieve its Title 10 mission.

6.4.6. Army Strategy for the Environment

On October 1, 2004, the Secretary and Chief of Staff of the Army signed a new strategy, which transitions the Army from our traditional pillar-based, compliance-oriented program to a mission-oriented approach focusing on sustainability and better integration across Army functional areas. This strategy is designed to strengthen the Army today and into the future by establishing a long-range vision for a sustainable Army that simultaneously meets current as well as future mission requirements worldwide, safeguards human health, improves quality of life, and enhances the natural environment. Key goals of the new Strategy are to meet current and future training, testing, and other mission requirements by sustaining land, air, and water resources; and to strengthen Army operational capability by reducing our environmental footprint through more sustainable practices.

6.5. TOOLS FOR MEASURING ENCROACHMENT

6.5.1. Encroachment Condition Model (ECM)

The Army is developing an ECM for the ODCS G-3, to quantify environmental impacts on the training mission. The ECM is an objective, centralized GIS-based data model that quantifies internal and external encroachment on Army training lands and ranges. It will collect GIS data on seven encroachment factors and will capture encroachment impacts to training such as digging, bivouacs, live fire training, heavy and/or light maneuver training, use of smoke and pyrotechnics, and fly-overs. This methodology provides a quantifiable evaluation of encroachment on training that will be integrated with the existing Army Range and Training Land Requirements Module (ARRM). ARRM is the Army's automated planning tool that provides a capability to determine live training throughput capacities and requirements for installations.)

The Army completed the prototype of the new ECM at Fort Riley, KS, in September 2005. The data collection phase of the project will commence in November 2005 and continue through 2006.

6.5.2. Installation Status Report – Natural Infrastructure (ISR-NI)

The Installation Status Report (ISR) is a management tool used by the Assistant Chief of Staff for Installation Management (ACSIM) to assess the quantity and quality of installation infrastructure, natural infrastructure (NI), and services using established Army-wide standards. When fielded, ISR-NI will provide senior leaders with the ability to evaluate how well an installation's natural assets (air, land, water, and energy) support current and future mission requirements to include ranges and training lands. ISR-NI is currently under development with fielding expected in FY 2007.

6.5.3. Fort Future: Sustainability, Encroachment, and Room to Maneuver (SERM)

The U.S. Army Engineer Research and Development Center (ERDC) is developing tools to help not only the Army, but other Services in sustaining mission capabilities and land assets through its Sustainability, Encroachment, and Room to Maneuver (SERM)/Fort Future research program. SERM/Fort Future focuses on creating tools to help military decision makers better understand land use conflicts and sustainability risks to avoid constraints to the mission and disruptions to local communities.

6.5.4. The Training Center Sustainment Initiative (TCSI)

The Army National Guard (ARNG) is developing the TCSI in order to proactively identify and evaluate encroachment challenges on ARNG training centers and prioritize resources to meet those challenges. When complete, the three-module TCSI system will have the capability to enable a user to retrieve data on encroachment impacts across multiple training centers and states; support routine and ad hoc reporting requirements; and calculate a training center's sensitivity to impacts from six sustainability considerations. The output is an overall score which enables decision makers to compare all installations to a common value and standard.

6.6. OTHER ARMY INITIATIVES

In 1994, the Deputy Under Secretary of Defense for Environmental Security initiated the DoD effort to establish Regional Environmental Coordinators (RECs) in each of ten regions in the United States to ensure greater coordination of environmental issues of importance to the military services and DoD at state and regional levels. DoD gave the Army executive agent responsibility for four of those regions (Regions 4, 5, 7 and 8). The following year, the USAEC formally established Regional Environmental Offices, known as REOs, in these four regions. Today, the Regional Environmental Coordinators in each REO support the Army mission by working with federal regions, state, and local governments on environmental, range sustainment, and encroachment issues of importance to the Army.

Army REOs have carried compatible land use and range sustainability messages to state and local governments through a variety of means and forums, including existing and new partnerships, military environmental groups (MEGs), and state and local officials and organizations. The result has been to significantly raise the general awareness of state and local officials regarding the adverse affects of incompatible land use on military training and readiness. This increased awareness is demonstrated by the fact that 18 states have now passed legislation to address incompatible land use near military installations. Five states enacted legislation in 2005.

The efforts of the REOs in support of the Army's sustainable range program are summarized below.

Partnerships with States

The development of partnerships between states, the U.S. Environmental Protection Agency (USEPA) Regional Offices, and military installations has been a key focus of Army REOs. The Army REOs have served to nurture the development of formal state Environmental/Sustainability Partnerships with DoD in 34 states. These partnerships offer opportunities for regular communication and information exchange, serve as forums for Army REOs to present outreach messages related to sustainable range and encroachment, and have resulted in providing REOs accessibility to the top level officials in EPA regional and state environmental offices. The highlights of these efforts are detailed below:

- Army REOs initiated outreach efforts with the Southern Legislative Conference (SLC), a 16-state regional group from the parent organization, the Council of State Governments (CSG). The Army REOs are working with SLC to develop an action plan to educate state legislators on environmental, sustainability, and military mission requirements to include installation tours for SLC staff and state legislators, and formal presentations by the REOs on encroachment and sustainability at the 2006 SLC meeting in Nashville, TN.
- Army REOs have been meeting with the Association of County Commissioner's of Georgia (ACCG) since March 2005 on compatible land-use and sustainability issues. Together, they are developing various approaches to educate Georgia county commissioners on encroachment and other military issues to include publication of encroachment articles with a distribution of over 10,000 state county commissioners and an outreach network for Georgia commissioners on how to assist installations with their encroachment problems. Similar efforts by Army REOs are also being conducted in Colorado and Missouri.

National Groups of State and Local Officials

Army REOs have been working with state legislators and regulators to ensure environmental requirements are consistent with the military's ability to carry out its mission. This outreach effort has helped key state policymakers understand and identify incompatible land-use trends and work toward managing the potential threats to military readiness and range sustainability. An example of those key efforts is provided below:

- Through a relationship Army REOs established in 2003 with the Council of State Governments (CSG) Environmental Task Force, the CSG invited DoD to make a presentation on encroachment to the task force at their annual meeting in September 2004. In conjunction with the presentation, the Army REOs arranged for task force members to take a tour of Fort Richardson, AK, and Elmendorf Air Force Base, AK, to see the problems of encroachment first hand. As a result of these tours, the CSG included a special "note" on military compatible land-use in its annual model legislation reference publication.

Early in 2004, Army REOs secured an invitation for a representative of the Office of the Deputy Assistant Secretary of the Army to address the National Association of Counties (NACo) Steering Committee on Environment, Energy and Land Use at their annual meeting. Following the presentation, NACo environmental leadership announced their intent to develop a formal, ongoing dialogue on sustainability with DoD. Since that time, Army REOs have initiated planning for a pilot project to help installations better address and counter encroachment at the local level.

New Legislation and Regulatory Efforts

In addition to working with national groups, the Army REO's also focus on protecting military mission from new legislative and regulatory efforts that fail to consider the uniqueness of military operations. The following are some of their initiatives:

- In Washington, the Army REO's assisted the state legislature in drafting land use planning regulations that will combat encroachment on military mission resulting from urban growth. The bill will require counties and cities in proximity to a military installation employing over 100 people, to notify the commander of their intent to amend comprehensive plans or development regulations. It will also protect against incompatible development adjacent to a military installation.
- In Colorado, the Army REOs worked to introduce legislation that encourages local government to work with their local military installations. This law encourages compatible land use, helps prevent incompatible encroachment upon military installations, and facilitates the continued presence of major military installations within the state. It requires local governments to notify military installations and training areas within their jurisdiction regarding proposed zoning changes, developments and other issues.
- In California, Army REOs successfully worked with the California Air Resources Board (ARB) to redraft an ARB rule that set new standards for diesel fuels and their emissions. The Army REOs obtained an exemption for all tactical military vehicles in California, resulting in a $25M cost savings to the Army which will have a negligible effect on urban air quality, but helps maintain military readiness and employability.

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7. NAVY SUSTAINABLE RANGES REPORT SUBMISSION

The Navy is focused on the future viability of its training ranges. During FY 2005, the Navy has made great strides forward with its Range Sustainability program. The following submission to the Office of the Secretary of Defense, in compliance with Section 366 of the Defense Authorization Act of 2003 and Section 320 of the Defense Authorization Act of 2004, is an outline of the Navy's ongoing Range Sustainability and Installation Management efforts.

Section 366 requires each military department to submit a standalone report that 1) assesses its current and future training requirements, 2) reports on implementation of a range inventory system, 3) evaluates the adequacy of current resources to meet training requirements, and 4) describes its plans to address training constraints. Section 320 describes additional reporting requirements for installations that focus on 1) civilian community encroachment and 2) compliance with specified laws.

This report, the third in a series of Sustainable Ranges Reports to Congress, puts greater emphasis on future capabilities and investment. The report also has an expanded encroachment section focused on the issues raised in Section 320. This report outlines the Navy's effort in five distinct sections: 1) current and future training requirements, 2) a narrative description of the Navy's range inventory 3) tools to evaluate training requirements 4) the Navy's plan to address training range constraints, and 5) the Navy's program to address encroachment on ranges and installations.

The Navy has instituted a robust plan to tackle tough range sustainment issues. Navy leadership has taken the following steps to assure the future of Navy Ranges:

- Execution of a Comprehensive Range-Sustainment Strategy. The Tactical Training Theater Assessment and Planning program (TAP) supports investment planning while increasing by orders of magnitude our knowledge of environmental issues and restraints on Navy ranges. Key elements of TAP are discussed in Section 7.4 of this report.
- Development of a Navy-wide Range Sustainment Policy. The Navy Range Office, in conjunction with the Navy Environmental Readiness Office, is currently writing a Navy-wide range sustainment policy instruction that will assign specific range sustainment responsibilities to each level of the range support command structure. The policy will integrate current range sustainment strategies from the test and training communities.
- Implementation of an Operational Range Clearance Policy. The Navy has published and is currently executing an operational range clearance (ORC) policy at all of its ranges. The new ORC policy will keep Navy's ranges environmentally friendly and safe for operations.
- Development of Encroachment Action Plans. An Encroachment Action Plan (EAP) is the blueprint for an installation or range's Encroachment Management Program. EAPs will supplement RCMPs to quantify encroachment at Navy's ranges and provide short, mid, and long-term encroachment management strategies to address encroachment challenges and impacts.
- Development of a Littoral Anti-Submarine Warfare Training Range Capability. ASW is a core Navy mission. The Navy is conducting environmental planning to build the Under Sea Warfare Training Range (USWTR). USWTR will allow the Navy to train in a realistic environment to meet the ASW challenges presented by the proliferation of diesel submarines to potentially hostile countries.

The Navy continues to strive to provide its servicemen and women the most realistic and comprehensive training environment possible. Realistic training and accurate feedback are the best ways to assure the

superiority of our fighting force. The Navy remains dedicated to sustaining its ranges. Additionally, Navy ranges are eager to support the Joint National Training Capability (JNTC). The Navy, with continued support from OSD, the Administration, and Congress, will provide the best training practicable on its ranges.

7.1. CURRENT AND FUTURE TRAINING REQUIREMENTS

7.1.1. Organization and Command Structure of Navy Training Ranges

For administrative purposes, Navy ranges are grouped in geographic complexes. While the specific ranges within those complexes may have different operational chains of command, they have common administrative requirements, such as environmental support, that are unique to each region. Range complexes meet specific warfare requirements for fleet concentrations in the region.

Validation of requirements for all training ranges in the United States and its territories falls under the purview of Commander, Fleet Forces Command (CFFC). Various Fleet and Type Commanders control the ranges as tenant commands on the installations where they reside. For example, the ranges in the San Diego area are grouped into the Southern California Complex (SOCAL). The SOCAL has several land, water, and air ranges managed by the Commander Naval Air Forces Pacific (CNAP), Naval Special Warfare Command (SPECWARCOM), and the San Diego Fleet Aviation Surveillance Control Facility (FASCFAC). While these multiple commands control the day-to-day operations on their ranges, they have environmental issues common to all of them, managed by the environmental staff of Navy Region Southwest.

Because of the common administrative requirements and geographic proximity, it is intuitive that the Navy manages its ranges as range complexes. For inventory and budgeting purposes the Navy groups sets of ranges in order to provide efficiency.

7.1.2. Training Range and Operational Area Requirements

The Navy accomplishes most of its training on designated ranges and Operating Areas (OPAREAs). Located near concentrations of forces in the United States and its territories, these areas give units the ability to train under conditions controlled by exercise administrators to provide high fidelity training. For safety purposes, they also may provide a training space with reduced or restricted civilian traffic.

Naval Forces also train on ranges controlled by the Army, Air Force, and Marine Corp. Joint use of ranges both in the United States and abroad helps to economize time and resources spent on travel while exposing Naval Forces to a joint environment.

The Secretary of the Navy's "At-Sea Policy" allows established guidelines for training outside of designated ranges and OPAREAs in international sea and airspace. For the Navy to maintain control of the sea lines of communications far from land, it must be able to train significant distances away from the coastal areas where designated training areas are located. The At-Sea Policy provides for this required ability.

7.1.3. Current Range Requirements (Systems and Mission Areas)

The Navy's range requirement is to provide forces with land, air, sea-space, and frequency spectrum to support the Fleet Response Plan (FRP). FRP is the Navy's training cycle that requires forces to build up for full operations, deploy for those operations, return from deployment maintaining a high level of readiness, and eventually stand down for maintenance. To meet these milestones, the Navy has a

geographically dispersed set of training complexes on each coast that provide the areas necessary to conduct controlled and safe training scenarios representative of those that our men and women will face in actual combat. Today's high performance aircraft and ships employ weapons of greater capability and complexity. These weapons have unique training and delivery characteristics that require a robust Training Range/OPAREA infrastructure.

To quantify its requirements the Navy has recently developed the Range Capability Document (RCD). This RCD describes the required capabilities for training ranges for three levels of training complexity (Basic, Intermediate, and Advanced) for eight range functions. The range functions, which are aligned with a Navy Primary Mission Areas (PRMARs), include: Anti-Air Warfare (AAW), Amphibious Warfare (AMW), Anti-Surface Warfare (ASU), Anti-submarine Warfare (ASW), Mine Warfare (MIW), StrikeWarfare (STW), Electronic Combat, and Naval Special Warfare (NSW). The RCD uses a set of attributes (Airspace, Sea Space, Undersea Space, Land Area, Scheduling, Communications, Meteorological, Targets, Instrumentation, and Opposition Force) to describe the required capabilities for each range function at the three levels of training complexity.

FRP training takes place in the following phases:

(1) Basic: The Basic or Unit Level Phase focuses on completion of Type Commander (TYCOM) requirements; team training unit level exercises at sea; squadron training; and unit inspections, assessments, certifications, and qualifications. Basic training involves the performance of routine operational procedures in a relatively benign environment. The goal of the Basic Phase is to ensure the unit attains the proficiency needed for more complex or integrated training events.

(2) Integrated: The Integrated Phase provides initial multi-unit training, bringing together the elements learned in basic training and applying them in tactical employment against simulated threats. The goal of integrated training, which usually takes place underway, is carrier and air wing integration and initial integration of surface, submarine, and air units in a challenging operational environment. This is usually accomplished during the Composite Training Unit Exercise (COMPTUEX). The training in this phase is generally event-driven.

(3) Sustainment: The Sustainment Phase provides live tactical training in a high-stress, simulated high-threat, and realistic environment with many participants in coordinated operations. Although this phase may contain some individual training events, the majority of the training is "scenario-driven," in which the training operations respond to an unfolding scenario, usually in a joint context. The at-sea training completes all underway-training requirements and culminates in an integrated Carrier Strike Group (CSG)/Expeditionary Strike Group (ESG)/Marine Expeditionary Unit Joint Task Force Exercise (JTFEX).

Following the Advanced Phase a CSG/ESG is at its highest readiness level and ready to embark on operations around the globe.

The Navy defines range functions as the ability to support training in the following Naval Warfare Mission Areas:

Anti-Air Warfare (AAW). The detection, tracking, destruction, or neutralization of enemy air platforms and airborne weapons, whether launched by the enemy from air, surface, subsurface, or land platforms.

Amphibious Warfare (AMW). Attacks launched from the sea by naval forces and by landing forces embarked in ships or craft designed to achieve a shore presence in a littoral zone. This includes fire

support for troops in contact with enemy forces through the use of close air support or shore bombardment.

Antisurface Ship Warfare (ASUW). The detection, tracking, and destruction or neutralization of enemy surface combatants and merchant ships.

Antisubmarine Warfare (ASW). The detection, tracking, and destruction or neutralization of enemy submarines.

Electronic Combat. The integrated use of psychological operations (PSYOP), military deception, operations security (OPSEC), Electronic Combat (EC), and physical destruction, mutually supported by intelligence, to deny information to, influence, degrade, or destroy adversary C2 capabilities while protecting friendly C2 capabilities against such actions (Formerly Electronic Warfare [ELW] and subsequently Space and Electronic Warfare [SEW]).

Mine Warfare (MIW). The use of mines for control/denial of sea or harbor areas, and mine countermeasures to destroy or neutralize enemy mines.

Naval Special Warfare (NSW). Naval operations generally accepted as being nonconventional—in many cases clandestine—in nature. The NSW includes special mobile operations, unconventional warfare, coastal and river interdiction, beach and coastal reconnaissance, and certain tactical intelligence operations.

Strike Warfare (STW). The destruction or neutralization of enemy targets ashore through the use of conventional or nuclear weapons. This includes, but is not limited to, strategic targets, building yards, and operating bases from which the enemy is capable of conducting air, surface, or subsurface operations against United States or coalition forces.

7.1.4. Projections Through 2025

Navy training ranges will play a critical role in supporting training for the operational forces well into the 21st century. The requirement will be to support all phases of the FRP. Strategic planning for Navy complexes will include support for future training operations, as well as improvements to infrastructure to support the Joint National Training Capability. Issues will be addressed in the forthcoming Navy Range Sustainment Policy and individual Range Complex Management Plans (RCMPs) under development for each Navy range complex. The Navy will use these plans to implement the OSD's Sustainable Range Policies, and to evaluate new requirements throughout the Planning, Programming, Budgeting, and Execution (PPBE) process.

7.1.5. Catalog of New Platforms and Systems for Navy Ranges

The catalog was developed to provide a single, comprehensive document of new platforms and systems that are likely to require investment in Navy range capability or range environmental planning, and that are expected to achieve Initial Operational Capability (IOC) or Full Operational Capability (FOC) within the next 10 years. It will be used as a reference document in the development of each individual RCMP and will ensure that each RCMP has a common source of information regarding new platforms and weapons systems.

New requirements at Navy training ranges will result from new platforms such as the Next Generation Nuclear Aircraft Carrier (CVN[X]), Multi-Mission Surface Combatant (DD[X]), Littoral Combat Ship (LCS), Mine Countermeasures Unmanned Underwater Vehicles (UUV), MV-22 Osprey, Joint Strike

Fighter (JSF), EA-18G Superhornet EC variant, Extended Range Guided Munition (ERGM), and Advanced Gun System (AGS).

7.2. NAVY RANGE INVENTORY

7.2.1. Individual Ranges Not in a Complex

Most Navy ranges are grouped into geographical complexes. Those ranges not in a complex are the Brownwood Military Operating Areas (MOAs) in Central Texas and the Major Range and Test Facility Base (MRTFB) ranges.

7.2.1.1. Navy MRTFB Ranges

The Navy MRTFB consists of T&E facilities, including ranges. The MRTFB Ranges serve a primary mission of acquisition support. The MRTFB ranges supplement Navy training needs in multiple areas in concert with their primary mission of acquisition support.

NAVAIR Atlantic Test Range

The Naval Air Systems Command (NAVAIR) Naval Air Warfare Center Aircraft Division Atlantic Test Range consists of the Naval Air Station (NAS) Patuxent River, RDT&E range airspaces and instrumentation, and flight and ground test facilities. The ranges consist of land, seaspace, and airspace along the Chesapeake Bay and in the offshore areas extending into the Atlantic Ocean.

NAVAIR Point Mugu Sea Range

The NAVAIR Point Mugu Sea Range provides highly instrumented air and sea space. Once focused on air weapons testing and evaluation, Point Mugu also provides critical support for FRP, Joint Service activities, multinational training, and experimentation exercises. As an MRTFB, Point Mugu has extensive range infrastructure and a large, highly qualified technical workforce. Investments made in interconnectivity, in addition to proximity to naval forces and other ranges, are vital to Point Mugu, which often networks with other ranges during live and virtual exercises.

NAVAIR China Lake Ranges

Fully instrumented and providing a wide range of targets and supersonic flight corridors, the China Lake Ranges support T&E for both air and ground testing of conventional weapons and aircraft systems. The ranges are located in R-2508 and include numerous land ranges, Military Operating Areas (MOAs), and Special Use Airspace (SUA).

Atlantic Undersea Test and Evaluation Center

The Atlantic Undersea Test and Evaluation Center (AUTEC) is a comprehensive shallow and deep-water weapons testing and research complex located in the Bahamas. The AUTEC facilities provide training, antisubmarine warfare assessment, and operational readiness testing for U.S. and Allied Naval forces. Access to the AUTEC range is geographically restricted by its remote nature. Its restricted access provides sanctuary from most commercial and private encroachment, providing unmatched operational security.

Keyport (Northwest) Ranges

Nanoose and Dabob Bay underwater instrumented ranges perform extensive T&E of Navy acquisition programs, most notably heavyweight (MK-48) and lightweight (MK-54) torpedoes. Keyport ranges entered the MRTFB in October 2005 from the Navy Working Capitol Fund.

7.2.2. Training Ranges

Atlantic City

The Atlantic City Range Complex contains no land ranges; a 5,590 sq nm Special Use Airspace Warning Area and 1 OPAREA encompassing 4,410 sq nm of surface and subsurface space. It is capable of supporting many types of live or inert ordnance, including laser-guided weapons. The complex supports FRTP training at the basic level for the anti-air warfare (AAW), anti-surface warfare (ASUW), however, it is capable of supporting some intermediate and advance level training events. The complex is used by surface, submarine, and aviation units. The complex serves as a backyard range for the units stationed at NAS Brunswick, ME, NSB New London, CT, and SUPSHIP Bath, ME, as well as local Coast Guard and Air Force units. The training operations conducted in Atlantic City include BOMBEX (sea); surface-to-surface, surface-to-air, and air-to-surface GUNEX; ASW TRACKEX exercises; Electronic Combat Operations; Chaff Exercises; and Flare Exercises. In FY 2003, over 1,690 operations were conducted.

Boston Area

The Boston Area Range Complex is composed of 12,467 acres of land; 10,190 sq nm of Special Use Airspace consisting of 3 Warning Areas; and 1 OPAREA encompassing 13,500 sq nm of surface and subsurface space. It is capable of supporting live and inert ordnance, including laser-guided weapons. The area supports FRTP training at the basic level for anti-surface warfare (ASUW), antisubmarine warfare (ASW), and mine warfare (MIW) (aerial mining events only). The complex is used extensively by Patrol and Reconnaissance Wing aviation units. The training operations conducted in the Boston Area (including W-102, -103, and -104) include BOMBEX (sea); subsurface-to-surface attack, and ASW tracking and torpedo exercises. In FY 2004, approximately 35 operations were conducted using approximately 75 rounds of inert ordnance.

Cherry Point

The Navy's Cherry Point Range Complex does not contain any land ranges; it is composed of an 18,715 sq nm Special Airspace Warning Area, overlaying an 18,715 sq nm OPAREA providing surface and subsurface space. It is capable of supporting many types of live and inert ordnance, as well as laser-guided weapons. The complex supports FRTP training at various levels for anti-air warfare (AAW), expeditionary maneuver warfare (EMW), anti-surface warfare (ASUW), anti-submarine warfare (ASW), mine warfare (MIW), strike warfare (STW), and Electronic Combat (EC). The complex serves as a backyard range for the units stationed in the Hampton Roads area The training operations conducted in the Navy Cherry Point complex include Q-Route Transit; Airborne Mine Countermeasures; surface-to-surface, surface-to-air, air-to-air, and air-to-surface GUNEX; ASW exercises; and FIREX. In FY 2002, over 120 operations were conducted using more than 44,000 rounds of ordnance.

Diego Garcia

The Diego Garcia Range Complex consists of 1 land range and 6 Warning Areas encompassing 28,530 sq nm. Used jointly by the Navy and Air Force, it is primarily designated for use during carrier battle group exercises. The complex provides Basic and Intermediate training for the FRTP and supports two Navy Warfare Areas. It offers training operations in surface-to-surface, surface-to-air, and air-to-surface GUNEX; surface-to-surface and air-to-surface MISSILEX; search and rescue exercises; and aerial MINEX. The complex supports Patrol and Reconnaissance Force (deployment site) and transiting aircraft-carrier strike groups.

El Centro

The El Centro Range Complex is composed of several land ranges encompassing 43,342 acres and 257 sq nm of Special Use Airspaces consisting of MOAs and Restricted Areas. It supports numerous types of

live and inert ordnance. El Centro's various targets include bullseyes, strafing, a mobile land track, and a laser target. The complex supports FRTP training at the basic level for NSW, anti-air warfare (AAW), and strike warfare (STW) training. It also supports AAW at the intermediate level. Additionally, it supports NSW, AAW, and STW at the advanced level. The majority of operations conducted within the complex support aviation related activities for units located within, or deployed to, the southwest region of the United States. The training operations conducted within the complex include Insertion and Extraction, ACM, and Air-to-Ground ordnance delivery operations. The complex, on a small scale, typically supports the following major exercises: JTFEX, COMPTUEX, and WTI; and to a lesser extent Desert Talon and Scorpion Wind. In FY 2004, over 8,321 sorties occurred on El Centro's ranges, utilizing more than 285,000 rounds of ordnance. Additionally, upwards of eight major exercises utilized portions of El Centro's ranges.

Fallon

The Fallon Training Range Complex (FRTC) is composed of 4 land ranges and 5 additional training areas and sties encompassing 234,124 acres, and 7,675 sq nm of Special Use Airspace consisting of various MOAs, ATCAAs, and Restricted Areas. It is capable of supporting most types of practice and live air-to-ground ordnance, including laser-guided weapons. The four separate target ranges include an array of fixed and mobile targets of various types, capable of supporting air-to-ground munitions, and are supported by weapons impact and strafe scoring systems. FRTC range instrumentation also includes an Electronic Warfare Complex (EWC) integrated with a Tactical Aircrew Combat training System (TACTS) and is identified as a persistent JNTC site. The complex supports FRTP training at all levels for the anti-air warfare (AAW), strike warfare (STW), electronic combat (EC) and NSW Warfare Areas. While FRTC is used extensively for unit level training, the primary focus of training is intermediate and advanced air warfare training for carrier airwings conducted by the Naval Strike and Air Warfare Center (NSWAC) located at NAS Fallon. This training includes Integrated Carrier Airwing Training, the Strike Fighter Tactics Instructor (SFTI) and Seahawk Weapons and Tactics Instructor (SWTI) courses, and the Joint Terminal Attack Controller (JTAC) course. FRTC is also used as a primary venue for COMTUEX and JTFEX long range strikes and the annual Desert Rescue Combat Search and Rescue (CSAR) exercise. In FY 2003, approximately 4,700 operations were conducted using 777,468 rounds of ordnance.

Gulf of Mexico (GOMEX)

The GOMEX Range Complex is composed of 1 land range encompassing 6,500 acres; 15,640 sq nm of Special Use Airspace made up of MOAs, Warning and Restricted Areas; and 4 OPAREAS encompassing 17,520 sq nm of surface and subsurface space. It is capable of supporting many types of inert ordnance, including laser-guided weapons. The McMullen range hosts a variety of land targets, including an impact area for air-to-ground munitions, and is supported by weapons impact and strafe scoring. The complex supports FRTP training at all levels for the anti-air warfare (AAW), anti-surface warfare (ASUW), strike warfare (STW), mine warfare (MIW), and NSW Warfare Areas. However, its primary focus is on support at the Basic and Intermediate level of training. The complex is used extensively by aviation units for initial pilot and Naval Flight Officer (NFO) training, and by surface and mine warfare units. The complex serves as a backyard range for the units stationed at NAS Corpus Christi, Kingsville, Meridian, and Pensacola, and for the surface and mine warfare forces based at Naval Station (NS) Ingleside in Texas and NS Pascagoula in Mississippi. The training operations conducted in GOMEX include airborne BOMBEX; surface-to-surface, surface-to-air, air-to-air, and air-to-surface GUNEX; ASW exercises; and MINEX. In FY 2003, over 110,000 operations were conducted using more than 44,000 rounds of ordnance.

Meridian

The Meridian Range Complex is composed of 1 land range encompassing 375 acres; 4,650 sq nm of Special Use Airspace made up of MOAs and Restricted Areas. It is capable of supporting many types of inert ordnance. The Sea Ray Target range hosts a variety of land targets, including an air-to-ground munitions impact area. The complex supports FRTP training at all levels for the anti-air warfare (AAW) and strike warfare (STW) warfare areas. However, its primary focus is on support at the Basic level of training. The complex is used extensively by aviation units for initial pilot and Naval Flight Officer (NFO) training. The complex serves as a backyard range for the units stationed at Naval Air Station (NAS) Meridian, Mississippi. The training operations conducted in Meridian complex include airborne BOMBEX; air-to-air, and air-to-surface GUNEX exercises. In FY 2003 over 29,000 operations were conducted.

Naval Air Station Joint Reserve Base (NAS JRB) Fort Worth

The NAS JRB Fort Worth Range Complex is an air only complex composed of approximately 3,500 sq nm of Special Use Airspace made-up of 4 MOAs. It does not support any type of live ordnance use. The complex supports reserve and FRTP training at all levels for the anti-air warfare (AAW) Warfare Areas, primarily as an air combat maneuvering training area. Its primary focus is on support at reserve aviation squadron readiness and basic pilot training. The complex is used extensively for initial pilot and Naval Flight Officer (NFO) training from NAS Corpus Christi and Kingsville, TX. It also serves as a backyard range for aviation units stationed at NASJRB Fort Worth TX.

Hawaiian Islands

The Hawaiian Islands Range Complex is composed of 2 land ranges with 300 acres; 58,599 sq nm of Warning and Restricted Airspace; and 1 OPAREA of 210,324 sq nm of surface and subsurface space. Within the OPAREA are two fully instrumented underwater training ranges at Pacific Missile Range Facility (PMRF). Also at PMRF are some of the Navy's most sophisticated tracking and telemetry instrumentation used for development of anti-ballistic missile systems. The only Navy owned air-to-ground bombing target in Hawaii is the inert-only target at Kaula Rock. In addition to the inert ordnance allowed at Kaula Rock, all of the Navy's gunnery ordnance, torpedoes, and missiles can be expended. PMRF provides a variety of targets including MK-30 ASW targets; stationary, towed, and remote control surface-to-surface gunnery targets; and subsonic and supersonic drones for surface-to-air gunnery and missile firings. While subsurface operations are tracked within the two UTRs, all surface and air exercises can be tracked in high fidelity using PMRF's large area tracking range (LATR) capability. The range supports basic, intermediate, and advanced level training for locally based ships, submarines and aircraft squadrons as well as transiting carrier strike groups (CSG) and expeditionary strike groups (ESG). All of the Navy's warfare areas are supported with the greatest emphasis placed on, anti-air warfare (AAW), antisubmarine warfare (ASW), anti-surface warfare (ASUW), and electronic combat (EC). Training exercises conducted in Hawaii include: the biennial Rim of the Pacific (RIMPAC) exercise, COMPTUEX, JTFEX, BOMBEX (Sea and Land); ASW TRACKEX; ASW TORPEX; surface-to-surface GUNEX and MISSILEX; air-to-surface MISSILEX and GUNEX; Naval Surface Fire Support; Air Combat Maneuvering; air-to-air and surface-to-air MISSILEX; SINKEX; and NSW tactical insertion exercises. In FY 2003, ordnance expenditure consisted of 166,920 bombs, cannon shells, small arms, torpedoes, and missiles.

Jacksonville

The Jacksonville Range Complex is composed of 3 land ranges encompassing 16,951 acres; 42,970 sq nm of Special Use Airspace made up of MOAs, Warning and Restricted Areas; and 2 OPAREAS encompassing 50,089 sq nm of sea space. It is capable of supporting many types of ordnance, including laser-guided weapons. The Lake George Range, Pinecastle Range and Rodman Target host a variety of

land and water targets, including an impact area for air-to-ground munitions, supported by weapons impact and strafe scoring. Instrumentation includes the Tactical Air Combat Training System (TACTS) installed off Beaufort, SC and the Shipboard Electronic Systems Evaluation Facility at Naval Station (NS) Mayport, FL. The complex supports FRTP training at all levels for the anti-air warfare (AAW), anti-surface warfare (ASUW), anti-submarine warfare (ASW), strike warfare (STW), mine warfare (MIW), and electronic combat (EC) Warfare Areas. The complex is used extensively by aviation units, submarines and by surface and mine warfare units. The complex serves as a backyard range for the units stationed at NAS Jacksonville, FL, MCAS Beaufort, SC, NS Mayport, FL and Naval Submarine Base Kings Bay, GA. The training operations conducted in JAX include airborne BOMBEX; surface-to-surface, surface-to-air, air-to-air, and air-to-surface GUNEX; ASW exercises; and MINEX. In FY 2003, over 5,600 operations were conducted using more than 134,000 rounds of ordnance.

Japan

The Japan Range Complex is completely over water; composed of 5 restricted areas, 4 of which have associated OPAREAs totaling 11,228 sq nm; and 1 OPAREA (Sagami Wan Submarine Haven) encompassing 295 sq nm of sea space. No United States Navy controlled land areas or targets are associated with the Japan Complex. Additionally, there is no instrumentation infrastructure to support training in the complex. The primary focus of the complex is Basic and Intermediate training supporting the Anti-Air Warfare (AAW), Anti-Surface Warfare (ASUW), Anti-Submarine Warfare (ASW), Mine Warfare (MIW), Strike Warfare (STW), and Electronic Combat (EC) warfare areas. Advanced training exercises, including bilateral exercise with the Japanese Maritime Defense Force (JMSDF) such as Annualex, use portions of the range complex, but do not take place exclusively within the Japan Complex. The complex primarily supports Seventh Fleet units and serves as a backyard range for all Forward Deployed Naval Forces (FDNFs) units stationed in Japan and occasionally supports Marianas-based and deployed units.

Key West

The Key West Range Complex is completely over water; composed of 25,480 sq nm of Special Use Airspace made up of MOAs and Warning Areas; and 1 OPAREA encompassing 8,282 sq nm of surface and subsurface space. It is capable of supporting air-to-air, air-to-surface and surface-to-surface ordnance. The Patricia Target is capable of supporting a variety of air-to-surface inert munitions and laser targeting exercises. Portions of the airspace for the complex are instrumented with a Tactical Air Combat Training System (TACTS) Range. The complex supports FRTP training at all levels for the anti-air warfare (AAW), anti-surface warfare (ASUW), and naval special warfare (NSW) areas. However, its primary focus is on support at the Basic and Intermediate level of training. The complex is used extensively by aviation units for air combat maneuvering (ACM) training using its inherent TACTS capability. The complex serves as a remote range for the units of the Atlantic Fleet which operate from NAS Key West. The training operations conducted in Key West include special warfare insertion/extraction and ACM exercises as well as various RDT&E events. In FY 2003, over 6,300 operations were conducted.

Marianas Islands

The Mariana Islands Range Complex (MIRC) encompasses onshore, near shore, and offshore areas on and adjacent to the islands of Guam and the Commonwealth of the Northern Mariana Islands (CNMI). The complex includes land ranges encompassing roughly 24,900 acres; 14,028 sq nm of Special Use Airspace (SUA) consisting of a Warning Area and a small (28 sq nm) Restricted Area along with 75,000 sq nm of seven FAA Air Traffic Control Assigned Airspace (ATCAA) areas; and 14,000 sq nm of surface and subsurface space. The Department of Defense leased a CNMI island, Farallon de Medinilla (FDM), to provide a vital live-fire range capability supporting Naval Surface Fire Support (NSFS) and Navy, Marine

Corps, Air Force, and Allied air-to-ground aviation training. The MIRC supports Army, Navy, Marine Corps, and Air Force training in air, land, sea, and amphibious warfare. Its primary focus is supporting embarked and deployed Seventh Fleet forces operating in the MIRC and Air Force forces operating out of Andersen AFB, Guam. The Army uses the MIRC to train the Guam Army National Guard and Army Reserves Marianas. The Marine Corps uses the MIRC to train for urban warfare and to rehearse expeditionary scenarios. Naval Special Warfare Unit One (NSWU-1) hosts NSW units for training in special operations missions in the Western Pacific Theater. In FY 2003, there were more than 2,223 scheduled operations in the MIRC expending more than 800,000 rounds of ammunition throughout the complex, including more than 1,560 air-to-ground ordnance expenditures on FDM. The complex is of particular significance because of its location in the western Pacific Ocean between the Joint Hawaii Range Complex (JHRC) and the ranges and training areas in Japan and Okinawa. It provides opportunity for forward deployed United States forces to train on United States territory.

Narragansett

The Narragansett Range Complex contains no land ranges; it is composed of 13,040 sq nm of Special Use Airspace Warning Areas and an OPAREA encompassing 27,210 sq nm of surface and subsurface space. It is capable of supporting several types of live and inert ordnance, including laser-guided weapons. The complex supports FRTP training at basic level for the anti-submarine warfare (ASW). The complex serves as a backyard range for the units stationed at the Naval Submarine Base New London, CT. The training operations conducted in Narragansett include surface-to-surface and surface-to-air GUNEX; ASW exercises; Electronic Combat, Flare and Chaff operations, as well as RDT&E operations. In FY 2003, over 140 training and over 180 RDT&E operations were conducted.

Okinawa

The Okinawa Range Complex is composed primarily of 19,580 sq nm of Special Use Airspace Warning and Restricted Areas overlying associated OPAREAs; three air/surface to island target ranges; and one beach-front area. Okino Daito Jima (ODJ), Kobi Sho Range and Sekibi Sho Range are the only United States Navy controlled island target ranges within the complex. ODJ is the primary target range currently in use and it supports STW and NSFS training. The targets located on ODJ consist of connex boxes and, have no instrumentation feedback capability. The Okinawa complex supports; Anti-Air Warfare (AAW), Amphibious Warfare (AMW), Anti-Surface Warfare (ASUW), Anti-Submarine Warfare (ASW), Mine Warfare (MIW), and Strike Warfare (STW), at all levels of training, but with a focus on Intermediate and Advanced level training. Exercises supported include the CVW-5 Strike Fighter Advanced Training Program (SFARP) exercise, ARGEX and SOCEX amphibious warfare training exercises in support of III MEF, and the DESRON 5 Multi-Sail exercise and Ship Anti-submarine Warfare Readiness and Evaluation Measurement (SHAREM) exercises. The complex serves as a regional range for all Forward Deployed Naval Forces (FDNFs) units in the western Pacific theater and occasionally supports Marianas-based and deployed units.

San Francisco

The San Francisco Range Complex contains no land ranges; it is composed of 15,902 sq nm of Special Use Airspace consisting of Warning Areas and a MOA overlying an OPAREA. The complex supports all phases of FRTP training across five Navy Warfare Areas. In addition to supporting the needs of the Navy, the complex supports non-Navy users as well.

Southern California (SOCAL)

The SOCAL Range Complex is composed of land areas encompassing 44,970 acres; 113,000 sq nm of Special Use Airspace consisting of MOAs, Warning and Restricted Areas; OPAREAS encompassing 120,000 sq nm of sea space, and under-sea training areas encompassing 695 sq nm. It is capable of

supporting many types of live and inert ordnance, including laser-guided weapons. San Clemente Island hosts a variety of land targets, including an impact area capable of supporting both air-to-ground and sea-to-shore munitions. The complex supports FRTP training at all levels for the anti-air warfare (AAW), Expeditionary Maneuver Warfare (EMW), anti-surface warfare (ASUW), Anti-submarine Warfare (ASW), Mine Warfare (MIW), strike warfare (STW), Electronic Combat (EC) Operations, and NSW Warfare Areas. The complex serves as a backyard range for Third Fleet units stationed in the San Diego Bay area. Training operations conducted in SOCAL include a majority of the required basic, intermediate and advanced level operations. In FY 2003, over 10,400 operations were conducted using more than 1,547,000 rounds of ordnance.

Virginia Capes (VACAPES)

The VACAPES Range Complex is composed of land areas encompassing 1,543 acres; 32,830 sq nm of Special Use Airspace consisting of Warning and Restricted Areas; and OPAREAS encompassing 28,640 sq nm of surface and subsurface space. It is capable of supporting many types of live and inert ordnance, including laser-guided weapons. The Navy Dare range hosts a variety of land targets, including an impact area capable of supporting air-to-ground inert munitions, supported by weapons impact and strafe scoring. The complex supports FRTP training at various levels for the anti-air warfare (AAW), anti-surface warfare (ASUW), anti-submarine warfare (ASW), strike warfare (STW), mine warfare (MIW), Electronic Combat (EC) operations, and NSW Warfare Areas. The complex serves as a backyard range for the units stationed in the Hampton Roads area. The training operations conducted in VACAPES include BOMBEX; surface-to-surface, surface-to-air, air-to-air, and air-to-surface weapons exercises (guns and missiles); ASW exercises; airborne mine countermeasures exercises, and various types of Naval Special Warfare exercises. In FY 2003, over 20,800 operations were conducted using more than 442,900 rounds of ordnance.

Whidbey Island (WI)

The Whidbey Island (WI) Range Complex is composed of 1 land range with 47,982 acres; 43,870 sq nm of Special Use Airspace consisting of MOAs, Warning and Restricted Areas; and 1 OPAREA of 126,630 sq nm of surface and subsurface space. Naval Weapons Systems Training Facility (NWSTF) Boardman is an inert bombing range with a variety of targets and capabilities. The range complex at WI supports FRTP training for electronic combat (EC), anti-air warfare (AAW), antisubmarine warfare (ASW), anti-surface warfare (ASUW), mine warfare (MIW), strike warfare (STW), Explosive Ordnance Disposal (EOD) training, and Naval special warfare (NSW). The current focus of training is currently EC, ASW, and ASUW, all at the basic and intermediate levels of training, as the range primarily supports the locally based P-3, EP-3, and EA-6B aircraft missions. The WI Range Complex also serves as the backyard range for surface and submarine units stationed at Naval Station Everett and Naval Base Kitsap. Training operations conducted at WI include: BOMBEX (Sea); ASW TRACKEX; ASW TORPEX; surface-to-surface GUNEX; air-to-surface MISSILEX; SINKEX; and NSW tactical insertion exercises. Oregon Army National Guard conducts marksmanship training at NWSTF Boardman, but otherwise, no Navy training resulted in ordnance expended at Boardman in FY 2004. Navy expenditure of ordnance in FY 2004 consisted of 96 practice bombs and 2,422 sonobuoys dropped in the ocean OPAREA.

7.3. TOOLS TO EVALUATE TRAINING REQUIREMENTS

The Navy has made great strides in meeting its training requirement. Recent funding increases have allowed Navy ranges to update infrastructure and instrumentation. Additionally the TAP program was funded to a low risk level allowing the Navy to sustain its ranges into the future. The Navy recognizes ranges are an important national asset and continues to strive to better evaluate the adequacy of its ranges.

A 2005 study, the Navy Range Office conducted using the Center for Naval Analysis, determined the adequacy of the Navy's SCORE range to meet the Navy's ASW requirements. The study determined that current instrumentation and available water space was adequate to meet most training requirements, but did not provide the shallow water ASW training that the Navy will need to meet future threats. The Navy Range Office is currently determining how best to expand the study into other warfare areas and ranges to provide a comprehensive evaluation of the Navy's training ranges.

Additionally, Range Complex Management Plans (RCMPs) give detailed description of each range's current ability to meet mission requirements. Each RCMP gives a list of the specific warfare areas that a range is required to support. The document then assigns a low, medium, or high risk rating by warfare area to the range capabilities currently available.

7.4. COMPREHENSIVE PLAN TO ADDRESS TRAINING CONSTRAINTS

7.4.1. Resource Enhancement Proposals

The Navy has a well-established, funded program to identify training constraints and ensure sustainable range management. In 2001, the Navy began building a five-part Fleet training range-sustainment program called the Tactical Training Theater Assessment and Planning Program (TAP). The Navy range-sustainability program is designed to ensure the Navy maintains access to its existing ranges and OPAREAs and can expand the capabilities of range/OPAREA infrastructure to continue supporting the training requirements of evolving weapons and platforms. The Navy sustainment program focuses on integrated planning and management to ensure training assets meet critical future mission support capabilities. TAP is the systematic investment strategy developed for Navy training ranges/OPAREAs to achieve sustained Fleet readiness. The following are TAP's five components and their functions:

Range Complex Management Plans (RCMPs). RCMPs address long-term sustainable use, management procedures, and record keeping requirements to support current and future operations. All collected data will adhere to standardized formats (GIS, ACCESS) to ensure future compatibility with a proposed Navy range management system. The RCMPs include:

- Complete description of all training areas,
- Comprehensive baseline of current range operations,
- Strategic 10-year planning vision,
- Analysis of encroachment and sustainment challenges,
- Identification of existing environmental planning requirements,
- Community involvement blueprint, and
- Range investment strategy.

RCMPs have been completed for six range complexes. The RCMPs for the remaining eleven complexes will be completed by FY 2007.

Efforts are currently underway to establish dedicated staff positions to carry out the guidance provided in the RCMPs. These personnel will report directly to the Range Complex Commander and will be dedicated to range management and sustainment.

Marine Species Density Data (MSDD). The MSDD component compiles existing marine species information and collects new information through surveys to determine marine species population densities in OPAREAs. This population density information is required to make accurate assessments of potential impacts to marine species from planned training operations. The development of MSDD for all Navy OPAREAs will be coordinated with the Fleet Commands and OPNAV to ensure consistency in (1)

outreach and coordination with the regulatory community, (2) the methodology/algorithms used to extrapolate literature and cite data for calculating densities, and (3) maintenance of all data in a centralized data repository.

Marine Resource Assessments (MRAs) are the first step in the process and consist of in-depth literature reviews of existing information that focus on ocean areas where Navy routinely trains. The MRAs were recently completed for many east coast OPAREAs to support development and/or updates of comprehensive environmental planning documentation. The MRAs were completed during FY 2003 for the Key West, Virginia Capes, Cherry Point, and Jacksonville complexes.

Operational Range Clearance (ORC). The ORC component establishes a plan for routine clearance and disposal of un-exploded ordnance and target debris, and maintains ranges by minimizing potential for possible future contamination. The ORC resources available through the range-sustainment program are in addition to the clearance currently conducted at Navy training ranges to maintain the safety of the range.

Environmental Planning. Implementing the RCMP may identify environmental planning requirements. The environmental planning will be conducted and documented as required by the NEPA (National Environmental Policy Act) or EO 12114 for action occurring overseas. Integrated operational and environmental planning is essential to ensuring operations and maintenance of ranges and OPAREAs are conducted in a manner that is (1) protective of human health and the environment, (2) consistent with current and future readiness requirements, and (3) compliant with existing environmental legal requirements. A large part of the environmental planning effort will ensure all required supporting studies and analysis of training operations conducted to fulfill NEPA and EO 12114 are current.

Range Sustainability and Environmental Program Assessments (RSEPA). A critical component to ensuring the long-term sustainability of the Navy's ranges is understanding the environmental conditions at each range and demonstrating that the Navy is conscientiously managing these resources in an environmentally sound manner. The Navy is taking steps to analyze and address environmental concerns by executing initiatives designed to sustain operational readiness while assessing the potential risk to human health and the environment. One initiative is the Chief of Naval Operations Navy Range Sustainability Environmental Program Assessment (RSEPA) policy. RSEPA was developed to provide a consistent and defensible approach for assessing the environmental condition of land-based operational ranges within the United States and its territories. The RSEPA program will determine environmental impacts of munitions use on DOD ranges, address issues of land-based range compliance, and assess the potential for off-range release of munitions constituents. The primary goals of the RSEPA process are to: (1) identify and eliminate the potential for off-range impacts to human health and the environment, and (2) comply with applicable laws and regulations. The Navy has initiated range assessments under the RSEPA process for all eleven training ranges requiring assessments.

7.4.2. Analyze Shortfalls

The Navy-wide Range Sustainment Policy will give headquarters level guidance on how the Navy will allocate limited resources. The RCD will allow the Navy to determine what range capabilities fall short of their requirements or will fall short of their requirements in the future. Each RCMP will include investment strategies for the range to prioritize resources to meet the shortfalls encountered. These documents are the pathway for guidance from and feedback to Navy leadership about Ranges. When shortfalls are found and quantified, Navy leadership can analyze the best investment strategy to limit risk.

The Navy Range Sustainment Program as implemented through TAP is phased across the Future Year Defense Program (FYDP), and as the programs are developed they put in place a consistent system across

the Navy. Many goals and milestones have already been achieved. Policy for preparing environmental documentation for training ranges is finalized. The Navy has funded the completion of several Marine Resource Assessments; funded initial efforts to develop a Navy-wide Range Management System; initiated the RSEPA process and has nearly completed the initial assessments; and completed the first six RCMPs. The Navy program is well underway.

7.4.3. Current and Future Service Investment Strategies

The Navy's training range investment strategy will be continually updated as Range Capability Documents generated under the RCMP portion of TAP are prepared. These range-specific investment strategies will delineate what infrastructure and technology is required to provide training to a specific warfare area during the three levels of the FRP, and thus allow ranges to create prioritized resource allocation structures for the following:

- Land, Air, and Water
- Facilities
- Operations and Maintenance
- Environmental
- Outreach
- Instrumentation

7.5. ENCROACHMENT MANAGEMENT (INCLUDING ENCROACHMENT ACTION PLANS AND ENCROACHMENT PARTNERING)

The Navy defines encroachment as the following: Encroachment is primarily any non-Navy action planned or executed which inhibits, curtails, or possesses the potential to impede the performance of Navy activities. Additionally, the lack of action by the Navy to work with local communities and to monitor development plans, or to adequately manage our facilities and real property can also impact the Navy's ability to meet its mission requirements and result in encroachment.

The Navy needed a proactive strategy to address all types of encroachment at our installations, ranges, and OPAREAS to preserve the ability to meet existing and future mission requirements and to provide effective test and training capabilities. Encroachment pressures (e.g., private development adjacent to an installation, range, or OPAREA, certain environmental restrictions, or growing competition for resources such as waterfront, airspace and frequency spectrum) are increasingly impeding the ability to conduct operations and training or testing in realistic environments. Encroachment pressures can limit low-altitude flight training, over-the-beach operations, night and all-weather training, live-fire training, and the application of new weapon technologies. The Navy is implementing an Encroachment Management program that focuses on systematic encroachment identification, quantification, mitigation, and prevention. The Encroachment Management program complements the efforts of TAP and expands the encroachment program to all installations.

The foundation of the Navy's Encroachment Management Program is identification and assessment by Mission Component Commands, Installation Commanding Officers (ICOs), Range Commanding Officers (RCOs), and Regional Commands of all encroachment impacts to installations, ranges, OPAREAs, special use airspace, and MTRs to ensure operational sustainment. Moreover, the program requires active engagement with local, state, other federal agencies, and community leaders to prevent encroachment impacts and promote compatible development of lands adjacent to and near our installations, ranges, special use airspace, and MTRs, and maintain unfettered access to and within our OPAREAs. The Navy is particularly susceptible to encroachment with many of its installations, ranges, special use airspace, and MTRs located in high growth areas and coastal regions. Many of the Navy's OPAREAs are located in

areas subject to recreational boating, commercial fishing, and commercial shipping pressures. Additionally, Navy must balance the need to train with protection of marine resources such as marine mammals, turtles, coral reefs, etc. The Encroachment Management program envisions a multi-faceted process to include:

- Establishment of regional teams consisting of diverse operational, planning, real estate, environmental, legal, security officer, and public affairs disciplines to become the focal point to address and resolve encroachment issues in support of Mission Component Commands.
- Establishment and maintenance of a Navy-wide encroachment database to identify and quantify encroachment challenges.
- Development of installation and range Encroachment Action Plans (EAP) to provide short-, mid-, and long-term encroachment management strategies.
- Development of Encroachment Partnering (EP) projects to acquire minimal real property interests in lands adjacent to or near installations or ranges: (1) where local planning and zoning initiatives are insufficient to protect the long-term viability of an installation, range, MTR, and special use airspace; and (2) preserve off-base habitat to relieve current or avoid future environmental restrictions on operations.

An EAP is the document that captures the results of identification, quantification, and mitigation of the potential encroachment challenges to an installation or a range. An EAP will be used to respond to encroachment challenges and to implement preventative or corrective actions identified in the Plan as appropriate. An EAP will delineate short, mid, and long-term strategies to address encroachment challenges at that installation or range. An EAP is meant to be an iterative document and should be periodically monitored and updated as necessary. The general steps involved in developing an EAP are the following:

- Establish a comprehensive EAP team to create and evaluate an EAP. The purpose of the team is to combine the knowledge and experience of various disciplines and perspectives in order to manage the vast array of issues involved in encroachment.
- The assessment should reflect and integrate impacts already identified in currently available planning, environmental and operational documents and studies such as the Regional Shore Infrastructure Plan (RSIP), Air Installations Compatible Use Zones (AICUZ) plan, Range Installations Compatible Use Zones (RAICUZ) plan, Joint Land Use Study (JLUS), Integrated Cultural Resource Management Plan (ICRMP), Integrated Natural Resource Management Plan (INRMP), NEPA Environmental Assessments or Impact Statements, local Range Complex Management Plan (RCMP), Anti-Terrorism/Force Protection plan (AT/FP), environmental agreements/permits/plans, operational plans, and any local or state development plans. These plans and studies are often generated without integration of information in other plans or studies. Often an installation or range might not be aware of the local or state development plans in the vicinity of the installation or range.
- Conduct discussions with local/state government staffs on their proposed development plans or projects that are being contemplated in the vicinity of the installation.
- Identify the underlying factors associated with the identified encroachment challenges. Requirements include collecting information on the encroachment challenges; the extent to which the encroachment challenges are pervasive on and off or near the installation; current Navy management, planning, or outreach activities that have been employed to minimize negative mission impacts and their effectiveness; the potential for greater impact on current and future

missions; and the regulatory and community frameworks that support or exacerbate the encroachment challenges.

- Develop short, mid, and long-term strategies to implement encroachment solutions – operational changes, land acquisition, rezoning requests, partnerships, outreach, environmental changes, legislative initiatives, and other means to establish mechanisms that enables/sustains the Navy's mission.

The Navy also established the Encroachment Partnering (EP) program to implement the acquisition authority set out in 10 USC § 2684a. The authority allows for the acquisition of real property interests in partnership with Conservators and/or local and State Agencies in order to prevent incompatible development of land near or adjacent to military activities. The foundation of the EP program is an active local command or regional effort working with local, regional, and state conservators as well as local and state agencies, and community leaders to identify partnering opportunities. This is necessary for two reasons: 1) local land use controls adjacent to or near Navy installations and ranges, and under MTRs and special use airspace are often inadequate to protect the mission; and 2) use of installation properties are sometimes restricted by natural resource requirements, making it necessary to acquire additional property interests to protect the regulated natural resource and/or the military mission. The Navy is particularly susceptible to a broad range of encroachment issues because many of its installations are located in ecologically important and high growth urban areas.

8. U.S. MARINE CORPS MISSION-CAPABLE RANGES PROGRAM

This report is the Marine Corps's third annual input to the Congressional reporting requirements levied in National Defense Authorization Act (NDAA), Section 366 of FY 2003. Although the body of the report is a thorough restatement of the Marine Corps' long-term plans for developing and sustaining our training ranges, we feel it is important to preface that report with a concise statement that addresses some of the concerns expressed by the Government Accountability Office (GAO) on the Department of Defense's (DoD's) previous reports and articulates the near-term goals that contribute to our long-term vision.

In critiquing the previous two versions of the 366 Report, GAO has taken an expansive definition of the requirement to provide an inventory of ranges and recommended an enterprise level information system that would facilitate cross-service or joint planning for the use of ranges. It is our view that such a system would be expensive, infrequently used, and, soon, redundant. The Marine Corps Range & Training Area Management System (RTAMS) is already based on a robust, dynamic inventory and includes a wealth of information on our training ranges. It is accessible to anyone with a military email address and shares a common scheduling system with the United States Army. Linkage to other Service range inventories and websites can be accomplished as they are developed. It is important to note that the great preponderance of ground training events take place at a unit's home station and are conducted by units below the level of a battalion—this is, and will remain, our primary customer. Creating a system to schedule joint exercises (a priority event by definition but a small percentage of the activities on our ranges) is an unnecessary expense with little value added to the users.

A more compelling criticism by the GAO has been our inability to provide definitive goals and milestones for improving Service training ranges. In the Marine Corps' case, candidly, we have been hampered in addressing this issue by our need to better document our requirement for ranges and to deal with both uncertain funding flows and the emergent needs evidenced by on-going combat operations. Though the basic report below does articulate a vision and program at a strategic level, there are still many pieces of analysis required to build the "range master plan" that will translate vision into achievable goals and programs. We do, however, have near-term goals that are component pieces of that larger vision and that can and should be addressed here. Between the writing of this report in early FY 2006 and the conclusion of the Program Objective Memorandum (POM) 08 FYDP (FY 2013) our goals (in order) are:

- Field basic urban training systems to all major ranges from which Marines deploy. Fielding by the end of FY 2008.
- Build and field a large combined arms urban training facility at Twenty-nine Palms, California to support urban training above the battalion level. Initial capability in FY 2009; full capability in FY 2013.
- Field state of the art range control systems to enhance ground and air training safety at all ranges. Range safety investments are an integral part of a sustainable range program since they ensure the range can continue to be used by Marines in the future. Prototype development finished in FY 2006; fielding completed by FY 2010.
- Field urban and maneuver instrumentation systems to provide after-action review and enhance Marine Corps training as well as the Joint National Training Capability (JNTC). Initial capability in FY 2006; full capability in FY 2013.

In support of its Mission-Capable Ranges program, the Marine Corps has instituted a range and training area management program that directs HQ and installation staffs to manage installation and training resources in the most efficient and effective manner to prepare Marine Corps operational forces for

combat. This management program will be embodied in the Marine Corps Mission Capable Ranges Operations Order.

Range Operations Order (OpOrd)—The Marine Corps Range Operations Order will be a comprehensive Service-level plan to sustain and modernize Marine Corps ranges and training areas. The objective of the OpOrd is to integrate and synchronize range and training area initiatives at Headquarters, Marine Corps (HQMC) and Training and Education Command (TECOM)/RTAM with Marine Corps operational training requirements and range current and planned required capabilities. The OpOrd is a coordinated family of documents that addresses the status of Marine Corps ranges, their future development, and the administration and resourcing of range management.

The OpOrd will include a review of Marine Corps training requirements, Marine Corps range policies and planning initiatives, Marine Corps range capabilities and shortfalls, JNTC and Joint Mission Essential Task List (JMETL) requirements, and other Marine Corps specific range issues. The OpOrd addresses:

- Training requirements and supporting range and training area required capabilities for all Marine Corps ranges
- The preservation and enhancement of live-fire combined arms training capabilities of Marine Air-Ground Task Force Training Command, 29 Palms, and Marine Corps Air Station, Yuma
- The recapture of unit-level littoral training requirements and range capabilities at the Marine Corps's two premier littoral training areas, Camp Lejeune and Camp Pendleton
- The goal of providing timely and objective feedback to the training audience by leveraging technology to support every level of Marine Corps training
- The preservation and enhancement of Marine Corps live training while honoring commitments to safe military operations and environmental compliance
- The assurance that Marine Corps training ranges are available to, and capable of supporting, Joint forces training and operations

The OpOrd will coordinate all Marine Corps range functions to include:

- Identify training requirements
- Document and track required range capabilities
- Ensure current range capabilities adequately support unit and individual training standards
- Identify emerging required range capabilities resulting from the introduction of new doctrine and missions, changing force structure, revised training techniques and procedures, hi-technology equipment, and range infrastructure resources
- Assess range capabilities shortfalls
- Develop recommendations for alternate training resource strategies using Marine Corps and other-Service facilities, ranges, and training areas
- Recommend investment strategies for range and training area sustainment, upgrade, and modernization

In support of the OpOrd, the Marine Corps has embarked on a major investment program to sustain and modernize the Marine Corps training range infrastructure. For reference purposes, the following definitions are applicable:

- **Range Operating Support—**The Marine Corps effort to support existing range and training area resources at their current capability levels and to provide life-cycle support to training systems on ranges. Examples of Range Sustainment investments include one-for-one replacement of failed equipment, range clearance programs, and additional upgrades to range controls.
- **Range Modernization and Transformation—**The Marine Corps range program to reconfigure ranges and training areas and to add new technology to the range infrastructure. Modernization capabilities seek to meet emerging training requirements evolving from new technologies, mission changes, and training techniques and procedures. Range Modernization investments will allow the Marine Corps to train for tomorrow's mission requirements. Modernization investments may include programmable, reactive targets; improved Military Operations in Urban Terrain (MOUT) training facilities from city block configurations to large (square mile) urban and rural areas; and leading-edge range and training area technologies and supporting infrastructures necessary to integrate vital Marine Corps training ranges into the JNTC.

8.1. SITUATION

8.1.1. Section 366 Report to Congress

In response to Congressional inquiry pursuant to HR 4546L Conference Report of the NDAA for FY 2003, Section 366, *Training Range Sustainment Plan, Global Status of Resources and Training System, and Training Range Inventory,* and pursuant to guidance by the Undersecretary of Defense (Personnel and Readiness), the Marine Corps developed a standalone Section 366 Report. The 366 Report contains information and analysis concerning:

- Assessment of current and future training requirements with projections through 2024.
- Plans to address operational constraints that result in adverse training impacts caused by limitations on the use of or access to land, water, air, and frequency spectrum.

Implementation of a Marine Corps range inventory system that includes:

- All available operational training ranges
- Training capacities and capabilities available at each range
- Identification of training constraints caused by limitations on the use of lands, water areas, air, and spectrum at each range and associated installation.
- Evaluation of the adequacy of current Marine Corps resources to meet current and future training requirements in the United States and overseas. Such resources include unencumbered and non-degraded access to land, water, air, and frequency spectrum required to perform all facets of test and training missions.

The Section 366 and its annual updates provide information on programs, processes, and initiatives designed to ensure that Marine Corps ranges and training areas fully and continuously meet the training requirements of the warfighter in the 21st Century.

8.1.2. Range Complex Management Plans (RCMP)

The Marine Corps has initiated detailed Range Complex Management Plans (RCMPs) for its installations and ranges. The RCMPs provide range and training area assessments and recommendations to support, modernize and transform Marine Corps ranges. RCMPs underway include Marine Corps Base (MCB) Camp Lejeune and Marine Corps Air Station (MCAS) Cherry Point; MCB Hawaii; Marine Corps Air Ground Combat Center (MCAGCC) Twentynine Palms; and, the Bob Stump Training Range Complex (BSTRC) and MCAS Yuma. An additional RCMP is in the initial stage for MCB Camp Pendleton. RCMPs for MCB Camp Butler, Okinawa, and MCB Quantico are pending. The purposes of an RCMP are to:

- Provide a detailed "as is" description of the range
- Organizational relationships
- Range and training operations baseline
- Current environmental and land use compliance and management plans, policies, and procedures
- Encroachment and sustainment challenges
- Range strategic planning
- Assess and evaluate current range capabilities against the Marine Corps Ranges Required Capabilities Document (RCD) requirements
- Identify project, organization, and process recommendations for range managers and planners
- Examine current range community involvement and outreach programs
- Outline and recommend investment needs for sustaining, upgrading, modernizing, and transforming the range

8.2. MISSION

8.2.1. U.S. Marine Corps Mission-Capable Ranges Vision

The Marine Corps Vision for Mission-Capable Ranges is action-oriented strategic planning to solve threats to Marine Corps operational training and the supporting range and training area resources and infrastructures. The Vision recognizes that increasing urbanization, environmental restrictions, and aging range and training area resources and infrastructures combine to limit Marine Corps training. Meanwhile, emerging new weapons systems and evolving warfighting techniques and procedures require refocused range capabilities and greater range resource allocations.

The Vision provides solutions to increasing encroachment and greater resource allocations by emphasizing how, when, and with what the ranges and training areas must be reconfigured, upgraded, and modernized to provide capabilities sufficient to support quality training. The Vision also provides appropriate balance between realistic, quality training, and environmental stewardship. Achieving the Vision requires investments in ranges and training area infrastructures, to include range instrumentation, target systems, and simulation technologies.

8.2.2. U.S. Marine Corps Training Ranges Required Capabilities Document (RCD)

The RCD is the Marine Corps' validated requirement for ranges and training areas. The purpose of the RCD is to define the required capabilities that will allow Marine Corps training ranges to support the training for mission essential tasking over a 10-year planning horizon. The RCD describes unconstrained required range capabilities by defining the "suites of ranges" that support various levels of training complexity and by describing the "systems of systems" needed on the ranges to support training.

The RCD is not intended to be used as an evaluation. Nor does it strictly define the number of required ranges. It was designed and implemented to be a significant component to the Marine Corps Mission-Capable Ranges program by stating range capability requirements in support of range and training area investment and POM programs. Highlighted capability shortfalls from the RCD, as described in the RCMPs, form the basis for developing current and future range investment supporting range sustainment, upgrade, modernization, and transformation plans. The RCD, therefore, is an integral part of the overall Marine Corps' strategic Mission-Capable Ranges planning effort.

8.3. EXECUTION

Managing and providing solutions to the Mission-Capable Ranges planning effort is pursuant to a number of tasks embodied in the Marine Corps Vision. Ultimately the Vision is the Commander's Intent for sustaining, upgrading, and modernizing Marine Corps ranges and training areas. The Commander's Intent specifies six tasks:

1. Preserve and enhance live fire combined arms training
2. Recapture littoral training capabilities
3. Leverage technology; provide feedback for better training
4. Guard against encroachment
5. Facilitate cross-Service utilization
6. Support the JNTC

Preserve and Enhance Live Fire Combined Arms Training—Live-fire combined arms training is a bedrock requirement that allows Marines to conduct expeditionary operations across the spectrum of crises and conflicts. Current geo-political situations in various areas of the world demonstrate an increasing demand for highly mobile, synchronized, and precise combat forces.

MCAGCC Twentynine Palms and MCAS Yuma are the only Marine Corps range complexes that together can support Marine Expeditionary Brigade (MEB)-level training. The MEB provides the forces for expeditionary warfare. To preserve live-fire and maneuver skills and to meet emerging expeditionary requirements, including urban area combat, the Marine Corps must both preserve and expand live-fire and maneuver capabilities at MCAGCC Twentynine Palms and MCAS Yuma.

The Marine Corps is developing a comprehensive unified investment strategy for ranges and training areas. Part of this strategy includes investment projects that address MCAGCC Twentynine Palms and MCAS Yuma.

Recapture Littoral Training Capabilities—Littoral power projection is a core Marine Corps expeditionary warfare competency. The ability to place a Marine Air Ground Task Force (MAGTF) from the sea into hostile territory is a unique Marine Corps skill. Amphibious operations are a national strategy that requires frequent, coordinated training with sufficient sea, air, and land space.

Most of the world's population lives close to coastlines. MCB Camp Lejeune and MCB Camp Pendleton are the two Continental United States beachfront range complexes that can provide amphibious training to support potential expeditionary warfare along the world's coastlines. Each complex, however, is threatened by encroachment from urban growth, environmental restrictions, and existing base configuration.

The Marine Corps has established programs to address encroachment pressures on MCB Camp Lejeune and MCB Camp Pendleton beachfronts. In addition, both complexes have comprehensive public outreach programs to ameliorate negative public perceptions and concerns related to amphibious operations. In concert with encroachment resolution, the Marine Corps is addressing range organizations and range resource configurations to increase amphibious training opportunities and quality.

Leverage Technology; Provide Feedback for Better Training—Today's technologies enhance training. The Marine Corps seeks to exploit new technologies, understanding they are integral to training and must be made part of the comprehensive range investment strategy.

Marines must cope with numerous complex and differing life threatening situations. Quality training is the best way to prepare Marines to meet these challenges. Instrumentation, feedback technologies, and hi-fidelity targets, offer timely, objective evaluations of training scenarios and reinforce lessons learned.

The Marine Corps has developed an investment strategy to address range instrumentation, feedback systems, and targets. Together, these investments leverage available technologies to provide better training feedback.

Guard Against Encroachment—Marines must have access to the ranges and training areas to allow them to "train as we fight." Without a commitment to protect the natural environment, however, the training environment becomes compromised by encroachment.

The Marine Corps has a long and distinguished record of properly using ranges and training areas. Part of range management focuses on protecting and conserving the natural and cultural resources. When natural and cultural resource management becomes uncoordinated with training operations, encroachment can result. Encroachment is any non-DoD action that has the potential to impede, interfere with, or restrict training operations, thus, forcing Marines to use alternative training practices as workarounds.

The Marine Corps guards against encroachment in a number of ways and prepares Encroachment Control Plans (ECPs) as roadmaps for taking action. Tools, such as the RCMPs, Training Range Encroachment Information System (TREIS), and Range Environmental Vulnerability Assessment (REVA) program, identify, analyze, and report to decision makers on encroachment and its impacts on the installation's abilities to support mission essential tasks. Moreover, they assist in the development of strategies to engage federal, state, and local agencies in finding encroachment solutions. A tool growing in importance is Encroachment Partnering, whereby the Marine Corps (USMC) partners with public and private conservators to acquire undeveloped land adjacent/proximate to Marine Corps installations to prevent incompatible development. The Marine Corps continues to develop other supporting tools to integrate with legacy tools.

Facilitate Cross-Service Utilization—Marine Corps training is heavily dependent on the availability of a portfolio of training assets including those of the other Services. Similarly, other Service usage of Marine Corps ranges is essential to mission training.

Restricted range availability and encroached ranges limit training opportunities and lessen training quality. The Marine Corps often uses other Service ranges and training areas to offset the restrictions and

limitations of Marine Corps ranges. All Services use each other's ranges in like manner. Unencumbered access and availability to ranges and training areas is essential to training Marine Corps forces.

The Marine Corps works hard to communicate and coordinate its use of other Service ranges. Strong relationships among the Services and federal, state, and local organizations strengthen cooperation and help to minimize encroachment impacts to Marine Corps training. The Marine Corps's RTAMS provides holistic range planning and helps to secure cross-Service utilization of Marine Corps ranges and training areas.

Support the Joint National Training Capability—The JNTC strategy is based on:

- Transforming the training environment
- Defining and providing Joint context for requirements-based Joint training
- Building on existing Joint exercises and selected Service training events
- Transforming the Joint Warfighting Center (JWFC) into the Joint National Training Command

The Marine Corps is committed to the JNTC concept. Comprehensive and realistic combat training requires contributions of all Services. The JNTC will capitalize on the collective contributions of each Service to Joint missions. The Marine Corps challenge is to identify, fund, and field the JNTC infrastructure resources to participate fully in JNTC events.

The Marine Corps is developing a strategy to identify Marine Corps ranges most suitable for JNTC certification and accreditation. The Marine Corps Combat Development Command (MCCDC) and Marine Corps TECOM are the Marine Corps lead commands for JNTC planning and implementation.

8.3.1. Program Objective Memorandum (POM)

Marine Corps POM submittals are predicated on investments that support the six Mission-Capable Ranges Vision tasks. Investment opportunities within the tasks are far reaching and will take long term planning. Funding constraints prevent near-term funding for many investments. Funding priorities, therefore, must be based on mission criticality.

The Marine Corps bases its installation, range, and training area investment on three funding categories: Facilities, Training Resources, and Environmental Resources. Within these three categories, there are four funding streams:

1. Range Facilities
   - Classrooms
   - Permanent Construction
   - Roads
   - Utilities

2. Environmental
   - Integrated Natural Resources Management Plan (INRMP)
   - Integrated Cultural Resources Management Plan (ICRMP)
   - Encroachment Partnering—Buffering
   - Range/Air Installation Compatible Use Zones (R/AICUZ)
   - Range Environmental Vulnerability Assessment (REVA)

3. Base Operating Support (BOS)
   - Grass cutting
   - Tree and brush removal
   - Fire break maintenance

4. Range control
   - Training Enablers and Training Systems
   - Targets
   - Instrumentation
   - Facades
   - MOUT systems

Marine Corps range programs were established as programs of record for the first time in FY 2006. The Range Modernization and Transformation Initiative was funded modestly in FY 2006 and FY 2007 because of funding constraints. Funded and unfunded investments will be prioritized by installation, funding category, funding stream, and criticality. The Mission-Capable Ranges funding strategy is based on overall competing Marine Corps investment priorities that must be managed at the Headquarters level in a way that considers installation, range, and training area management imperatives to support training and to ensure mission readiness.

8.4. ADMINISTRATION AND LOGISTICS

The Marine Corps has a suite of Marine Corps Orders (MCOs) that guide the Mission-Capable Ranges management efforts. In addition, the Marine Corps has developed and implemented the RTAMS to facilitate user interface with the Marine Corps ranges.

8.4.1. Marine Corps Order (MCO) 3550.10, Range Management and Control

MCO 3550.10 establishes the responsibilities, policies, and procedures pertaining to the safety and management of operational ranges, training areas, and associated training facilities within the Marine Corps. It further defines and describes the functions associated with ranges and training areas, and the responsibilities attendant to those functions.

8.4.2. MCO 3550.9, Range Certification and Recertification

MCO 3550.9 is an integral part of the Marine Corps' overarching ground range safety program. Range certification is the function by which safety and environmental compliance are enhanced without compromising training requirements and standards. The order defines the certification and re-certification process that meets an approved set of requirements applicable to an assigned role and mission. Applied appropriately, the range certifications/re-certification will allow for the effective and efficient use of existing ranges, while not compromising safety and the environment.

8.4.3. MCO 3570.1B, Range Safety

MCO 3570.1B establishes the range safety policies and responsibilities for all Marine Corps ranges and training areas. It establishes the minimum safety standards through Surface Danger Zones (SDZs) and institutes the requirements for individual range safety programs for all live-fire and non live-fire ranges and training areas. The order establishes a risk-management process to identify and control range hazards by defining the principles and deviation authorities that control range operations. The establishment of the ground range safety program enhances the Marine Corps objective to:

- Enhance safe, realistic live-fire training, enabling Marine Corps units to train as they fight
- Protect personnel and property while improving combat readiness training, thus helping to prevent fratricide in combat
- Protect civilian and military populations who live and work in the vicinity of live-fire training ranges
- Design and use ranges and the munitions used on them, to the extent practical, to minimize both potential explosive hazards and harmful environmental impacts, and to promote resource recovery
- Avoid injuries and property damage by introducing the risk-management process early in the range management process to enhance combat readiness

8.4.4. MCO 3570.3, Aviation Range Safety

MCO 3570.3, Aviation Range Safety, is under development. It will contain policy and procedures to conduct aviation activities at Marine Corps installations. Included will be a weapons safety footprint tool for mission planning, range management, and environmental oversight. The Aviation Range Safety MCO is due out during FY 2006.

8.4.5. Range and Training Area Management System (RTAMS)

RTAMS, formerly designated Range Management System (RMS), is the web-enabled, institutional-level, centrally managed system that provides commanders, operating units, range managers, and all cross-Service users with a single source access for all range related capabilities and resources utilizing established and developing data metrics and software. RTAMS allows its users with the resources to:

- Schedule, report, plan, and manage training on Marine Corps ranges and training areas
- Schedule, report, plan, and manage Special Use Airspace (SUA)
- Access and schedule Marine Corps and Army ranges and training areas
- Define Marine Corps range inventory and training assets
- Reference institutional guidance on range operations
- Relate range and training area capabilities and limitations to standardized training and readiness requirements and tasks
- Assess and manage range encroachment
- Identify encroachment impacts on training and readiness
- Assess, define, and identify required range capabilities
- Identify required range capabilities and capability shortfalls
- Reference institutional guidance to ensure ground and aviation safe range operations
- Produce range and weapon system SDZs, custom range maps, natural and cultural resource locations, and range training restrictions

8.5. COMMAND AND SIGNAL

The Marine Corps participates in three major planning activities that provide strategic planning venues for installations, ranges, and training areas.

8.5.1. The Mission-Capable Ranges Working Group

The Mission-Capable Ranges Working Group develops strategy and implementation plans that fulfill the sustainable ranges process tenets found within the pending Marine Corps Range Operations Order and the *Marine Corps Installations 2020* vision. TECOM and I&L integrate their activities into the overall Mission-Capable Ranges strategic plans. TECOM provides training requirements, range capabilities, and related investment planning factors while I&L provides facilities, environmental, land use and related investment planning factors. The Mission-Capable Ranges Working Group goals and objectives mirror and feed those of the DoD Sustainable Ranges Integrated Product Team (IPT).

8.5.2. Mission-Capable Ranges Operational Advisory Group

By direction of the Assistant Commandant of the Marine Corps, the Commanding General, TECOM is establishing the Mission-Capable Ranges Operational Advisory Group (OAG). The OAG will consist of senior representatives of major operational and installation commands and will assist in guiding range development by providing requirement validation and program prioritization. The OAG Charter is under development and will accompany OAG stand-up in FY 2006.

8.5.3. Department of Defense Sustainable Ranges Integrated Product Team

The Marine Corps is an active participant on the DoD Sustainable Ranges IPT. The IPT is the DoD coordinating body responsible for oversight, development, and coordination of a comprehensive DoD response to encroachment pressures that adversely affect operational ranges and operating areas. The Marine Corps provides Service-level perspectives on matters pertinent to the IPT. Given many common goals and objectives, the Marine Corps Mission-Capable Ranges Working Group directly supports the DoD IPT effort.

8.6. ENCROACHMENT CONTROL FOR MISSION CAPABLE RANGES SECTION 320

Encroachment is a serious threat to the readiness of the Marine Corps. Continued population growth and economic development around military installations, ranges, and training areas can create land uses that are incompatible with current and future military operations and training requirements. The term "encroachment" refers to factors that degrade or have the potential to degrade the capability of a military installation to support required testing and training. "Encroachment Control" describes current mitigation efforts underway and planned prevention efforts to be taken by local, regional, and national public and private entities to lessen or prevent training impacts caused by encroachment on Marine Corps ranges and training areas.

8.7. SECTION 320 REPORT TO CONGRESS

The Section 320 Report requirements specified in the NDAA for FY 2004, Section 320, Report Regarding Impact of Civilian Community Encroachment and Certain Legal Requirements on Military Installations and Ranges and Plan to Address Encroachment, direct the Secretary of Defense to "… conduct a study on the impact, if any, of the following types of encroachment issues affecting military installations and operational ranges:"

- Civilian community encroachment on military installations and ranges for activities that may require safety or operational buffer areas
- Compliance by the Department of Defense for Air Quality under the Clean Air Act

- Compliance by the Department of Defense under the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- Civilian Community Encroachment
- Programs to Address Community Encroachment

Military installations, including operational ranges and training areas, serve as realistic operations and training platforms that provide varied and realistic land, air, and sea resources suitable to fulfill Marine Corps Title 10 responsibilities. Military training on operational ranges and training areas are subject to many encroachment issues that can enhance or degrade the capability of an installation to support training and military readiness activities. These encroachment issues can affect training in detrimental ways. Marine Corps RCMPs provide insight into how encroachment affects training by correlating encroachment issues with training impacts. Range Environmental Vulnerability Assessment (REVA) provides information regarding encroachment in relation to environmental issues.

8.7.1. Encroachment Issues

The Senior Readiness Oversight Council (SROC) identified eight encroachment issues for the Services to study. The Marine Corps added four additional encroachment issues as it investigated and analyzed the various encroachment pressures on its ranges during preparation of RCMPs. The twelve encroachment issues currently used to assess installation and range encroachment are:

- Endangered Species and Critical Habitat (SROC)
- Unexploded ordnance (UXO) and munitions (SROC)
- Frequency encroachment (SROC)
- Maritime sustainability (SROC)
- Airspace restrictions (SROC)
- Air quality (SROC)
- Airborne noise (SROC)
- Urban growth (SROC)
- Cultural resources
- Water quality
- Wetlands
- Range transients, e.g., unauthorized entry on to ranges by civilians

REVA investigates and analyzes encroachment issues from potential environmental regulation, which relates to the following encroachment issues: UXO & munitions, air quality, cultural resources, water quality, and wetlands.

8.7.2. Impacts on Training

In recognition that encroachment impacts training, the Marine Corps uses a set of training impact factors to affiliate with encroachment. These training impact factors are used in the RCMPs along with the encroachment issues. The 12 training impact factors are:

- Creates avoidance areas
- Reduces training days
- Prohibits certain training events
- Reduces range access
- Segments training/reduces realism
- Limits application of new technologies

- Raises flight altitudes
- Inhibits new tactics development
- Complicates night and all-weather training
- Reduces live-fire proficiency
- Increases personnel tempo
- Increases Operations and Maintenance (O&M) costs

The correlation and assessment of an encroachment issue with each of the training impact factors provide a high-level analysis of encroachment impacts on training at any given Marine Corps range. RCMP analyses joined with REVA's detailed environmental assessment presents insights into encroachment pressures on ranges and informs installation and range mangers in formulating encroachment control strategies and environmental investment.

8.7.3. Potential Trends and Problem Areas

National, state, and local processes regulating frequency spectrum, airspace, natural resources, and human health and safety combine to constrain the timing, location, and frequency of military operations within our installations and ranges and training areas. While the Marine Corps will always be ready to answer the Nation's call to arms, the effects of increasing encroachment will continue to accumulate and to degrade our installations' abilities to support realistic individual and unit combat training requirements. Legislative initiatives, community involvement, and regulatory and administrative consultations with federal and state regulatory agencies remain underway to improve understanding of encroachment to enhance support for encroachment control efforts, and ultimately to achieve relief from debilitating encroachment impacts on training.

8.8. MARINE CORPS ENCROACHMENT CONTROL PLANS

Encroachment Control Plans (ECPs) are being prepared in order to provide each installation with management processes, strategic planning, and range resources to combat encroachment in order to continue to support realistic training. The plans are in two parts; encroachment analysis and action plan. The ECP is built on three pillars.

1. An ECP is both an installation and community plan
2. An ECP cannot be implemented solely by the installation
3. An ECP must be in compliance with federal, state, and local land use legislation and regulations

Installation managers must monitor future legislation and regulations to ensure that potential encroachment impacts to training are identified early. In turn, installation managers must notify the regulatory community should future legislation and regulation impact installation operations and training. Frequently, inter-agency coordination requires the involvement of DoD organizations and HQMC. Implementation of actions to combat encroachment frequently requires assistance from military higher HQ, state agencies, and regional organizations.

A preliminary draft prototype ECP for MCAS Beaufort, South Carolina, and its supporting Townsend Bombing Range, Georgia, was completed in 2005. A draft ECP report for MCAS Cherry Point, North Carolina, is scheduled for completion in 2006.

8.9. MARINE CORPS BUFFER PROGRAM

Buffers, buffering, buffer properties, and zones constitute the various land use alternatives the Marine Corps has adopted to implement encroachment control measures. Such land use applies to properties

adjacent and proximate to Marine Corps installations, ranges, and training areas. The properties must be free of incompatible development, e.g., high-density residential housing adjacent to a runway or training range. Buffers, buffering, buffer properties, and zones are parcels of land not under DoD control. Where incompatible development does not currently exist but may exist in the future, ensuring the property is not so developed can help to prevent encroachment from urban development and environmental compliance restrictions. Several prevention tools are available, such as working with local zoning officials, working with state officials to ensure development proposals consider military requirements, and working with state, local and non-governmental conservation organizations to acquire the land for preservation of its natural attributes.

8.9.1. Encroachment Partnering Background and Philosophy

Title 10, U.S. Code Section § 2684a authorizes the military services to enter into partnerships with States, local governments, and conservation-minded non-governmental organizations to acquire undeveloped land from willing sellers to prevent its development in a manner inconsistent with military readiness requirements. In exchange for its financial contribution to the partnership, a military service is authorized to acquire a real property restrictive easement. The Department of the Navy has determined that lands acquired under this authority will not to be directly used (e.g., maneuver or range use) for military purposes. Indirect use (e.g., overflights, noise) is authorized. This authority allows the Marine Corps to enter into agreements with state and local agencies and private environmental organizations to acquire real property in the vicinity of military installations, including ranges and training areas for purposes of (1) limiting development or use of property that would be incompatible with the mission of the installations and (2) preserving habitat on properties that would relieve current or anticipated ecosystem habitats for the installations. The Marine Corps follows three guiding principles when exercising the authority:

1. Maintain the integrity of the military installation including ranges and training areas
2. Conserve open space and natural resources
3. Enhance the community's quality of life

The Marine Corps exercises this authority by participating in Conservation Forums led by states or non-governmental organizations. The Marine Corps, as a matter of policy, does not lead a Conservation Forum. These Forums are open to all interested federal and state agencies, and non-governmental organizations and individuals. Though not required, a charter agreed to by all participants usually governs Forum activities. The primary purpose of these Forums is to identify mutually agreeable criteria for land acquisition, identify land available for acquisition, develop a real estate process that meets all participants' legal requirements for property acquisition, and bring together interested members of the Forum to conduct real estate transactions.

Forum members fall into three categories: criteria development and property identification, political support, and real estate transaction. The criteria development and property identification individuals bring a wealth of ecological and social knowledge of landscapes that are vital to ensuring effective use of the authority. These groups include universities, federal and state regulatory agencies, and small non-governmental organizations that focus on ecosystem health. Organizations that provide political support help bring resources to bear and convince the public that the acquisition is desirable for multiple constituencies. These organizations include the Sierra Club, National Wildlife Federation, and other national and local environmental activist groups. Real estate transaction partners execute acquisitions and bring funding to the table. These groups include the military services, state agencies and national and local land trusts (e.g., Trust for Public Land).

Though primarily a vehicle for exercising the buffer land authority, Conservation Forums also serve as a forum for environmental organizations to engage the military services on environmental matters in a non-confrontational manner. Working together to exercise the authority builds trust among participants, which leads to a productive dialog regarding military land use. Many organizations that have neutral or negative views of the military become supporters of military land use.

8.9.2. Current Encroachment Partnering Programs

In 2002, MCB Camp Lejeune joined the Onslow Bight Conservation Forum. The Forum members are dedicated to sharing information and discussing potential buffer land partnering opportunities in coastal North Carolina. Onslow Bight participants include The Nature Conservancy (TNC), North Carolina Coastal Land Trust, Endangered Species Coalition, several North Carolina State agencies, the U.S. Fish and Wildlife Service, and the U.S. Forest Service. In 2003, TNC purchased 2,500 acres adjacent to the Camp Lejeune tank and rifle ranges. The land was slated for a golf course and housing development of 3,000 units. The North Carolina Wildlife Resources Commission took fee title of the land for inclusion into the state hunting lands system and the Marine Corps acquired a restrictive easement governing development, thus ensuring any land use of the parcel must be in accordance with Marine Corps training requirements. In 2005, three properties totaling 1,065 acres were acquired adjacent and proximate to MCB Camp Lejeune, North Carolina. Work on additional parcels is underway.

In 2003, MCAS Beaufort joined the Low Country Conservation Forum. Members of this forum include Beaufort County, the Beaufort Open Space Land Trust, and Trust for Public Land. In 2004, Beaufort County and MCAS Beaufort jointly acquired a restrictive easement over a 69-acre parcel beneath the runway approach zone. The land is retained by the owner and continues to be used for farming. The restrictive easement governs development and protects MCAS Beaufort from incompatible development. In 2005, Beaufort County and MCAS Beaufort jointly acquired restrictive easements on three properties totaling 162 acres. Additional parcels are being considered for restrictive easement acquisition.

In 2003, Camp Pendleton, along with Orange, Riverside, and San Diego Counties, Sierra Club, TNC, Trust for Public Land, and Wild Habitats League, joined the South Coast Conservation Forum. The Marine Corps anticipates an Encroachment Partnering project being executed in 2006. In 2004, MCB Hawaii, along with the Army, Office of Hawaiian Affairs (a State of Hawaii agency), and several native Hawaiian organizations joined the Oahu Open Space Conservation Forum to acquire a 900-acre parcel adjacent to an Army range. This Encroachment Partnering project is underway. In 2005, MCB Quantico initiated discussions with State of Virginia agencies and environmental organizations to establish a conservation forum and to acquire restrictive easements adjacent to the base.

8.10. RANGE ENVIRONMENTAL VULNERABILITY ASSESSMENT (REVA)

The Marine Corps is currently developing their REVA program to assess the potential for munitions constituents (MC) to migrate off operational ranges and identify potential impacts to human health and the environment. The REVA is designed to provide a consistent and defensible process to assess Marine Corps operational ranges and training areas that may be impacted by environmental regulations. The goals of the REVA program are to:

- Provide environmental information for the RCMPs
- Enhance the Marine Corps' ability to prevent or respond to a release or substantial threat of a release of MC from an operational range or training area
- Assist range managers in making decisions to improve sustainable range management

A REVA will collect operational range usage data (expenditures by munitions types and location) and environmental data (geological, hydrogeological, weather) to determine if a potential source of MC exists as well as potential pathway(s) and receptor(s). Using the data collected, a conceptual site model will be developed, and using qualitative and quantitative fate and transport models, MC sources will be analyzed to determine if there is a potential for MC to migrate off operational ranges. Based on the fate and transport model results, confirmation sampling may be required. Sampling decisions will be made on a case-by-case basis in concert with the installation and regulators. A report summarizing the analysis and results will be documented in a report. Operational ranges and training areas will be assessed at a minimum every 5 years.

8.11. CONCLUSION

The Marine Corps has undertaken an aggressive and comprehensive Mission-Capable Ranges program. The program seeks to support, modernize, and transform Marine Corps operational ranges while protecting human safety and health, the environment, and the imperatives of military range training requirements. The program embraces processes and investment strategies that ensure operational range and training area access and usage in the foreseeable future. In addition, the program develops investment strategies to improve range and training area resources and infrastructures to meet training requirements well into the future.

As part of range support, modernization, and transformation, the Marine Corps recognizes encroachment control is necessary to ensure operational range access and usage. Encroachment control is managed best by developing a plan that includes community input and relies on a variety of tools, including buffering programs. This approach recognizes that the Marine Corps and local communities are best served by mutually supporting efforts to protect the installation. The Marine Corps has established a comprehensive Encroachment Partnering program to protect installation, range, and training area mission objectives and military readiness. Encroachment Partnering captures the interests and efforts of both civilian stakeholders and Marine Corps installation managers that serve to provide cooperative arrangements necessary to guard against encroachment and protect undeveloped land for the enjoyment of local residents.

Marine Corps range support, modernization, and transformation management processes and investment strategies combined with REVA, Encroachment Partnering, and other encroachment control actions, provide a comprehensive plan to manage Marine Corps installations, ranges, and training areas.

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9. AIR FORCE

In response to the requirements of Section 366 of the *Defense Authorization Act for Fiscal Year 2003* (Public Law 107-314), the Air Force submitted to the Office of the Under Secretary of Defense, Personnel and Readiness (USD (P&R)) a report titled, *Implementation of the Air Force Training Range Comprehensive Plan* in December 2004. The December 2004 Air Force report was subsequently incorporated and summarized in the Department of Defense (DoD) Report to Congress, *Implementation of the DoD Training Range Comprehensive Plan, Ensuring Training Ranges Support Training Requirements*, which was submitted to the Congress in July 2005. Similarly, for DoD's FY 2006 Report to Congress, the Air Force is submitting this enclosed report as an update to the December 2004 Air Force report. This year's update of the Air Force report includes sections on:

- An introduction to the Air Force's Sustainable Range Program
- A discussion of encroachment impacts due to the growth of civilian communities and populations around military installations that can result in increased limitations and restrictions on military training operations
- An overview of comprehensive range management and planning, including a summary of the Air Force's investment strategy for resolving existing training constraints related to ranges and airspace
- A discussion of Air Force initiatives related to Natural Infrastructure Capability and Resource Management, and environmental asset management at operational ranges

As with last year's report, this report provides the basis for the Air Force reports and the Office of the Secretary of Defense (OSD) Annual Reports to Congress that will be submitted in subsequent years.

9.1. INTRODUCTION

9.2. PURPOSE

In an effort to understand civilian encroachment impacts on Armed Forces operations, the Congress, in Section 366 of the FY 2003 National Defense Authorization Act (NDAA), required the Secretary of Defense to submit to Congress an annual report (during FYs 2004–2008) on operational training and test ranges. DoD has requested annual inputs from each Service to assist in the development of the Congressional report. The annual reports are intended to provide progress updates on DoD's comprehensive plan to address operational constraints that could potentially affect training and testing requirements and/or limit the use of, or access to, land, water, air, and the communications spectrum. The Air Force has implemented processes to identify encroachment pressures and actively engages in mitigation efforts to minimize the effects of encroachment on training and readiness requirements, thus ensuring the Air Force's ability to consistently fulfill its readiness requirements.

9.3. OVERVIEW

The Air Force continues to enhance its test and training sustainability programs through initiatives designed to provide focused investment in our people, science, and technology, maintenance, modernization, and recapitalization of our systems and infrastructure by means of integration with our capabilities-based requirements process. These initiatives such as comprehensive range planning, Range Manager's Software Tool (R-MAST), and Natural Infrastructure Capability and Requirements Management (NICRM), support the Air Force's four-point encroachment prevention and resolution

strategy, which is discussed in greater detail in this report. The strategy is essentially designed to continue moving the Air Force towards an adaptive asset management approach that relies on better understanding of how operational requirements relate to access and use of a variety of natural assets such as airspace, land, water, and frequency spectrum. Many of these assets are used exclusively by the Air Force and some are shared-use with local communities and other stakeholders. The sustained access to, and compatible use of, these assets is key to sustaining test and training capability.

The Air Force is focused on comprehensively planning, programming, budgeting, and executing the sustainment, restoration, and modernization of its asset base under an integrated planning framework. This will enable commanders to make prompt value-driven decisions that ensure these assets are sustained to support the current and future warfighter. The emerging set of tools and management constructs build on existing asset management systems for a broader, better integrated framework that monitors the effects of and informs our operational decision-making as related to both the built and natural infrastructure.

The asset management construct is intended to enhance the overall management system through improved adaptive management capabilities and planning. Elements will continue to include (1) identification of current and future operational requirements; (2) quantification of operational infrastructure needed; (3) capability assessment against current inventory (gap analysis); and (4) evaluation of operational and financial risks and opportunities. At a minimum, periodic reevaluation of infrastructure inventory, condition, value, and mission support capability will be conducted to assure mission-value is maximized, while economic, ecological, and community values are optimized. The bottom line is that asset management is intended to move us into a management system construct that more efficiently and more effectively satisfies compatible use and operational requirements.

Note that this report is an update to the earlier submissions and does not re-state issues covered in previous years. Information contained in the Air Force's 2004 submission that is not restated or updated in this year's report still represents the current status of the Air Force ranges and its range sustainment program.

9.4. ENCROACHMENT IMPACTS ON THE AIR FORCE TESTING, TRAINING, AND READINESS PROGRAM

9.4.1. Background

Department of Defense (DoD) operational training and test ranges are increasingly being hemmed in by adjacent off-site civilian development resulting in increased limitations and restrictions on military operations. This encroachment, due to the growth of civilian communities around military installations, forces the military services to shift training and testing procedures and adjust their readiness protocols. Our civilian neighbors place unforeseen restrictions on the use of natural and physical resources currently set aside for military training, in addition to limiting the times and conditions under which these operations can be conducted.

This chapter presents an overview of the Air Force's encroachment-related challenges, provides examples of Air Force ranges experiencing encroachment constraints, and discusses the mitigation measures being implemented to address these issues.

9.4.2. Civilian Community Encroachment Impacts on the Testing, Training, and Readiness Program

The Air Force initially developed a survey questionnaire to solicit information and data from the MAJCOMs regarding range requirements, capabilities, and capacities for the NDAA Section 366 annual report submitted to Congress in FY 2004. Existing data were then combined with the questionnaire survey data to develop a baseline. In 2005, the Air Force engaged the MAJCOMs in a follow-up effort to gather additional information on encroachment pressures and mitigation responses. The data from this survey were then used to update the Air Force report for the FY 2005 NDAA Section 366 annual report to Congress.

9.4.2.1. Encroachment Pressures and Constraints

The Air Force is experiencing encroachment pressures that potentially limit training and testing capacity and capabilities at operational ranges that ultimately may impact our efficiency in maintaining appropriate training and readiness. Encroachment pressures generally fall within three broad categories—(1) competition for resources (e.g., access to land, water, air, and key frequencies in the communications spectrum); (2) civilian community concerns regarding military operations (e.g., complaints about noise); and (3) environmental enforcement and compliance issues. The following examples illustrate some of the encroachment pressures at Air Force installations and operational ranges:

- At Nellis Air Force Base (AFB), the Air Force no longer uses the southern departure procedure for live ordnance missions because of extensive residential development located at the end of the runway. To manage this operational risk, Nellis AFB acquired 417 acres of land under the northern departure corridor at a cost of $38 million. Nellis AFB is also experiencing encroachment challenges stemming from urbanization and noise. Officials report that urban growth near the base and safety concerns have restricted the flight patterns of armed aircraft causing mission delays and cancellations. The Nellis AFB and Nevada Test and Training Range also report they receive approximately 250 complaints about noise each year.[20]
- Currently, 78 Federally-listed threatened and endangered species occupy substantial portions of the approximately nine million acres of Air Force property for which the Air Force provides various levels of habitat and species protection. On the Barry M. Goldwater Range (BMGR) in Arizona, the Air Force protects the breeding lands and habitat of the endangered Sonoran pronghorn antelope. The DoD flew 54,319 sorties in 2004 on the BMGR; all while our biologists monitor the BMGR target areas for pronghorn movements. If pronghorn movements are detected, live missions projected for that area are diverted or cancelled. BMGR biologists direct closure of live target areas if they observe, within a two-hour period prior to bombing, endangered Sonoran pronghorn antelope within five kilometers of the target area. From 2002 to 2004, 11 percent (81 out of 765 per year on average) of the scheduled live drop missions were rerouted to another target area, and 7 percent (53 of 765 per year on average) were cancelled because of pronghorn antelope proximity to live, high explosive delivery target areas.

Many of our largest and most critical installations are located in areas that are experiencing rapid or explosive growth. Fifty-nine of our installations are currently located in areas that do not achieve minimum air quality standards (non-attainment areas), while new standards may affect an additional 27 bases. Air quality pressures generally affect operations at our installations more than on our training and test ranges, but these issues potentially limit our basing options for force realignments and weapon system beddowns. The Clean Air Act (CAA) general conformity provision requires that any beddown action

[20] http://www.gao.gov/new.items/d02727t.pdf

must conform to the state implementation plan (SIP) for CAA compliance. If it does not conform to the SIP, the Air Force must either obtain air quality credits or reduce other emissions at the base to counterbalance the impact. Military mission requirements frequently demand operational changes with little or no lead-time to adjust for requirements such as the general conformity provision. We continue to work with state regulators and local communities to ensure the flexibility to base aircraft at our installations that have huge investments in infrastructure, not only on the installation itself, but also to ensure access to the required air and range space necessary for operational training and testing needs.

9.4.2.2. Mitigation Measures Implemented to Address Encroachment

As competition for resources increases, managing the associated operational and financial risks without compromising our mission becomes increasingly difficult and costly. The Air Force has instituted a four-point strategy to address encroachment issues:

- Identify and quantify the resource base needed to perform the Air Force mission, and quantify the readiness impairments resulting from resource denial (encroachment) including impairments in connection with joint use of training facilities managed by other DoD components. As a result, the Air Force has developed the Resource Capability Model (RCM) to identify natural and physical resources more precisely and associated regulatory requirements needed to conduct readiness activities to better inform decision-makers both within the Air Force and among our community and regulatory partners. See Section 9.6 for further information on the application of the RCM.
- Institute routine dialogue with other federal resource management agencies to develop regulatory or administrative improvements that can relieve military resource encroachment. The Air Force continues to work with the Department of the Interior, the Environmental Protection Agency, and the Department of Commerce (National Oceanic & Atmospheric Administration) to better communicate and develop effective resource management techniques and alternatives to prevent or mitigate encroachment.
- Communicate with states, tribes, local governments, and other interested organizations regarding how unintended consequences of resource management programs can impair military readiness. By using resource modeling and other informational techniques, the Air Force will continue outreach and communications efforts with partners and stakeholders.
- Explore the possible need for statutory modifications to prevent unintended impacts to military readiness from resource denial or degradation. The Air Force supports making necessary and appropriate adjustments to the implementation of environmental laws to address encroachment that is negatively impacting military readiness activities.

Further examples of the types of ranges encroachment pressures and specific mitigation efforts underway at various Air Force installations are summarized in Table 9-1. The table identifies various ways in which encroachment manifests itself and affects Air Force range operations. Encroachment pressures resulting from increased residential development around operational ranges include complaints about noise during training exercises and subsequent work-around restrictions on the use of range approach airspace; public demand for access to ranges for recreational purposes; airspace interference from private commercial air traffic; pressures to use military training lands to house public works facilities and build roads to support new civilian development; and restrictions on the use of the communication frequency spectrum for testing and training purposes. The likelihood of greater conflict increases with the growth of population near ranges. Though mitigation activities are currently underway to address some of these challenges described above, they often do not address the root causes–population growth and urban sprawl. In addition, mitigation measures typically require ongoing and escalating funding, which increases the Air

Force's overall cost of conducting training and testing activities and ultimately diverts funds that could be alternatively used to ensure that our forces are well trained and our weapons systems are properly maintained.

Table 9-1. Examples of Encroachment Pressures and Mitigation Measures at Air Force Operational Ranges

Operational Range	Identified Encroachment Pressures / Constraints	Mitigation Measures
Poinsett Range, SC	Population growth (urban encroachment)	New zoning and subdivision legislation supports the Poinsett Range's operational goals and introduces controls for growth in the area around the range.
Dare County Range, NC	Population growth (urban encroachment) Public demand for access to range property (hunting, recreation, etc) Encroachment into Military Training Routes airspace approaching the range.	The Dare Bomb Range Advisory Council (DBRAC) was formed to provide a forum for the dissemination of information and public comment concerning the operations, maintenance, and environmental management of the range property. The DBRAC process has proven to be a successful method of satisfying the local, interested population's need to be heard. Since its formation, there has not been another instance of negative political interest in the Dare County Bomb Range.
Utah Test and Training Range (UTTR)	Population growth (urban encroachment) Airspace encroachment	The 388 Range Squadron works closely with the Federal Aviation Administration (FAA), Utah Bureau of Land Management and other government and civil agencies through a Range Program Planning Board (RPPB). The RPPB is a conduit for various state and government agencies to express their concerns, address issues, and propose solutions to minimize current and future conflicts.
Avon Park Air Force Range (APAFR), FL	Airspace encroachment	APAFR manages approximately 20,000 square miles of airspace, all within close proximity to Tampa/St Petersburg, Orlando, and Miami. Additionally, there are multiple smaller airports around APAFR supporting a large population of private aviation. The APAFR airspace manager is working directly with Miami Center and the FAA to update and improve existing letters of agreement. Also, the range is proposing to expand the special use airspace above APAFR from 18,000 feet to 40,000 feet. It is expected that this will greatly improve training and help stem encroachment from commercial airline traffic.
Barry M. Goldwater Range (BMGR), Luke AFB, AZ	The presence of the endangered Sonoran pronghorn antelope results in periodic closure of the range and efforts to mitigate impacts on the antelope divert funds to species management and away from training activities	The Barry M. Goldwater Range Executive Council (BEC) is the lead forum for managing Sonoran pronghorn antelope on the range. The BEC's Pronghorn Recovery Team (PRT) subgroup meets regularly to ensure processes are in place to facilitate sustainment of this endangered species.
Barry M. Goldwater Range (BMGR), Luke AFB, AZ	Illegal alien trespassing incidents and associated law enforcement activities have resulted in cancellation or modification of training activities.	The 56 RMO works in cooperation with Customs and Border Protection (CBP) officials to communicate, educate, and enhance safety for both ground and airborne operations. Participation in the Borderlands Management Task Force and other forums has enabled a high degree of communicative and

Operational Range	Identified Encroachment Pressures / Constraints	Mitigation Measures
		cooperative participation towards working as a team to address the flow of illegal entrants through the range, and tackle border security and human safety issues.
Barry M. Goldwater Range (BMGR), Luke AFB, AZ	Increasing complexity in accessing the range from the north and along low-level military training routes (MTRs) terminating in the range airspace. Urban growth continues to spread into Luke AFB areas of operations with isolated residential growth continuing within the Air Installation Compatible Use Zone (AICUZ) of the main base and Auxiliary Field 1. Proposed residential developments have the potential to impact operations on several low level military training routes which lead into the BMGR. Civilian general aviation traffic continues to increase and operations at local civilian airfields are expected to increase significantly over the next few years. Increased civilian general aviation traffic north of the field has resulted in a significant increase in near midair collisions over the last three years, though the trend appears to be reversing with recent mitigation measures, including an aggressive "road show by 56 FW Safety to civilian airfields/FBOs.	Even though the majority of the land on the northern border of the BMGR-E is Bureau of Land Management or Arizona State Trust land, active engagement with state and local jurisdictions is critical in the continued unfettered low altitude access to the Goldwater ranges. With no opportunity to adjust the 5 MTR routes where they enter the range via the north border, any incompatible community development will result in noise complaints. Therefore, the 56 RMO and the Luke AFB Community Initiatives Team actively engage with federal, state, and local agencies and jurisdictions to plan for and mitigate consequences of eventual community growth. 56th Fighter Wing /CC established a full time staff organization, the Community Initiatives Team (CIT) to handle encroachment issues. The CIT works on a daily basis with local government and area landowners and developers to mitigate the effect of urban growth on military operations. The CIT has worked with the state legislature and Governor's office to enact legislation to restrict land use in areas of military operations. State statutes now dictate compatible land uses within main and auxiliary airfield AICUZs, and require notification to potential buyers of land underlying military training routes. State funding is available to compensate landowners. 56th Fighter Wing has educated area general aviation pilots on Luke AFB flying operations, including areas where the midair collision potential is especially high. 56th Fighter Wing is proposing a Special Air Traffic Rule that will require civilian traffic to contact Luke RAPCON for clearance prior to transiting Luke approach corridors. The 56th RMO engages in multiple forums and at all levels in a collaborative fashion to recognize and understand encroachment factors that affect the BMGR, then plan, and carry out efforts to mitigate the effects and consequences.
Eglin AFB, FL	Eglin AFB faces rapid growth of the surrounding community. Given that the 724 square miles constituting Eglin AFB transverse four counties and 12 incorporated cities and towns, recent and predicted growth in population, has driven increased requests for Air Force land to meet community infrastructure requirements, such as roads, sewage treatment facilities, recreation complexes, and other needs. Additionally, intense development and rising housing costs create housing problems for military, DoD civilian, and contractor support personnel.	Eglin AFB has been active in working with surrounding communities. State Of Florida Senate Bill 1604 mandates that communities at the county and municipal level integrate military installations into their planning forums. All comprehensive plans must be reviewed by the installation to ensure that military mission requirements are considered and factored into the process. Eglin AFB is represented at the county and municipal level in all planning forums to include land planning, developmental planning and aviation planning. Additionally, following the Presidential transmittal of the Base Realignment and Closure (BRAC) Report to Congress, Eglin AFB instituted a well-received Senior Leadership forum to advise elected leaders from across the Eglin area of impact of future growth pressures and military mission requirements driven by increased activity. The first meeting occurred in September 2005 with the admonition that the installation will no longer consider community requests that do not come with military mission value. Future workshops are planned to ensure that elected leaders understand and support mission needs.

Operational Range	Identified Encroachment Pressures / Constraints	Mitigation Measures
Eglin AFB, FL	Eglin AFB has experienced illegal frequency encroachment by non-military users. Increased frequency requirements generated by newly realigned missions of the U.S. Army 7th Special Forces Group and Joint Strike Fighter initial pilot training will require close scrutiny and abatement of frequency encroachment activity.	Encroachment in the frequency area has abated since the installation worked with county and municipal permitting agencies, building associations, and developers to establish a channel of communication between the installation frequency manager during early planning phases of proposed construction. Possible conflicts are identified and resolved prior to a problem rising.
Eglin AFB, FL	Eglin AFB is concerned about the incompatible offshore oil and gas exploration and development operations underlying the Gulf of Mexico water range, which is a 93,000-square mile heavily utilized water range. Offshore oil and gas activity promotes increased helicopter and boat traffic in support of platform and drilling logistics operations, but the primary concern is safety footprint restrictions due to incompatible activity on the surface.	Close contact is maintained with the Department of Interior Minerals Management Service under the provisions of the 1983 DoI–DoD Memorandum of Agreement for Off-shore Oil and Gas Negotiations. Military stipulations and requirements are factored into the final lease sale and military stipulations developed by the installation in cooperation with MMS are placed into all lease sale agreements, including direct control over exploratory operations in the Gulf range area.
Edwards AFB, CA	The FAA's airspace weather recalls may decrease R-2515 airspace availability by as much as 33 percent.	Working with FAA.
United States Air Forces in Europe (USAFE)	Reduction/loss of airspace for air-to-air activity. Reduction/loss of airspace around and over ranges limiting realistic tactical employment of modern weapons. Limited range size compared to modern weapons footprints. National restrictions to operating hours, sortie limits, weapon system use (i.e., laser).	USAFE is striving to address encroachment on available airspace. As range size and airspace in Europe are limited, USAFE is in a continuous mode of exploration for more receptive nations that have larger range areas and more airspace that may be accessed; e.g., Romania, Bulgaria. USAFE continue to program and budget to routinely send units to the continental United States (CONUS) for enhanced training opportunities; e.g., Red Flag, Air Warrior. This requirement will expand in the future and become more important as opportunities to train in the Europian theater are reduced.
Air National Guard (ANG)	Airspace – example: the Coastal memorandum of agreement (MOA) proposal that has been in work for over 11 years. Ops tempo requires a more streamlined process to converting or developing airspace. The FAA has removed previous means to simplify the	The ANG is working with the Policy Board on Federal Aviation to address the issues with the FAA on behalf of DoD.

Operational Range	Identified Encroachment Pressures / Constraints	Mitigation Measures
	environmental impact assessment process, and provided no substitute process.	
Air National Guard (ANG)	Surrounding land use: Cannon Range, MO is experiencing continuous housing growth near the Range boundary and has had to modify Range procedures and patterns. Grayling Range has had to limit run-in headings due to housing development within Range Restricted Airspace.	In an effort to prevent construction encroachment and to accommodate future mission requirements, the Southern Division, Naval Facilities Engineering Command is working to expand the land size of Townsend Range from 5,187 acres to approximately 10,000 acres, with potential plans to further expand to approximately 50,000 acres.

9.5. COMPREHENSIVE RANGE MANAGEMENT AND PLANNING

9.5.1. Investment Areas

The Combat Air Forces Mission Support Plan (CAF-MSP) presents the Air Force's investment strategy for resolving existing training constraints on operational ranges and airspace. The plan presents an investment strategy focused on ten major areas.

Land: Covers land lease/purchase and associated costs related to meeting mission needs while trying to accommodate competing land uses. Related issues involve range location, distance from user airfields, sufficient surface area, and the attributes of designated airspace that allows effective use of the land.

Airspace: Covers actions taken in designating and reserving airspace. Considerations include proximity to user airfields, airspace volume, airspace attributes, and airspace requirements and availability. Other considerations include the land underneath and the airspace's interrelationship with the National Airspace System (NAS).

Environmental: Involves range sustainability and stewardship of natural and cultural resources, including public/tribal outreach efforts that promote a dialogue between the Air Force and local communities. Also addresses mandates such as the Sikes Act, Clean Air Act, Emergency Planning and Community Right-to-Know Act, Resource Conservation and Recovery Act, Endangered Species Acts, and the Environmental Impact Assessment Process. Additionally, this area may include the monitoring of environmental effects of operations and establishing mitigation measures.

Unexploded Ordnance (UXO)/ Range Residue Removal: Covers removal of ammunition, explosives, and other dangerous articles (AEDA), and other range residue on operational ranges. Also includes efforts to reduce levels of residue and enhance clearance practices (e.g., hollow bomb initiative, plastic training ordnance, UXO detection, processing technologies, etc.).

Physical Plant (Real Property and Infrastructure): Involves the identification of long- and short-range infrastructure requirements, including the construction, upgrade, and maintenance of facilities and the repair and improvement of roads and utilities and other recurring physical structure maintenance. Responsibilities for maintenance, repair, and construction must be delineated between the contractor and the civil engineer.

Scoring and Feedback Systems: Includes air-to-surface scoring systems, air combat mission record and replay capabilities, and electronic countermeasures (ECM) analysis systems for feedback on Electronic Combat Ranges.

Communication Systems: Includes ground-to-air and point-to-point systems and support on the ranges and communications backbones, such as microwave and fiber systems. Also addresses information protection requirements (such as encryption) and radio, data link, and instrumentation frequency management.

Integrated Air Defense Systems (IADS) Training: Covers the types and quantities of training equipment required for training and exercising against IADS. This area also includes training needs for Information Warfare/Information Operations and Space Warfare.

Targets and Target Arrays: Includes the types and quantity of ground targets such as conventional, strafe, urban warfare, and other target configurations to include Camouflage, Concealment & Detection (CCD) and urban target complexes.

Management: Represents overarching systemic or institutional work that generally covers procedures and administration. Includes activities such as programming and supervision, scheduling issues, the modernization planning process, and reducing duplication of efforts among the ranges.

9.5.2. Range Manager's Software Tool

Each Air Force range manager must comply with various overarching requirements regarding operational procedures, documentation, and data collection. Since there are no centralized means to meet these various requirements, numerous tools and procedures have been developed to ensure that required operational procedures are fulfilled; documents are completed and submitted in a timely manner; and data are collected to meet individual ranges requirements. As a result, attempts to collect data at the individual range level, or across a variety of ranges, are typically a manual and labor intensive process.

The Air Force is addressing this issue by developing a software tool that will provide the range manager the necessary guidance and references to manage a range more effectively and efficiently. The Range Manager's Software Tool, or R-MAST, will:

- Standardize the process of completing and submitting documentation
- Enable data to be collected and be available to the individual ranges and to higher commands as appropriate
- Create a comprehensive, current, and accurate database
- Enable the ability to parse the data as required
- Reduce the response time and manpower effort required by range management staffs to respond to data calls

R-MAST is an information system that will provide a single point of access to range management documentation, procedures, and data collection. The software will be hosted at a single site and be accessible by range managers worldwide via the Internet. R-MAST will assist range managers with day-to-day operations and long-term planning requirements. R-MAST will serve as a reference for current regulations and procedures, as well as a data collection and a form submittal tool. Data will be collected and will be accessible via password-protected features. As a system, R-MAST meets DoD and Air Force security requirements for use over an unclassified network. The types of data that may be collected via

R-MAST include range usage by aircraft type; weapons released by type; target status; usage of range connectivity capabilities; and off-range UXO tracking.

The form submittal process in R-MAST will be "smart," i.e., routine forms will be easily filled out and submitted using this software. In addition, based on the information submitted on the forms, the software will direct range managers to correct procedures for any given situation.

For example, if an off-range release were reported on a range utilization report, the R-MAST highlight any requirements to complete any specific actions or documentation based on the physical location of that range and the chain of command. MAJCOMs may have unique forms and data requirements requiring each individual range to customize software while retaining data collection interoperability with all other ranges. In contrast to the current system, R-MAST will greatly improve and facilitate document processing, data collection and information management.

R-MAST will enable decision-makers to improve management decisions and manage range community investments across the ten investment areas. The initial release of R-MAST is expected in Spring 2006, with greater expanded functionality scheduled for Fall 2006.

DoD is currently transforming its training to make it a more effective and joint initiative. One aspect of this transformation is a Live-Virtual-Constructive capability, which simultaneously utilizes actual systems operating on live ranges and simulations to conduct training events. Enhancing communication between Air Force range management and the individual range managers is crucial to realizing this training transformation and to achieving overall mission objectives.

R-MAST Objectives

- Improve range management documentation standardization
- Reduce time to process range management documentation
- Enhance accuracy of document submission
- Collect range utilization data
- Make range utilization data readily available to authorized users.

R-MAST software will assist range managers and standardize reporting.

9.6. NATURAL INFRASTRUCTURE CAPABILITY AND RESOURCE MANAGEMENT

Natural Infrastructure Capability and Resource Management (NICRM) is the Air Force's developing approach for assessing and managing the capability of the installation's natural infrastructure to support current and future military missions. The overarching goal of NICRM is to sustain, restore, and modernize natural infrastructure to ensure operational capability. While the fundamental principles behind this developing methodology are not new to the DoD, the Air Force and DoD are implementing innovative concepts, standardizing data collection methodologies, and more fully integrating natural infrastructure asset management practices into existing processes. The name of this initiative, in fact, has changed several times to reflect the need to incorporate the natural infrastructure capability (NIC) methodologies and tools into operational decision-making, and budgeting and business processes. From Resource Capability Modeling to Natural Infrastructure Management Encroachment Prevention (NIMEP), and then to Natural Infrastructure Capability and Resource Management, the name changes reflect the commitment to integrate the results of NIC assessments into environmental management systems used to manage natural infrastructure assets.

> Under the NIC process, the DoD focuses on managing **natural infrastructure**, defined as follows: *the combined set of natural and statutory assets and operational components that together facilitate conduct of the military mission at installations, ranges and operating areas.*
>
> *Natural Assets:* Examples include wetlands, streams, forests, grasslands, aquifers, and mineral-bearing geologic structures.
>
> *Statutory Assets:* Examples include emission and discharge permits, landfill permits, pollution credits, and restoration credits.
>
> *Operational Components:* Examples include airspace availability, air shed emissions availability, water supply access, water discharge availability, on-site surface land access, and off-site surface land compatibility.

NICRM initiatives are achieving the much-desired transition from managing a base's natural infrastructure from a reactive process to a proactive management approach. Though the historical approach of responding to regulatory requirements and community encroachment issues has been adequate to maintain the requisite operational training capabilities, it is becoming unsustainable for the long term. Air and water regulations, water supply, competition for frequency spectrum, and uncontrolled development near military installations require a management approach that assesses natural infrastructure assets from a perspective that is regional and cross media. The Air Force has understood for years, demonstrated through its AICUZ Program, that development of land resources affects the use of other media such as airspace. Land development may result in noise complaints, safety issues, or placements of towers, which all affect the ability to train in the airspace. Likewise, development of an industrial park may contribute to an increased amount of air pollutants, which in turn reduces the allowable emissions from other sources in the region. The media are interconnected and the availability of the natural infrastructure for military training is significantly affected by activity throughout the region. The NICRM process addresses media components by assessing air, land, and water resources needed to support the military mission, and incorporates regional trends in assessing encroachment impacts and developing risk management solutions.

Under the NICRM process, health protection and regulatory compliance are essential elements to be addressed in sustaining DoD's operational capability (i.e., provision of natural infrastructure to mission needs). This policy focuses on managing natural infrastructure elements as a group of assets, rather than individual liabilities. There are four basic principles that are central to the implementation of NICRM:

- Identify operational and financial risks to resource requirements in an objective, quantified manner.
- Make informed risk management decisions through total cost visibility for ESOH resource sustainment.

- Leverage the equity and knowledge value of the ESOH resource portfolio.
- Manage risk through investments that support operational and regulatory requirements.

Two assessment tools support the implementation of these principles: Resource Capability (RC) and Resource Valuation (RV). RC is an assessment of the operational capability of land, air, and water to support mission requirements. RC incorporates urban encroachment, ESOH considerations, built infrastructure limits, and other operating constraints into the assessment process. Presently, the resource areas of airspace, air emissions, surface land and sea space, water supply and discharge, and frequency spectrum are assessed. RV takes a comprehensive view of the economic value associated with the natural infrastructure assets of land, air, and water, which include military, community, and ecological value. Natural infrastructure resources will not be viewed solely as liabilities in terms of cost to maintain, comply, clean up, or consume. These resources also represent asset value in terms of recreational, historical, and ecological value to the community and society. Together, these tools provide a view of an installation's natural infrastructure that allows the Commander to make risk management and/or acquisition decisions that will provide the highest return on investment to the military.

Example of Leveraging Value of ESOH Resource Portfolio

Valuing and Banking Air Shed Equity

- Mission Requirement: Replace C-141s with thirteen C-17s at McGuire AFB in ozone non-attainment area.
- Operational Constraint: NOx budget in State Implementation Plan is sufficient only for the thirteen new planes.
- Leveraging the Equity: Past pollution prevention achievements allowed the base to negotiate with New Jersey Department of Environmental Protection to trade volatile organic compounds headroom for NOx credits.

Result: Cost avoidance and increased operational capability; additional NOx credits valued at $1 million.

9.6.1. Resource Capability Assessments

The RC assessment uses several sets of measures to quantify the adequacy of natural infrastructure components to support mission needs on a range or installation. In general, measures compare required natural infrastructure quantities to available natural infrastructure quantities. The results of these comparisons provide a quantitative indication of resource headroom available to accept new mission, or resource deficiency that needs to be addressed. Results may also indicate resource adequacy (also referred to as "resource ready") with potential future deficiency that should be managed in the near-term.

Over the last two years, the RC methodology has been pilot tested at Air Combat Command (ACC), Air Education and Training Command (AETC), Pacific Air Forces (PACAF), United States Air Forces in Europe (USAFE), Space Command, and Air National Guard (ANG) installations, including associated ranges and airspace units. Over 30 RC assessments have been conducted to-date. In the coming year, Air Force Special Operations Command, and Air Mobility Command will apply RC assessments to their installations. The ACC will further apply the results from their pilot studies to support installation and MAJCOM decision-making.

9.6.2. Resource Valuation

RV is an asset valuation methodology used to ascribe economic and ecological values to natural infrastructure assets. The Air Force uses RV as an important analytical tool to quantify its natural infrastructure as economic and ecological assets that provide valuable goods and services to the Air

Example of the Benefits of Applying Resource Valuation:

- Mission Requirement: Barksdale Air Force Base seeking to increase value of outleases to offset operations and maintenance cost.
- Operational Constraint: Land serves as important encroachment buffer.
- Leveraging the Equity: RV assessment determines recreational value, which is used in lease negotiations with oil and gas companies.

Result: Additional $180K annual revenue and sustained mission buffer.

Force, surrounding communities, and local and regional ecosystems.

Natural assets provide materials or goods such as water, timber, crops, or undeveloped lands. Natural assets also provide services or functional processes such as floodwater retention, groundwater recharge, pollutant neutralization, and maintenance of biodiversity. Services also include the provision of aesthetic qualities or recreational opportunities.

- Three approaches to *economic valuation* are available for valuing natural infrastructure assets:
- *Empirical studies.* Primary research using one or more specific valuation techniques.
- *Market appraisal.* Uses market data based on sales of comparable assets, income streams from use of an asset, and/or the cost to replace the asset.
- *Benefits transfer.* An indirect approach that uses values from primary empirical studies or market appraisals conducted off-site to generate values for assets on-site, adjusting for differences between the sites.

Resource Valuation applications were applied at Altus AFB, Andersen Air Base, Avon Park AFR, Elmendorf AFB, Luke AFB, Tyndall AFB, and Vandenberg AFB. Additional applications are planned to occur in FY 2006 at two AFSOC installations and selected PACAF installations. Resource Capability and Resource Valuation together provide the Commander with a complete view of the deficiencies and/or potential additional capability of the installation's natural infrastructure, and the valuations needed to determine the cost-benefits of various risk management actions. Resource valuation is an important consideration in selecting risk management actions, such as resource acquisition, asset disposal, investments in asset management, and environmental equity development, as well as outreach efforts to communicate the ecological and community value of the property in and around military installations.

9.6.3. OSD NIC Workgroup

OSD formed a NIC Work Group (NIC WG) in September 2004, to analyze the Air Force NICRM concept for DoD-wide use, and to provide policy and direction for the NICRM initiative. The NIC WG, which reports to the Installations Capabilities Council (ICC) that is headed by the Office of the Deputy Undersecretary of Defense, Installations and Environment (DUSD (I&E)), is comprised of representatives from OSD, Army, Navy, Marine Corps, Air Force and Defense Logistics Agency (DLA).

To supplement the pilot studies conducted within the Air Force, the NIC WG sponsored RC and RV pilot studies at Army and Navy installations. Additional site visits planned for FY 2006 include a Marine Corps location, a DLA location, an international installation, and a joint location that includes two different Service installations within the same geographic area. While each of the pilot studies generates site-specific results and recommendations, the NIC WG will also evaluate the pilot study results supported by DoD to establish commonalities among the separate applications and lessons learned. The NIC WG plans to draft a broad NIC framework and identify opportunities to integrate the OSD framework with Service-specific programs.

9.6.4. Air Force NIC Integrated Product Team

Within the Air Force, the NIC Integrated Product Team (NIC IPT) is responsible for strategic planning, developing policy and guidance documents, conducting pilot studies, and developing a NICRM implementation plan. The management of natural infrastructure became a requirement following the issuance of the November 2003 policy memorandum from the Deputy Assistant Secretary of the Air Force for Environment, Safety and Occupational Health (SAF/IEE). In March 2005, the NIC IPT

produced a draft strategy document describing the vision, mission, goals, objectives, principles, definitions and management framework for NIC. In addition, SAF/IEE is now developing a guidance document on conducting an RC assessment and utilizing the data. The focus will be on integrating the data into the existing corporate structure and decision-making process.

Late in FY 2005 and continuing into FY 2006, a separate effort began to evaluate how to integrate NIC concepts and methodologies into weapon system acquisition. The acquisition business process will be evaluated to determine the steps at which resource requirements and capabilities should be assessed and reported. NIC assessments will allow for the implementation of risk management actions that have time to take effect before resource demand is realized.

9.6.5. Asset Management at Air Force Operational Ranges

The mission of the Air Force Operational Range Program is to "optimize assets to meet range mission requirements … today, tomorrow and in the future." Four goals have been established to achieve the overall program mission. These goals are:

- Maintain an accurate operational range environmental database;
- Manage environmental assets to meet operational requirements;
- Optimize lines of strategic communication; and
- Integrate environmental aspects into range planning and design.

These four goals support the over-arching Air Force Sustainable Range program by ensuring assets at our ranges are managed to meet operational requirements.

9.6.5.1. Operational Range Environmental Database

The first goal of the Air Force Operational Range Environmental Program is to maintain an accurate database of environmental attributes at operational ranges to support data calls and decision-making at the Air Force headquarters level and above. The Air Force Environmental Division has developed the Operational Range Environmental Database (ORED), for the collection and storage of specific environmental information from Air Force Operational Ranges.

The first module in the ORED consists of general range attributes such as location, range type, size, and usage. The second module is focused on range specifics such as air media, range residue, hazardous waste, contaminant release, landfills, natural and cultural resources, and clean water. The information in the ORED is currently being validated and will be updated on a recurring basis. The database provides information for the Air Force to use in making informed and accurate environmental asset management decisions that sustain our operational ranges, as well as support the other three operational range environmental program pillars or goals.

9.6.5.2. Environmental Resource Management

The second goal of the Air Force Operational Range Environmental Program is to manage environmental assets to meet operational requirements. In response to DoD Directives 4715.11 and 4715.12, the Air Force developed the Operational Range Assessment Plan (ORAP). This plan establishes headquarters level guidance on overall operational range sustainment by instituting a process for assessing the release or potential threat of release of munitions constituents from operational ranges to off-range areas.

Development of the ORAP began in Fall 2003. The first action taken by the Air Force was to initiate and implement a limited field study at 11 air-to-ground range complexes composed of 32 individual ranges. This limited field study consisted of evaluations of current and historical environmental information about

the ranges and limited physical sampling of soils, sediments, surface water, and ground water. The study, which was completed in Fall 2004, indicated that the potential for munitions constituent migration at Air Force operational ranges is not widespread.

Building on the results of the limited field study, as well as guidance and direction from headquarters level inter-service working groups and OSD, the Air Force Environmental Division began formalizing the framework for the ORAP at the end of 2004. In early 2005, two planning charrettes involving representatives from the Secretariat, Air Staff, the Major Commands, and the range community were held to discuss and critique the newly developed ORAP. As part of the ORAP development process, the Air Force conducted thee pilot range assessments at the Warren Grove Range, NJ, the Utah Test and Training Range, UT, and Barry M. Goldwater Range, AZ. The results from these range assessments have indicated that the potential for munitions constituent migration is not an issue at theses three ranges. The ORAP is in the final stage of development, and will be rolled out for implementation during the FY 2008 Program Objective Memorandum (POM) cycle.

9.6.5.3. Strategic Communication

The Air Force is committed to incorporating a strategic communications plan into its overall Operational Range Environmental Program. Currently, work is underway to define, develop, and implement a strategic communications plan that will provide an overall strategy for the Air Force to communicate with the diverse stakeholders that are involved in, and impacted by, range operations.

The communications plan will outline activities that are designed to keep stakeholders informed and provide them with opportunities to be involved in the program. A uniform approach to stakeholder involvement will help develop a strong brand identity for the program, and will communicate and promote core information messages that stakeholders can easily understand. In addition, the communications plan will ensure that consistent information regarding the Air Force's regulatory requirements, the role of the Operational Range Environmental Program, and the public involvement process can be used to establish cohesive communications themes.

The Air Force will follow these steps as it develops the plan: conceptual planning, scope evaluation, stakeholder identification, stakeholder interviews, key message development, plan preparation, plan revision, and implementation. A draft plan is anticipated to be complete by the end of calendar year 2005.

9.6.5.4. Integrating Environmental Aspects into Range Planning and Design

Military ranges are facing increasing regulatory and public scrutiny as a result of concerns over potential for off-base migration of UXO and munitions constituents. Therefore, to ensure that ranges remain as a viable resource to meet future training needs, it is imperative that they are designed and managed in a manner that is compatible and consistent with public safety and environmental stewardship.

The Air Force Center for Environmental Excellence (AFCEE) developed the Model Target Planning Guide in May 2004 to help installation and range mangers minimize future impacts of UXO on human health and the environment by providing guidance on the use, siting, and design of new range and target areas. Specifically, this guide focuses on designing targets to be used primarily by the BDU-33 training munition. Several Air Force, Navy, and Marine aircraft currently use the BDU-33 munition in many of their training activities.

This guide is to be used by operators, designers, and managers of BDU-33 target areas. It provides areas to examine for potential environmental impacts resulting from the construction, operation, and maintenance of range sites for use by weapons platforms dropping the BDU-33 munition and possible measures to mitigate or reduce impacts to the public. While the considerations identified in this guide will

not eliminate all hazards and risks associated the development and operation of ranges and use of BDU-33 munition, it is expected that they will help reduce future liabilities associated with BDU-33 munition training activities.

9.7. CONCLUSIONS

The United States Air Force continues to provide air and space power capability far surpassing that of any current or potential future challenger. The key to maintaining this edge and vital national capability is to anticipate the battlespace needs of the future; that is, to begin today to create the force we will need tomorrow. The Air Force must adapt for the future without degrading its ability to conduct current operations; especially in light of the Global War on Terrorism and its unprecedented operational requirements.

The Air Force recognizes the need for ensuring that test and training infrastructure, be it man-made or natural, meets the needs of the operators who carry out the Air Force mission. This report updates the information contained in the Air Force submission for 2004 and presents a more detailed accounting of the following:

- Actions to address identified constraints to range operations,
- Overview of comprehensive range management and planning,
- Initiatives related to Natural Infrastructure Capability and Resource Management, and
- Overview of the Range Manager's Software Tool (R-MAST).

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10. OBSERVATIONS

Many of the observations presented in the first two Sustainable Range reports remain valid today. To provide ready military forces to meet our country's national security needs, our personnel must train as they would fight, especially for combined arms and joint training. Effective training and testing require reliable access to adequate land, air, sea space, and frequency spectrum resources. Encroachment effectively reduces the amount of these resources that the Department has to support essential military training.

Over the past several years, the Department has increased its efforts to cooperate with state and local governments, non-governmental organizations, private landowners, and others to preserve and expand open space, buffers, and compatible land uses in locations that are important for military training and testing activities, and to develop and sustain effective communications with a wide variety of affected stakeholders. These efforts are an especially important element of the Department's strategy for sustainable ranges.

The Department is grateful for the support that the Congress has provided on the Readiness and Range Preservation Initiative, compatible land use buffer initiative, and related range management issues. Yet even with the recently enacted changes in the law, tomorrow's encroachment problems will be substantially worse than today's without effective management and broad cooperation. As our weapon systems grow in capability, they detect at greater distances, travel faster, cover wider areas, and process more information. These trends suggest training and testing needs for more land area, airspace, sea space, and frequency spectrum. At the same time encroachment diminishes the availability of these resources.

The Department looks forward to continuing to work with the Congress, other federal agencies, the states, Native American tribes, local governments, host nations abroad, and non-governmental organizations to address today's encroachment problems and to ensure the long-run sustainability of the range resources that are so essential to training, testing, readiness, and our nation's security.

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APPENDIX A:
SECTION 366 OF THE BOB STUMP NATIONAL DEFENSE AUTHORIZATION ACT FOR FISCAL YEAR 2003
AND
SECTION 320 OF THE NATIONAL DEFENSE AUTHORIZATION ACT FOR FISCAL YEAR 2004

Section 366 of the National Defense Authorization Act for Fiscal Year 2003

SEC. 366. TRAINING RANGE SUSTAINMENT PLAN, GLOBAL STATUS OF RESOURCES AND TRAINING SYSTEM, AND TRAINING RANGE INVENTORY.

(a) PLAN REQUIRED.—(1) The Secretary of Defense shall develop a comprehensive plan for using existing authorities available to the Secretary of Defense and the Secretaries of the military departments to address training constraints caused by limitations on the use of military lands, marine areas, and airspace that are available in the United States and overseas for training of the Armed Forces.

(2) As part of the preparation of the plan, the Secretary of Defense shall conduct the following:

(A) An assessment of current and future training range requirements of the Armed Forces.

(B) An evaluation of the adequacy of current Department of Defense resources (including virtual and constructive training assets as well as military lands, marine areas, and airspace available in the United States and overseas) to meet those current and future training range requirements.

(3) The plan shall include the following:

(A) Proposals to enhance training range capabilities and address any shortfalls in current Department of Defense resources identified pursuant to the assessment and evaluation conducted under paragraph (2).

(B) Goals and milestones for tracking planned actions and measuring progress.

(C) Projected funding requirements for implementing planned actions.

(D) Designation of an office in the Office of the Secretary of Defense and in each of the military departments that will have lead responsibility for overseeing implementation of the plan.

(4) At the same time as the President submits to Congress the budget for fiscal year 2004, the Secretary of Defense shall submit to Congress a report describing the progress made in implementing this subsection, including—

(A) the plan developed under paragraph (1);

(B) the results of the assessment and evaluation conducted under paragraph (2); and

(C) any recommendations that the Secretary may have for legislative or regulatory changes to address training constraints identified pursuant to this section.

(5) At the same time as the President submits to Congress the budget for each of fiscal years 2005 through 2008, the Secretary shall submit to Congress a report describing the progress made in implementing the plan and any additional actions taken, or to be taken, to address training constraints caused by limitations on the use of military lands, marine areas, and airspace.

(b) READINESS REPORTING IMPROVEMENT.—Not later than June 30, 2003, the Secretary of Defense, using existing measures within the authority of the Secretary, shall submit to Congress a report on the plans of the Department of Defense to improve the Global Status of Resources and Training System to reflect the readiness impact that training constraints caused by limitations on the use of military lands, marine areas, and airspace have on specific units of the Armed Forces.

(c) TRAINING RANGE INVENTORY.—(1) The Secretary of Defense shall develop and maintain a training range inventory for each of the Armed Forces—

(A) to identify all available operational training ranges;

(B) to identify all training capacities and capabilities available at each training range; and

(C) to identify training constraints caused by limitations on the use of military lands, marine areas, and airspace at each training range.

(2) The Secretary of Defense shall submit an initial inventory to Congress at the same time as the President submits the budget for fiscal year 2004 and shall submit an updated inventory to Congress at the same time as the President submits the budget for fiscal years 2005 through 2008.

(d) GAO EVALUATION.—The Secretary of Defense shall transmit copies of each report required by subsections (a) and (b) to the Comptroller General. Within 60 days after receiving a report, the Comptroller General shall submit to Congress an evaluation of the report.

(e) ARMED FORCES DEFINED.—In this section, the term "Armed Forces" means the Army, Navy, Air Force, and Marine Corps.

Section 320 of the National Defense Authorization Act for Fiscal Year 2004

SEC. 320. REPORT REGARDING IMPACT OF CIVILIAN COMMUNITY ENCROACHMENT AND CERTAIN LEGAL REQUIREMENTS ON MILITARY INSTALLATIONS AND RANGES AND PLAN TO ADDRESS ENCROACHMENT.

(a) STUDY REQUIRED.—The Secretary of Defense shall conduct a study on the impact, if any, of the following types of encroachment issues affecting military installations and operational ranges:

(1) Civilian community encroachment on those military installations and ranges whose operational training activities, research, development, test, and evaluation activities, or other operational, test and evaluation, maintenance, storage, disposal, or other support functions require, or in the future reasonably may require, safety or operational buffer areas. The requirement for such a buffer area may be due to a variety of factors, including air operations, ordnance operations and storage, or other activities that generate or might generate noise, electromagnetic interference, ordnance arcs, or environmental impacts that require or may require safety or operational buffer areas.

(2) Compliance by the Department of Defense with State Implementation Plans for Air Quality under section 110 of the Clean Air Act (42 U.S.C. 7410).

(3) Compliance by the Department of Defense with the Solid Waste Disposal Act (42 U.S.C. 6901 et seq.) and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 et seq.).

(b) MATTERS TO BE INCLUDED WITH RESPECT TO CIVILIAN COMMUNITY ENCROACHMENTS.—With respect to paragraph (1) of subsection (a), the study shall include the following:

(1) A list of all military installations described in subsection (a)(1) at which civilian community encroachment is occurring.

(2) A description and analysis of the types and degree of such civilian community encroachment at each military installation included on the list.

(3) An analysis, including views and estimates of the Secretary of Defense, of the current and potential future impact of such civilian community encroachment on operational training activities, research, development, test, and evaluation activities, and other significant operational, test and evaluation, maintenance, storage, disposal, or other support functions performed by military installations included on the list. The analysis shall include the following:

(A) A review of training and test ranges at military installations, including laboratories and technical centers of the military departments, included on the list.

(B) A description and explanation of the trends of such encroachment, as well as consideration of potential future readiness problems resulting from unabated encroachment.

(4) An estimate of the costs associated with current and anticipated partnerships between the Department of Defense and non-Federal entities to create buffer zones to preclude further development around military installations included on the list, and the costs associated with the conveyance of surplus property around such military installations for purposes of creating buffer zones.

(5) Options and recommendations for possible legislative or budgetary changes necessary to mitigate current and anticipated future civilian community encroachment problems.

(c) MATTERS TO BE INCLUDED WITH RESPECT TO COMPLIANCE WITH SPECIFIED LAWS.—With respect to paragraphs (2) and (3) of subsection (a), the study shall include the following:

(1) A list of all military installations and other locations at which the Armed Forces are encountering problems related to compliance with the laws specified in such paragraphs.

(2) A description and analysis of the types and degree of compliance problems encountered.

(3) An analysis, including views and estimates of the Secretary of Defense, of the current and potential future impact of such compliance problems on the following functions performed at military installations:

(A) Operational training activities.

(B) Research, development, test, and evaluation activities.

(C) Other significant operational, test and evaluation, maintenance, storage, disposal, or other support functions.

(4) A description and explanation of the trends of such compliance problems, as well as consideration of potential future readiness problems resulting from such compliance problems.

(d) PLAN TO RESPOND TO ENCROACHMENT ISSUES.—On the basis of the study conducted under subsection (a), including the specific matters required to be addressed by subsections (b) and (c), the Secretary of Defense shall prepare a plan to respond to the encroachment issues described in subsection (a) affecting military installations and operational ranges.

(e) REPORTING REQUIREMENTS.—The Secretary of Defense shall submit to the Committee on Armed Services of the Senate and the Committee on Armed Services of the House of Representatives the following reports regarding the study conducted under subsection (a), including the specific matters required to be addressed by subsections (b) and (c):

(1) Not later than January 31, 2004, an interim report describing the progress made in conducting the study and containing the information collected under the study as of that date.

(2) Not later than January 31, 2006, a report containing the results of the study and the encroachment response plan required by subsection (d).

(3) Not later than January 31, 2007, and each January 31 thereafter through January 31, 2010, a report describing the progress made in implementing the encroachment response plan.

APPENDIX B: MAPS AND INVENTORY OF DEPARTMENT OF DEFENSE RANGE COMPLEXES, INDIVIDUAL RANGES NOT IN A COMPLEX, AND SPECIAL USE AIRSPACE

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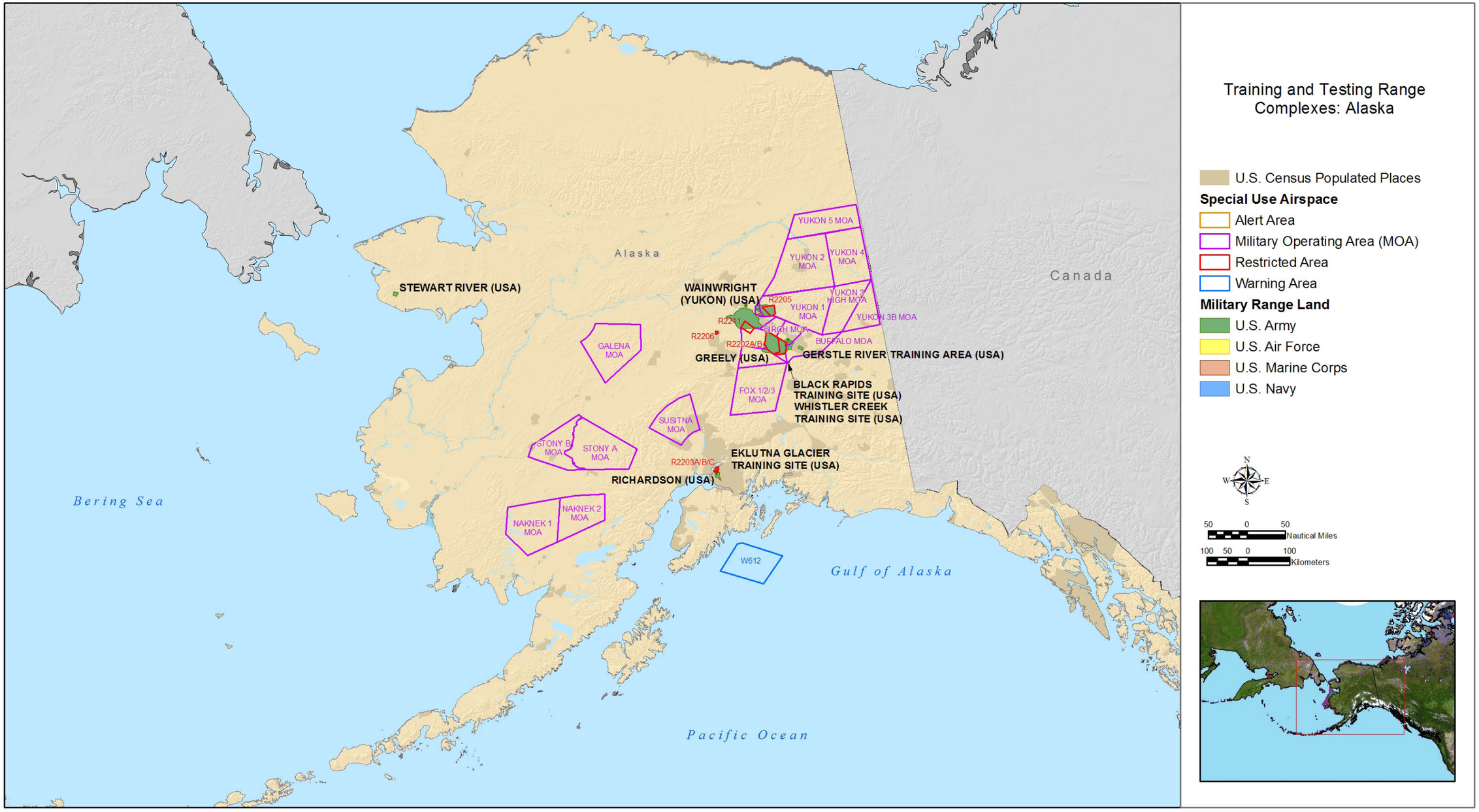
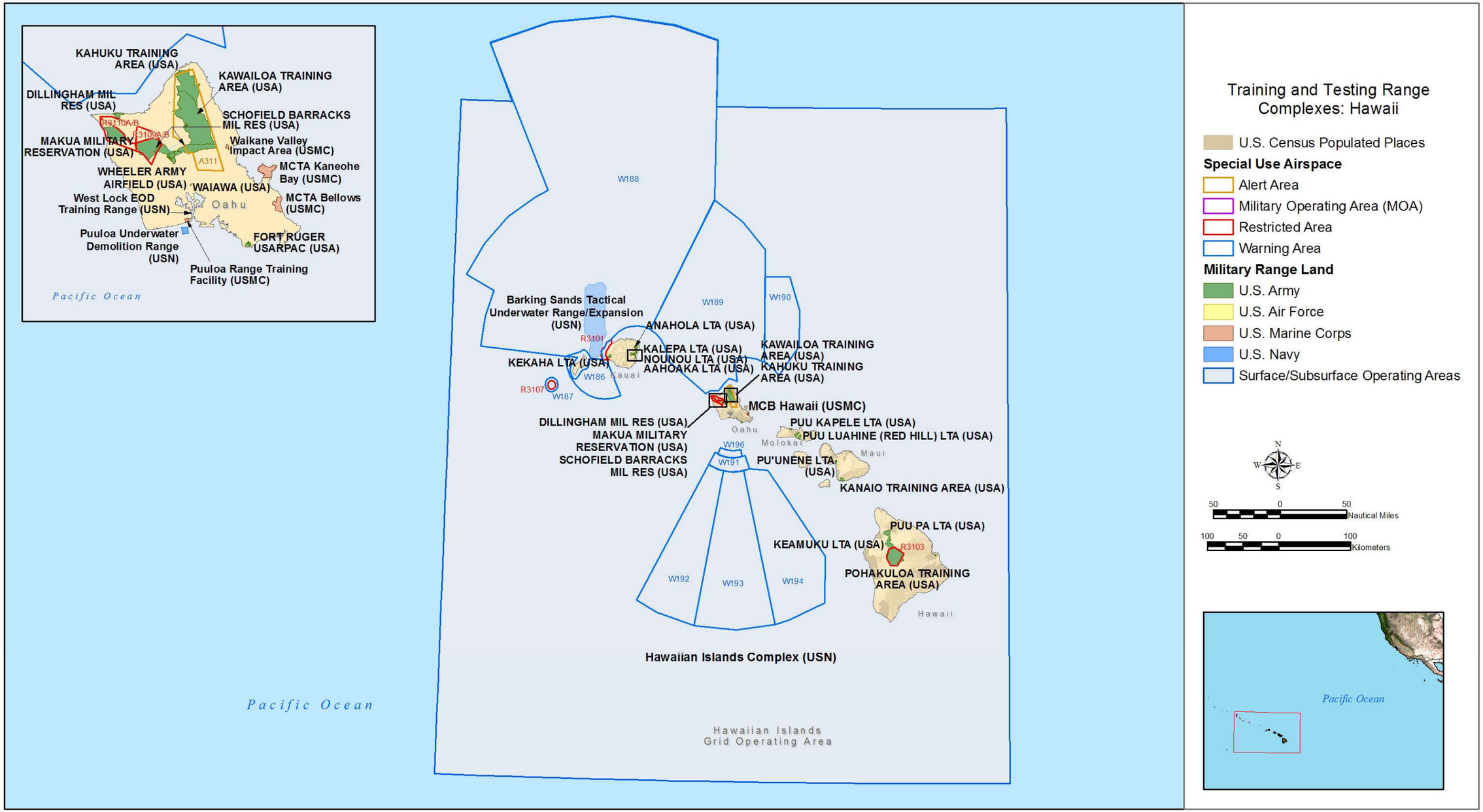
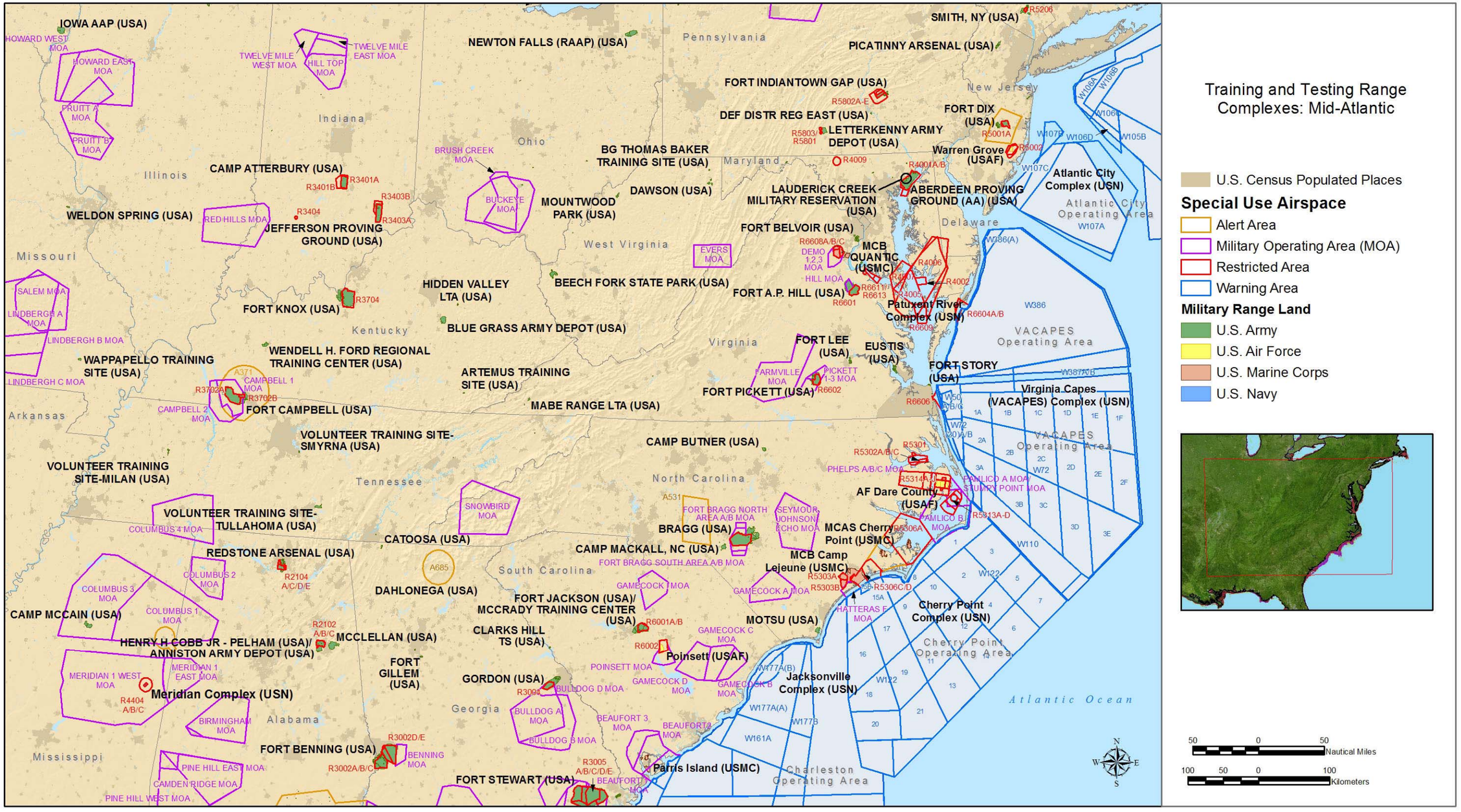
DoD Regional Range Complexes: Alaska



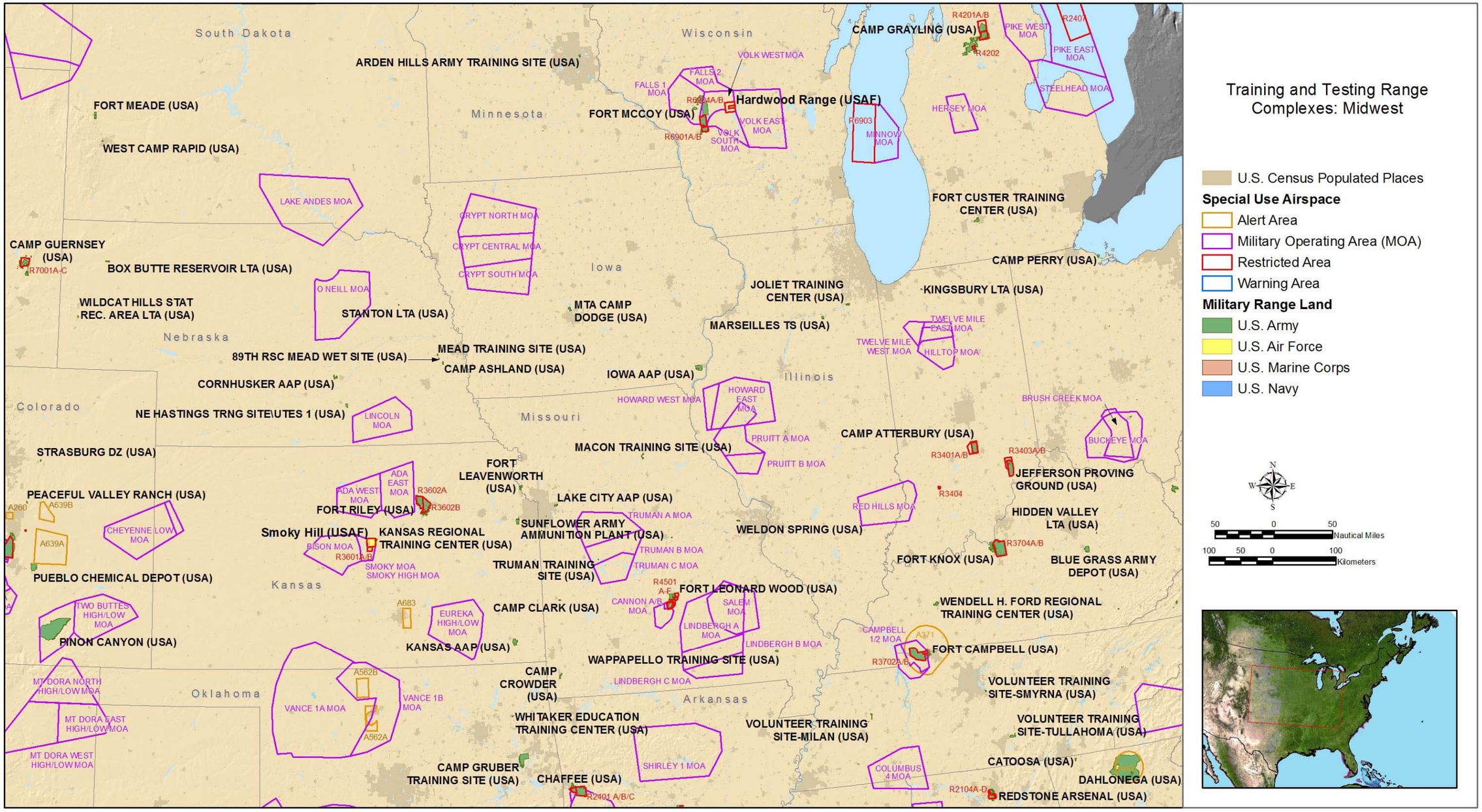
DoD Regional Range Complexes: Hawaii



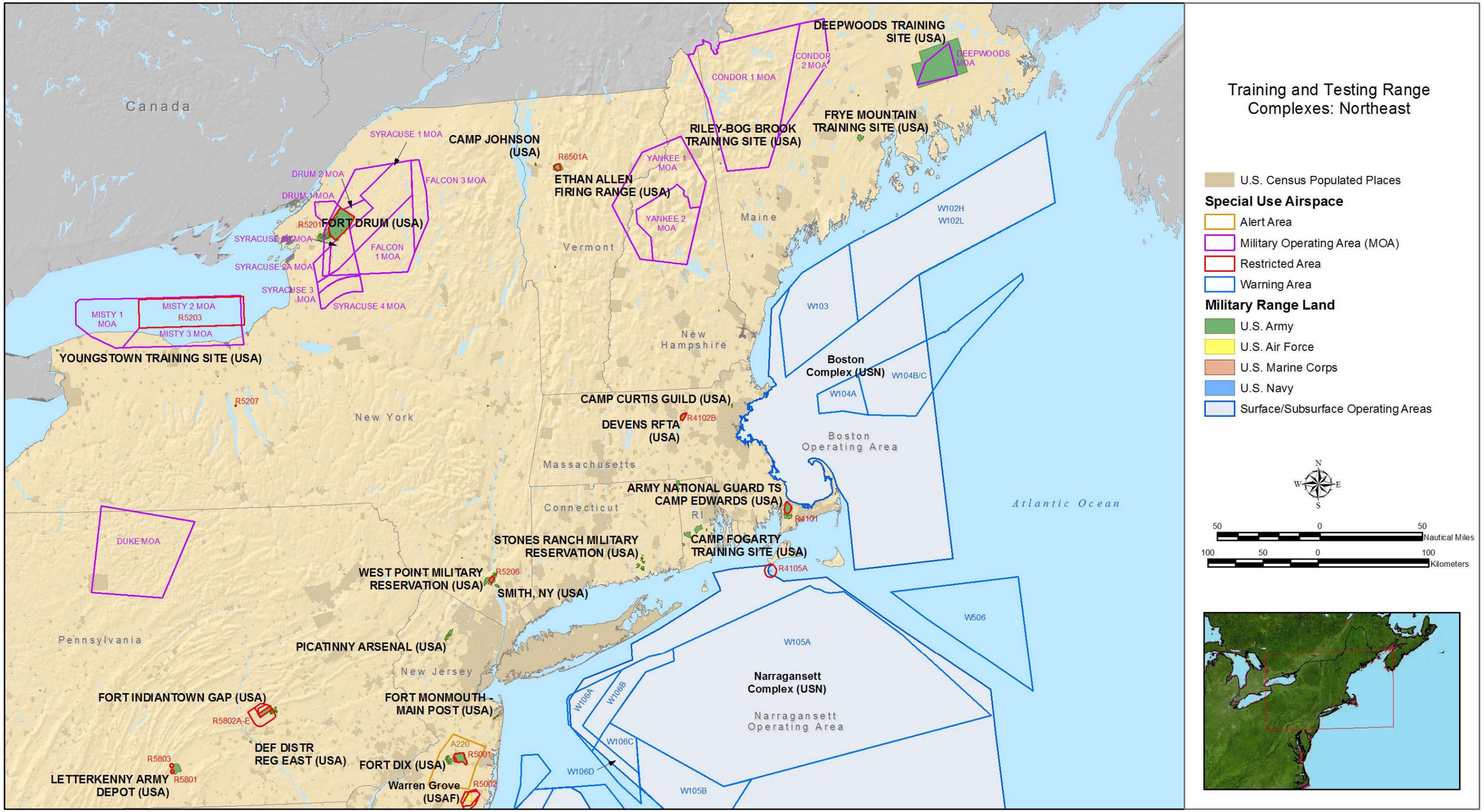
DoD Regional Range Complexes: Mid-Atlantic



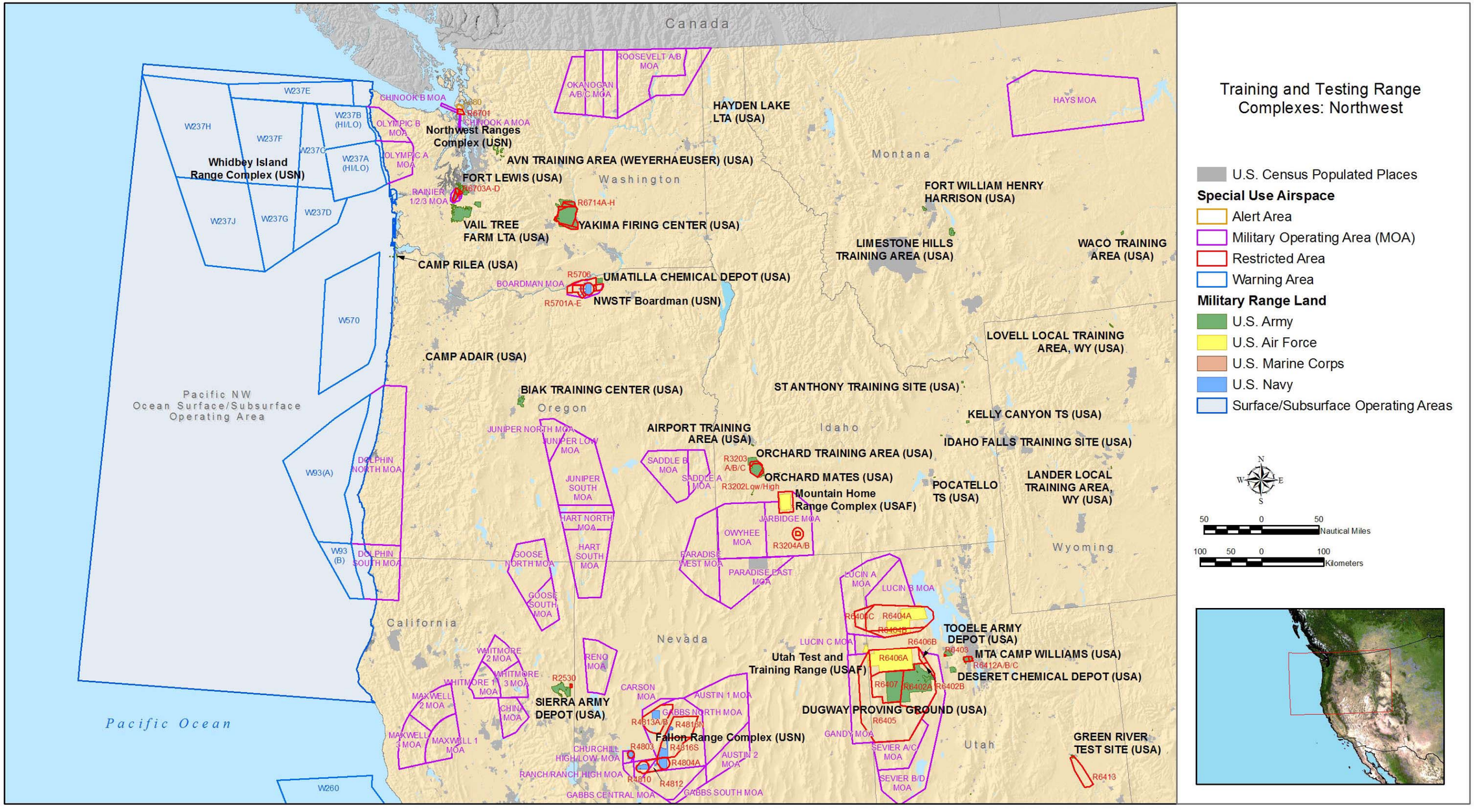
DoD Regional Range Complexes: Mid-West



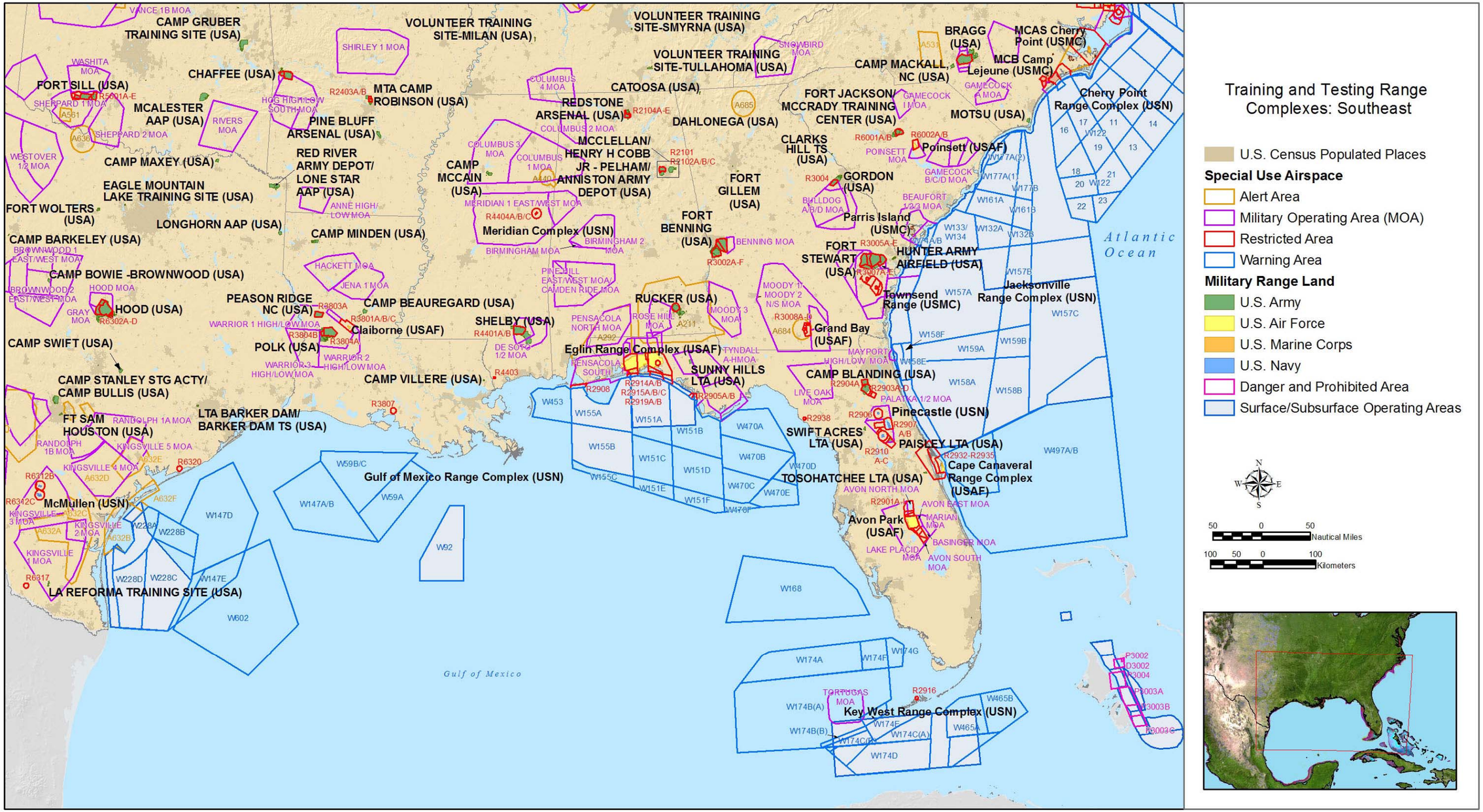
DoD Regional Range Complexes: Northeast



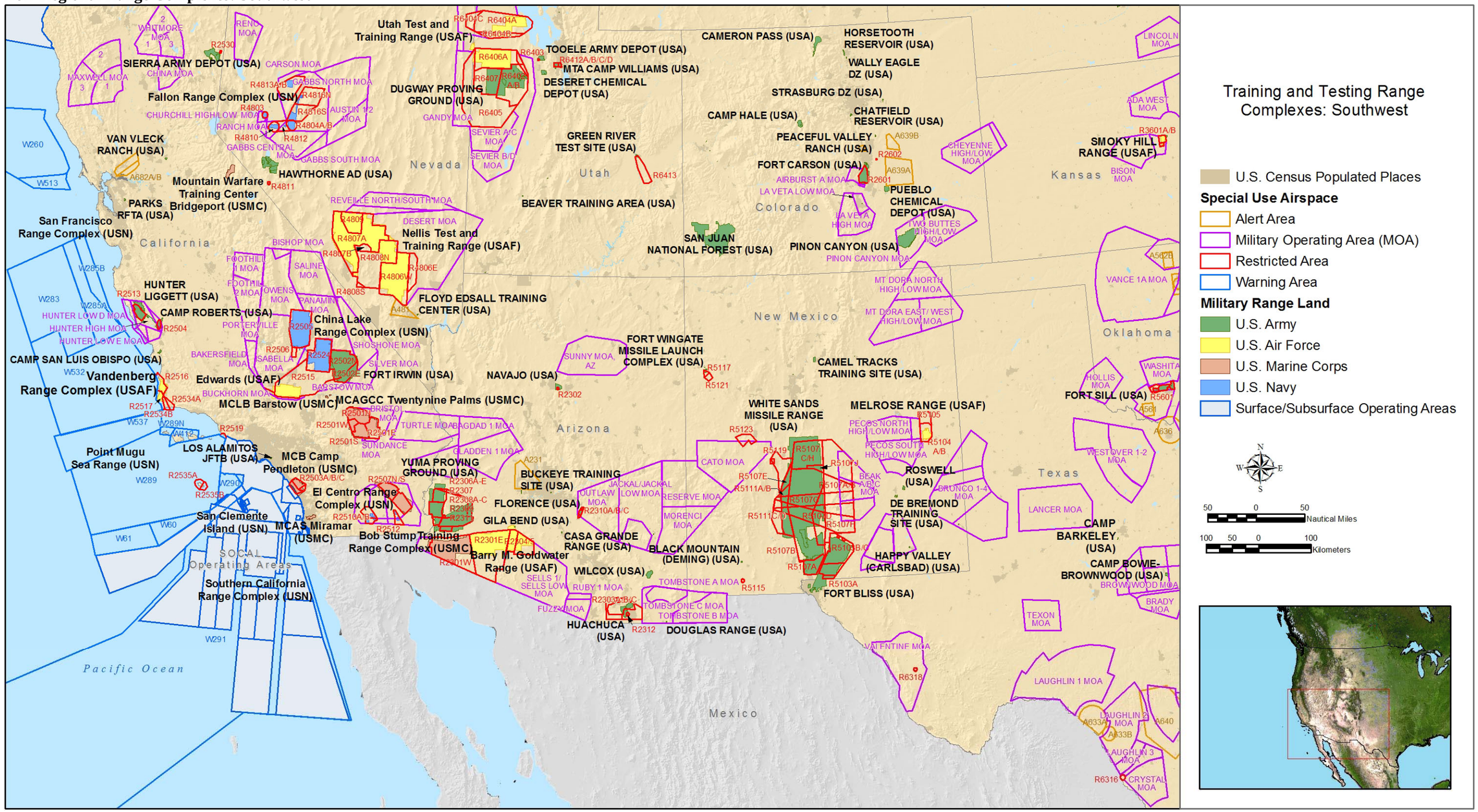
DoD Regional Range Complexes: Northwest

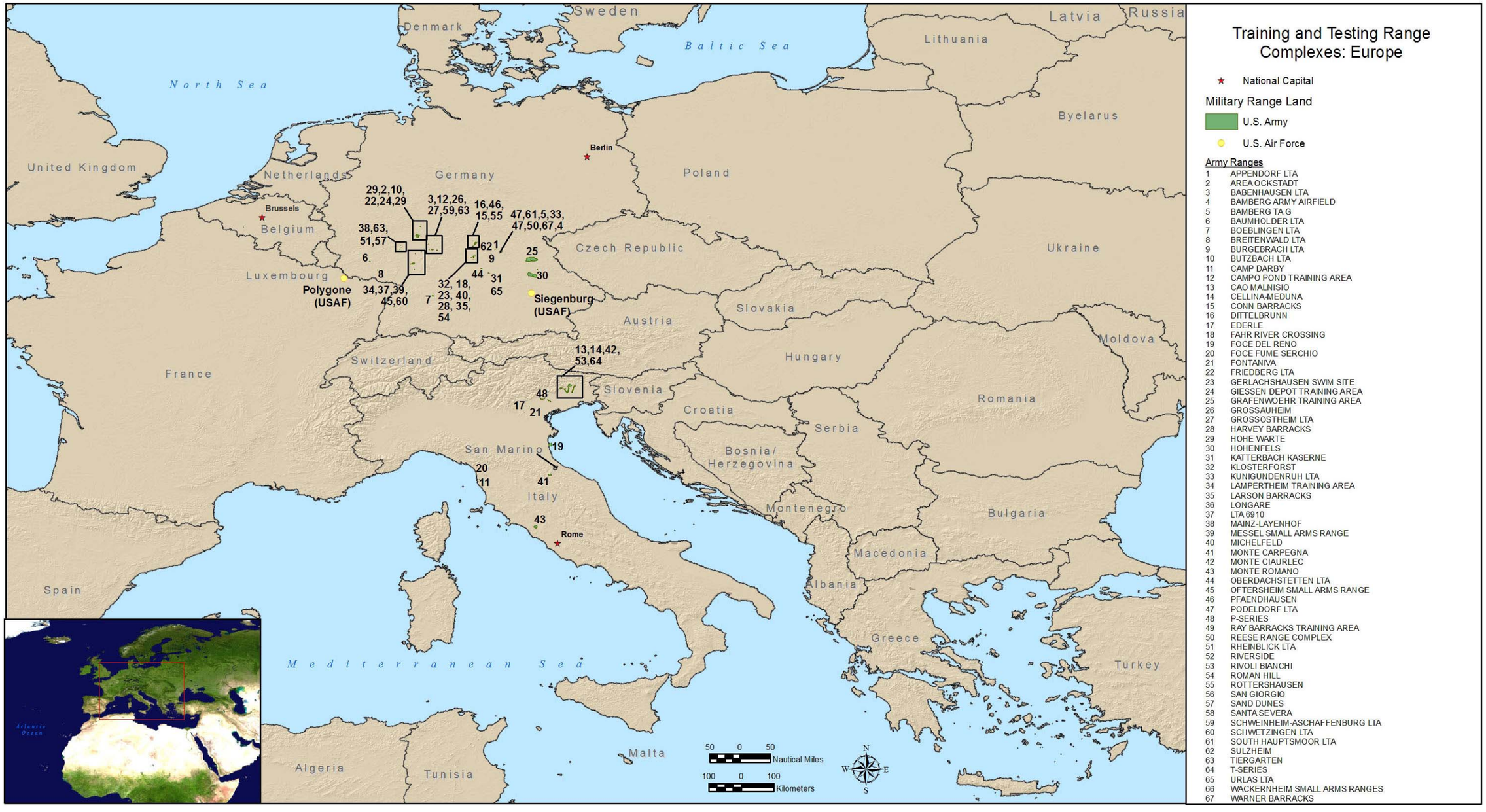


DoD Regional Range Complexes: Southeast



DoD Regional Range Complexes: Southwest




Training and Testing Range Complexes: Europe
National Capital
Military Range Land
U.S. Army
U.S. Air Force
Army Ranges
1 APPENDORF LTA
2 AREA OCKSTADT
3 BABENHAUSEN LTA
4 BAMBERG ARMY AIRFIELD
5 BAMBERG TA G
6 BAUMHOLDER LTA
7 BOEBLINGEN LTA
8 BREITENWALD LTA
9 BURGEBRACH LTA
10 BUTZBACH LTA
11 CAMP DARBY
12 CAMPO POND TRAINING AREA
13 CAO MALNISIO
14 CELLINA-MEDUNA
15 CONN BARRACKS
16 DITTELBRUNN
17 EDERLE
18 FAHR RIVER CROSSING
19 FOCE DEL RENO
20 FOCE FUME SERCHIO
21 FONTANIVA
22 FRIEDBERG LTA
23 GERLACHSHAUSEN SWIM SITE
24 GIESSEN DEPOT TRAINING AREA
25 GRAFENWOEHR TRAINING AREA
26 GROSSAUHEIM
27 GROSSOSTHEIM LTA
28 HARVEY BARRACKS
29 HOHE WARTE
30 HOHENFELS
31 KATTERBACH KASERNE
32 KLOSTERFORST
33 KUNIGUNDENRUH LTA
34 LAMPERTHEIM TRAINING AREA
35 LARSON BARRACKS
36 LONGARE
37 LTA 6910
38 MAINZ-LAYENHOF
39 MESSEL SMALL ARMS RANGE
40 MICHELFELD
41 MONTE CARPEGNA
42 MONTE CIAURLEC
43 MONTE ROMANO
44 OBERDACHSTETTEN LTA
45 OFTERSHEIM SMALL ARMS RANGE
46 PFAENDHAUSEN
47 PODELDORF LTA
48 P-SERIES
49 RAY BARRACKS TRAINING AREA
50 REESE RANGE COMPLEX
51 RHEINBLICK LTA
52 RIVERSIDE
53 RIVOLI BIANCHI
54 ROMAN HILL
55 ROTTERSHAUSEN
56 SAN GIORGIO
57 SAND DUNES
58 SANTA SEVERA
59 SCHWEINHEIM-ASCHAFFENBURG LTA
60 SCHWETZINGEN LTA
61 SOUTH HAUPTSMOOR LTA
62 SULZHEIM
63 TIERGARTEN
64 T-SERIES
65 URLAS LTA
66 WACKERNHEIM SMALL ARMS RANGES
67 WARNER BARRACKS
North Sea
Baltic Sea
Mediterranean Sea
Sweden
Denmark
Latvia
Russia
Lithuania
Byelarus
United Kingdom
Netherlands
Germany
Berlin
Poland
Brussels
Belgium
Luxembourg
Czech Republic
Ukraine
Slovakia
Austria
Moldova
Hungary
France
Switzerland
Slovenia
Romania
Croatia
Serbia
San Marino
Bosnia/ Herzegovina
Italy
Montenegro
Bulgaria
Rome
Macedonia
Albania
Spain
Greece
Turkey
Malta
Algeria
Tunisia
Polygone (USAF)
Siegenburg (USAF)
29,2,10, 22,24,29
3,12,26, 27,59,63
16,46, 15,55
47,61,5,33, 47,50,67,4
38,63, 51,57
6
8
34,37,39, 45,60
7
32, 18, 23, 40, 28, 35, 54
62
1
9
44
31
65
25
30
13,14,42, 53,64
48
17
21
19
20
11
41
43
50 0 50
Nautical Miles
100 0 100
Kilometers
N
W
E
S

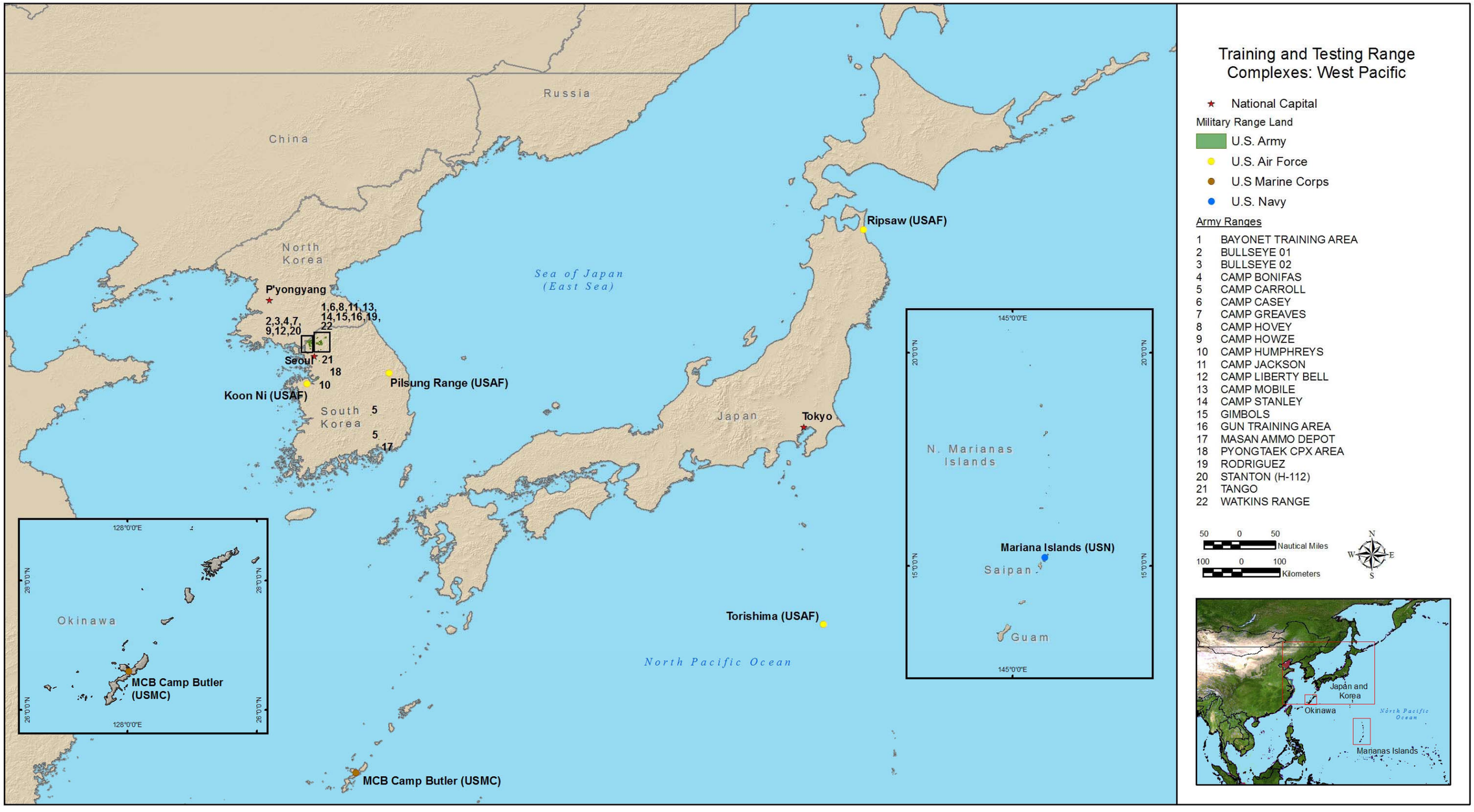

Training and Testing Range Complexes: West Pacific
National Capital
Military Range Land
U.S. Army
U.S. Air Force
U.S Marine Corps
U.S. Navy
Army Ranges
1 BAYONET TRAINING AREA
2 BULLSEYE 01
3 BULLSEYE 02
4 CAMP BONIFAS
5 CAMP CARROLL
6 CAMP CASEY
7 CAMP GREAVES
8 CAMP HOVEY
9 CAMP HOWZE
10 CAMP HUMPHREYS
11 CAMP JACKSON
12 CAMP LIBERTY BELL
13 CAMP MOBILE
14 CAMP STANLEY
15 GIMBOLS
16 GUN TRAINING AREA
17 MASAN AMMO DEPOT
18 PYONGTAEK CPX AREA
19 RODRIGUEZ
20 STANTON (H-112)
21 TANGO
22 WATKINS RANGE
50 0 50 Nautical Miles
100 0 100 Kilometers
N
W
E
S
Russia
China
North Korea
South Korea
Japan
Sea of Japan (East Sea)
North Pacific Ocean
P'yongyang
Seoul
Tokyo
Ripsaw (USAF)
Pilsung Range (USAF)
Koon Ni (USAF)
Torishima (USAF)
MCB Camp Butler (USMC)
1,6,8,11,13, 14,15,16,19, 22
2,3,4,7, 9,12,20
21
18
10
5
5
17
Okinawa
MCB Camp Butler (USMC)
128°0'0"E
26°0'0"N
N. Marianas Islands
Mariana Islands (USN)
Saipan
Guam
145°0'0"E
20°0'0"N
15°0'0"N
Japan and Korea
Okinawa
North Pacific Ocean
Marianas Islands

Table B-1. Training and Testing Range Complex Inventory

Training and Testing Range Complex Inventory																			
					Range Description*				Range Type*										
Military Service	Range Complex	United States (US) or Overseas (OS)	State or Country	Major Command or Claimant Organization	Land Area for Ranges (acres)	Special Use Airspace (sq nm)	Sea Surface Area (sq nm)	Underwater Tracking Area (sq nm)	Air-to-Air or Surface-to-Air	Air-to-Ground	Land Maneuver	Land Impact Area	Land Firing Range	C2W/EW	Ocean Operating Area	MOUT	Underwater Tracking Range	Amphibious Area	Other
ARMY																			
	Fort Richardson	US	AK	USARPAC	54,541	163	0	0			Y	Y	Y						Y
	Fort Wainwright	US	AK	USARPAC	922,589	0	0	0				Y	Y			Y			Y
	Fort Benning	US	GA	TRADOC	168,778	422	0	0			Y	Y	Y						Y
	Fort Bliss	US	TX	TRADOC	1,096,153	1597	0	0			Y	Y	Y						Y
	Fort Bragg	US	NC	FORSCOM	143,593	1718	0	0			Y	Y	Y			Y			Y
	Fort Carson/Pinon Canyon	US	CO	FORSCOM	364,311	1153	0	0			Y	Y	Y			Y			Y
	Fort Drum	US	NY	FORSCOM	98,524	299	0	0			Y	Y	Y			Y			Y
	Dillingham MIL RES	US	HI	USARPAC	600	0	0	0			Y								Y
	Kahuka Training Area	US	HI	USARPAC	8,833	0	0	0			Y								Y
	Kawailoa Training Area	US	HI	USARPAC	23,455	0	0	0			Y								Y
	Makua MIL RES	US	HI	USARPAC	4,228	0	0	0				Y	Y						Y
	Pohakuloa Training Area	US	HI	USARPAC	109,950	0	0	0			Y	Y	Y						Y
	Schofiled Barracks MIL RES	US	HI	USARPAC	11,442	0	0	0			Y	Y	Y			Y			Y
	Fort Hood	US	TX	FORSCOM	199,758	500	0	0			Y	Y	Y			Y			Y
	Fort Irwin	US	CA	FORSCOM	587,508	560	0	0			Y	Y	Y						Y
	Fort Knox	US	KY	TRADOC	101,623	113	0	0			Y	Y	Y			Y			Y

* Estimates are based on currently available information from the Military Services. Estimates may change as a result of ongoing reviews.
Source: Department of Defense data provided by the Military Services.

Training and Testing Range Complex Inventory

Military Service	Range Complex	United States (US) or Overseas (OS)	State or Country	Major Command or Claimant Organization	Range Description*				Range Type*										
					Land Area for Ranges (acres)	Special Use Airspace (sq nm)	Sea Surface Area (sq nm)	Underwater Tracking Area (sq nm)	Air-to-Air or Surface-to-Air	Air-to-Ground	Land Maneuver	Land Impact Area	Land Firing Range	C2W/EW	Ocean Operating Area	MOUT	Underwater Tracking Range	Amphibious Area	Other
	Orchard (Gowen Field) Training Area	US	ID	ARNG	138,847	0	0	0			Y	Y	Y						Y
	Fort Pickett	US	VA	ARNG	38,899	161	0	0			Y	Y	Y			Y			Y
	Fort Polk	US	LA	FORSCOM	138,737	5471	0	0			Y	Y	Y			Y			Y
	Camp Ripley	US	MN	ARNG	50,929	0	0	0			Y	Y	Y			Y			Y
	Camp Shelby	US	MS	ARNG	133,794	0	0	0			Y	Y	Y						Y
	Fort Sill	US	OK	TRADOC	85,002	153	0	0			Y	Y	Y						Y
	Fort Stewart	US	G	FORSCOM	274,137	556	0	0			Y	Y	Y			Y			Y
	White Sands Missile Range	US	NM	ATEC	3,546,156	7321	0	0				Y	Y						Y
	Yakima Training Center	US	WA	FORSCOM	324,313	0	0	0			Y	Y	Y						Y
	Yuma Proving Ground	US	AZ	ATEC	1,033,361	1500	0	0			Y		Y						Y
	Aberdeen Proving Ground	US	MD	AMC	64,250	133	0	0			Y		Y						Y
	Fort A.P. Hill	US	VA	MDW	74,263	928	0	0			Y	Y	Y						Y
	Camp Atterbury	US	IN	ARNG	31,889	0	0	0			Y	Y	Y						Y
	Camp Blanding	US	FL	ARNG	68,658	0	0	0			Y	Y	Y			Y			Y
	Fort Campbell	US	KY/TN	FORSCOM	93,348	931	0	0			Y	Y	Y			Y			Y
	Fort Dix	US	NJ	USARC	28,002	104	0	0			Y	Y	Y						Y
	Dugway Proving Ground	US	UT	ATEC	763,093	0	0	0			Y	Y	Y						Y
	Camp Grayling	US	MI	ARNG	147,711	8680	0	0			Y	Y	Y						Y
	Camp Gruber	US	OK	ARNG	46,887	0	0	0			Y		Y						Y

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Source: Department of Defense data provided by the Military Services.

Training and Testing Range Complex Inventory

Military Service	Range Complex	United States (US) or Overseas (OS)	State or Country	Major Command or Claimant Organization	Range Description*				Range Type*										
					Land Area for Ranges (acres)	Special Use Airspace (sq nm)	Sea Surface Area (sq nm)	Underwater Tracking Area (sq nm)	Air-to-Air or Surface-to-Air	Air-to-Ground	Land Maneuver	Land Impact Area	Land Firing Range	C2W/EW	Ocean Operating Area	MOUT	Underwater Tracking Range	Amphibious Area	Other
	Fort Indiantown Gap	US	PA	ARNG	14,940	0	0	0			Y	Y	Y			Y			Y
	Fort Jackson	US	SC	TRADOC	29,532	0	0	0			Y	Y	Y						Y
	Fort Leonard Wood	US	MO	TRADOC	53,502	175	0	0			Y	Y	Y						Y
	Fort Lewis	US	WA	FORSCOM	77,577	0	0	0			Y	Y	Y			Y			Y
	Fort McClellan	US	AL	ARNG	41	0	0	0			Y		Y						Y
	Fort McCoy	US	WI	USARC	135,601	0	0	0			Y	Y	Y						Y
	Camp San Luis Obispo	US	CA	ARNG	4,852	0	0	0			Y	Y	Y						Y
	Fort Riley	US	KS	FORSCOM	92,660	107	0	0			Y	Y	Y						Y
	Camp Roberts	US	CA	ARNG	41,051	64	0	0			Y	Y	Y						Y
	Fort Rucker	US	AL	TRADOC	58,189	0	0	0			Y	Y	Y						Y
	Camp Beauregard	US	LA	ARNG	12,588	0	0	0			Y	Y	Y						Y
	Bog Brook/Riley Deepwoods Training Site	US	ME	ARNG	341,015	0	0	0			Y		Y			Y			Y
	Camp Bowie	US	TX	ARNG	8,697	0	0	0			Y		Y						Y
	Biak Training Center	US	OR	ARNG	27,961	0	0	0			Y		Y						Y
	Camp Crowder	US	MO	ARNG	4,098	0	0	0			Y	Y	Y						Y
	Fort Custer Training Center	US	MI	ARNG	7,487	0	0	0			Y	Y	Y			Y			Y
	Camp Dawson	US	WV	ARNG	4,383	0	0	0			Y	Y	Y						Y
	Ethan Allen Firing Range	US	VT	ARNG	10,742	0	0	0			Y	Y	Y						Y
	Camp Edwards	US	MA	ARNG	13,285	13	0	0			Y	Y	Y						Y

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Source: Department of Defense data provided by the Military Services.

Training and Testing Range Complex Inventory

Military Service	Range Complex	United States (US) or Overseas (OS)	State or Country	Major Command or Claimant Organization	Range Description*				Range Type*										
					Land Area for Ranges (acres)	Special Use Airspace (sq nm)	Sea Surface Area (sq nm)	Underwater Tracking Area (sq nm)	Air-to-Air or Surface-to-Air	Air-to-Ground	Land Maneuver	Land Impact Area	Land Firing Range	C2W/EW	Ocean Operating Area	MOUT	Underwater Tracking Range	Amphibious Area	Other
	Eustis/Fort Story	US	VA	TRADOC	3,999	0	0	0			Y	Y	Y						Y
	Fort Gordon	US	GA	TRADOC	49,353	0	0	0			Y	Y	Y						Y
	Camp Grafton	US	ND	TRADOC	11,380	0	0	0			Y		Y						Y
	Camp Guernsey	US	WY	ARNG	35,062	46	0	0			Y	Y	Y						Y
	Hunter-Liggit	US	CA	USARC	154,473	113	0	0			Y		Y						Y
	Keaukhana MIL RES	US	HI	ARNG	434	0	0	0			Y		Y						
	Fort Lee	US	VA	TRADOC	2,949	69	0	0			Y	Y	Y						Y
	Limestone Hills Training Area	US	MT	ARNG	19,120	0	0	0			Y		Y						Y
	Camp McCain	US	MS	ARNG	12,796	0	0	0			Y		Y						Y
	McCrady Training Center	US	SC	ARNG	14,506	0	0	0			Y		Y						Y
	Camp Minden	US	LA	ARNG	13,867	0	0	0			Y		Y						
	Navajo	US	AZ	ARNG	28,442	0	0	0					Y						Y
	Parks RFTA	US	CA	USARC	1,993	0	0	0			Y	Y	Y						Y
	Redstone Arsenal	US	AL	AMC	27,655	25	0	0			Y		Y						Y
	Camp Perry	US	OH	ARNG	343	0	0	0			Y	Y	Y						Y
	Camp Rilea	US	OR	ARNG	4,213	0	0	0			Y		Y						Y
	Camp Robinson	US	AR	ARNG	30,837	0	0	0			Y	Y	Y			Y			Y
	Fort Sam Houston/Camp Bullis	US	TX	MEDCOM	27,655	0	0	0			Y	Y	Y						Y
	Camp Santiago	US	PR	ARNG	12,044	0	0	0			Y	Y	Y						Y

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Source: Department of Defense data provided by the Military Services.

Training and Testing Range Complex Inventory

Military Service	Range Complex	United States (US) or Overseas (OS)	State or Country	Major Command or Claimant Organization	Range Description*				Range Type*										
					Land Area for Ranges (acres)	Special Use Airspace (sq nm)	Sea Surface Area (sq nm)	Underwater Tracking Area (sq nm)	Air-to-Air or Surface-to-Air	Air-to-Ground	Land Maneuver	Land Impact Area	Land Firing Range	C2W/EW	Ocean Operating Area	MOUT	Underwater Tracking Range	Amphibious Area	Other
	Wendell H. Ford Regional Training Center	US	KY	ARNG	7,174	0	0	0			Y	Y	Y						Y
	West Point MIL RES	US	NY	USMA	14,101	4	0	0			Y	Y	Y						Y
	Camp Williams	US	UT	ARNG	25,000	0	0	0			Y	Y	Y			Y			Y
	Stewart River	US	AK	ARNG	25,519	0	0	0			Y		Y						
	Camp Butner	US	NC	ARNG	4,550	0	0	0			Y	Y	Y						Y
	TS Caswell	US	ME	ARNG	1,094	0	0	0			Y		Y						
	Catoosa	US	TN	ARNG	1,515	0	0	0			Y	Y	Y						Y
	Camp Clark	US	MO	ARNG	997	0	0	0			Y	Y	Y						Y
	Fort Devens	US	MA	USARC	4,588	0	0	0			Y	Y	Y						Y
	MTA Camp Dodge	US	IA	ARNG	4,025	0	0	0			Y	Y	Y			Y			Y
	Florence Training Site	US	AZ	ARNG	25,559	61	0	0				Y	Y						Y
	Fort William Henry Harrison	US	MT	ARNG	6,314	0	0	0			Y		Y			Y			Y
	Camp Ashland - Greenleaf Training Site	US	NE	ARNG	4,263	0	0	0			Y		Y						Y
	Macon Training Site	US	MT	ARNG	3,062	0	0	0			Y		Y						Y
	Marseilles Training Site	US	IL	ARNG	2,630	0	0	0			Y	Y	Y						Y
	Camp Maxey	US	TX	ARNG	6,562	0	0	0			Y	Y	Y						Y
	McAlester AAP	US	OK	AMC	2,245	0	0	0			Y		Y						Y
	Milan Volunteer Training Site	US	TN	ARNG	2,391	0	0	0			Y		Y						Y
	Roswell	US	NM	ARNG	5,376	0	0	0			Y		Y						

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Source: Department of Defense data provided by the Military Services.

Training and Testing Range Complex Inventory

Military Service	Range Complex	United States (US) or Overseas (OS)	State or Country	Major Command or Claimant Organization	Range Description*				Range Type*										
					Land Area for Ranges (acres)	Special Use Airspace (sq nm)	Sea Surface Area (sq nm)	Underwater Tracking Area (sq nm)	Air-to-Air or Surface-to-Air	Air-to-Ground	Land Maneuver	Land Impact Area	Land Firing Range	C2W/EW	Ocean Operating Area	MOUT	Underwater Tracking Range	Amphibious Area	Other
	Smith	US	NY	ARNG	1,763	0	0	0			Y	Y	Y						Y
	Kansas Regional Training Site (Smokey Hills)	US	KS	ARNG	3,404	0	0	0			Y	Y	Y						Y
	Stones Ranch MIL RES	US	CT	ARNG	5,753	0	0	0			Y		Y						Y
	Tullahoma MIL RES	US	TN	ARNG	6,553	0	0	0			Y		Y						Y
	Camp Villere	US	LA	ARNG	658	0	0	0			Y		Y						Y
	Wappapellots	US	MO	ARNG	2,187	0	0	0			Y		Y						Y
	Camp Wismer	US	WS	ARNG	3,319	0	0	0			Y		Y						Y
	Anniston Army Depot	US	AL	AMC	88	0	0	0					Y						Y
	Arden Hills Army Training Site	US	MN	ARNG	1,796	0	0	0			Y								Y
	Auburn	US	ME	ARNG	203	0	0	0			Y		Y						Y
	Austin Training Property	US	NE/SD	ARNG	413	0	0	0			Y								Y
	Bangor Training Center	US	ME	ARNG	189	0	0	0			Y		Y						Y
	Barker Dam Training Site	US	TX	ARNG	572	0	0	0			Y								Y
	Belton LTA	US	MO	USARC	461	0	0	0			Y								
	Black Mountain	US	NM	ARNG	2,114	0	0	0			Y		Y						
	Blossom Point Research Facility	US	MD	AMC	1,643	0	0	0			Y		Y						Y
	Blue Grass Army Depot	US	KY	AMC	175	0	0	0			Y		Y						Y
	Buckman	US	FL	ARNG	68	0	0	0											Y
	Bucksnort Gun Club	US	MO	ARNG	10	0	0	0					Y						

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Source: Department of Defense data provided by the Military Services.

Training and Testing Range Complex Inventory

Military Service	Range Complex	United States (US) or Overseas (OS)	State or Country	Major Command or Claimant Organization	Range Description*				Range Type*										
					Land Area for Ranges (acres)	Special Use Airspace (sq nm)	Sea Surface Area (sq nm)	Underwater Tracking Area (sq nm)	Air-to-Air or Surface-to-Air	Air-to-Ground	Land Maneuver	Land Impact Area	Land Firing Range	C2W/EW	Ocean Operating Area	MOUT	Underwater Tracking Range	Amphibious Area	Other
	Buhl Training Site	US	ID	ARNG	162	0	0	0			Y		Y						
	Camp Adair	US	OR	ARNG	526	0	0	0			Y		Y						Y
	Camp Curtis Guild	US	MA	ARNG	623	0	0	0			Y		Y						Y
	Camp Davis	US	ND	ARNG	82	0	0	0			Y		Y						Y
	Camp Fogarty Training Site	US	RI	ARNG	17,755	0	0	0			Y	Y	Y						Y
	Camp Fretterd	US	MD	ARNG	424	0	0	0			Y								Y
	Camp Hartell	US	CT	ARNG	31	0	0	0			Y		Y						Y
	Camp Johnson	US	VT	ARNG	595	0	0	0			Y		Y						Y
	Camp Mackall	US	NC	FORSCOM	8,484	0	0	0			Y								Y
	Camp Merrill	US	GA	TRADOC	344,990	0	0	0			Y		Y						
	Camp Murray	US	WA	ARNG	113	0	0	0											Y
	Camp Rowland	US	CT	ARNG	38	0	0	0											Y
	Camp Sherman	US	NC	ARNG	430	0	0	0			Y	Y	Y						
	Camp Stanley Storage Activity	US	TX	AMC	82	0	0	0					Y						
	Camp Swift	US	TX	ARNG	11,663	0	0	0			Y		Y						Y
	Camp Varnum	US	RI	ARNG	18	0	0	0			Y								Y
	Camp Withycombe	US	OR	ARNG	166	0	0	0			Y								Y
	Casper Armory	US	WY	ARNG	27	0	0	0			Y		Y						
	Chaffee	US	AR	ARNG	63,519	81	0	0			Y	Y	Y						Y

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Training and Testing Range Complex Inventory

Military Service	Range Complex	United States (US) or Overseas (OS)	State or Country	Major Command or Claimant Organization	Range Description*				Range Type*										
					Land Area for Ranges (acres)	Special Use Airspace (sq nm)	Sea Surface Area (sq nm)	Underwater Tracking Area (sq nm)	Air-to-Air or Surface-to-Air	Air-to-Ground	Land Maneuver	Land Impact Area	Land Firing Range	C2W/EW	Ocean Operating Area	MOUT	Underwater Tracking Range	Amphibious Area	Other
	Clinton Training Site	US	PA	USARC	154	0	0	0			Y		Y						Y
	Colorado Springs Training Site	US	CO	ARNG	310	1	0	0					Y						Y
	Cpt. Euripides Rubio Jr. Center	US	PR	USARC	51	0	0	0											Y
	De Bremond Training Center	US	NM	ARNG	1,343	0	0	0			Y		Y						
	Defense Distribution Depot Susquehanna	US	PA	AMC	0	0	0	0					Y						Y
	Deseret Chemical Depot	US	UT	AMC	552	0	0	0					Y						Y
	Dona Ana Range Camp	US	NM	ARNG	64	0	0	0			Y								
	Duffield Industrial Park	US	VA	ARNG	75	0	0	0											Y
	East Haven Rifle Range	US	CT	ARNG	113	0	0	0			Y	Y							Y
	Eastern Kentucky Gun Club	US	KY	ARNG	13	0	0	0			Y		Y						
	Floyd Edsal Training Center	US	NV	ARNG	1,525	0	0	0			Y		Y						Y
	Fort Allen	US	PR	ARNG	423	0	0	0			Y								Y
	Fort Belvoir	US	VA	MDW	2,178	0	0	0			Y	Y							Y
	Fort George G. Meade	US	MD	MDW	129	0	0	0			Y								Y
	Fort Gillem	US	GA	FORSCOM	474	0	0	0			Y								Y
	Fort Huachuca	US	AZ	TRADOC	73,953	815	0	0			Y	Y	Y						Y
	Fort Leavenworth	US	KS	TRADOC	4,285	0	0	0			Y		Y						Y
	Fort Meade	US	SD	ARNG	6,139	0	0	0			Y								
	Fort Monmouth	US	NJ	AMC	104	0	0	0			Y		Y			Y			Y

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	Fort Nathaniel Greene	US	RI	USARC	96	0	0	0			Y		Y						Y
	Fort Wingate Missile Launch Complex	US	NM	ATEC	6,526	0	0	0					Y						
	Fort Wolters	US	TX	ARNG	4,061	0	0	0			Y	Y	Y						Y
	Frye Mountain Training Site	US	ME	ARNG	5,137	0	0	0			Y		Y						
	Fort McPherson	US	GA	FORSCOM	21	0	0	0			Y		Y						Y
	Gardiner	US	ME	ARNG	106	0	0	0			Y		Y						Y
	Greely	US	AK	USARPAC	631,643	0	0	0			Y	Y	Y			Y			Y
	Green River Launch Complex	US	UT	ATEC	3,960	0	0	0					Y						
	Guilderland	US	NY	ARNG	291	0	0	0					Y						Y
	Gunpowder MIL RES	US	MD	ARNG	227	0	0	0			Y								Y
	Happy Valley (Carlsbad)	US	NM	ARNG	721	0	0	0			Y		Y						
	Hawthorne Army Depot	US	NV	AMC	35,789	0	0	0				Y	Y						
	Henry H. Cobb Jr. - Pelham	US	AL	ARNG	22,142	0	0	0			Y	Y	Y						Y
	Hollis Plains Training Site	US	ME	ARNG	412	0	0	0			Y		Y						Y
	Hunter Army Airfield	US	GA	FORSCOM	2,832	0	0	0			Y		Y						Y
	Idaho Falls Training Site	US	ID	ARNG	1,081	0	0	0			Y		Y						
	Idaho Launch Complex	US	ID	ATEC	315	0	0	0					Y						
	Ike Skelton Training Site	US	MO	ARNG	24	0	0	0			Y		Y						Y
	Indiana Range Wet Site	US	PA	ARNG	165	0	0	0			Y		Y						

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	Iowa AAP	US	IA	AMC	1,338	0	0	0			Y		Y						Y
	Jefferson Proving Ground	US	IN	AMC	1,050	0	0	0				Y							
	John Sevier Range	US	TN	ARNG	6	0	0	0					Y						
	Joliet Training Center	US	IL	USARC	3,446	0	0	0			Y	Y	Y						Y
	Kanaio Training Center	US	HI	ARNG	4,633	0	0	0			Y		Y						
	Kansas AAP	US	KS	AMC	157	0	0	0			Y		Y						
	Kekaha	US	HI	ARNG	61	0	0	0			Y		Y						
	Keystone Rifle Range	US	CA	ARNG	189	0	0	0			Y		Y						
	Keystone Training Site	US	PA	USARC	452	0	0	0			Y		Y						Y
	La Reforma Training Site	US	TX	ARNG	4,264	0	0	0			Y		Y						
	Lake City AAP	US	MO	AMC	696	0	0	0			Y		Y						Y
	Lander Local Training Area	US	WY	ARNG	1,353	0	0	0			Y		Y						
	Lauderick Creek MIL RES	US	MD	ARNG	1,065	0	0	0			Y								
	Letterkenny Army Depot	US	PA	AMC	9	0	0	0					Y						
	Lone Star AAP	US	TX	AMC	232	0	0	0					Y						
	Los Alamitos JFTB	US	CA	ARNG	397	0	0	0					Y						Y
	Lovell Local Training Area	US	WY	ARNG	3,606	0	0	0			Y		Y						Y
	Mabe Range LTA	US	VA	ARNG	1,733	0	0	0					Y						Y
	Mead Training Site	US	NE	ARNG	1,185	0	0	0			Y		Y						Y

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					Land Area for Ranges (acres)	Special Use Airspace (sq nm)	Sea Surface Area (sq nm)	Underwater Tracking Area (sq nm)	Air-to-Air or Surface-to-Air	Air-to-Ground	Land Maneuver	Land Impact Area	Land Firing Range	C2W/EW	Ocean Operating Area	MOUT	Underwater Tracking Range	Amphibious Area	Other
	Mobridge Training Area	US	SD	ARNG	120	0	0	0			Y								Y
	MOTSU	US	NC	MTMC	7	0	0	0			Y		Y						
	MTA SMR CP Pendleton	US	VA	ARNG	89	0	0	0			Y		Y						Y
	New Castle Rifle Range	US	DE	ARNG	93	0	0	0			Y		Y						Y
	Newton Falls (RAAP)	US	OH	ARNG	2,879	0	0	0			Y		Y						Y
	NGTC at Sea Girt	US	NJ	ARNG	120	0	0	0			Y	Y	Y						Y
	NH NG Training Site	US	NH	ARNG	94	0	0	0											Y
	Onate Training Site	US	NM	ARNG	158	0	0	0			Y								Y
	Papago Park MIL RES	US	AZ	ARNG	104	0	0	0					Y						Y
	Pearson Ridge NC	US	LA	FORSCOM	33,456	0	0	0				Y	Y						
	Picatinny Arsenal	US	NJ	AMC	4,545	0	0	0			Y		Y						Y
	Pine Bluff Arsenal	US	AR	AMC	98	0	0	0					Y						Y
	Plymouth Training Site	US	ME	ARNG	306	0	0	0			Y		Y						Y
	Pocatello Training Site	US	ID	ARNG	718	0	0	0			Y		Y						
	Pueblo Chemical Depot	US	CO	AMC	94	0	0	0					Y						Y
	Puu Luahine (Red Hill) LTA	US	HI	ARNG	8,346	0	0	0			Y								
	Racine County Line Range	US	WI	ARNG	15	0	0	0					Y						
	Red River Army Depot	US	TX	AMC	165	0	0	0					Y						Y
	Redfield Training Area	US	SD	ARNG	176	0	0	0			Y								

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	Ridgeway	US	PA	ARNG	7	0	0	0			Y		Y						Y
	Rio Rancho	US	NM	ARNG	96	0	0	0					Y						Y
	Scranton (Leach Range)	US	PA	AMC	102	0	0	0			Y		Y						
	Seagoville LTA	US	TX	USARC	198	0	0	0			Y		Y						Y
	Sheridan Local TA	US	WY	ARNG	3,980	0	0	0			Y		Y						
	Sierra Army Depot	US	CA	AMC	4,749	0	0	0					Y						Y
	Sioux Falls Airport Training Area	US	SD	ARNG	15	0	0	0			Y		Y						
	Springfield Training Site	US	IL	ARNG	99	0	0	0					Y						Y
	St. Anthony Training Site	US	ID	ARNG	3,336	0	0	0			Y		Y						
	St. George Training Area	US	UT	ARNG	369	0	0	0			Y								
	Sunflower Army Ammunition Plant	US	KS	AMC	493	0	0	0			Y								Y
	Tooele Army Depot	US	UT	AMC	1,457	0	0	0					Y						
	Truman Training Site	US	MO	ARNG	565	0	0	0			Y								
	TS NAS Fallon RG B19	US	NV	ARNG	132	0	0	0					Y						Y
	Tucumcari Training Site	US	NM	ARNG	63	0	0	0			Y		Y						
	Twin Falls Training Site	US	ID	ARNG	312	0	0	0			Y		Y						
	Ukumehame Firing Range	US	HI	ARNG	27	0	0	0			Y		Y						
	Umatilla Chemical Depot	US	OR	AMC	9	0	0	0					Y						Y
	Vail Tree Farm LTA	US	WA	USARC	166,332	0	0	0											Y

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	Van Vleck Ranch	US	CA	ARNG	2,685	0	0	0			Y								Y
	Smyrna Volunteer Training Site	US	TN	ARNG	557	0	0	0			Y		Y						Y
	Waco Training Area	US	MT	ARNG	4,763	0	0	0			Y		Y						
	Watkin Armory	US	CO	ARNG	5	0	0	0											Y
	Weldon Spring	US	MO	ARNG	1,659	0	0	0			Y		Y						Y
	West Camp Rapid	US	SD	ARNG	570	0	0	0			Y		Y						Y
	West Silver Spring Complex	US	WI	USARC	9	0	0	0											Y
	Westminster	US	VT	ARNG	39	0	0	0			Y		Y						
	Wildcat Hills State Rec. Area TA	US	NE	ARNG	853	0	0	0			Y		Y						
	Williston Wets	US	ND	ARNG	345	0	0	0			Y		Y						
	WV DNR Elk River WMA TA	US	WV	ARNG	278	0	0	0			Y		Y						Y
	WV DNR McClintic WMA TA	US	WV	ARNG	55	0	0	0			Y		Y						
	Youngstown Wets	US	NY	ARNG	848	0	0	0			Y		Y						Y
	Grafenwoehr	OS	Germany	USAREUR	52,281	0	0	0			Y	Y	Y						Y
	Hofenfels	OS	Germany	USAREUR	38,981	0	0	0			Y		Y			Y			Y
	Area I (North)	OS	Korea	EUSA	41,495	0	0	0			Y	Y	Y			Y			Y
	Area II (Northwest)	OS	Korea	EUSA	115	0	0	0					Y						Y
	Area III (Central)	OS	Korea	EUSA	113	0	0	0					Y						Y
	Area IV (South)	OS	Korea	EUSA	722	0	0	0			Y	Y	Y						Y

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	Friedberg LTA	OS	Germany	USAREUR	8,519	0	0	0			Y		Y						Y
	Schweinfurt	OS	Germany	USAREUR	6,326	0	0	0			Y	Y	Y						Y
	Wuerzburg	OS	Germany	USAREUR	3,308	0	0	0			Y		Y			Y			Y
	Ansbach LTA	OS	Germany	USAREUR	899	0	0	0			Y		Y						Y
	Aschaffenbu RG LTA	OS	Germany	USAREUR	1,337	0	0	0			Y		Y						Y
	Baumholder	OS	Germany	USAREUR	188	0	0	0			Y	Y	Y			Y			Y
	Boeblingen	OS	Germany	USAREUR	1,125	0	0	0			Y		Y			Y			Y
	Breitenwald	OS	Germany	USAREUR	205	0	0	0			Y		Y						Y
	Camp Darby	OS	Italy	USAREUR	135	0	0	0											Y
	Campo Pond TA	OS	Germany	USAREUR	366	0	0	0			Y		Y						Y
	Cao Malnisio	OS	Italy	USAREUR	4,098	0	0	0			Y	Y	Y						Y
	Cellina-Meduna	OS	Italy	USAREUR	11,558	0	0	0			Y		Y						Y
	Conn Barracks	OS	Germany	USAREUR	127	0	0	0					Y						Y
	Ederle	OS	Italy	USAREUR	11	0	0	0			Y		Y						Y
	Foce del Reno	OS	Italy	USAREUR	8,941	0	0	0				Y	Y						
	Foce Fume Serchio	OS	Italy	USAREUR	163	0	0	0				Y	Y						
	Lampertheim Training Area	OS	Germany	USAREUR	3,942	0	0	0			Y	Y	Y						Y
	Longare	OS	Italy	USAREUR	15	0	0	0			Y								Y
	Messell Small Arms Range	OS	Germany	USAREUR	25	0	0	0					Y						Y

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	Monte Carpegna	OS	Italy	USAREUR	6,488	0	0	0			Y	Y							
	Monte Ciarlec	OS	Italy	USAREUR	7,925	0	0	0			Y	Y							
	Monte Romano	OS	Italy	USAREUR	10,207	0	0	0			Y	Y	Y						Y
	Offersheim Small Arms Range	OS	Germany	USAREUR	3	0	0	0			Y		Y						Y
	Podeldorf LTA	OS	Germany	USAREUR	1,105	0	0	0			Y		Y						Y
	P-Series	OS	Italy	USAREUR	5,291	0	0	0			Y								
	Ray Barracks Training Area	OS	Germany	USAREUR	21	0	0	0			Y		Y						Y
	Reese Range Complex	OS	Germany	USAREUR	18	0	0	0					Y						Y
	Rheinblick LTA	OS	Germany	USAREUR	44	0	0	0					Y						Y
	Rivoli Bianchi	OS	Italy	USAREUR	235	0	0	0					Y						
	Santa Severa	OS	Italy	USAREUR	100	0	0	0				Y	Y						
	Schwetzingen LTA	OS	Germany	USAREUR	249	0	0	0			Y								Y
	Tiergarten	OS	Germany	USAREUR	234	0	0	0			Y								Y
	T-Series	OS	Italy	USAREUR	7,222	0	0	0			Y								
	Wackernheim Small Arms Ranges	OS	Germany	USAREUR	32	0	0	0					Y						Y
Individual Army Ranges																			
	BULLSEYE 02	OS	KOREA	EUSA	1,395						Y								
	CAMP GREAVES	OS	KOREA	EUSA	0								Y						
	CAMP HOWZE	OS	KOREA	EUSA	0								Y						

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	GIMBOLS	OS	KOREA	EUSA	3,019						Y								
	WATKINS RANGE	OS	KOREA	EUSA	44														Y
	CAMP HUMPHREYS	OS	KOREA	EUSA	1								Y						
	ROTTERSHAUSEN	OS	GERMANY	USAREUR	142						Y								
	FAHR RIVER CROSSING	OS	GERMANY	USAREUR	3														Y
	GERLACHSHAUSEN SWIM SITE	OS	GERMANY	USAREUR	0													Y	
	MICHELFELD	OS	GERMANY	USAREUR	92						Y								
	KATTERBACH KASERNE	OS	GERMANY	USAREUR	49														Y
	BAMBERG TA G	OS	GERMANY	USAREUR	70								Y						
	APPENDORF LTA	OS	GERMANY	USAREUR	328						Y								
	AREA OCKSTADT	OS	GERMANY	USAREUR	192						Y								
	BABENHAUSEN LTA	OS	GERMANY	USAREUR	190						Y								
	BAMBERG ARMY AIRFIELD	OS	GERMANY	USAREUR	11														Y
	BENELUX TSC	OS	BELGIUM	USAREUR	70						Y								
	BUG LTA	OS	GERMANY	USAREUR	111						Y								
	BURGEBRACH LTA	OS	GERMANY	USAREUR	249						Y								
	FONTANIVA	OS	ITALY	USAREUR	155						Y								
	GIESSEN DEPOT TRAINING AREA	OS	GERMANY	USAREUR	137						Y								
	GROSSAUHEIM	OS	GERMANY	USAREUR	46														Y

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	GROSSOSTHEIM LTA	OS	GERMANY	USAREUR	1,557						Y								
	HOHE WARTE	OS	GERMANY	USAREUR	160						Y								
	KUNIGUNDENRUH LTA	OS	GERMANY	USAREUR	113						Y								
	LTA 6910	OS	GERMANY	USAREUR	104						Y								
	MAINZ-LAYENHOF	OS	GERMANY	USAREUR	249											Y			
	RIVERSIDE	OS	ITALY	USAREUR	3						Y								
	SAN GIORGIO	OS	ITALY	USAREUR	68											Y			
	SAND DUNES	OS	GERMANY	USAREUR	105						Y								
	SOUTH HAUPTSMOOR LTA	OS	GERMANY	USAREUR	268						Y								
	WARNER BARRACKS	OS	GERMANY	USAREUR	2								Y						
	BLACK RAPIDS TRAINING SITE	US	AK	USARPAC	4,213						Y								
	EKLUTNA GLACIER TS	US	AK	USARPAC	33						Y								
	GERSTLE RIVER TRAINING AREA	US	AK	USARPAC	20,589						Y								
	WHISTLER CREEK TS	US	AK	USARPAC	543						Y								
	KEAMUKU LTA	US	HI	USARPAC	22,640						Y								
	CAMEL TRACKS TNG SITE	US	NM	ARNG	8,349						Y								
	BG THOMAS BAKER TRAINING SITE	US	MD	ARNG	871						Y								
	MTA STEAD FAC	US	NV	ARNG	196						Y								
	89TH RSC MEAD WET SITE	US	NE	USARC	956						Y								

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Source: Department of Defense data provided by the Military Services.

Training and Testing Range Complex Inventory

Military Service	Range Complex	United States (US) or Overseas (OS)	State or Country	Major Command or Claimant Organization	Range Description*				Range Type*										
					Land Area for Ranges (acres)	Special Use Airspace (sq nm)	Sea Surface Area (sq nm)	Underwater Tracking Area (sq nm)	Air-to-Air or Surface-to-Air	Air-to-Ground	Land Maneuver	Land Impact Area	Land Firing Range	C2W/EW	Ocean Operating Area	MOUT	Underwater Tracking Range	Amphibious Area	Other
	89TH RSC SUNFLOWER WET SITE	US	KS	USARC	69						Y								
	AAHOAKA LTA	US	HI	ARNG	3,128						Y								
	ALBUQUERQUE LTA	US	NM	USARC	7						Y								
	AMERICAN SAMOA LTA	US	AS	USARC	79						Y								
	ANAHOLA LTA	US	HI	ARNG	3,322						Y								
	ARTEMUS LTA	US	KY	ARNG	523						Y								
	AVN TRAINING AREA (WEYERHAEUSER)	US	WA	USARC	20,443														Y
	BARADA LTA	US	NE	ARNG	85						Y								
	BARKER DAM LTA	US	TX	USARC	1,636														Y
	BEAVER TRAINING AREA	US	UT	ARNG	657						Y								
	BECKLEY CITY POLICE RANGE	US	WV	ARNG	2								Y						
	BEECH FORK STATE PARK	US	WV	ARNG	12,836						Y								
	BIDWELL HILL	US	CO	ARNG	40														Y
	BLANDING ARMORY	US	UT	ARNG	28						Y								
	BOLIVAR LTA	US	TN	ARNG	170						Y								
	BOOK CLIFFS RIFLE RANGE	US	CO	ARNG	346								Y						
	BOX BUTTE RESERVOIR LTA	US	NE	ARNG	13														Y
	BRETTONS WOOD BIATHLON RANGE	US	NH	ARNG	1								Y						
	BUCKEYE TRAINING SITE	US	AZ	ARNG	1,481						Y								

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Training and Testing Range Complex Inventory

Military Service	Range Complex	United States (US) or Overseas (OS)	State or Country	Major Command or Claimant Organization	Range Description*				Range Type*										
					Land Area for Ranges (acres)	Special Use Airspace (sq nm)	Sea Surface Area (sq nm)	Underwater Tracking Area (sq nm)	Air-to-Air or Surface-to-Air	Air-to-Ground	Land Maneuver	Land Impact Area	Land Firing Range	C2W/EW	Ocean Operating Area	MOUT	Underwater Tracking Range	Amphibious Area	Other
	BUCKLEY ANG BASE, CO	US	CO	ARNG	10														Y
	BULLVILLE USARC	US	NY	USARC	154														Y
	CAMERON PASS	US	CO	ARNG	45,396						Y								
	CAMP BARKELEY	US	TX	ARNG	980						Y								
	CAMP FOWLER	US	IN	ARNG	98						Y								
	CAMP HALE	US	CO	ARNG	21,483						Y								
	CAMP KEYES T.S.	US	ME	ARNG	1														Y
	CAMP LUNA	US	NM	ARNG	133						Y								
	CAMP MABRY	US	TX	ARNG	178						Y								
	CAMP SEVEN MILE	US	WA	ARNG	340						Y								
	CASA GRANDE TRAINING SITE	US	AZ	ARNG	800						Y								
	CHATFIELD RESERVOIR	US	CO	ARNG	2,281														Y
	CLARKS HILL TS	US	SC	ARNG	891						Y								
	CORNHUSKER AAP	US	NE	USACE	6								Y						
	DOUGLAS TRAINING SITE	US	AZ	ARNG	990						Y								
	DZ BABICH	US	MD	ARNG	114														Y
	DZ BEECH HILL	US	WV	ARNG	189														Y
	EAGLE MOUNTAIN LAKE TRAINING SITE	US	TX	ARNG	1,246						Y								
	EAST STROUDSBURG ARMORY	US	PA	ARNG	19						Y								

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Training and Testing Range Complex Inventory

Military Service	Range Complex	United States (US) or Overseas (OS)	State or Country	Major Command or Claimant Organization	Range Description*				Range Type*										
					Land Area for Ranges (acres)	Special Use Airspace (sq nm)	Sea Surface Area (sq nm)	Underwater Tracking Area (sq nm)	Air-to-Air or Surface-to-Air	Air-to-Ground	Land Maneuver	Land Impact Area	Land Firing Range	C2W/EW	Ocean Operating Area	MOUT	Underwater Tracking Range	Amphibious Area	Other
	EDGEMEADE TS MTN HOME	US	ID	ARNG	123						Y								
	ERNIE PYLE USARC/AMSA #12 (G)	US	NY	USARC	2														Y
	FAA RADIO TOWER SITE	US	CO	ARNG	13														Y
	FELICITY	US	OH	ARNG	1														Y
	FORT MIFFLIN	US	PA	ARNG	27														Y
	FORT MORGAN AIRPORT	US	CO	ARNG	20														Y
	FORT RUGER	US	HI	USARPAC	312						Y								
	FOUNTAIN INN TS	US	SC	ARNG	21						Y								
	FREEMAN FIELD POLICE RANGE	US	IN	ARNG	2								Y						
	GARRISON WETS	US	ND	ARNG	765						Y								
	GILA BEND TRAINING SITE	US	AZ	ARNG	639														Y
	GOODPASTURE DZ	US	CO	ARNG	179														Y
	GREAT BEND LTA	US	KS	USARC	1														Y
	HAWS CROSSROADS WET SITE	US	TN	USARC	103						Y								
	HAYDEN LAKE LTA	US	ID	USARC	612								Y						
	HAYFORD PIT LTA	US	WA	USARC	24														Y
	HIDDEN VALLEY LTA	US	KY	ARNG	535						Y								
	HILLTOP RANGE	US	IN	ARNG	1								Y						
	HOBBS	US	NM	ARNG	262						Y								

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Training and Testing Range Complex Inventory

Military Service	Range Complex	United States (US) or Overseas (OS)	State or Country	Major Command or Claimant Organization	Range Description*				Range Type*										
					Land Area for Ranges (acres)	Special Use Airspace (sq nm)	Sea Surface Area (sq nm)	Underwater Tracking Area (sq nm)	Air-to-Air or Surface-to-Air	Air-to-Ground	Land Maneuver	Land Impact Area	Land Firing Range	C2W/EW	Ocean Operating Area	MOUT	Underwater Tracking Range	Amphibious Area	Other
	HODGES TS	US	SC	ARNG	20						Y								
	HONOPOU LTA	US	HI	ARNG	106						Y								
	HORSETOOTH RESERVOIR	US	CO	ARNG	5,047														Y
	KALEPA LTA	US	HI	ARNG	903						Y								
	KEKAHA LTA	US	HI	ARNG	3,195						Y								
	KELLY CANYON TS	US	ID	ARNG	3,826						Y								
	KINGSBURY LTA	US	IN	USARC	919						Y								
	LEBANON READINESS CENTER	US	NH	ARNG	0														Y
	LEEMAN FIELD LTA	US	VA	ARNG	24														Y
	LEROY DILKA LAND	US	CO	ARNG	2														Y
	LEXINGTON	US	OK	ARNG	317						Y								
	LONGHORN AAP	US	TX	AMC	0								Y						
	LTA VAAP	US	TN	USARC	195						Y								
	LTC HERNAN G. PESQUERA USAR CENTER	US	PR	USARC	4														Y
	MALUHIA LTA	US	HI	ARNG	70						Y								
	MANKATO LOCAL TRAINING AREA	US	MN	USARC	20						Y								
	MARION LTA	US	OH	USARC	122						Y								
	MITCHELL TRAINING AREA	US	SD	ARNG	1								Y						
	MOOSEHORN	US	ME	ARNG	0								Y						

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Training and Testing Range Complex Inventory

Military Service	Range Complex	United States (US) or Overseas (OS)	State or Country	Major Command or Claimant Organization	Range Description*				Range Type*										
					Land Area for Ranges (acres)	Special Use Airspace (sq nm)	Sea Surface Area (sq nm)	Underwater Tracking Area (sq nm)	Air-to-Air or Surface-to-Air	Air-to-Ground	Land Maneuver	Land Impact Area	Land Firing Range	C2W/EW	Ocean Operating Area	MOUT	Underwater Tracking Range	Amphibious Area	Other
	MOUNTWOOD PARK	US	WV	ARNG	3,121						Y								
	NEW RIVER VALLEY TRAINING SITE	US	VA	USARC	88														Y
	NEWARK LTA, NY	US	NY	ARNG	100						Y								
	NEWFANE WET SITE	US	NY	USARC	3														Y
	NEWPORT CHEMICAL DEPOT	US	IN	AMC	0								Y						
	NOUNOU LTA	US	HI	ARNG	1,721						Y								
	OCALA ARMORY	US	FL	ARNG	0														Y
	OGDEN LOCAL TRAINING AREA	US	UT	USARC	132														Y
	OXFORD	US	ME	ARNG	58						Y								
	PAISLEY LTA	US	FL	ARNG	11,300						Y								
	PAU'UILO LTA	US	HI	ARNG	45						Y								
	PEACEFUL VALLEY RANCH	US	CO	ARNG	1,213						Y								
	PETERBOROUGH READINESS CENTER	US	NH	ARNG	0														Y
	PICACHO TRAINING SITE	US	AZ	ARNG	353														Y
	PICKENS TS	US	SC	ARNG	9						Y								
	PIERRE TRAINING AREA	US	SD	ARNG	5								Y						
	PLATTE TRAINING AREA	US	SD	ARNG	41						Y								
	POCATELLO AIRPORT LOCAL TRAINING AREA	US	ID	USARC	9						Y								
	POVERTY FLATS TRAINING AREA	US	UT	ARNG	448						Y								

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Training and Testing Range Complex Inventory

Military Service	Range Complex	United States (US) or Overseas (OS)	State or Country	Major Command or Claimant Organization	Range Description*				Range Type*										
					Land Area for Ranges (acres)	Special Use Airspace (sq nm)	Sea Surface Area (sq nm)	Underwater Tracking Area (sq nm)	Air-to-Air or Surface-to-Air	Air-to-Ground	Land Maneuver	Land Impact Area	Land Firing Range	C2W/EW	Ocean Operating Area	MOUT	Underwater Tracking Range	Amphibious Area	Other
	PRICE TRAINING AREA	US	UT	ARNG	159														Y
	PUU KAPELE LTA	US	HI	ARNG	1,113						Y								
	PUU PA LTA	US	HI	ARNG	13,273						Y								
	PU'UNENE LTA	US	HI	ARNG	1,618						Y								
	RALEIGH COUNTY FIRING RANGE	US	WV	ARNG	1								Y						
	RAMEY USAR CENTER LTA	US	PR	USARC	53														Y
	RAYTOWN TRAINING SITE	US	MO	ARNG	51						Y								
	RITTENHOUSE TRAINING SITE	US	AZ	ARNG	226						Y								
	SAFFORD TRAINING SITE	US	AZ	ARNG	400						Y								
	SAN JUAN NATIONAL FOREST	US	CO	ARNG	634,562						Y								
	SNAKE CREEK TRAINING SITE	US	FL	ARNG	295						Y								
	SOUTH CHARLESTON	US	WV	ARNG	1								Y						
	STANTON LTA	US	NE	ARNG	633						Y								
	STATE POLICE ACADEMY, VT	US	VT	ARNG	0								Y						
	STRASBURG DZ	US	CO	ARNG	949														Y
	SUNNY HILLS LTA	US	FL	ARNG	11,119						Y								
	SWIFT ACRES LTA	US	FL	ARNG	4,163						Y								
	TARLTON LTA	US	OH	ARNG	118						Y								
	TOLEDO USARC	US	OH	USARC	28						Y								

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Training and Testing Range Complex Inventory

Military Service	Range Complex	United States (US) or Overseas (OS)	State or Country	Major Command or Claimant Organization	Range Description*				Range Type*										
					Land Area for Ranges (acres)	Special Use Airspace (sq nm)	Sea Surface Area (sq nm)	Underwater Tracking Area (sq nm)	Air-to-Air or Surface-to-Air	Air-to-Ground	Land Maneuver	Land Impact Area	Land Firing Range	C2W/EW	Ocean Operating Area	MOUT	Underwater Tracking Range	Amphibious Area	Other
	TOSOHATCHEE LTA	US	FL	ARNG	3,451														Y
	TS-HAWK MCCONNELSVILLE, OH	US	OH	ARNG	395						Y								
	VERNAL TRAINING AREA	US	UT	ARNG	159														Y
	WAIAWA	US	HI	ARNG	15														Y
	WALKER FIELD AIRPORT	US	CO	ARNG	25														Y
	WALLY EAGLE DZ	US	CO	ARNG	841														Y
	WASHINGTON COUNTY MEMORIAL USARC	US	OH	USARC	16						Y								
	WATERTOWN TRAINING AREA	US	SD	ARNG	5								Y						
	WELLS GULCH	US	CO	ARNG	57														Y
	WESTERN ARNG AVIATION (WAATS) SILVERBELL	US	AZ	ARNG	161														Y
	WHEELER ARMY AIRFIELD	US	HI	USARPAC	568														Y
	WHITAKER EDUCATION TRAINING CENTER	US	OK	ARNG	593						Y								
	WHITEHORSE RANGE	US	WV	ARNG	1								Y						
	WILCOX	US	AZ	TRADOC	28,893								Y						
	WV STATE POLICE ACADEMY RANGE	US	WV	ARNG	12								Y						
	WVDNR BLUESTONE WMA RANGE	US	WV	ARNG	1								Y						
	WVDNR PLUM ORCHARD WMA RANGE	US	WV	ARNG	3								Y						
NAVY																			
	Atlantic City	US	NJ	CFFC	0	5,662	4,414	4,414	Y						Y				

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Training and Testing Range Complex Inventory

Military Service	Range Complex	United States (US) or Overseas (OS)	State or Country	Major Command or Claimant Organization	Range Description*				Range Type*										
					Land Area for Ranges (acres)	Special Use Airspace (sq nm)	Sea Surface Area (sq nm)	Underwater Tracking Area (sq nm)	Air-to-Air or Surface-to-Air	Air-to-Ground	Land Maneuver	Land Impact Area	Land Firing Range	C2W/EW	Ocean Operating Area	MOUT	Underwater Tracking Range	Amphibious Area	Other
	Boston Area	US	MA	CFFC	12,467	10,229	13,497	13,497	Y	Y	Y				Y				
	Cherry Point	US	NC	CFFC	0	18,966	18,390	18,390	Y					Y	Y				
	Diego Garcia	OS	BIOT	CPF	0	28,520	0	0	Y										
	El Centro	US	CA	CFFC	43,342	1,426	0	0	Y	Y		Y							Y
	Fallon	US	NV	CFFC	232,481	14,230	0	0	Y	Y	Y	Y	Y	Y		Y			
	Gulf of Mexico	US	FL/TX	CFFC	6,502	15,640	17,475	17,475	Y	Y			Y		Y			Y	Y
	Hawaiian Islands	US/OS	HI	CPF	303	58,599	214,848	214,848	Y	Y	Y	Y	Y		Y		Y	Y	Y
	Jacksonville	US	FL/GA	CFFC	7,502	40,820	50,101	50,101	Y	Y		Y	Y		Y				
	Japan	OS	Japan	CPF	0	11,616	0	0	Y						Y				
	Key West	US	Key West	CFFC	1	25,170	8,283	8,283	Y	Y			Y	Y	Y				Y
	Marianas Islands	OS	CNMI	CPF	24,890	14,028	14,000	14,000	Y		Y		Y		Y	Y		Y	Y
	Meridian	US	MS/AL	NAVAIR	3,135	7,140	0	0	Y	Y			Y						
	Narragansett	US	RI	CFFC	0	13,149	27,217	27,217	Y						Y				
	NAS JRB Fort Worth	US	TX		1	3,234	0	0	Y				Y						
	Okinawa	OS	Japan	CPF	0	20,576	0	0	Y	Y									
	San Francisco	US	CA	CFFC	0	16,122	0	0	Y										
	SOCAL	US	CA	CFFC	43,437	113,780	120,000	7,698	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	VACAPES	US	VA/NC	CFFC	1,543	34,267	28,921	28,921	Y	Y	Y		Y		Y	Y		Y	
	Whidbey Island	US	WA/OR/CA	CFFC	47,982	43,870	128,905	128,905	Y	Y	Y	Y	Y		Y				Y

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Source: Department of Defense data provided by the Military Services.

Training and Testing Range Complex Inventory

Military Service	Range Complex	United States (US) or Overseas (OS)	State or Country	Major Command or Claimant Organization	Range Description*				Range Type*										
					Land Area for Ranges (acres)	Special Use Airspace (sq nm)	Sea Surface Area (sq nm)	Underwater Tracking Area (sq nm)	Air-to-Air or Surface-to-Air	Air-to-Ground	Land Maneuver	Land Impact Area	Land Firing Range	C2W/EW	Ocean Operating Area	MOUT	Underwater Tracking Range	Amphibious Area	Other
	Test and Evaluation	Various	Various	NAVAIR, NAVSEA	1,161,900	31,860	1,650	195	Y	Y					Y		Y		Y
MARINE CORPS																			
	MCB Camp Butler	OS	Japan	MARFORPAC	47,000	3,330	0	0			Y	Y	Y		Y			Y	
	MCB Camp Lejeune	US	NC	MARFORLANT	157,440	153	0	0		Y	Y	Y	Y		Y	Y		Y	
	MCB Camp Pendleton	US	CA	MARFORPAC	125,704	182	0	0		Y	Y	Y	Y		Y	Y		Y	
	MCAS Cherry Point	US	NC	MCIEAST	29,139	20,712	0	0	Y	Y		Y	Y	Y	Y				
	MCAGCC, 29 Palms	US	CA	TECOM	601,151	1,285	0	0		Y	Y	Y	Y			Y			
	MCAS Beaufort/Townsend	US	SC	MCIEAST	5,182	1,145	0	0	Y	Y		Y	Y	Y					
	MCAS Miramar	US	CA	MCIWEST	4,700	0	0	0				Y	Y						
	MCAS Yuma/Bob Stump Training Range Complex	US	AZ	MCIWEST	1,216,000	10,000	0	0	Y	Y	Y	Y	Y	Y		Y			
	MCB Hawaii	US/OS	HI	MARFORPAC	4,706	0	0	0			Y	Y	Y		Y	Y		Y	
	MCB Quantico	US	VA	MCCDC	64,000	282	0	0		Y	Y	Y	Y			Y			
	MCLB Albany	US	GA	MATCOM	4	0	0	0				Y	Y						
	MCLB Barstow	US	CA	MATCOM	2,438	0	0	0				Y	Y						
	MCMWTC Bridgeport	US	CA	TECOM	45,217	0	0	0			Y								
	MCRD Parris Island	US	SC	TECOM	1,100	0	0	0			Y	Y	Y						
AIR FORCE																			
	Adirondack	US	NY	ANG	75000	200	0	0		Y				Y					
	Airburst	US	CO	ANG	4,257	26	0	0		Y				Y					

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					Land Area for Ranges (acres)	Special Use Airspace (sq nm)	Sea Surface Area (sq nm)	Underwater Tracking Area (sq nm)	Air-to-Air or Surface-to-Air	Air-to-Ground	Land Maneuver	Land Impact Area	Land Firing Range	C2W/EW	Ocean Operating Area	MOUT	Underwater Tracking Range	Amphibious Area	Other
	Atterbury	US	IN	ANG	18500	103	0	0		Y				Y					
	Avon Park	US	FL	ACC	106,073	1,400	0	0	Y	Y									
	Barry M. Goldwater Range	US	AZ	AETC	1,607,018	3,906	0	0	Y	Y				Y					
	Belle Fourche ESS	US	SD	ACC	183	0	0	0		Y				Y					
	Blair Lake	US	AK	PACAF	2,560	22,000	0	0		Y									
	Bollen	US	PA	ANG	10,657	42	0	0		Y				Y					
	Cannon	US	MO	ANG	4,600	339	0	0		Y				Y					
	Claiborne	US	LA	AFRC	7,800	135	0	0		Y				Y					
	Dare County Ranges	US	SC	ACC	46,621	1,184	0	0	Y	Y				Y					
	Edwards Ranges	US	CA	AFMC	50,080	20,000	0	0	Y	Y				Y					
	Eglin Ranges	US	FL	AFMC	463,360	133,979	0	0	Y	Y				Y					
	Falcon	US	OK	AFRC	5,200	1,845	0	0		Y				Y					
	Grand Bay	US	GA	ACC	6,000	17,290	0	0		Y									
	Grayling	US	MI	ANG	145,025	63	0	0	Y	Y				Y					
	Hardwood	US	WI	ANG	7,263	84	0	0		Y				Y					
	Holloman	US	NM	ACC	207,800	2,256	0	0	Y	Y				Y					
	Jefferson	US	IN	ANG	50,000	160	0	0	Y	Y				Y					
	Koon-Ni	OS	Korea	PACAF	0	0	0	0		Y				Y					
	Lone Star ESS	US	TX	ACC	90	0	0	0		Y				Y					

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Training and Testing Range Complex Inventory

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					Land Area for Ranges (acres)	Special Use Airspace (sq nm)	Sea Surface Area (sq nm)	Underwater Tracking Area (sq nm)	Air-to-Air or Surface-to-Air	Air-to-Ground	Land Maneuver	Land Impact Area	Land Firing Range	C2W/EW	Ocean Operating Area	MOUT	Underwater Tracking Range	Amphibious Area	Other
	McMullen	US	TX	ANG	2,800	63	0	0		Y				Y					
	Melrose	US	NM	ACC	66,033	22,000	0	0	Y	Y				Y					
	Mountain Home Ranges	US	ID	ACC	120,844	18,526	0	0	Y	Y				Y					
	Nevada Testing and Training Range	US	NV	ACC	2,919,890	12,000	0	0	Y	Y				Y					
	Oklahoma	US	AK	PACAF	25,600	22,000	0	0		Y				Y					
	Pilsung	OS	Korea	PACAF	0	0	0	0		Y				Y					
	Poinsett	US	SC	ACC	12,521	1,500	0	0		Y				Y					
	Polygone	OS	France/Germany	USAFE	0	0	0	0		Y				Y					
	Razorback	US	AR	ANG	5760	128	0	0		Y				Y					
	Ripsaw	OS	Japan	PACAF	0	0	0	0		Y				Y					
	Shelby Ranges	US	MS	ANG	26,676	0	0	0		Y				Y					
	Shoal Creek	US	TX	AFRC	17,540	5,200	0	0		Y				Y					
	Siegenberg	OS	Germany	USAFE	0	0	0	0		Y									
	Smoky Hill	US	KS	ANG	33,875	53	0	0		Y				Y					
	Snyder ESS	US	TX	ACC	90	0	0	0		Y				Y					
	Torishima	OS	Japan	PACAF	0	0	0	0		Y									
	Townsend	US	GA	ANG	5,183	288	0	0		Y				Y					
	Utah Testing and Training Ranges	US	UT	ACC	1,712,000	12,574	0	0	Y	Y				Y					
	Warren Grove	US	NJ	ANG	9,416	30	0	0		Y				Y					
	Yukon	US	AK	PACAF	25,600	22,000	0	0		Y				Y					

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Source: Department of Defense data provided by the Military Services.

Table B-2. Special Use Airspace (SUA) Inventory

Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
ARMY							
	R4001A	FAA, WASHINGTON, DC ARTCC	Aberdeen Proving Ground	UNLTD	SURFACE	USA	99
	R4001B	FAA, WASHINGTON, DC ARTCC	Aberdeen Proving Ground	010000AMSL	SURFACE	USA	26
	R2101	FAA, ATLANTA ARTCC	Anniston Army Depot	005000AMSL	SURFACE	USA	2
	R3203A	FAA, SALT LAKE CITY ARTCC	Boise	015000AMSL	SURFACE	USA	85
	R3203B	FAA, SALT LAKE CITY ARTCC	Boise	022000AMSL	15000AMSL	USA	85
	R3203C	FAA, SALT LAKE CITY ARTCC	Boise	006000AMSL	SURFACE	USA	9
	R3203D	FAA, SALT LAKE CITY ARTCC	Boise	022000AMSL	SURFACE	USA	22
	SADDLE A MOA, OR	FAA, SALT LAKE CITY ARTCC	Boise	017999AMSL	10000AMSL	USA	484
	SADDLE B MOA, OR	FAA, SALT LAKE CITY ARTCC	Boise	017999AMSL	08000AMSL	USA	1,200
	R4101	FAA, CAPE APP	Camp Edwards	009000AMSL	SURFACE	USA	13
	PIKE EAST MOA, MI	FAA, MINNEAPOLIS ARTCC	Camp Grayling	017999AMSL	00300AGL	USA	3,389
	PIKE WEST MOA, MI	FAA, MINNEAPOLIS ARTCC	Camp Grayling	017999AMSL	06000AMSL	USA	2,501
	R4201A	FAA, MINNEAPOLIS ARTCC	Camp Grayling	023000AMSL	SURFACE	USA	60
	R4201B	FAA, MINNEAPOLIS ARTCC	Camp Grayling	009000AMSL	SURFACE	USA	39
	R4202	FAA, MINNEAPOLIS ARTCC	Camp Grayling	008200AMSL	SURFACE	USA	5
	STEELHEAD MOA, MI	FAA, CLEVELAND ARTCC	Camp Grayling	017999AMSL	06000AMSL	USA	2,079
	R7001A	FAA, DENVER ARTCC	Camp Guernsey	007999AMSL	SURFACE	USA	43
	R7001B	FAA, DENVER ARTCC	Camp Guernsey	023500AMSL	08000AMSL	USA	43
	R7001C	FAA, DENVER ARTCC	Camp Guernsey	030000AMSL	23500AMSL	USA	43
	A685	FAA, ATLANTA ARTCC	Camp Merrill	000700AGL	SURFACE	USA	463
	R4301	FAA, MINNEAPOLIS ARTCC	Camp Riley	027000AMSL	SURFACE	USA	60
	R2504	FAA, OAKLAND ARTCC	Camp Roberts	015000AMSL	SURFACE	USA	25

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Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005)). Please refer to DoD Flight Information Publications for more information.

Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
	R2401A	FAA, MEMPHIS ARTCC	Chaffee	030000AMSL	SURFACE	USA	15
	R2401B	FAA, MEMPHIS ARTCC	Chaffee	030000AMSL	SURFACE	USA	2
	R2402	FAA, MEMPHIS ARTCC	Chaffee	FL300	SURFACE	USA	60
	R2602	FAA, DENVER ARTCC	Colorado Springs Training Site	001000AGL	SURFACE	USA	1
	R4102A	FAA, BOSTON ARTCC	Devens Reserve Forces Training Area	001999AMSL	SURFACE	USA	5
	R4102B	FAA, BOSTON ARTCC	Devens Reserve Forces Training Area	003995AMSL	02000AMSL	USA	5
	R2310A	FAA, ALBUQUERQUE ARTCC	Florence Training Site	010000AMSL	SURFACE	USA	28
	R2310B	FAA, ALBUQUERQUE ARTCC	Florence Training Site	017000AMSL	10000AMSL	USA	17
	R2310C	FAA, ALBUQUERQUE ARTCC	Florence Training Site	035000AMSL	17000AMSL	USA	14
	HILL MOA, VA	FAA, POTOMAC APP	Fort A.P. Hill	003000AMSL	SURFACE	USA	34
	HILL TOP MOA, IN	FAA, CHICAGO ARTCC	Fort A.P. Hill	017999AMSL	10000AMSL	USA	801
	R6601	FAA, RICHMOND TWR	Fort A.P. Hill	005000AMSL	SURFACE	USA	37
	BENNING MOA, GA	FAA, COLUMBUS TWR	Fort Benning	008000AMSL	00500AGL	USA	102
	R3002A	FAA, ATCT, COLUMBUS	Fort Benning	004000AMSL	SURFACE	USA	111
	R3002B	FAA, ATCT, COLUMBUS	Fort Benning	008000AMSL	04000AMSL	USA	111
	R3002C	FAA, ATCT, COLUMBUS	Fort Benning	014000AMSL	08000AMSL	USA	111
	R3002D	FAA, ATCT, COLUMBUS	Fort Benning	008000AMSL	SURFACE	USA	75
	R3002E	FAA, ATCT, COLUMBUS	Fort Benning	014000AMSL	08000AMSL	USA	75
	R3002F	FAA, ATLANTA ARTCC	Fort Benning	FL250	14000AMSL	USA	114
	R5103A	FAA, ALBUQUERQUE ARTCC	Fort Bliss	017999AMSL	SURFACE	USA	266
	R5103B	FAA, ALBUQUERQUE ARTCC	Fort Bliss	012500AMSL	SURFACE	USA	627
	R5103C	FAA, ALBUQUERQUE ARTCC	Fort Bliss	UNLTD	12500AMSL	USA	627
	R5103D	FAA, ALBUQUERQUE ARTCC	Fort Bliss	UNLTD	FL180	USA	225
	A531	USA, FORT BRAGG	Fort Bragg	001500AGL	00200AGL	USA	660

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Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
	FORT BRAGG NORTH AREA A MOA, NC	FAA, FAYETTEVILLE TWR	Fort Bragg	006000AMSL	00500AGL	USA	40
	FORT BRAGG NORTH AREA B MOA, NC	FAA, FAYETTEVILLE TWR	Fort Bragg	006000AMSL	04000AMSL	USA	29
	FORT BRAGG SOUTH AREA A MOA, NC	FAA, FAYETTEVILLE TWR	Fort Bragg	006000AMSL	00500AGL	USA	50
	FORT BRAGG SOUTH AREA B MOA, NC	FAA, FAYETTEVILLE TWR	Fort Bragg	006000AMSL	01500AGL	USA	34
	R5311A	FAA, WASHINGTON, DC ARTCC	Fort Bragg	006999AMSL	SURFACE	USA	115
	R5311B	FAA, WASHINGTON, DC ARTCC	Fort Bragg	011999AMSL	07000AMSL	USA	115
	R5311C	FAA, WASHINGTON, DC ARTCC	Fort Bragg	028999AMSL	12000AMSL	USA	115
	A371	USA, CAMPBELL AAF APP	Fort Campbell	002000AMSL	SURFACE	USA	1,127
	CAMPBELL 1 MOA, KY	FAA, MEMPHIS ARTCC	Fort Campbell	010000AMSL	00500AGL	USA	374
	CAMPBELL 2 MOA, KY	FAA, MEMPHIS ARTCC	Fort Campbell	010000AMSL	01500AGL	USA	294
	R3701	USA, CAMPBELL AAF APP	Fort Campbell	005000AMSL	SURFACE	USA	8
	R3702A	FAA, MEMPHIS ARTCC	Fort Campbell	006000AMSL	SURFACE	USA	88
	R3702B	FAA, MEMPHIS ARTCC	Fort Campbell	FL220	06001AMSL	USA	88
	R3702C	FAA, MEMPHIS ARTCC	Fort Campbell	FL270	FL220	USA	88
	PINON CANYON MOA, CO	FAA, DENVER ARTCC	Fort Carson	010000AMSL	00100AGL	USA	972
	R2601A	FAA, DENVER ARTCC	Fort Carson	012499AMSL	SURFACE	USA	116
	R2601B	FAA, DENVER ARTCC	Fort Carson	022499AMSL	12500AMSL	USA	116
	R2601C	FAA, DENVER ARTCC	Fort Carson	034999AMSL	22500AMSL	USA	116
	R2601D	FAA, DENVER ARTCC	Fort Carson	059999AMSL	35000AMSL	USA	116
	R5001A	FAA, NEW YORK ARTCC	Fort Dix	004000AMSL	SURFACE	USA	22
	R5001B	FAA, NEW YORK ARTCC	Fort Dix	008000AMSL	04000AMSL	USA	20
	R5002A	FAA, NEW YORK ARTCC	Fort Dix	014000AMSL	SURFACE	USA	34
	R5002B	FAA, NEW YORK ARTCC	Fort Dix	014000AMSL	01000AMSL	USA	11
	R5002C	FAA, NEW YORK ARTCC	Fort Dix	003000AMSL	SURFACE	USA	8

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Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
	R5002D	FAA, NEW YORK ARTCC	Fort Dix	004000AMSL	SURFACE	USA	2
	R5002E	FAA, NEW YORK ARTCC	Fort Dix	014000AMSL	03500AMSL	USA	2
	DRUM 1 MOA, NY	USA, WHEELER SACK APP	Fort Drum	005000AMSL	00500AGL	USA	89
	DRUM 2 MOA, NY	USA, WHEELER SACK APP	Fort Drum	005999AMSL	00100AGL	USA	79
	R5201	FAA, BOSTON ARTCC	Fort Drum	023000AMSL	SURFACE	USA	104
	SYRACUSE 2B MOA, NY	USA, WHEELER SACK APPROACH	Fort Drum	005999AMSL	00100AGL	USA	151
	R3004	FAA, ATLANTA ARTCC	Fort Gordon	016000AMSL	SURFACE	USA	29
	R2202A	FAA, ANCHORAGE ARTCC	Fort Greely	009999AMSL	SURFACE	USA	177
	R2202B	FAA, ANCHORAGE ARTCC	Fort Greely	009999AMSL	SURFACE	USA	411
	R2202C	FAA, ANCHORAGE ARTCC	Fort Greely	UNLTD	10000AMSL	USA	588
	GRAY MOA, TX	FAA, HOUSTON ARTCC	Fort Hood	010000AMSL	02000AMSL	USA	27
	HOOD MOA, TX	FAA, HOUSTON ARTCC	Fort Hood	010000AMSL	02000AMSL	USA	255
	R6302A	FAA, HOUSTON ARTCC	Fort Hood	FL300	SURFACE	USA	120
	R6302B	FAA, HOUSTON ARTCC	Fort Hood	011000AMSL	SURFACE	USA	15
	R6302C	FAA, HOUSTON ARTCC	Fort Hood	FL300	SURFACE	USA	38
	R6302D	FAA, HOUSTON ARTCC	Fort Hood	FL300	SURFACE	USA	23
	R6302E	FAA, HOUSTON ARTCC	Fort Hood	FL450	FL300	USA	116
	R6320	FAA, HOUSTON ARTCC	Fort Hood	015000AMSL	SURFACE	USA	20
	R2303A	FAA, ALBUQUERQUE ARTCC	Fort Huachuca	015000AMSL	SURFACE	USA	254
	R2303B	FAA, ALBUQUERQUE ARTCC	Fort Huachuca	FL300	08000AMSL	USA	473
	R2303C	FAA, ALBUQUERQUE ARTCC	Fort Huachuca	FL300	15000AMSL	USA	222
	R2513	FAA, OAKLAND ARTCC	Fort Hunter-Leggett	FL240	SURFACE	USA	107
	R5802A	FAA, NEW YORK ARTCC	Fort Indiantown Gap	005000AMSL	00200AGL	USA	11
	R5802B	FAA, NEW YORK ARTCC	Fort Indiantown Gap	013000AMSL	SURFACE	USA	13
	R5802C	FAA, NEW YORK ARTCC	Fort Indiantown Gap	016999AMSL	00500AGL	USA	31

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Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
	R5802D	FAA, NEW YORK ARTCC	Fort Indiantown Gap	022999AMSL	17000AMSL	USA	31
	R5802E	FAA, NEW YORK ARTCC	Fort Indiantown Gap	FL250	FL220	USA	91
	R2502E	FAA, HI-DESERT TRACON, EDWARDS AFB	Fort Irwin	UNLTD	SURFACE	USA	170
	R2502N	FAA, HI-DESERT TRACON, EDWARDS AFB	Fort Irwin	UNLTD	SURFACE	USA	530
	R6001A	FAA, JACKSONVILLE ARTCC	Fort Jackson	003200AMSL	SURFACE	USA	36
	R6001B	FAA, JACKSONVILLE ARTCC	Fort Jackson	FL230	03200AMSL	USA	38
	R3704A	FAA, STANDIFORD TWR, LOUISVILLE	Fort Knox	010000AMSL	SURFACE	USA	107
	R3704B	FAA, STANDIFORD TWR, LOUISVILLE	Fort Knox	020000AMSL	10001AMSL	USA	107
	R6602A	FAA, WASHINGTON, DC ARTCC	Fort Lee	003999AMSL	SURFACE	USA	34
	R6602B	FAA, WASHINGTON, DC ARTCC	Fort Lee	010999AMSL	04000AMSL	USA	31
	R6602C	FAA, WASHINGTON, DC ARTCC	Fort Lee	017999AMSL	11000AMSL	USA	31
	R4501A	FAA, KANSAS CITY ARTCC	Fort Leonard Wood	002199AMSL	SURFACE	USA	20
	R4501B(A)	FAA, KANSAS CITY ARTCC	Fort Leonard Wood	002200AMSL	SURFACE	USA	9
	R4501B(B)	FAA, KANSAS CITY ARTCC	Fort Leonard Wood	001500AMSL	SURFACE	USA	0
	R4501C	FAA, KANSAS CITY ARTCC	Fort Leonard Wood	005000AMSL	02200AMSL	USA	32
	R4501D	FAA, KANSAS CITY ARTCC	Fort Leonard Wood	012000AMSL	05000AMSL	USA	32
	R4501E	FAA, KANSAS CITY ARTCC	Fort Leonard Wood	FL180	12000AMSL	USA	32
	R4501F	FAA, KANSAS CITY ARTCC	Fort Leonard Wood	003200AMSL	SURFACE	USA	4
	R4501H	FAA, KANSAS CITY ARTCC	Fort Leonard Wood	003200AMSL	SURFACE	USA	14
	RAINIER 1 MOA, WA	FAA, SEATTLE-TACOMA APP CON	Fort Leonard Wood	009000AMSL	02000AMSL	USA	26
	RAINIER 2 MOA, WA	FAA, SEATTLE-TACOMA APP CON	Fort Leonard Wood	009000AMSL	02000AMSL	USA	46
	RAINIER 3 MOA, WA	FAA, SEATTLE-TACOMA APP CON	Fort Leonard Wood	009000AMSL	02000AMSL	USA	14
	R6714A	FAA, SEATTLE ARTCC	Fort Lewis	028999AMSL	SURFACE	USA	216
	R6714B	FAA, SEATTLE ARTCC	Fort Lewis	028999AMSL	SURFACE	USA	23
	R6714C	FAA, SEATTLE ARTCC	Fort Lewis	028999AMSL	SURFACE	USA	28

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Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
	R6714D	FAA, SEATTLE ARTCC	Fort Lewis	028999AMSL	SURFACE	USA	4
	R6714F	FAA, SEATTLE ARTCC	Fort Lewis	028999AMSL	SURFACE	USA	14
	R6714G	FAA, SEATTLE ARTCC	Fort Lewis	028999AMSL	SURFACE	USA	20
	R6714H	FAA, SEATTLE ARTCC	Fort Lewis	005499AMSL	SURFACE	USA	24
	R2102A	FAA, ATLANTA ARTCC	Fort McClellan	008000AMSL	SURFACE	USA	25
	R2102B	FAA, ATLANTA ARTCC	Fort McClellan	014000AMSL	08000AMSL	USA	25
	R2102C	FAA, ATLANTA ARTCC	Fort McClellan	FL240	14000AMSL	USA	25
	R6901A	FAA, MINNEAPOLIS ARTCC	Fort McCoy	020000AMSL	SURFACE	USA	43
	R6901B	FAA, MINNEAPOLIS ARTCC	Fort McCoy	020000AMSL	SURFACE	USA	19
	PICKETT 1 MOA, VA	FAA, WASHINGTON, DC ARTCC	Fort Pickett	006000AMSL	00500AGL	USA	42
	PICKETT 2 MOA, VA	FAA, WASHINGTON, DC ARTCC	Fort Pickett	010000AMSL	00500AGL	USA	88
	PICKETT 3 MOA, VA	FAA, WASHINGTON, DC ARTCC	Fort Pickett	010000AMSL	04000AMSL	USA	22
	R3803A	FAA, HOUSTON ARTCC	Fort Polk	FL180	SURFACE	USA	39
	R3803B	FAA, HOUSTON ARTCC	Fort Polk	034999AMSL	FL180	USA	39
	R3804A	FAA, HOUSTON ARTCC	Fort Polk	FL180	SURFACE	USA	96
	R3804B	FAA, HOUSTON ARTCC	Fort Polk	003000AMSL	SURFACE	USA	13
	R3804C	FAA, HOUSTON ARTCC	Fort Polk	034999AMSL	FL180	USA	96
	WARRIOR 1 HIGH MOA, LA	FAA, HOUSTON ARTCC	Fort Polk	017999AMSL	10000AMSL	USA	1,528
	WARRIOR 1 LOW MOA, LA	FAA, HOUSTON ARTCC	Fort Polk	009999AMSL	00100AGL	USA	1,528
	WARRIOR 2 HIGH MOA, LA	FAA, HOUSTON ARTCC	Fort Polk	017999AMSL	10000AMSL	USA	847
	WARRIOR 2 LOW MOA, LA	FAA, HOUSTON ARTCC	Fort Polk	009999AMSL	00100AGL	USA	847
	WARRIOR 3 HIGH MOA, LA	FAA, HOUSTON ARTCC	Fort Polk	017999AMSL	10000AMSL	USA	965
	WARRIOR 3 LOW MOA, LA	FAA, HOUSTON ARTCC	Fort Polk	009999AMSL	00100AGL	USA	965
	R2203A	FAA, ANCHORAGE TWR	Fort Richardson	011000AMSL	SURFACE	USA	6
	R2203B	FAA, ANCHORAGE TWR	Fort Richardson	011000AMSL	SURFACE	USA	20

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Special Use Airspace Inventory							
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	R2203C	FAA, ANCHORAGE TWR	Fort Richardson	005000AMSL	SURFACE	USA	1
	R2205	FAA, FAIRBANKS APP	Fort Richardson	020000AMSL	SURFACE	USA	144
	R3602A	FAA, KANSAS CITY ARTCC	Fort Riley	029000AMSL	SURFACE	USA	46
	R3602B	FAA, KANSAS CITY ARTCC	Fort Riley	029000AMSL	SURFACE	USA	55
	A211	USA, CAIRNES APP	Fort Rucker	005000AMSL	SURFACE	USA	4,409
	R2103A	USA, CAIRNS APP	Fort Rucker	009999AMSL	SURFACE	USA	48
	R2103B	FAA, JACKSONVILLE ARTCC	Fort Rucker	015000AMSL	10000AMSL	USA	48
	R5601A	FAA, FORT WORTH ARTCC	Fort Sill	040000AMSL	SURFACE	USA	32
	R5601B	FAA, FORT WORTH ARTCC	Fort Sill	040000AMSL	SURFACE	USA	52
	R5601C	FAA, FORT WORTH ARTCC	Fort Sill	040000AMSL	SURFACE	USA	17
	R5601D	FAA, FORT WORTH ARTCC	Fort Sill	FL400	00500AGL	USA	34
	R5601E	FAA, FORT WORTH ARTCC	Fort Sill	006000AMSL	00500AGL	USA	9
	HOG HIGH NORTH MOA, AR	FAA, MEMPHIS ARTCC	Fort Smith	017999AMSL	06000AMSL	USA	649
	HOG HIGH SOUTH MOA, AR	FAA, MEMPHIS ARTCC	Fort Smith	017999AMSL	06000AMSL	USA	1,226
	HOG JRTC MOA, AR	FAA, MEMPHIS ARTCC	Fort Smith	017999AMSL	00100AGL	USA	23
	HOG LOW NORTH MOA, AR	FAA, MEMPHIS ARTCC	Fort Smith	005999AMSL	00100AGL	USA	649
	HOG LOW SOUTH MOA, AR	FAA, MEMPHIS ARTCC	Fort Smith	005999AMSL	00100AGL	USA	774
	SHIRLEY 1 MOA, AR	FAA, MEMPHIS ARTCC	Fort Smith	017999AMSL	10000AMSL	USA	2,902
	FORT STEWART B1 MOA, GA	FAA, JACKSONVILLE ARTCC	Fort Stewart	004999AMSL	00500AGL	USA	139
	FORT STEWART B2 MOA, GA	FAA, JACKSONVILLE ARTCC	Fort Stewart	010000AMSL	05000AMSL	USA	139
	FORT STEWART C1 MOA, GA	FAA, JACKSONVILLE ARTCC	Fort Stewart	002999AMSL	00500AGL	USA	29
	FORT STEWART C2 MOA, GA	FAA, JACKSONVILLE ARTCC	Fort Stewart	010000AMSL	03000AMSL	USA	67
	R3005A	FAA, JACKSONVILLE ARTCC	Fort Stewart	029000AMSL	SURFACE	USA	68
	R3005B	FAA, JACKSONVILLE ARTCC	Fort Stewart	029000AMSL	SURFACE	USA	44

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Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
	R3005C	FAA, JACKSONVILLE ARTCC	Fort Stewart	FL290	SURFACE	USA	102
	R3005D	FAA, JACKSONVILLE ARTCC	Fort Stewart	029000AMSL	SURFACE	USA	48
	R3005E	FAA, JACKSONVILLE ARTCC	Fort Stewart	029000AMSL	SURFACE	USA	34
	TWELVE MILE EAST MOA, IN	FAA, CHICAGO ARTCC	Fort Wayne	009999AMSL	00500AGL	USA	350
	TWELVE MILE WEST MOA, IN	FAA, CHICAGO ARTCC	Fort Wayne	005999AMSL	00500AGL	USA	195
	DE SOTO 1 MOA, MS	FAA, HOUSTON ARTCC	Gulfport	010000AMSL	00500AGL	USA	282
	DE SOTO 2 MOA, MS	FAA, HOUSTON ARTCC	Gulfport	005000AMSL	00100AGL	USA	445
	R5203	FAA, CLEVELAND ARTCC	Hancock Field	FL500	SURFACE	USA	667
	R4811	FAA, OAKLAND ARTCC	Hawthorne Army Ammunition Plant	015000AMSL	SURFACE	USA	7
	R3401A	FAA, INDIANAPOLIS ARTCC	Indianapolis	040000AMSL	SURFACE	USA	40
	R3401B	FAA, INDIANAPOLIS ARTCC	Indianapolis	014000AMSL	01200AGL	USA	33
	R3403A	FAA, INDIANAPOLIS ARTCC	Indianapolis	043000AMSL	SURFACE	USA	50
	R3403B	FAA, INDIANAPOLIS ARTCC	Indianapolis	FL180	01200AGL	USA	25
	JUNIPER LOW MOA, OR	FAA, SEATTLE ARTCC	Kingley Field	010999AMSL	00300AGL	USA	2,870
	JUNIPER NORTH MOA, OR	FAA, SEATTLE ARTCC	Kingley Field	017999AMSL	11000AMSL	USA	455
	JUNIPER SOUTH MOA, OR	FAA, SEATTLE ARTCC	Kingley Field	017999AMSL	11000AMSL	USA	2,697
	R5801	FAA, WASHINGTON, DC ARTCC	Letterkenny Ordnance Depot	004000AMSL	SURFACE	USA	2
	R5803	FAA, WASHINGTON, DC ARTCC	Letterkenny Ordnance Depot	004000AMSL	SURFACE	USA	2
	R2403A	FAA, MEMPHIS ARTCC	Little Rock	016000AMSL	SURFACE	USA	7
	R2403B	FAA, MEMPHIS ARTCC	Little Rock	016000AMSL	SURFACE	USA	10
	R2302	FAA, ALBUQUERQUE ARTCC	Navajo Ordnance Depot	010000AMSL	SURFACE	USA	4
	R3103	FAA, HONOLULU CERAP	Pohakuloa Training Area	030000AMSL	SURFACE	USA	124
	R2104A	FAA, MEMPHIS ARTCC	Redstone Arsenal	012000AMSL	SURFACE	USA	16
	R2104B	FAA, MEMPHIS ARTCC	Redstone Arsenal	002400AMSL	SURFACE	USA	4

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Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
	R2104C	FAA, MEMPHIS ARTCC	Redstone Arsenal	012000AMSL	SURFACE	USA	4
	R2104D	FAA, MEMPHIS ARTCC	Redstone Arsenal	FL300	12000AMSL	USA	16
	R2104E	FAA, MEMPHIS ARTCC	Redstone Arsenal	FL300	12000AMSL	USA	4
	BISON MOA, KS	FAA, KANSAS CITY ARTCC	Salinas	017999AMSL	01000AGL	USA	1,013
	SMOKY HIGH MOA, KS	FAA, KANSAS CITY ARTCC	Salinas	017999AMSL	05000AMSL	USA	174
	SMOKY MOA, KS	FAA, KANSAS CITY ARTCC	Salinas	004999AMSL	00500AGL	USA	174
	A311	FAA, HONOLULU CERAP	Schofield, Kahuku, Kawailoa	000500AGL	SURFACE	USA	71
	R3109A	FAA, HONOLULU TWR	Schofield-Makua	008999AMSL	SURFACE	USA	9
	R3109B	FAA, HONOLULU TWR	Schofield-Makua	018999AMSL	09000AMSL	USA	15
	R3109C	FAA, HONOLULU TWR	Schofield-Makua	008999AMSL	SURFACE	USA	5
	R3110A	FAA, HONOLULU TWR	Schofield-Makua	008999AMSL	SURFACE	USA	11
	R3110B	FAA, HONOLULU TWR	Schofield-Makua	018999AMSL	09000AMSL	USA	21
	R3110C	FAA, HONOLULU TWR	Schofield-Makua	008999AMSL	SURFACE	USA	10
	R5207	FAA, NEW YORK ARTCC	Seneca Army Depot	002000AMSL	SURFACE	USA	0
	R2530	FAA, OAKLAND ARTCC	Sierra Army Deport	008600AMSL	SURFACE	USA	4
	LAKE ANDES MOA, SD	FAA, MINNEAPOLIS ARTCC	Sioux Falls	017999AMSL	06000AMSL	USA	3,289
	HOWARD EAST MOA, IL	FAA, KANSAS CITY ARTCC	Springfield	017999AMSL	09000AMSL	USA	1,738
	HOWARD WEST MOA, IL	FAA, KANSAS CITY ARTCC	Springfield	017999AMSL	10000AMSL	USA	302
	PRUITT A MOA, IL	FAA, KANSAS CITY ARTCC	Springfield	006000AMSL	00500AGL	USA	922
	PRUITT B MOA, IL	FAA, KANSAS CITY ARTCC	Springfield	003000AMSL	00500AGL	USA	400
	R6403	FAA, SALT LAKE CITY ARTCC	Tooele Army Depot	009000AMSL	SURFACE	USA	2
	R5206	FAA, NEW YORK APP	West Point	005000AMSL	SURFACE	USA	4
	R5107A	FAA, ALBUQUERQUE ARTCC	White Sands Missile Range	UNLTD	SURFACE	USA	267
	R5107B	FAA, ALBUQUERQUE ARTCC	White Sands Missile Range	UNLTD	SURFACE	USA	2,984
	R5107C	FAA, ALBUQUERQUE ARTCC	White Sands Missile Range	UNLTD	09000AMSL	USA	846

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Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
	R5107D	FAA, ALBUQUERQUE ARTCC	White Sands Missile Range	022000AMSL	SURFACE	USA	524
	R5107E	FAA, ALBUQUERQUE ARTCC	White Sands Missile Range	UNLTD	SURFACE	USA	121
	R5107F	FAA, ALBUQUERQUE ARTCC	White Sands Missile Range	FL450	FL240	USA	1,137
	R5107G	FAA, ALBUQUERQUE ARTCC	White Sands Missile Range	FL450	FL240	USA	907
	R5107H	FAA, ALBUQUERQUE ARTCC	White Sands Missile Range	009000AMSL	SURFACE	USA	772
	R5107J	FAA, ALBUQUERQUE ARTCC	White Sands Missile Range	009000AMSL	SURFACE	USA	73
	R5109A	FAA, ALBUQUERQUE ARTCC	White Sands Missile Range	UNLTD	24000AMSL	USA	1,599
	R5109B	FAA, ALBUQUERQUE ARTCC	White Sands Missile Range	UNLTD	24000AMSL	USA	952
	R5111A	FAA, ALBUQUERQUE ARTCC	White Sands Missile Range	UNLTD	13000AMSL	USA	384
	R5111B	FAA, ALBUQUERQUE ARTCC	White Sands Missile Range	013000AMSL	SURFACE	USA	384
	R5111C	FAA, ALBUQUERQUE ARTCC	White Sands Missile Range	UNLTD	13000AMSL	USA	302
	R5111D	FAA, ALBUQUERQUE ARTCC	White Sands Missile Range	012999AMSL	SURFACE	USA	302
	R5117	FAA, ALBUQUERQUE ARTCC	White Sands Missile Range	UNLTD	SURFACE	USA	21
	R5119	FAA, ALBUQUERQUE ARTCC	White Sands Missile Range	UNLTD	FL350	USA	372
	R5121	FAA, ALBUQUERQUE ARTCC	White Sands Missile Range	UNLTD	FL200	USA	36
	R5123	FAA, ALBUQUERQUE ARTCC	White Sands Missile Range	UNLTD	SURFACE	USA	144
	R6714E	FAA, SEATTLE ARTCC	Yakima	054999AMSL	29000AMSL	USA	300
	R2306A	FAA, LOS ANGELES ARTCC	Yuma Proving Ground	080000AMSL	SURFACE	USA	198
	R2306B	FAA, LOS ANGELES ARTCC	Yuma Proving Ground	080000AMSL	SURFACE	USA	157
	R2306D	FAA, LOS ANGELES ARTCC	Yuma Proving Ground	FL230	SURFACE	USA	15
	R2306E	FAA, LOS ANGELES ARTCC	Yuma Proving Ground	080000AMSL	SURFACE	USA	62
	R2307	FAA, LOS ANGELES ARTCC	Yuma Proving Ground	UNLTD	SURFACE	USA	277
	R2308A	FAA, LOS ANGELES ARTCC	Yuma Proving Ground	080000AMSL	01500AGL	USA	524
	R2308B	FAA, LOS ANGELES ARTCC	Yuma Proving Ground	080000AMSL	SURFACE	USA	73
	R2308C	FAA, LOS ANGELES ARTCC	Yuma Proving Ground	FL230	01500AGL	USA	28

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Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
	R2311	YUMA APP, YUMA MCAS	Yuma Proving Ground	003500AMSL	SURFACE	USA	59
	RIVERS MOA, OK	FAA, FORT WORTH ARTCC	125 FS, OK ANG	017999AMSL	08000AMSL	USA(ARNG)	1,831
	R3601A	FAA, KANSAS CITY ARTCC	ARNG Topeka, KS	FL180	SURFACE	USA(ARNG)	51
	R3601B	FAA, KANSAS CITY ARTCC	ARNG Topeka, KS	006500AMSL	SURFACE	USA(ARNG)	15
	R6501A	FAA, BURLINGTON APP	ARNG, Colchester, VT	004000AMSL	SURFACE	USA(ARNG)	8
	R6501B	FAA, BURLINGTON APP	ARNG, Colchester, VT	013600AMSL	04000AMSL	USA(ARNG)	8
	R5401	FAA, MINNEAPOLIS ARTCC	Camp Grafton	005000AMSL	SURFACE	USA(ARNG)	3
	R4401A	FAA, HOUSTON ARTCC	Camp Shelby	004000AMSL	SURFACE	USA(ARNG)	83
	R4401B	FAA, HOUSTON ARTCC	Camp Shelby	018000AMSL	04000AMSL	USA(ARNG)	83
	R4401C	FAA, HOUSTON ARTCC	Camp Shelby	029000AMSL	18001AMSL	USA(ARNG)	83
	R4403	FAA, HOUSTON ARTCC	Camp Shelby	005000AMSL	SURFACE	USA(ARNG)	4
	R6412A	FAA, SALT LAKE CITY TRACON	Camp Williams	009000AMSL	SURFACE	USA(ARNG)	17
	R6412B	FAA, SALT LAKE CITY TRACON	Camp Williams	010000AMSL	09000AMSL	USA(ARNG)	17
	R6412C	FAA, SALT LAKE CITY TRACON	Camp Williams	009000AMSL	SURFACE	USA(ARNG)	12
	R6412D	FAA, SALT LAKE CITY TRACON	Camp Williams	010000AMSL	09000AMSL	USA(ARNG)	12
	R2903A	FAA, JACKSONVILLE ARTCC	State Arsenal, St. Augustine	022999AMSL	SURFACE	USA(ARNG)	63
	R2903B	FAA, JACKSONVILLE ARTCC	State Arsenal, St. Augustine	032000AMSL	23000AMSL	USA(ARNG)	63
	R2903C	FAA, JACKSONVILLE TRACON	State Arsenal, St. Augustine	007000AMSL	SURFACE	USA(ARNG)	11
	R2903D	FAA, JACKSONVILLE TRACON	State Arsenal, St. Augustine	005000AMSL	SURFACE	USA(ARNG)	22
	R2904A	FAA, JACKSONVILLE TRACON	State Arsenal, St. Augustine	001799AMSL	SURFACE	USA(ARNG)	27
NAVY							
	W107A	FAA, WASHINGTON, DC ARTCC	Atlantic City Range Complex	UNLTD	SURFACE	USN	4,525
	W107B	FAA, WASHINGTON, DC ARTCC	Atlantic City Range Complex	001999AMSL	SURFACE	USN	212
	W107C	FAA, WASHINGTON, DC ARTCC	Atlantic City Range Complex	017999AMSL	SURFACE	USN	517
	W102H	FAA, BOSTON ARTCC	Boston Range Complex	FL600	17001AMSL	USN	3,237

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Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
	W102L	FAA, BOSTON ARTCC	Boston Range Complex	017000AMSL	SURFACE	USN	3,237
	W103	FAA, BOSTON ARTCC	Boston Range Complex	002000AMSL	SURFACE	USN	1,391
	W104A	FAA, BOSTON ARTCC	Boston Range Complex	010000AMSL	SURFACE	USN	296
	W104B	FAA, BOSTON ARTCC	Boston Range Complex	017999AMSL	SURFACE	USN	1,418
	W104C	FAA, BOSTON ARTCC	Boston Range Complex	UNLTD	FL180	USN	1,418
	W122(1)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	833
	W122(10)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	623
	W122(11)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	795
	W122(12)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	736
	W122(13)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	1,036
	W122(14)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	1,033
	W122(15A)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	901
	W122(15B)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	39
	W122(16)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	929
	W122(17)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	703
	W122(18)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	779
	W122(19)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	845
	W122(2)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	1,007
	W122(20)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	749
	W122(21)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	978
	W122(22)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range	UNLTD	SURFACE	USN	584

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Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
			Complex				
	W122(23)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	422
	W122(3)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	881
	W122(4)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	649
	W122(5)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	610
	W122(6)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	756
	W122(7)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	757
	W122(8)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	478
	W122(9)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	630
	W72(13)A	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	001999AMSL	SURFACE	USN	405
	W72(13)B	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	FL600	USN	405
	W72(1A)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	455
	W72(1B)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	611
	W72(1C)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	692
	W72(1D)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	751
	W72(1E)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	756
	W72(1F)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	839
	W72(20)A	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	001999AMSL	SURFACE	USN	295
	W72(20)B	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	FL600	USN	295
	W72(2A)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	485

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Special Use Airspace Inventory							
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	W72(2B)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	656
	W72(2C)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	747
	W72(2D)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	814
	W72(2E)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	823
	W72(2F)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	919
	W72(3A)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	538
	W72(3B)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	847
	W72(3C)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	1,057
	W72(3D)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	1,206
	W72(3E)	FAA, WASHINGTON, DC ARTCC	Cherry Point Range Complex	UNLTD	SURFACE	USN	1,047
	R2505	FAA, HI-DESERT TRACON, EDWARDS AFB	China Lake Range Complex	UNLTD	SURFACE	USN	736
	R2506	FAA, HI-DESERT TRACON, EDWARDS AFB	China Lake Range Complex	006000AMSL	SURFACE	USN	45
	R2524	FAA, HI-DESERT TRACON, EDWARDS AFB	China Lake Range Complex	UNLTD	SURFACE	USN	669
	R2510A	FAA, LOS ANGELES ARTCC	El Centro Range Complex	015000AMSL	SURFACE	USN	172
	R2510B	FAA, LOS ANGELES ARTCC	El Centro Range Complex	FL400	15000AMSL	USN	118
	R2512	FAA, LOS ANGELES ARTCC	El Centro Range Complex	023000AMSL	SURFACE	USN	71
	AUSTIN 1 MOA, NV	FAA, SALT LAKE CITY ARTCC	Fallon Range Complex	017999AMSL	00200AGL	USN	2,264
	AUSTIN 2 MOA, NV	FAA, SALT LAKE CITY ARTCC	Fallon Range Complex	017999AMSL	00200AGL	USN	793
	CARSON MOA, NV	FAA, OAKLAND ARTCC	Fallon Range Complex	017999AMSL	00500AGL	USN	123
	CHURCHILL HIGH MOA, NV	FAA, OAKLAND ARTCC	Fallon Range Complex	017999AMSL	09000AMSL	USN	59
	CHURCHILL LOW MOA, NV	FAA, OAKLAND ARTCC	Fallon Range Complex	009000AMSL	00500AGL	USN	66

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Special Use Airspace Inventory							
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	GABBS CENTRAL MOA, NV	FAA, OAKLAND ARTCC	Fallon Range Complex	017999AMSL	00100AGL	USN	868
	GABBS NORTH MOA, NV	FAA, OAKLAND ARTCC	Fallon Range Complex	017999AMSL	00100AGL	USN	2,535
	GABBS SOUTH MOA, NV	FAA, OAKLAND ARTCC	Fallon Range Complex	017999AMSL	00100AGL	USN	270
	R4803	FAA, OAKLAND ARTCC	Fallon Range Complex	017999AMSL	SURFACE	USN	27
	R4804A	FAA, OAKLAND ARTCC	Fallon Range Complex	017999AMSL	SURFACE	USN	82
	R4804B	FAA, OAKLAND ARTCC	Fallon Range Complex	FL350	FL180	USN	82
	R4810	FAA, OAKLAND ARTCC	Fallon Range Complex	017000AMSL	SURFACE	USN	82
	R4812	FAA, OAKLAND ARTCC	Fallon Range Complex	017999AMSL	SURFACE	USN	95
	R4813A	FAA, OAKLAND ARTCC	Fallon Range Complex	017999AMSL	SURFACE	USN	392
	R4813B	FAA, OAKLAND ARTCC	Fallon Range Complex	FL350	FL180	USN	392
	R4816N	FAA, OAKLAND ARTCC	Fallon Range Complex	017999AMSL	01500AGL	USN	382
	R4816S	FAA, OAKLAND ARTCC	Fallon Range Complex	017999AMSL	00500AGL	USN	312
	RANCH HIGH MOA, NV	FAA, OAKLAND ARTCC	Fallon Range Complex	013000AMSL	09000AMSL	USN	92
	RANCH MOA, NV	FAA, OAKLAND ARTCC	Fallon Range Complex	009000AMSL	00500AMSL	USN	296
	RENO MOA, NV	FAA, OAKLAND ARTCC	Fallon Range Complex	017999AMSL	13000AMSL	USN	954
	BRADY HIGH MOA, TX	FAA, HOUSTON ARTCC	Fort Worth NAS JRB	017999AMSL	06000AMSL	USN	923
	BRADY LOW MOA, TX	FAA, HOUSTON ARTCC	Fort Worth NAS JRB	005999AMSL	00500AGL	USN	923
	BRADY NORTH MOA, TX	FAA, FORT WORTH ARTCC	Fort Worth NAS JRB	017999AMSL	03600AMSL	USN	149
	BROWNWOOD 1 EAST MOA, TX	FAA, FORT WORTH ARTCC	Fort Worth NAS JRB	017999AMSL	07000AMSL	USN	544
	BROWNWOOD 1 WEST MOA, TX	FAA, FORT WORTH ARTCC	Fort Worth NAS JRB	017999AMSL	07000AMSL	USN	529
	BROWNWOOD 2 EAST MOA, TX	FAA, FORT WORTH ARTCC	Fort Worth NAS JRB	017999AMSL	07000AMSL	USN	436
	BROWNWOOD 2 WEST MOA, TX	FAA, FORT WORTH ARTCC	Fort Worth NAS JRB	017999AMSL	07000AMSL	USN	565
	BROWNWOOD 3 MOA, TX	FAA, FORT WORTH ARTCC	Fort Worth NAS JRB	017999AMSL	13000AMSL	USN	665
	BROWNWOOD 4 MOA, TX	FAA, FORT WORTH ARTCC	Fort Worth NAS JRB	017999AMSL	13000AMSL	USN	306

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Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005)). Please refer to DoD Flight Information Publications for more information.

Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
	KINGSVILLE 1 MOA, TX	FAA, HOUSTON ARTCC	GOMEX Range Complex	017999AMSL	08000AMSL	USN	3,220
	KINGSVILLE 2 MOA, TX	FAA, HOUSTON ARTCC	GOMEX Range Complex	017999AMSL	13000AMSL	USN	371
	KINGSVILLE 3 MOA, TX	FAA, HOUSTON ARTCC	GOMEX Range Complex	017999AMSL	08000AMSL	USN	1,775
	KINGSVILLE 4 MOA, TX	FAA, HOUSTON ARTCC	GOMEX Range Complex	017999AMSL	09000AMSL	USN	1,991
	KINGSVILLE 5 MOA, TX	FAA, HOUSTON ARTCC	GOMEX Range Complex	017999AMSL	09000AMSL	USN	454
	PENSACOLA NORTH MOA, FL	FAA, JACKSONVILLE ARTCC	GOMEX Range Complex	017999AMSL	10000AMSL	USN	1,160
	PENSACOLA SOUTH MOA, FL	FAA, PENSACOLA TOWER	GOMEX Range Complex	017999AMSL	10000AMSL	USN	1,348
	R6312	FAA, HOUSTON ARTCC	GOMEX Range Complex	012000AMSL	SURFACE	USN	147
	W155A	FAA, JACKSONVILLE ARTCC	GOMEX Range Complex	FL600	SURFACE	USN	2,150
	W155B	FAA, JACKSONVILLE ARTCC	GOMEX Range Complex	FL600	SURFACE	USN	2,572
	W155C	FAA, JACKSONVILLE ARTCC	GOMEX Range Complex	FL600	SURFACE	USN	505
	W228A	FAA, HOUSTON ARTCC	GOMEX Range Complex	FL450	SURFACE	USN	867
	W228B	FAA, HOUSTON ARTCC	GOMEX Range Complex	FL450	SURFACE	USN	1,226
	W228C	FAA, HOUSTON ARTCC	GOMEX Range Complex	FL450	SURFACE	USN	3,524
	W228D	FAA, HOUSTON ARTCC	GOMEX Range Complex	FL450	SURFACE	USN	2,101
	W92	FAA, HOUSTON ARTCC	GOMEX Range Complex	FL400	SURFACE	USN	2,519
	R3101	FAA, HONOLULU CERAP	Hawaiian Islands Range Complex	UNLTD	SURFACE	USN	51
	R3107	FAA, HONOLULU CERAP	Hawaiian Islands Range Complex	FL180	SURFACE	USN	28
	W186	FAA, HONOLULU CERAP	Hawaiian Islands Range Complex	009000AMSL	SURFACE	USN	749
	W187	FAA, HONOLULU CERAP	Hawaiian Islands Range Complex	FL180	SURFACE	USN	78
	W188	FAA, HONOLULU CERAP	Hawaiian Islands Range Complex	UNLTD	SURFACE	USN	34,829
	W189	FAA, HONOLULU CERAP	Hawaiian Islands Range Complex	UNLTD	SURFACE	USN	7,914
	W190	FAA, HONOLULU CERAP	Hawaiian Islands Range Complex	UNLTD	SURFACE	USN	1,593

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Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
	W191	FAA, HONOLULU CERAP	Hawaiian Islands Range Complex	003000AMSL	SURFACE	USN	291
	W192	FAA, HONOLULU CERAP	Hawaiian Islands Range Complex	UNLTD	SURFACE	USN	3,483
	W193	FAA, HONOLULU CERAP	Hawaiian Islands Range Complex	UNLTD	SURFACE	USN	4,579
	W194	FAA, HONOLULU CERAP	Hawaiian Islands Range Complex	UNLTD	SURFACE	USN	4,071
	W196	FAA, HONOLULU TWR	Hawaiian Islands Range Complex	002000AMSL	SURFACE	USN	90
	GATOR 1 MOA, GA	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	017999AMSL	14000AMSL	USN	1,305
	GATOR 2 MOA, GA	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	014000AMSL	13000AMSL	USN	120
	MAYPORT HIGH MOA, FL	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	017999AMSL	03000AMSL	USN	65
	MAYPORT LOW MOA, FL	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	002999AMSL	00500AMSL	USN	65
	PALATKA 1 MOA, FL	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	017999AMSL	03000AGL	USN	440
	PALATKA 2 MOA, FL	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	017999AMSL	03000AGL	USN	269
	QUICK THRUST E MOA, GA	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	000499AGL	00100AGL	USN	137
	QUICK THRUST F MOA, GA	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	002999AMSL	00100AGL	USN	65
	QUICK THRUST G MOA, GA	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	014000AMSL	10000AMSL	USN	137
	QUICK THRUST H MOA, GA	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	014000AMSL	10000AMSL	USN	65
	QUICK THRUST I MOA, GA	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	014000AMSL	00100AGL	USN	1,200
	QUICK THRUST J MOA, GA	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	014000AMSL	08000AMSL	USN	311
	QUICK THRUST L MOA, GA	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	014000AMSL	12000AMSL	USN	393
	QUICK THRUST M M0A, GA	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	012000AMSL	11000AMSL	USN	541
	QUICK THRUST N MOA, GA	FAA, JACKSONVILLE ARTCC	Jacksonville Range	003000AMSL	00500AGL	USN	541

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Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
			Complex				
	R2906	FAA, JACKSONVILLE TRACON	Jacksonville Range Complex	014000AMSL	SURFACE	USN	72
	R2907A	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	FL230	SURFACE	USN	85
	R2907B	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	009000AMSL	SURFACE	USN	50
	R2908	FAA, PENSACOLA TRACON	Jacksonville Range Complex	012000AMSL	SURFACE	USN	50
	R2910	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	FL230	SURFACE	USN	75
	R2910(A)	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	009000AMSL	SURFACE	USN	13
	R2910(B)	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	009000AMSL	SURFACE	USN	25
	R2910(C)	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	006000AMSL	SURFACE	USN	55
	SNOWBIRD MOA, TN	FAA, ATLANTA ARTCC	Jacksonville Range Complex	017999AMSL	11000AMSL	USN	1,367
	W132A	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	UNLTD	SURFACE	USN	958
	W132B	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	FL240	SURFACE	USN	347
	W133	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	004500AMSL	SURFACE	USN	1,661
	W134	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	UNLTD	04500AMSL	USN	1,661
	W157A	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	FL430	SURFACE	USN	7,746
	W157B	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	FL240	SURFACE	USN	2,206
	W157C	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	005000AMSL	SURFACE	USN	9,949
	W158A	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	FL430	SURFACE	USN	5,565
	W158B	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	FL240	SURFACE	USN	2,687
	W158C	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	UNLTD	FL430	USN	21,084

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Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
	W158E	FAA, JACKSONVILLE NAS TRACON	Jacksonville Range Complex	001200AMSL	SURFACE	USN	523
	W158F	FAA, JACKSONVILLE NAS TRACON	Jacksonville Range Complex	001700AMSL	01200AMSL	USN	165
	W159A	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	FL430	SURFACE	USN	1,880
	W159B	FAA, JACKSONVILLE ARTCC	Jacksonville Range Complex	FL240	SURFACE	USN	994
	TORTUGAS MOA, FL	FAA, MIAMI ARTCC	Key West Range Complex	017999AMSL	05000AMSL	USN	1,091
	W174A	FAA, MIAMI ARTCC	Key West Range Complex	FL700	SURFACE	USN	3,238
	W174B(A)	FAA, MIAMI ARTCC	Key West Range Complex	FL700	SURFACE	USN	10,006
	W174B(B)	FAA, MIAMI ARTCC	Key West Range Complex	005500AMSL	SURFACE	USN	207
	W174C(A)	FAA, MIAMI ARTCC	Key West Range Complex	FL700	SURFACE	USN	978
	W174C(B)	FAA, MIAMI ARTCC	Key West Range Complex	005500AMSL	SURFACE	USN	388
	W174D	FAA, MIAMI ARTCC	Key West Range Complex	FL700	SURFACE	USN	2,760
	W174D(A)	FAA, MIAMI ARTCC	Key West Range Complex	FL700	05500AMSL	USN	423
	W174E	FAA, MIAMI ARTCC	Key West Range Complex	010000AMSL	SURFACE	USN	275
	W174F	FAA, MIAMI ARTCC	Key West Range Complex	FL700	SURFACE	USN	786
	W174G	FAA, MIAMI ARTCC	Key West Range Complex	FL700	SURFACE	USN	445
	W465A	FAA, MIAMI ARTCC	Key West Range Complex	FL700	SURFACE	USN	1,445
	W465B	FAA, MIAMI ARTCC	Key West Range Complex	FL700	SURFACE	USN	1,422
	W465C	FAA, MIAMI ARTCC	Key West Range Complex	FL700	FL210	USN	829
	R7201	FAA, GUAM CERAP	Marianas Range Complex	FL600	SURFACE	USN	29
	W517	FAA, GUAM CERAP	Marianas Range Complex	UNLTD	SURFACE	USN	9,142
	MERIDIAN 1 EAST MOA, MS	FAA, MEMPHIS ARTCC	Meridian Complex	017999AMSL	08000AMSL	USN	674
	MERIDIAN 1 WEST MOA, MS	FAA, MEMPHIS ARTCC	Meridian Complex	017999AMSL	08000AMSL	USN	3,740
	PINE HILL EAST MOA, MS	FAA, ATLANTA ARTCC	Meridian Complex	017999AMSL	10000AMSL	USN	1,202
	PINE HILL WEST MOA, MS	FAA, ATLANTA ARTCC	Meridian Complex	017999AMSL	10000AMSL	USN	1,012

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Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
	R4404A	FAA, MEMPHIS ARTCC	Meridian Complex	011500AMSL	SURFACE	USN	3
	R4404B	FAA, MEMPHIS ARTCC	Meridian Complex	011500AMSL	01200AGL	USN	74
	R4404C	FAA, MEMPHIS ARTCC	Meridian Complex	014500AMSL	11500AMSL	USN	74
	W105A	FAA, BOSTON ARTCC	Narragansett Range Complex	FL500	SURFACE	USN	9,689
	W105B	FAA, BOSTON ARTCC	Narragansett Range Complex	FL180	SURFACE	USN	1,239
	W106A	FAA, BOSTON ARTCC	Narragansett Range Complex	003000AMSL	SURFACE	USN	337
	W106B	FAA, BOSTON ARTCC	Narragansett Range Complex	008000AMSL	SURFACE	USN	475
	W106C	FAA, BOSTON ARTCC	Narragansett Range Complex	010000AMSL	SURFACE	USN	213
	W106D	FACSFAC, VACAPES, OCEANA NAS	Narragansett Range Complex	005999AMSL	SURFACE	USN	254
	A632A	USN, CORPUS CHRISTI NAS	NAS Corpus Christi	017999AMSL	06000AMSL	USN	2,006
	A632B	USN, CORPUS CHRISTI NAS	NAS Corpus Christi	017999AMSL	SURFACE	USN	1,283
	A632C	USN, CORPUS CHRISTI NAS	NAS Corpus Christi	017999AMSL	SURFACE	USN	495
	A632D	USN, CORPUS CHRISTI NAS	NAS Corpus Christi	010999AMSL	06000AMSL	USN	1,787
	A632E	USN, CORPUS CHRISTI NAS	NAS Corpus Christi	008999AMSL	06000AMSL	USN	867
	A632F	USN, CORPUS CHRISTI NAS	NAS Corpus Christi	017999AMSL	03000AGL	USN	397
	FOOTHILL 1 MOA, CA	FAA, OAKLAND ARTCC	NAS Lemoore	017999AMSL	02000AGL	USN	779
	FOOTHILL 2 MOA, CA	FAA, OAKLAND ARTCC	NAS Lemoore	017999AMSL	02000AGL	USN	820
	HUNTER HIGH MOA, CA	FAA, OAKLAND ARTCC	NAS Lemoore	017999AMSL	11000AMSL	USN	942
	HUNTER LOW A MOA, CA	FAA, OAKLAND ARTCC	NAS Lemoore	010999AMSL	00200AGL	USN	465
	HUNTER LOW B MOA, CA	FAA, OAKLAND ARTCC	NAS Lemoore	010999AMSL	02000AGL	USN	139
	HUNTER LOW C MOA, CA	FAA, OAKLAND ARTCC	NAS Lemoore	010999AMSL	03000AGL	USN	77
	HUNTER LOW D MOA, CA	FAA, OAKLAND ARTCC	NAS Lemoore	006000AMSL	01500AGL	USN	196
	HUNTER LOW E MOA, CA	FAA, OAKLAND ARTCC	NAS Lemoore	003000AMSL	01500AGL	USN	66

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Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
	A292	USN, COMTRAWING SIX	NAS Pensacola	003000AMSL	SURFACE	USN	3,291
	R3404	FAA, HULMAN TWR, TERRE HAUTE	Naval Ammunitions Depot, Crane	002500AMSL	SURFACE	USN	3
	R6611A	FAA, WASHINGTON, DC ARTCC	NAVSEA Dahlgren	040000AMSL	SURFACE	USN	20
	R6612	FAA, WASHINGTON, DC ARTCC	NAVSEA Dahlgren	007000AMSL	SURFACE	USN	5
	R6613A	FAA, WASHINGTON, DC ARTCC	NAVSEA Dahlgren	040000AMSL	SURFACE	USN	17
	W59A	FAA, HOUSTON ARTCC	New Orleans NAS JRB	FL500	05000AMSL	USN	2,435
	W59B	FAA, HOUSTON ARTCC	New Orleans NAS JRB	027999AMSL	05000AMSL	USN	3,270
	W59C	FAA, HOUSTON ARTCC	New Orleans NAS JRB	FL500	FL280	USN	3,270
	R6611B	FAA, WASHINGTON, DC ARTCC	NSWC Dahlgren	060000AMSL	40000AMSL	USN	20
	R6613B	FAA, WASHINGTON, DC ARTCC	NSWC Dahlgren	060000AMSL	40000AMSL	USN	17
	R5113	FAA, ALBUQUERQUE ARTCC	Office of Naval Research, Atmospheric Sciences	045000AMSL	SURFACE	USN	18
	R4002	FAA, WASHINGTON, DC ARTCC	Patuxent River Complex	020000AMSL	SURFACE	USN	37
	R4005	FAA, WASHINGTON, DC ARTCC	Patuxent River Complex	024999AMSL	SURFACE	USN	298
	R4006	FAA, WASHINGTON, DC ARTCC	Patuxent River Complex	024999AMSL	03500AMSL	USN	1,374
	R4007	FAA, WASHINGTON, DC ARTCC	Patuxent River Complex	004999AMSL	SURFACE	USN	153
	R4008	FAA, WASHINGTON, DC ARTCC	Patuxent River Complex	FL850	FL250	USN	1,224
	R4009	FAA, WASHINGTON, DC ARTCC	Patuxent River Complex	012500AMSL	05000AMSL	USN	26
	R6609	FAA, WASHINGTON, DC ARTCC	Patuxent River Complex	FL200	SURFACE	USN	118
	R2519	FAA, LOS ANGELES ARTCC	Pt. Mugu Range Complex	UNLTD	SURFACE	USN	20
	R2535A	FAA, LOS ANGELES ARTCC	Pt. Mugu Range Complex	100000AMSL	SURFACE	USN	60
	R2535B	FAA, LOS ANGELES ARTCC	Pt. Mugu Range Complex	100000AMSL	SURFACE	USN	35
	W289	FAA, LOS ANGELES ARTCC	Pt. Mugu Range Complex	UNLTD	SURFACE	USN	11,162
	W289N	FAA, LOS ANGELES ARTCC	Pt. Mugu Range Complex	FL240	SURFACE	USN	102
	W290	FAA, LOS ANGELES ARTCC	Pt. Mugu Range Complex	FL800	SURFACE	USN	450
	W412	FAA, LOS AGELES ARTCC	Pt. Mugu Range Complex	003000AMSL	SURFACE	USN	356

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Special Use Airspace Inventory							
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	W532	FAA, LOS ANGELES ARTCC	Pt. Mugu Range Complex	UNLTD	SURFACE	USN	9,000
	W537	FAA, LOS ANGELES ARTCC	Pt. Mugu Range Complex	UNLTD	SURFACE	USN	2,925
	W60	FAA, LOS ANGELES ARTCC	Pt. Mugu Range Complex	UNLTD	SURFACE	USN	749
	W602	FAA, HOUSTON ARTCC	Pt. Mugu Range Complex	FL250	SURFACE	USN	10,148
	W61	FAA, LOS ANGELES ARTCC	Pt. Mugu Range Complex	UNLTD	SURFACE	USN	1,398
	W260	FAA, OAKLAND ARTCC	San Francisco Range Complex	FL600	SURFACE	USN	5,348
	W283	FAA, OAKLAND ARTCC	San Francisco Range Complex	FL600	SURFACE	USN	5,590
	W285A	FAA, OAKLAND ARTCC	San Francisco Range Complex	FL450	SURFACE	USN	2,578
	W285B	FAA, OAKLAND ARTCC	San Francisco Range Complex	FL450	08000AMSL	USN	843
	W513	FAA, OAKLAND ARTCC	San Francisco Range Complex	FL600	SURFACE	USN	541
	W291	FAA, LOS ANGELES ARTCC	SOCAL Range Complex	FL800	SURFACE	USN	107,551
	PAMLICO A MOA, NC	FAA, WASHINGTON, DC ARTCC	VACAPES Range Complex	017999AMSL	08000AMSL	USN	214
	PAMLICO B MOA, NC	FAA, WASHINGTON, DC ARTCC	VACAPES Range Complex	017999AMSL	08000AMSL	USN	808
	R5301	FAA, WASHINGTON ARTCC	VACAPES Range Complex	014000AMSL	SURFACE	USN	6
	R5302A	FAA, WASHINGTON, DC ARTCC	VACAPES Range Complex	014000AMSL	SURFACE	USN	10
	R5302B	FAA, WASHINGTON, DC ARTCC	VACAPES Range Complex	014000AMSL	00100AGL	USN	64
	R5302C	FAA, WASHINGTON, DC ARTCC	VACAPES Range Complex	003000AMSL	00100AGL	USN	11
	R5313A	FAA, WASHINGTON, DC ARTCC	VACAPES Range Complex	018000AMSL	SURFACE	USN	20
	R5313B	FAA, WASHINGTON, DC ARTCC	VACAPES Range Complex	013000AMSL	00100AGL	USN	74
	R5313C	FAA, WASHINGTON, DC ARTCC	VACAPES Range Complex	013000AMSL	00100AGL	USN	21
	R5313D	FAA, WASHINGTON, DC ARTCC	VACAPES Range Complex	013000AMSL	00500AGL	USN	57
	R5314A	FAA, WASHINGTON, DC ARTCC	VACAPES Range Complex	FL205	SURFACE	USN	43
	R5314B	FAA, WASHINGTON, DC ARTCC	VACAPES Range Complex	FL205	00500AGL	USN	55
	R5314C	FAA, WASHINGTON, DC ARTCC	VACAPES Range Complex	FL205	00500AGL	USN	50

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Special Use Airspace Inventory							
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	R5314D	FAA, WASHINGTON, DC ARTCC	VACAPES Range Complex	FL205	SURFACE	USN	3
	R5314E	FAA, WASHINGTON, DC ARTCC	VACAPES Range Complex	FL205	SURFACE	USN	5
	R5314F	FAA, WASHINGTON, DC ARTCC	VACAPES Range Complex	FL205	00500AGL	USN	20
	R5314G	FAA, WASHINGTON, DC ARTCC	VACAPES Range Complex	015000AMSL	00200AGL	USN	41
	R5314H	FAA, WASHINGTON, DC ARTCC	VACAPES Range Complex	010000AMSL	00500AGL	USN	73
	R5314J	FAA, WASHINGTON, DC ARTCC	VACAPES Range Complex	006000AMSL	01000AGL	USN	200
	R6606	FAA, WASHINGTON, DC ARTCC	VACAPES Range Complex	051000AMSL	SURFACE	USN	31
	STUMPY POINT MOA, NC	FAA, WASHINGTON, DC ARTCC	VACAPES Range Complex	007999AMSL	SURFACE	USN	117
	W110	USN, FACSFAC, VACAPES	VACAPES Range Complex	FL230	SURFACE	USN	1,750
	W386	FAA, WASHINGTON, DC ARTCC	VACAPES Range Complex	UNLTD	SURFACE	USN	9,034
	W386(A)	FAA, WASHINGTON, DC ARTCC	VACAPES Range Complex	FL230	SURFACE	USN	142
	W387A	USN, FACSFAC VACAPES	VACAPES Range Complex	023999AMSL	SURFACE	USN	2,152
	W387B	USN, FACSFAC VACAPES	VACAPES Range Complex	UNLTD	FL240	USN	2,152
	W50A	FAA, WASHINGTON, DC ARTCC	VACAPES Range Complex	FL750	SURFACE	USN	25
	W50B	FAA, WASHINGTON, DC ARTCC	VACAPES Range Complex	FL750	SURFACE	USN	60
	W50C	FAA, WASHINGTON, DC ARTCC	VACAPES Range Complex	FL750	SURFACE	USN	31
	A680	USN, WHIDBEY NAS APP	Whidbey Island Range Complex	003000AMSL	SURFACE	USN	27
	BOARDMAN MOA, OR	FAA, SEATTLE ARTCC	Whidbey Island Range Complex	017999AMSL	04000AMSL	USN	337
	CHINOOK A MOA, WA	USN, WHIDBEY IS NAS APP	Whidbey Island Range Complex	005000AMSL	00300AMSL	USN	21
	CHINOOK B MOA, WA	USN, WHIDBEY IS NAS APP	Whidbey Island Range Complex	005000AMSL	00300AMSL	USN	31
	DOLPHIN NORTH MOA, OR	FAA, SEATTLE ARTCC	Whidbey Island Range Complex	017999AMSL	11000AMSL	USN	5,376
	DOLPHIN SOUTH MOA, OR	FAA, SEATTLE ARTCC	Whidbey Island Range Complex	017999AMSL	11000AMSL	USN	1,660
	OKANOGAN A MOA, WA	FAA, SEATTLE ARTCC	Whidbey Island Range Complex	017999AMSL	09000AMSL	USN	2,461

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Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005)). Please refer to DoD Flight Information Publications for more information.

Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
	OKANOGAN B MOA, WA	FAA, SEATTLE ARTCC	Whidbey Island Range Complex	008999AMSL	00300AGL	USN	907
	OKANOGAN C MOA, WA	FAA, SEATTLE ARTCC	Whidbey Island Range Complex	008999AMSL	00300AGL	USN	701
	OLYMPIC A MOA, WA	FAA, SEATTLE ARTCC	Whidbey Island Range Complex	017999AMSL	06000AMSL	USN	869
	OLYMPIC B MOA, WA	FAA, SEATTLE ARTCC	Whidbey Island Range Complex	017999AMSL	06000AMSL	USN	660
	R5701(A)	FAA, SEATTLE ARTCC	Whidbey Island Range Complex	FL200	SURFACE	USN	74
	R5701(B)	FAA, SEATTLE ARTCC	Whidbey Island Range Complex	010000AMSL	SURFACE	USN	11
	R5701(C)	FAA, SEATTLE ARTCC	Whidbey Island Range Complex	006000AMSL	SURFACE	USN	30
	R5701(D)	FAA, SEATTLE ARTCC	Whidbey Island Range Complex	010000AMSL	SURFACE	USN	20
	R5701(E)	FAA, SEATTLE ARTCC	Whidbey Island Range Complex	006000AMSL	SURFACE	USN	60
	R5706	FAA, SEATTLE ARTCC	Whidbey Island Range Complex	010000AMSL	03500AMSL	USN	100
	R6701	USN, WHIDBEY ISLAND NAS APP	Whidbey Island Range Complex	005000AMSL	SURFACE	USN	20
	R6703A	FAA, SEATTLE-TACOMA APP	Whidbey Island Range Complex	014000AMSL	SURFACE	USN	13
	R6703B	FAA, SEATTLE-TACOMA APP	Whidbey Island Range Complex	005000AMSL	SURFACE	USN	4
	R6703C	FAA, SEATTLE-TACOMA APP	Whidbey Island Range Complex	014000AMSL	SURFACE	USN	19
	R6703D	FAA, SEATTLE-TACOMA APP	Whidbey Island Range Complex	005000AMSL	SURFACE	USN	4
	ROBERTS MOA, CA	FAA, OAKLAND ARTCC	Whidbey Island Range Complex	014999AMSL	00500AGL	USN	82
	ROOSEVELT A MOA, WA	FAA, SEATTLE ARTCC	Whidbey Island Range Complex	017999AMSL	09000AMSL	USN	2,980
	ROOSEVELT B MOA, WA	FAA, SEATTLE ARTCC	Whidbey Island Range Complex	008999AMSL	00300AGL	USN	2,072
	W237A(HI)	FAA, SEATTLE ARTCC	Whidbey Island Range Complex	FL500	FL230	USN	1,922
	W237A(LO)	FAA, SEATTLE ARTCC	Whidbey Island Range	FL230	SURFACE	USN	1,922

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Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
			Complex				
	W237B(HI)	FAA, SEATTLE ARTCC	Whidbey Island Range Complex	FL500	FL230	USN	1,436
	W237B(LO)	FAA, SEATTLE ARTCC	Whidbey Island Range Complex	FL230	SURFACE	USN	1,436
	W237C	FAA, SEATTLE ARTCC	Whidbey Island Range Complex	UNLTD	SURFACE	USN	1,458
	W237D	FAA, SEATTLE ARTCC	Whidbey Island Range Complex	UNLTD	SURFACE	USN	1,536
	W237E	FAA, SEATTLE ARTCC	Whidbey Island Range Complex	FL270	SURFACE	USN	1,718
	W237F	FAA, SEATTLE ARTCC	Whidbey Island Range Complex	UNLTD	SURFACE	USN	3,683
	W237G	FAA, SEATTLE ARTCC	Whidbey Island Range Complex	UNLTD	SURFACE	USN	2,193
	W237H	FAA, OAKLAND ARTCC	Whidbey Island Range Complex	FL270	SURFACE	USN	5,572
	W237J	FAA, OAKLAND ARTCC	Whidbey Island Range Complex	FL270	SURFACE	USN	4,054
	W570	FAA, SEATTLE ARTCC	Whidbey Island Range Complex	FL500	SURFACE	USN	4,220
MARINE CORPS							
	R2503A	FAA, LOS ANGELES ARTCC	Camp Pendleton Range Complex	002000AMSL	SURFACE	USMC	68
	R2503B	FAA, LOS ANGELES ARTCC	Camp Pendleton Range Complex	015000AMSL	SURFACE	USMC	103
	R2503C	FAA, LOS ANGELES ARTCC	Camp Pendleton Range Complex	FL270	15000AMSL	USMC	81
	SAN ONOFRE HIGH MOA, CA	FAA, SOCAL TRACON	Camp Pendleton Range Complex	007999AMSL	04000AMSL	USMC	39
	SAN ONOFRE LOW MOA, CA	FAA, SOCAL TRACON	Camp Pendleton Range Complex	003999AMSL	02000AMSL	USMC	83
	HATTERAS F MOA, NC	FAA, WASHINGTON, DC ARTCC	Cherry Point/Camp Lejeune Range Complex	013000AMSL	03000AMSL	USMC	97
	R5303A	USMC, CHERRY POINT APP	Cherry Point/Camp Lejeune Range Complex	006999AMSL	SURFACE	USMC	24
	R5303B	USMC, CHERRY POINT APP	Cherry Point/Camp Lejeune Range Complex	009999AMSL	07000AMSL	USMC	24

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Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
	R5303C	FAA, WASHINGTON, DC ARTCC	Cherry Point/Camp Lejeune Range Complex	017999AMSL	10000AMSL	USMC	24
	R5304A	USMC, CHERRY POINT APP	Cherry Point/Camp Lejeune Range Complex	006999AMSL	SURFACE	USMC	23
	R5304B	USMC, CHERRY POINT APP	Cherry Point/Camp Lejeune Range Complex	009999AMSL	07000AMSL	USMC	23
	R5304C	FAA, WASHINGTON, DC ARTCC	Cherry Point/Camp Lejeune Range Complex	017999AMSL	10000AMSL	USMC	23
	R5306A	USMC, CHERRY POINT APP	Cherry Point/Camp Lejeune Range Complex	017999AMSL	SURFACE	USMC	772
	R5306C	USMC, CHERRY POINT APP	Cherry Point/Camp Lejeune Range Complex	017999AMSL	01200AMSL	USMC	155
	R5306D	USMC, CHERRY POINT APP	Cherry Point/Camp Lejeune Range Complex	017999AMSL	SURFACE	USMC	93
	R5306E	USMC, CHERRY POINT APP	Cherry Point/Camp Lejeune Range Complex	017999AMSL	SURFACE	USMC	4
	BEAUFORT 1 MOA, SC	FAA, JACKSONVILLE ARTCC	MCAS Beaufort/Townsend Range Complex	010000AMSL	00100AGL	USMC	243
	BEAUFORT 2 MOA, SC	FAA, JACKSONVILLE ARTCC	MCAS Beaufort/Townsend Range Complex	007000AMSL	00100AGL	USMC	397
	BEAUFORT 3 MOA, SC	FAA, JACKSONVILLE ARTCC	MCAS Beaufort/Townsend Range Complex	002000AMSL	00100AGL	USMC	262
	W74(A)	FAA, JACKSONVILLE ARTCC	MCAS Beaufort/Townsend Range Complex	010000AMSL	SURFACE	USMC	165
	W74(B)	FAA, JACKSONVILLE ARTCC	MCAS Beaufort/Townsend Range Complex	010000AMSL	03000AMSL	USMC	9
	A530	USMC, CHERRY POINT MCAS	MCAS Cherry Point	017999AMSL	SURFACE	USMC	383
	DEMO 1 MOA, VA	FAA, WASHINGTON, DC ARTCC	Quantico Range Complex	005000AMSL	00500AMSL	USMC	79
	DEMO 2 MOA, VA	FAA, WASHINGTON, DC ARTCC	Quantico Range Complex	015000AMSL	10000AMSL	USMC	51
	DEMO 3 MOA, VA	FAA, WASHINGTON, DC ARTCC	Quantico Range Complex	015000AMSL	05000AMSL	USMC	79
	R6608A	FAA, DULLES INTL TWR	Quantico Range Complex	010000AMSL	SURFACE	USMC	10
	R6608B	FAA, DULLES INTL TWR	Quantico Range Complex	010000AMSL	SURFACE	USMC	25
	R6608C	FAA, DULLES INTL TWR	Quantico Range Complex	010000AMSL	SURFACE	USMC	16
	BRISTOL MOA, CA	FAA, LOS ANGELES ARTCC	Twentynine Palms Range Complex	017999AMSL	05000AMSL	USMC	382

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Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
	R2501E	FAA, LOS ANGELES ARTCC	Twentynine Palms Range Complex	UNLTD	SURFACE	USMC	225
	R2501N	FAA, LOS ANGELES ARTCC	Twentynine Palms Range Complex	UNLTD	SURFACE	USMC	289
	R2501S	FAA, LOS ANGELES ARTCC	Twentynine Palms Range Complex	UNLTD	SURFACE	USMC	186
	R2501W	FAA, LOS ANGELES ARTCC	Twentynine Palms Range Complex	UNLTD	SURFACE	USMC	72
	SUNDANCE MOA, CA	FAA, LOS ANGELES ARTCC	Twentynine Palms Range Complex	010000AMSL	00500AGL	USMC	48
	ABEL BRAVO MOA, CA	FAA, LOS ANGELES ARTCC	Yuma Range Complex	017999AMSL	07000AMSL	USMC	85
	ABEL EAST MOA, CA	FAA, LOS ANGELES ARTCC	Yuma Range Complex	012999AMSL	05000AMSL	USMC	294
	ABEL NORTH MOA, CA	FAA, LOS ANGELES ARTCC	Yuma Range Complex	017999AMSL	07000AMSL	USMC	635
	ABEL SOUTH MOA, CA	FAA, LOS ANGELES ARTCC	Yuma Range Complex	017999AMSL	07000AMSL	USMC	245
	DOME MOA, AZ	FAA, LOS ANGELES ARTCC	Yuma Range Complex	017999AMSL	06000AMSL	USMC	183
	KANE EAST MOA, CA	FAA, LOS ANGELES ARTCC	Yuma Range Complex	017999AMSL	10000AMSL	USMC	446
	KANE SOUTH MOA, CA	FAA, LOS ANGLES ARTCC	Yuma Range Complex	017999AMSL	10000AMSL	USMC	68
	KANE WEST MOA, CA	FAA, LOS ANGELES ARTCC	Yuma Range Complex	017999AMSL	10000AMSL	USMC	581
	QUAIL MOA, AZ	FAA, LOS ANGELES ARTCC	Yuma Range Complex	017999AMSL	10000AMSL	USMC	1,002
	R2301W	FAA, LOS ANGELES ARTCC	Yuma Range Complex	FL800	SURFACE	USMC	1,116
	R2507N	FAA, LOS ANGELES ARTCC	Yuma Range Complex	FL400	SURFACE	USMC	203
	R2507S	FAA, LOS ANGELES ARTCC	Yuma Range Complex	FL400	SURFACE	USMC	231
	TURTLE MOA, AZ	FAA, LOS ANGELES ARTCC	Yuma Range Complex	017999AMSL	11000AMSL	USMC	1,626
AIR FORCE							
	R2206	FAA, ANCHORAGE ARTCC	13th Missile Wing	008800AMSL	SURFACE	USAF	11
	R2901A	FAA, MIAMI ARTCC	Avon Park	014000AMSL	SURFACE	USAF	160
	R2901B	FAA, MIAMI ARTCC	Avon Park	FL180	14000AMSL	USAF	141
	R2901C	FAA, MIAMI ARTCC	Avon Park	014000AMSL	SURFACE	USAF	24
	R2901D	FAA, MIAMI ARTCC	Avon Park	004000AMSL	00500AMSL	USAF	27

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Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
	R2901E	FAA, MIAMI ARTCC	Avon Park	004000AMSL	01000AMSL	USAF	87
	R2901F	FAA, MIAMI ARTCC	Avon Park	005000AMSL	04000AMSL	USAF	14
	R2901G	FAA, MIAMI ARTCC	Avon Park	005000AMSL	SURFACE	USAF	26
	R2901H	FAA, MIAMI ARTCC	Avon Park	004000AMSL	01000AMSL	USAF	31
	R2901I	FAA, MIAMI ARTCC	Avon Park	004000AMSL	01500AMSL	USAF	30
	ANNE HIGH MOA, AR	FAA, FORT WORTH ARTCC	Barksdale AFB	017999AMSL	07000AMSL	USAF	649
	ANNE LOW MOA, AR	FAA, FORT WORTH ARTCC	Barksdale AFB	006999AMSL	00100AGL	USAF	649
	HACKETT MOA, LA	FAA, FORT WORTH ARTCC	Barksdale AFB	017999AMSL	07000AMSL	USAF	1,176
	JENA 1 MOA, LA	FAA, HOUSTON ARTCC	Barksdale AFB	005000AMSL	00100AGL	USAF	1,026
	R3801A(A)	FAA, HOUSTON ARTCC	Barksdale AFB	004000AMSL	01500AGL	USAF	54
	R3801A(B)	FAA, HOUSTON ARTCC	Barksdale AFB	004000AMSL	00500AGL	USAF	23
	R3801B	FAA, HOUSTON ARTCC	Barksdale AFB	007000AMSL	SURFACE	USAF	96
	R3801C	FAA, HOUSTON ARTCC	Barksdale AFB	014000AMSL	07000AMSL	USAF	96
	R4105A	FAA, CAPE APP	Barnes ANGB	009999AMSL	SURFACE	USAF	26
	R4105B	FAA, CAPE APP	Barnes ANGB	017999AMSL	10000AMSL	USAF	26
	FUZZY MOA, AZ	FAA, ALBUQUERQUE ARTCC	Barry M. Goldwater Range	009999AMSL	00100AGL	USAF	423
	CHINA MOA, CA	FAA, OAKLAND ARTCC	Beale AFB	017999AMSL	03000AGL	USAF	588
	MAXWELL 1 MOA, CA	FAA, OAKLAND ARTCC	Beale AFB	017999AMSL	11000AMSL	USAF	825
	MAXWELL 2 MOA, CA	FAA, OAKLAND ARTCC	Beale AFB	017999AMSL	11000AMSL	USAF	871
	MAXWELL 3 MOA, CA	FAA, OAKLAND ARTCC	Beale AFB	017999AMSL	11000AMSL	USAF	871
	WHITMORE 1 MOA, CA	FAA, OAKLAND ARTCC	Beale AFB	017999AMSL	11000AMSL	USAF	550
	WHITMORE 2 MOA, CA	FAA, OAKLAND ARTCC	Beale AFB	017999AMSL	11000AMSL	USAF	581
	WHITMORE 3 MOA, CA	FAA, OAKLAND ARTCC	Beale AFB	017999AMSL	11000AMSL	USAF	580
	BRONCO 1 MOA, TX	FAA, FORT WORTH ARTCC	Cannon AFB	017999AMSL	08000AMSL	USAF	987
	BRONCO 2 MOA, TX	FAA, FORT WORTH ARTCC	Cannon AFB	017999AMSL	10000AMSL	USAF	578

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Special Use Airspace Inventory							
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	BRONCO 3 MOA, TX	FAA, FORT WORTH ARTCC	Cannon AFB	017999AMSL	10000AMSL	USAF	1,652
	BRONCO 4 MOA, TX	FAA, FORT WORTH ARTCC	Cannon AFB	017999AMSL	10000AMSL	USAF	1,676
	MT DORA EAST HIGH MOA, NM	FAA, ALBUQUERQUE ARTCC	Cannon AFB	017999AMSL	11000AMSL	USAF	1,098
	MT DORA EAST LOW MOA, NM	FAA, ALBUQUERQUE ARTCC	Cannon AFB	010999AMSL	01500AGL	USAF	1,098
	MT DORA NORTH HIGH MOA, NM	FAA, ALBUQUERQUE ARTCC	Cannon AFB	017999AMSL	11000AMSL	USAF	1,190
	MT DORA NORTH LOW MOA, NM	FAA, ALBUQUERQUE ARTCC	Cannon AFB	010999AMSL	01500AGL	USAF	1,190
	MT DORA WEST HIGH MOA, NM	FAA, ALBUQUERQUE ARTCC	Cannon AFB	017999AMSL	11000AMSL	USAF	1,518
	MT DORA WEST LOW MOA, NM	FAA, ALBUQUERQUE ARTCC	Cannon AFB	010999AMSL	01500AGL	USAF	1,518
	PECOS NORTH HIGH MOA, NM	FAA, ALBUQUERQUE ARTCC	Cannon AFB	017999AMSL	11000AMSL	USAF	1,175
	PECOS NORTH LOW MOA, NM	FAA, ALBUQUERQUE ARTCC	Cannon AFB	010999AMSL	00500AGL	USAF	985
	PECOS SOUTH HIGH MOA, NM	FAA, ALBUQUERQUE ARTCC	Cannon AFB	017999AMSL	11000AMSL	USAF	1,262
	PECOS SOUTH LOW MOA, NM	FAA, ALBUQUERQUE ARTCC	Cannon AFB	010999AMSL	00500AGL	USAF	903
	R5104A	FAA, ALBUQUERQUE ARTCC	Cannon AFB	017999AMSL	SURFACE	USAF	198
	R5104B	FAA, ALBUQUERQUE ARTCC	Cannon AFB	023000AMSL	18000AMSL	USAF	198
	R5105	FAA, ALBUQUERQUE ARTCC	Cannon AFB	010000AMSL	SURFACE	USAF	132
	TAIBAN MOA, NM	FAA, ALBUQUERQUE ARTCC	Cannon AFB	010999AMSL	00500AGL	USAF	223
	R2932	FAA, MIAMI ARTCC	Cape Canaveral Range Complex	004999AMSL	SURFACE	USAF	111
	R2933	FAA, MIAMI ARTCC	Cape Canaveral Range Complex	UNLTD	05000AMSL	USAF	111
	R2934	FAA, MIAMI ARTCC	Cape Canaveral Range Complex	UNLTD	SURFACE	USAF	163
	R2935	FAA, MIAMI ARTCC	Cape Canaveral Range Complex	UNLTD	11000AMSL	USAF	390
	CLAIBORNE A MOA, LA	USA, POLK APP CON	Claiborne	009999AMSL	00100AGL	USAF	76

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Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
	CLAIBORNE B MOA, LA	USA, POLK APP CON	Claiborne	017999AMSL	10000AMSL	USAF	76
	A440	USAF, 14 FTW COLUMBUS AFB	Columbus AFB	006500AMSL	SURFACE	USAF	206
	COLUMBUS 1 MOA, MS	FAA, MEMPHIS ARTCC	Columbus AFB	017999AMSL	08000AMSL	USAF	2,567
	COLUMBUS 2 MOA, MS	FAA, MEMPHIS ARTCC	Columbus AFB	017999AMSL	08000AMSL	USAF	609
	COLUMBUS 3 MOA, MS	FAA, MEMPHIS ARTCC	Columbus AFB	017999AMSL	08000AMSL	USAF	2,523
	COLUMBUS 4 MOA, MS	FAA, MEMPHIS ARTCC	Columbus AFB	017999AMSL	10000AMSL	USAF	1,302
	TOMBSTONE A MOA, AZ	FAA, ALBUQUERQUE ARTCC	David-Monthan AFB	014499AMSL	00500AGL	USAF	496
	TOMBSTONE B MOA, AZ	FAA, ALBUQUERQUE ARTCC	David-Monthan AFB	014499AMSL	00500AGL	USAF	1,239
	TOMBSTONE C MOA, AZ	FAA, ALBUQUERQUE ARTCC	David-Monthan AFB	017999AMSL	14500AMSL	USAF	2,856
	LANCER MOA, TX	FAA, FORT WORTH ARTCC	Dyess AFB	017999AMSL	06200AMSL	USAF	3,064
	BAKERSFIELD MOA, CA	FAA, LOS ANGLES ARTCC	Edwards AFB	017999AMSL	02000AGL	USAF	284
	BARSTOW MOA, CA	FAA, HI-DESERT TRACON, EDWARDS, CA	Edwards AFB	017999AMSL	00200AGL	USAF	154
	BISHOP MOA, CA	FAA, LOS ANGLES ARTCC	Edwards AFB	017999AMSL	00200AGL	USAF	120
	BUCKHORN MOA, CA	FAA, LOS ANGELES ARTCC	Edwards AFB	017999AMSL	00200AGL	USAF	55
	ISABELLA MOA, CA	FAA, HI-DESERT TRACON, EDWARDS AFB	Edwards AFB	017999AMSL	00200AGL	USAF	2,538
	OWENS MOA, CA	FAA, HI-DESERT TRACON, EDWARDS AFB	Edwards AFB	017999AMSL	00200AGL	USAF	1,902
	PANAMINT MOA, CA	FAA, HI-DESERT TRACON, EDWARDS AFB	Edwards AFB	017999AMSL	03001AGL	USAF	1,940
	PORTERVILLE MOA, CA	FAA, LOS ANGELES ARTCC	Edwards AFB	017999AMSL	02000AGL	USAF	440
	POWDER RIVER A MOA, MT	FAA, SALT LAKE CITY ARTCC	Edwards AFB	017999AMSL	SURFACE	USAF	2,868
	POWDER RIVER B MOA, WY	FAA, DENVER ARTCC	Edwards AFB	017999AMSL	01000AGL	USAF	1,303
	R2515	FAA, HI-DESERT TRACON, EDWARDS AFB	Edwards AFB	UNLTD	SURFACE	USAF	1,295
	SALINE MOA, CA	FAA, HI-DESERT TRACON, EDWARDS AFB	Edwards AFB	017999AMSL	00200AGL	USAF	1,595
	EGLIN A EAST MOA, FL	FAA, JACKSONVILLE ARTCC	Eglin AFB	017999AMSL	01000AGL	USAF	94

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Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
	EGLIN A WEST MOA, FL	FAA, JACKSONVILLE ARTCC	Eglin AFB	017999AMSL	01000AGL	USAF	86
	EGLIN B MOA, FL	FAA, JACKSONVILLE ARTCC	Eglin AFB	017999AMSL	01000AGL	USAF	212
	EGLIN C MOA, FL	FAA, JACKSONVILLE ARTCC	Eglin AFB	017999AMSL	01000AGL	USAF	138
	EGLIN D MOA, FL	FAA, JACKSONVILLE ARTCC	Eglin AFB	003000AMSL	01000AGL	USAF	128
	EGLIN E MOA, FL	FAA, JACKSONVILLE ARTCC	Eglin AFB	017999AMSL	SURFACE	USAF	1,095
	EGLIN F MOA, FL	FAA, JACKSONVILLE ARTCC	Eglin AFB	017999AMSL	SURFACE	USAF	5
	R2914A	FAA, JACKSONVILLE ARTCC	Eglin AFB	UNLTD	SURFACE	USAF	370
	R2914B	FAA, JACKSONVILLE ARTCC	Eglin AFB	UNLTD	08500AMSL	USAF	68
	R2915A	FAA, JACKSONVILLE ARTCC	Eglin AFB	UNLTD	SURFACE	USAF	199
	R2915B	FAA, JACKSONVILLE ARTCC	Eglin AFB	UNLTD	SURFACE	USAF	44
	R2915C	FAA, JACKSONVILLE ARTCC	Eglin AFB	UNLTD	08500AMSL	USAF	33
	R2917	USAF, EGLIN AFB APP	Eglin AFB	022999AMSL	SURFACE	USAF	19
	R2918	FAA, JACKSONVILLE ARTCC	Eglin AFB	UNLTD	SURFACE	USAF	15
	R2919A	FAA, JACKSONVILLE ARTCC	Eglin AFB	UNLTD	SURFACE	USAF	46
	R2919B	FAA, JACKSONVILLE ARTCC	Eglin AFB	UNLTD	08500AMSL	USAF	80
	ROSE HILL MOA, AL	FAA, JACKSONVILLE ARTCC	Eglin AFB	017999AMSL	08000AMSL	USAF	620
	W151A	FAA, JACKSONVILLE ARTCC	Eglin AFB	UNLTD	SURFACE	USAF	2,452
	W151B	FAA, JACKSONVILLE ARTCC	Eglin AFB	UNLTD	SURFACE	USAF	2,420
	W151C	FAA, JACKSONVILLE ARTCC	Eglin AFB	UNLTD	SURFACE	USAF	1,663
	W151D	FAA, JACKSONVILLE ARTCC	Eglin AFB	UNLTD	SURFACE	USAF	2,034
	W151E	FAA, JACKSONVILLE ARTCC	Eglin AFB	UNLTD	SURFACE	USAF	512
	W151F	FAA, JACKSONVILLE ARTCC	Eglin AFB	UNLTD	SURFACE	USAF	781
	W470A	FAA, JACKSONVILLE ARTCC	Eglin AFB	UNLTD	SURFACE	USAF	1,934
	W470B	FAA, JACKSONVILLE ARTCC	Eglin AFB	UNLTD	SURFACE	USAF	2,051
	W470C	FAA, JACKSONVILLE ARTCC	Eglin AFB	UNLTD	SURFACE	USAF	1,105

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Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
	W470D	FAA, JACKSONVILLE ARTCC	Eglin AFB	UNLTD	SURFACE	USAF	406
	W470E	FAA, MIAMI ARTCC	Eglin AFB	UNLTD	SURFACE	USAF	973
	W470F	FAA, JACKSONVILLE ARTCC	Eglin AFB	UNLTD	SURFACE	USAF	254
	BIRCH MOA, AK	FAA, ANCHORAGE ARTCC	Eielson AFB	005000AMSL	00500AGL	USAF	443
	BUFFALO MOA, AK	FAA, ANCHORAGE ARTCC	Eielson AFB	006999AMSL	00300AGL	USAF	1,712
	EIELSON MOA, AK	FAA, ANCHORAGE ARTCC	Eielson AFB	017999AMSL	00100AGL	USAF	751
	FOX 1 MOA, AK	FAA, ANCHORAGE ARTCC	Eielson AFB	017999AMSL	05000AGL	USAF	1,177
	FOX 2 MOA, AK	FAA, ANCHORAGE ARTCC	Eielson AFB	017999AMSL	07000AMSL	USAF	97
	FOX 3 MOA, AK	FAA, ANCHORAGE ARTCC	Eielson AFB	017999AMSL	05000AMSL	USAF	3,815
	R2211	FAA, ANCHORAGE ARTCC	Eielson AFB	018000AMSL	SURFACE	USAF	140
	VIPER A MOA, AK	FAA, FAIRBANKS TWR	Eielson AFB	010000AMSL	00500AGL	USAF	110
	VIPER B MOA, AK	FAA, ANCHORAGE ARTCC	Eielson AFB	017999AMSL	10000AMSL	USAF	110
	YUKON 1 MOA, AK	FAA, ANCHORAGE ARTCC	Eielson AFB	017999AMSL	00100AGL	USAF	3,932
	YUKON 2 MOA, AK	FAA, ANCHORAGE ARTCC	Eielson AFB	017999AMSL	00100AGL	USAF	5,204
	YUKON 3 HIGH MOA, AK	FAA, ANCHORAGE ARTCC	Eielson AFB	017999AMSL	10000AMSL	USAF	2,378
	YUKON 3A LOW MOA, AK	FAA, ANCHORAGE ARTCC	Eielson AFB	009999AMSL	00100AGL	USAF	2,378
	YUKON 3B MOA, AK	FAA, ANCHORAGE ARTCC	Eielson AFB	017999AMSL	02000AGL	USAF	1,585
	YUKON 4 MOA, AK	FAA, ANCHORAGE ARTCC	Eielson AFB	017999AMSL	00100AGL	USAF	3,563
	YUKON 5 MOA, AK	FAA, ANCHORAGE ARTCC	Eielson AFB	017999AMSL	05000AGL	USAF	2,878
	W147A	FAA, HOUSTON ARTCC	Ellington Field	022999AMSL	05000AMSL	USAF	4,329
	W147B	FAA, HOUSTON ARTCC	Ellington Field	FL500	FL230	USAF	4,329
	W147D	FAA, HOUSTON ARTCC	Ellington Field	FL500	SURFACE	USAF	5,277
	W147E	FAA, HOUSTON ARTCC	Ellington Field	FL500	FL260	USAF	1,858
	GALENA MOA, AK	FAA, ANCHORAGE ARTCC	Elmendorf AFB	017999AMSL	01000AMSL	USAF	4,073
	NAKNEK 1 MOA, AK	FAA, ANCHORAGE ARTCC	Elmendorf AFB	017999AMSL	03000AGL	USAF	3,899

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Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
	NAKNEK 2 MOA, AK	FAA, ANCHORAGE ARTCC	Elmendorf AFB	017999AMSL	03000AGL	USAF	2,762
	STONY A MOA, AK	FAA, ANCHORAGE ARTCC	Elmendorf AFB	017999AMSL	00100AGL	USAF	4,133
	STONY B MOA, AK	FAA, ANCHORAGE ARTCC	Elmendorf AFB	017999AMSL	02000AGL	USAF	2,430
	SUSITNA MOA, AK	FAA, ANCHORAGE ARTCC	Elmendorf AFB	017999AMSL	10000AMSL	USAF	2,532
	W612	FAA, ANCHORAGE ARTCC	Elmendorf AFB	FL290	SURFACE	USAF	2,543
	GANDY MOA, UT	FAA, SALT LAKE CITY ARTCC	Hill AFB	017999AMSL	00100AGL	USAF	782
	LUCIN A MOA, UT	FAA, SALT LAKE CITY ARTCC	Hill AFB	009000AMSL	00100AGL	USAF	1,439
	LUCIN B MOA, UT	FAA, SALT LAKE CITY ARTCC	Hill AFB	007500AMSL	00100AGL	USAF	932
	LUCIN C MOA, UT	FAA, SALT LAKE CITY ARTCC	Hill AFB	006500AMSL	00100AGL	USAF	112
	R6402A	FAA, SALT LAKE CITY ARTCC	Hill AFB	FL580	SURFACE	USAF	928
	R6402B	FAA, SALT LAKE CITY ARTCC	Hill AFB	FL580	00100AGL	USAF	33
	R6404A	FAA, SALT LAKE CITY ARTCC	Hill AFB	FL580	SURFACE	USAF	1,052
	R6404B	FAA, SALT LAKE CITY ARTCC	Hill AFB	013000AMSL	SURFACE	USAF	189
	R6404C	FAA, SALT LAKE CITY ARTCC	Hill AFB	FL280	00100AGL	USAF	158
	R6404D	FAA, SALT LAKE CITY ARTCC	Hill AFB	FL250	13000AMSL	USAF	189
	R6405	FAA, SALT LAKE CITY ARTCC	Hill AFB	FL580	00100AGL	USAF	1,828
	R6406A	FAA, SALT LAKE CITY ARTCC	Hill AFB	FL580	SURFACE	USAF	799
	R6406B	FAA, SALT LAKE CITY ARTCC	Hill AFB	FL580	00100AGL	USAF	44
	R6407	FAA, SALT LAKE CITY ARTCC	Hill AFB	FL580	SURFACE	USAF	612
	SEVIER A MOA, UT	FAA, SALT LAKE CITY ARTCC	Hill AFB	014500AMSL	00100AGL	USAF	950
	SEVIER B MOA, UT	FAA, SALT LAKE CITY ARTCC	Hill AFB	009500AMSL	00100AGL	USAF	2,069
	SEVIER C MOA, NV	FAA, SALT LAKE CITY ARTCC	Hill AFB	017999AMSL	14500AMSL	USAF	950
	SEVIER D MOA, UT	FAA, SALT LAKE CITY ARTCC	Hill AFB	017999AMSL	09500AMSL	USAF	2,069
	BEAK A MOA, NM	FAA, ALBUQUERQUE ARTCC	Holloman AFB	017999AMSL	12500AMSL	USAF	654
	BEAK B MOA, NM	FAA, ALBUQUERQUE ARTCC	Holloman AFB	017999AMSL	12500AMSL	USAF	576

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Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
	BEAK C MOA, NM	FAA, ALBUQUERQUE ARTCC	Holloman AFB	017999AMSL	12500AMSL	USAF	605
	TALON EAST HIGH MOA, NM	FAA, ALBUQUERQUE ARTCC	Holloman AFB	017999AMSL	12500AMSL	USAF	629
	TALON LOW MOA, NM	FAA, ALBUQUERQUE ARTCC	Holloman AFB	012499AMSL	00300AGL	USAF	978
	TALON WEST HIGH MOA, NM	FAA, ALBUQUERQUE ARTCC	Holloman AFB	017999AMSL	12500AMSL	USAF	927
	VALENTINE MOA, TX	FAA, ALBUQUERQUE ARTCC	Holloman AFB	017999AMSL	15000AMSL	USAF	2,357
	CATO MOA, NM	FAA, ALBUQUERQUE ARTCC	Kirtland AFB	017999AMSL	13500AMSL	USAF	2,520
	EVERS MOA, WV	FAA, WASHINGTON, DC ARTCC	Langley AFB	017999AMSL	01000AGL	USAF	451
	FARMVILLE MOA, VA	FAA, WASHINGTON, DC ARTCC	Langley AFB	005000AMSL	00300AGL	USAF	1,119
	A633A	USAF, LAUGHLIN AFB	Laughlin AFB	007000AMSL	SURFACE	USAF	525
	A633B	USAF, LAUGHLIN AFB	Laughlin AFB	004000AMSL	SURFACE	USAF	147
	CRYSTAL MOA, TX	FAA, HOUSTON ARTCC	Laughlin AFB	017999AMSL	06000AMSL	USAF	1,328
	CRYSTAL NORTH MOA, TX	FAA, HOUSTON ARTCC	Laughlin AFB	017999AMSL	06000AMSL	USAF	395
	LAUGHLIN 1 MOA, TX	FAA, HOUSTON ARTCC	Laughlin AFB	017999AMSL	09000AMSL	USAF	4,541
	LAUGHLIN 2 MOA, TX	FAA, HOUSTON ARTCC	Laughlin AFB	017999AMSL	07000AMSL	USAF	2,190
	LAUGHLIN 3 HIGH MOA, TX	FAA, HOUSTON ARTCC	Laughlin AFB	FL180	15000AMSL	USAF	404
	LAUGHLIN 3 LOW MOA, TX	FAA, HOUSTON ARTCC	Laughlin AFB	014999AMSL	07000AMSL	USAF	404
	A231	FAA, ALBUQUERQUE ARTCC	Luke AFB	006500AMSL	00500AGL	USAF	489
	BAGDAD 1 MOA, AZ	FAA, ALBUQUERQUE ARTCC	Luke AFB	017999AMSL	07000AMSL	USAF	1,010
	GLADDEN 1 MOA, AZ	FAA, ALBUQUERQUE ARTCC	Luke AFB	017999AMSL	05000AGL	USAF	1,774
	R2301E	FAA, ALBUQUERQUE ARTCC	Luke AFB	FL800	SURFACE	USAF	1,476
	R2304	FAA, ALBUQUERQUE ARTCC	Luke AFB	FL240	SURFACE	USAF	328
	R2305	FAA, ALBUQUERQUE ARTCC	Luke AFB	FL240	SURFACE	USAF	178
	SELLS 1 MOA, AZ	FAA, ALBUQUERQUE ARTCC	Luke AFB	017999AMSL	10000AMSL	USAF	3,491
	SELLS LOW MOA, AZ	FAA, ALBUQUERQUE ARTCC	Luke AFB	009999AMSL	03000AGL	USAF	2,985
	SUNNY MOA, AZ	FAA, DENVER ARTCC	Luke AFB	017999AMSL	12000AMSL	USAF	2,203

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Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
	AVON EAST MOA, FL	FAA, MIAMI ARTCC	MacDill AFB	013999AMSL	00500AGL	USAF	36
	AVON NORTH MOA, FL	FAA, MIAMI ARTCC	MacDill AFB	017999AMSL	05000AMSL	USAF	91
	AVON SOUTH MOA, FL	FAA, MIAMI ARTCC	MacDill AFB	017999AMSL	05000AMSL	USAF	113
	BASINGER MOA, FL	FAA, MIAMI ARTCC	MacDill AFB	005000AMSL	00500AGL	USAF	41
	LAKE PLACID MOA, FL	FAA, MIAMI ARTCC	MacDill AFB	017999AMSL	07000AMSL	USAF	1,049
	MARIAN MOA, FL	FAA, MIAMI ARTCC	MacDill AFB	005000AMSL	00500AGL	USAF	197
	W168	FAA, MIAMI ARTCC	MacDill AFB	UNLTD	SURFACE	USAF	7,038
	DEVILS LAKE EAST MOA, ND	FAA, MINNEAPOLIS ARTCC	McChord AFB	017999AMSL	03500AMSL	USAF	1,674
	DEVILS LAKE WEST MOA, ND	FAA, MINNEAPOLIS ARTCC	McChord AFB	017999AMSL	04000AMSL	USAF	1,643
	R2312	LIBBY AAF TWR	McChord AFB	014999AMSL	SURFACE	USAF	9
	R5115	FAA, ALBUQUERQUE ARTCC	McChord AFB	015000AMSL	SURFACE	USAF	9
	R6316	FAA, HOUSTON ARTCC	McChord AFB	015000AMSL	SURFACE	USAF	21
	R6317	FAA, HOUSTON ARTCC	McChord AFB	015000AMSL	SURFACE	USAF	21
	R6318	FAA, ALBUQUERQUE ARTCC	McChord AFB	014000AMSL	SURFACE	USAF	9
	TIGER NORTH MOA, ND	FAA, MINNEAPOLIS ARTCC	McChord AFB	017999AMSL	00300AGL	USAF	2,104
	TIGER SOUTH MOA, ND	FAA, MINNEAPOLIS ARTCC	McChord AFB	017999AMSL	06000AMSL	USAF	1,625
	W93(A)	FAA, SEATTLE ARTCC	McChord AFB	FL500	SURFACE	USAF	4,684
	W93(B)	FAA, SEATTLE ARTCC	McChord AFB	FL500	SURFACE	USAF	919
	A220	USAF, MCGUIRE AFB RAPCON	McGuire AFB	004500AMSL	SURFACE	USAF	430
	POWERS MOA, ND	FAA, MINNEAPOLIS ARTCC	Minot AFB	017999AMSL	12000AMSL	USAF	557
	A684	FAA, JACKSONVILLE ARTCC	Moody AFB	004000AGL	SURFACE	USAF	299
	LIVE OAK MOA, FL	FAA, JACKSONVILLE ARTCC	Moody AFB	017999AMSL	08000AMSL	USAF	1,157
	MOODY 1 MOA, GA	FAA, JACKSONVILLE ARTCC	Moody AFB	017999AMSL	08000AMSL	USAF	4,500
	MOODY 2 NORTH MOA, GA	FAA, JACKSONVILLE ARTCC	Moody AFB	007999AMSL	00500AGL	USAF	303
	MOODY 2 SOUTH MOA, GA	FAA, JACKSONVILLE ARTCC	Moody AFB	007999AMSL	00100AGL	USAF	387

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	MOODY 3 MOA, GA	FAA, JACKSONVILLE ARTCC	Moody AFB	017999AMSL	08000AMSL	USAF	1,200
	R3008A	USAF, VALDOSTA APP	Moody AFB	010000AMSL	SURFACE	USAF	5
	R3008B	USAF, VALDOSTA APP	Moody AFB	010000AMSL	00100AGL	USAF	19
	R3008C	USAF, VALDOSTA APP	Moody AFB	010000AMSL	00500AGL	USAF	64
	R3008C(A)	USAF, VALDOSTA APP	Moody AFB	001500AGL	SURFACE	USAF	3
	R3008D	USAF, VALDOSTA APP	Moody AFB	022999AMSL	10000AMSL	USAF	89
	R3202(HI)	FAA, SALT LAKE CITY ARTCC	Mountain Home AFB	FL290	FL180	USAF	213
	R3202(LO)	FAA, SALT LAKE CITY ARTCC	Mountain Home AFB	017999AMSL	SURFACE	USAF	213
	R3204A	FAA, SALT LAKE CITY ARTCC	Mountain Home AFB	000100AGL	SURFACE	USAF	13
	R3204B	FAA, SALT LAKE CITY ARTCC	Mountain Home AFB	017999AMSL	00100AGL	USAF	74
	R3204C	FAA, SALT LAKE CITY ARTCC	Mountain Home AFB	FL290	FL180	USAF	74
	JARBIDGE MOA, ID	FAA, SALT LAKE CITY ARTCC	Mt. Home AFB	017999AMSL	00100AGL	USAF	1,724
	OWYHEE MOA, ID	FAA, SALT LAKE CITY ARTCC	Mt. Home AFB	017999AMSL	00100AGL	USAF	1,869
	PARADISE EAST MOA, NV	FAA, SALT LAKE CITY ARTCC	Mt. Home AFB	017999AMSL	14500AMSL	USAF	1,516
	PARADISE WEST MOA, OR	FAA, SALT LAKE CITY ARTCC	Mt. Home AFB	017999AMSL	14500AMSL	USAF	1,729
	A481	USAF, NELLIS AFB	Nellis AFB	017000AMSL	07000AMSL	USAF	238
	DESERT MOA, NV	FAA, LOS ANGELES ARTCC	Nellis AFB	017999AMSL	00100AGL	USAF	5,227
	R4806E	FAA, LOS ANGELES ARTCC	Nellis AFB	UNLTD	00100AGL	USAF	274
	R4806W	FAA, LOS ANGELES ARTCC	Nellis AFB	UNLTD	SURFACE	USAF	1,112
	R4807A	FAA, LOS ANGELES ARTCC	Nellis AFB	UNLTD	SURFACE	USAF	1,601
	R4807B	FAA, LOS ANGELES ARTCC	Nellis AFB	UNLTD	SURFACE	USAF	94
	REVEILLE NORTH MOA, NV	FAA, SALT LAKE CITY ARTCC	Nellis AFB	017999AMSL	00100AGL	USAF	1,173
	REVEILLE SOUTH MOA, NV	FAA, SALT LAKE CITY ARTCC	Nellis AFB	017999AMSL	00100AGL	USAF	413
	SILVER MOA, CA	FAA, LOS ANGELES ARTCC	Nellis AFB	007000AMSL	00200AGL	USAF	480
	R4808N	FAA, LOS ANGELES ARTCC	Nellis AFB	UNLTD	SURFACE	DOE	1208

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	R4808S	FAA, LOS ANGELES ARTCC	Nellis AFB	UNLTD	SURFACE	DOE	23
	R4809	FAA, LOS ANGELES ARTCC	Nellis AFB	UNLTD	SURFACE	DOE	370
	ONTONAGON MOA, MI	FAA, MINNEAPOLIS ARTCC	Offutt AFB	017999AMSL	00500AGL	USAF	814
	R4305	FAA, MINNEAPOLIS ARTCC	Offutt AFB	FL450	SURFACE	USAF	1,172
	W497A	FAA, MIAMI ARTCC	Patrick AFB	UNLTD	SURFACE	USAF	2,334
	W497B	FAA, MIAMI ARTCC	Patrick AFB	UNLTD	SURFACE	USAF	20,929
	R2508	FAA, HI-DESERT TRACON, EDWARDS AFB	R-2508 Complex	UNLTD	20000AMSL	USAF	11,480
	SHOSHONE MOA, CA	FAA, LOS ANGELES ARTCC	R-2508 Complex	017999AMSL	03001AGL	USAF	1,104
	A635	USAF, RANDOLPH AFB	Randolph AFB	004000AMSL	01500AMSL	USAF	134
	A638	USAF, RANDOLPH AFB	Randolph AFB	003000AMSL	SURFACE	USAF	124
	A640	USAF, RANDOLPH AFB	Randolph AFB	007500AMSL	00200AGL	USAF	2,397
	RANDOLPH 1A MOA, TX	FAA, HOUSTON ARTCC	Randolph AFB	017999AMSL	08000AMSL	USAF	1,361
	RANDOLPH 1B MOA, TX	FAA, SAN ANTONIO TRACON	Randolph AFB	017999AMSL	07000AMSL	USAF	726
	RANDOLPH 2A MOA, TX	FAA, HOUSTON ARTCC	Randolph AFB	017999AMSL	09000AMSL	USAF	1,387
	RANDOLPH 2B MOA, TX	FAA, HOUSTON ARTCC	Randolph AFB	017999AMSL	14000AMSL	USAF	304
	TEXON MOA, TX	FAA, HOUSTON ARTCC	Randolph AFB	017999AMSL	06000AMSL	USAF	1,103
	PHELPS A MOA, NC	FAA, WASHINGTON, DC ARTCC	Seymour-Johnson AFB	017999AMSL	06000AMSL	USAF	200
	PHELPS B MOA, NC	FAA, WASHINGTON, DC ARTCC	Seymour-Johnson AFB	017999AMSL	10000AMSL	USAF	73
	PHELPS C MOA, NC	FAA, WASHINGTON, DC ARTCC	Seymour-Johnson AFB	017999AMSL	15000AMSL	USAF	41
	SEYMOUR JOHNSON ECHO MOA, NC	FAA, WASHINGTON, DC ARTCC	Seymour-Johnson AFB	017999AMSL	07000AMSL	USAF	979
	BULLDOG A MOA, GA	FAA, ATLANTA ARTCC	Shaw AFB	009999AMSL	00500AGL	USAF	1,000
	BULLDOG B MOA, GA	FAA, ATLANTA ARTCC	Shaw AFB	017999AMSL	10000AMSL	USAF	1,595
	BULLDOG D MOA, GA	FAA, ATLANTA ARTCC	Shaw AFB	017000AMSL	00500AGL	USAF	75
	GAMECOCK B MOA, SC	FAA, JACKSONVILLE ARTCC	Shaw AFB	017999AMSL	10000AMSL	USAF	236

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Special Use Airspace Inventory							
Military Service	SUA Name	Controlling Agency	Range Complex / Installation Name	Upper Altitude	Lower Altitude	User*	Area** (nm^2)
	GAMECOCK C MOA, SC	FAA, JACKSONVILLE ARTCC	Shaw AFB	010000AMSL	00100AGL	USAF	591
	GAMECOCK D MOA, SC	FAA, JACKSONVILLE ARTCC	Shaw AFB	017999AMSL	10000AMSL	USAF	797
	GAMECOCK I MOA, SC	FAA, JACKSONVILLE ARTCC	Shaw AFB	006000AMSL	00100AGL	USAF	384
	POINSETT MOA, SC	USAF, SHAW APP CON	Shaw AFB	002500AMSL	00300AGL	USAF	138
	R6002A	FAA, JACKSONVILLE ARTCC	Shaw AFB	012999AMSL	SURFACE	USAF	51
	R6002B	FAA, JACKSONVILLE ARTCC	Shaw AFB	017999AMSL	13000AMSL	USAF	51
	R6002C	FAA, JACKSONVILLE ARTCC	Shaw AFB	FL230	FL180	USAF	51
	W161A	FAA, JACKSONVILLE ARTCC	Shaw AFB	FL620	SURFACE	USAF	1,203
	W161B	FAA, JACKSONVILLE ARTCC	Shaw AFB	FL240	SURFACE	USAF	534
	W177A(A)	FAA, JACKSONVILLE ARTCC	Shaw AFB	FL500	SURFACE	USAF	1,581
	W177A(B)	FAA, JACKSONVILLE ARTCC	Shaw AFB	FL500	06001AMSL	USAF	200
	W177B	FAA, JACKSONVILLE ARTCC	Shaw AFB	FL240	SURFACE	USAF	720
	GAMECOCK A MOA, NC	FAA, WASHINGTON, DC ARTCC	Shaw AFB (20 OSS/OSOS)	017999AMSL	07000AMSL	USAF	526
	A561	USAF, SHEPPARD AFB	Sheppard AFB	004000AMSL	SURFACE	USAF	137
	A636	USAF, SHEPPARD AFB	Sheppard AFB	004000AMSL	SURFACE	USAF	502
	HOLLIS MOA, OK	FAA, FORT WORTH ARTCC	Sheppard AFB	017999AMSL	11000AMSL	USAF	1,140
	SHEPPARD 1 MOA, TX	FAA, FORT WORTH ARTCC	Sheppard AFB	017999AMSL	08000AMSL	USAF	979
	SHEPPARD 2 MOA, TX	FAA, FORT WORTH ARTCC	Sheppard AFB	017999AMSL	08000AMSL	USAF	1,198
	WASHITA MOA, OK	FAA, FORT WORTH ARTCC	Sheppard AFB	017999AMSL	08000AMSL	USAF	915
	WESTOVER 1 MOA, TX	FAA, FORT WORTH ARTCC	Sheppard AFB	017999AMSL	09000AMSL	USAF	1,885
	WESTOVER 2 MOA, TX	FAA, FORT WORTH ARTCC	Sheppard AFB	017999AMSL	10000AMSL	USAF	2,069
	A682(A)	USAF, TRAVIS AFB	Travis AFB	006000AMSL	SURFACE	USAF	194
	A682(B)	USAF, TRAVIS AFB	Travis AFB	003000AMSL	SURFACE	USAF	109
	R2905A	TYNDALL AFB RADAR APP	Tyndall AFB	010000AMSL	SURFACE	USAF	14
	R2905B	TYNDALL AFB RADAR APP	Tyndall AFB	010000AMSL	SURFACE	USAF	24

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	R2916	FAA, MIAMI ARTCC	Tyndall AFB	014000AMSL	SURFACE	USAF	37
	R2938	FAA, JACKSONVILLE ARTCC	Tyndall AFB	015000AMSL	SURFACE	USAF	7
	R3807	FAA, HOUSTON ARTCC	Tyndall AFB	015000AMSL	SURFACE	USAF	27
	TYNDALL B MOA, FL	USAF, TYNDALL RADAR APP CON	Tyndall AFB	017999AMSL	09000AMSL	USAF	332
	TYNDALL C MOA, FL	USAF, TYNDALL RADAR APP CON	Tyndall AFB	006000AMSL	00300AGL	USAF	535
	TYNDALL D MOA, FL	USAF, TYNDALL RADAR APP CON	Tyndall AFB	006000AMSL	00300AGL	USAF	297
	TYNDALL E MOA, FL	USAF, TYNDALL RADAR APP CON	Tyndall AFB	017999AMSL	00300AGL	USAF	856
	TYNDALL F MOA, FL	USAF, TYNDALL RADAR APP CON	Tyndall AFB	017999AMSL	00300AGL	USAF	285
	TYNDALL G MOA, FL	USAF, TYNDALL RADAR APP CON	Tyndall AFB	017999AMSL	01000AGL	USAF	215
	TYNDALL H MOA, FL	USAF, TYNDALL RADAR APP CON	Tyndall AFB	017999AMSL	09000AMSL	USAF	535
	A260	USAF ACADEMY	USAF Academy	017500AMSL	SURFACE	USAF	29
	A639A	USAF, USAF ACADEMY	USAF Academy	012000AMSL	03000AGL	USAF	687
	A639B	USAF, USAF ACADEMY	USAF Academy	012000AMSL	03000AGL	USAF	128
	A562A	USAF, VANCE AFB	Vance AFB	010000AMSL	SURFACE	USAF	198
	A562B	USAF, VANCE AFB	Vance AFB	010000AMSL	SURFACE	USAF	148
	ADA EAST MOA, KS	FAA, KANSAS CITY ARTCC	Vance AFB	017999AMSL	07000AMSL	USAF	1,057
	ADA WEST MOA, KS	FAA, KANSAS CITY ARTCC	Vance AFB	017999AMSL	07000AMSL	USAF	1,002
	VANCE 1A MOA, OK	FAA, KANSAS CITY ARTCC	Vance AFB	017999AMSL	10000AMSL	USAF	5,828
	VANCE 1B MOA, OK	FAA, KANSAS CITY ARTCC	Vance AFB	017999AMSL	07000AMSL	USAF	2,111
	R2516	FAA, LOS ANGELES ARTCC	Vandenberg AFB	UNLTD	SURFACE	USAF	127
	R2517	FAA, LOS ANGELES ARTCC	Vandenberg AFB	UNLTD	SURFACE	USAF	90
	R2534A	FAA, LOS ANGELES ARTCC	Vandenberg AFB	UNLTD	00500AGL	USAF	50
	R2534B	FAA, LOS ANGELES ARTCC	Vandenberg AFB	UNLTD	00500AGL	USAF	51
	R6413	FAA, DENVER ARTCC	White Sands Missile Range	UNLTD	SURFACE	USAF	192
	TRUMAN A MOA, MO	FAA, KANSAS CITY ARTCC	Whiteman AFB	017999AMSL	08000AMSL	USAF	1,043

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Special Use Airspace Inventory							
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	TRUMAN B MOA, MO	FAA, KANSAS CITY ARTCC	Whiteman AFB	017999AMSL	08000AMSL	USAF	688
	TRUMAN C MOA, MO	FAA, KANSAS CITY ARTCC	Whiteman AFB	017999AMSL	00500AGL	USAF	573
	R2309	FAA, LOS ANGELES ARTCC	Yuma Proving Ground	015000AMSL	SURFACE	USAF	7
	W506	FAA, NEW YORK ARTCC	Northeast ADS/DOOS	FL500	SURFACE	USAF	1,688
	R3007A	FAA, JACKSONVILLE ARTCC	Townsend	005000AMSL	01500AGL	USAF (ANG)	63
	R3007A(A)	FAA, JACKSONVILLE ARTCC	Townsend	005000AMSL	03001AGL	USAF (ANG)	7
	R3007B	FAA, JACKSONVILLE ARTCC	Townsend	005000AMSL	00500AGL	USAF (ANG)	55
	R3007C	FAA, JACKSONVILLE ARTCC	Townsend	013000AMSL	00100AGL	USAF (ANG)	89
	R3007D	FAA, JACKSONVILLE ARTCC	Townsend	013000AMSL	01200AGL	USAF (ANG)	31
	R3007E	FAA, JACKSONVILLE ARTCC	Townsend	013000AMSL	SURFACE	USAF (ANG)	5
	YANKEE 1 MOA, NH	FAA, BOSTON ARTCC	103 TFG/DOC, CT ANG	017999AMSL	09000AMSL	USAF(ANG)	1,806
	YANKEE 2 MOA, NH	FAA, BOSTON ARTCC	103 TFG/DOC, CT ANG	008999AMSL	00100AGL	USAF(ANG)	728
	HERSEY MOA, MI	FAA, MINNEAPOLIS ARTCC	110 TASG, MI ANG	017999AMSL	05000AMSL	USAF(ANG)	542
	DUKE MOA, PA	FAA, CLEVELAND ARTCC	112 ACS/DOT, PA ANG	017999AMSL	08000AMSL	USAF(ANG)	1,544
	HAYS MOA, MT	FAA, SALT LAKE CITY ARTCC	120 FW, MT ANG	017999AMSL	00300AGL	USAF(ANG)	5,061
	BRUSH CREEK MOA, OH	FAA, INDIANAPOLIS ARTCC	123 ACS, OH ANG	004999AMSL	00100AGL	USAF(ANG)	678
	BUCKEYE MOA, OH	FAA, INDIANAPOLIS ARTCC	123 ACS, OH ANG	017999AMSL	05000AMSL	USAF(ANG)	1,555
	LINDBERGH A MOA, MO	FAA, KANSAS CITY ARTCC	131 FW, MO ANG	017999AMSL	07000AMSL	USAF(ANG)	2,171
	LINDBERGH B MOA, MO	FAA, KANSAS CITY ARTCC	131 FW, MO ANG	017999AMSL	08000AMSL	USAF(ANG)	765
	LINDBERGH C MOA, MO	FAA, KANSAS CITY ARTCC	131 FW, MO ANG	017999AMSL	08000AMSL	USAF(ANG)	576
	CANNON A MOA, MO	FAA, KANSAS CITY ARTCC	131 TFW, Det 1, MO ANG	017999AMSL	00300AGL	USAF(ANG)	219
	CANNON B MOA, MO	FAA, KANSAS CITY ARTCC	131 TFW, Det 1, MO ANG	017999AMSL	00100AGL	USAF(ANG)	15
	SALEM MOA, MO	FAA, KANSAS CITY ARTCC	131 TFW, Det 1, MO ANG	006999AMSL	SURFACE	USAF(ANG)	1,375
	CRYPT CENTRAL MOA, IA	FAA, MINNEAPOLIS ARTCC	132 FW, IA ANG	017999AMSL	08000AMSL	USAF(ANG)	1,389
	CRYPT NORTH MOA, IA	FAA, MINNEAPOLIS ARTCC	132 FW, IA ANG	017999AMSL	08000AMSL	USAF(ANG)	1,670

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Special Use Airspace Inventory							
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	CRYPT SOUTH MOA, IA	FAA, MINNEAPOLIS ARTCC	132 FW, IA ANG	017999AMSL	08000AMSL	USAF(ANG)	1,244
	BEAVER MOA, MN	FAA, MINNEAPOLIS ARTCC	148 FIG, MN ANG	017999AMSL	00300AGL	USAF(ANG)	2,357
	BIG BEAR MOA, MI	FAA, MINNEAPOLIS ARTCC	148 FIG, MN ANG	017999AMSL	00500AMSL	USAF(ANG)	1,650
	SNOOPY EAST MOA, MN	FAA, MINNEAPOLIS ARTCC	148 FIG, MN ANG	017999AMSL	00300AGL	USAF(ANG)	1,012
	SNOOPY WEST MOA, MN	FAA, MINNEAPOLIS ARTCC	148 FIG, MN ANG	017999AMSL	06000AMSL	USAF(ANG)	2,618
	LINCOLN MOA, NE	FAA, MINNEAPOLIS ARTCC	155 TRG, NE ANG	017999AMSL	08000AMSL	USAF(ANG)	1,228
	JACKAL LOW MOA, AZ	FAA, ALBUQUERQUE ARTCC	162 FW, AZ ANG	010999AMSL	00100AGL	USAF(ANG)	644
	JACKAL MOA, AZ	FAA, ALBUQUERQUE ARTCC	162 FW, AZ ANG	017999AMSL	11000AMSL	USAF(ANG)	3,384
	MORENCI MOA, AZ	FAA, ALBUQUERQUE ARTCC	162 FW, AZ ANG	017999AMSL	01500AGL	USAF(ANG)	1,669
	OUTLAW MOA, AZ	FAA, ALBUQUERQUE ARTCC	162 FW, AZ ANG	017999AMSL	08000AMSL	USAF(ANG)	1,886
	RESERVE MOA, AZ	FAA, ALBUQUERQUE ARTCC	162 FW, AZ ANG	017999AMSL	05000AGL	USAF(ANG)	2,402
	RUBY 1 MOA, AZ	FAA, ALBUQUERQUE ARTCC	162 FW, AZ ANG	017999AMSL	10000AMSL	USAF(ANG)	555
	HART NORTH MOA, OR	FAA, SEATTLE ARTCC	173 FW, OR ANG	017999AMSL	11000AMSL	USAF(ANG)	620
	HART SOUTH MOA, OR	FAA, SEATTLE ARTCC	173 FW, OR ANG	017999AMSL	11000AMSL	USAF(ANG)	1,713
	MISTY 1 MOA, NY	FAA, CLEVELAND ARTCC	174 FW, NY ANG	017999AMSL	04000AMSL	USAF(ANG)	562
	MISTY 2 MOA, NY	FAA, CLEVELAND ARTCC	174 FW, NY ANG	017999AMSL	00300AGL	USAF(ANG)	674
	MISTY 3 MOA, NY	FAA, CLEVELAND ARTCC	174 FW, NY ANG	017999AMSL	11000AMSL	USAF(ANG)	489
	SYRACUSE 1 MOA, NY	USA, WHEELER SACK APPROACH	174 FW, NY ANG	005999AMSL	00100AGL	USAF(ANG)	571
	SYRACUSE 2A MOA, NY	USA, WHEELER SACK APPROACH	174 FW, NY ANG	005999AMSL	00100AGL	USAF(ANG)	84
	SYRACUSE 3 MOA, NY	USA, WHEELER SACK APPROACH	174 FW, NY ANG	005999AMSL	00100AGL	USAF(ANG)	124
	SYRACUSE 4 MOA, NY	USA, WHEELER SACK APPROACH	174 FW, NY ANG	003000AMSL	00100AGL	USAF(ANG)	157
	RED HILLS MOA, IN	FAA, INDIANAPOLIS ARTCC	181 TFG, IN ANG, Terre Haute	017999AMSL	06000AMSL	USAF(ANG)	1,291
	O NEILL MOA, NE	FAA, MINNEAPOLIS ARTCC	185 FW, IA ANG	017999AMSL	00500AGL	USAF(ANG)	2,071
	BIRMINGHAM 2 MOA, AL	FAA, ATLANTA ARTCC	187 FW, AL ANG	009999AMSL	00500AGL	USAF(ANG)	1,081
	BIRMINGHAM MOA, AL	FAA, ATLANTA ARTCC	187 FW, AL ANG	017999AMSL	10000AMSL	USAF(ANG)	1,108

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Special Use Airspace Inventory							
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	CAMDEN RIDGE MOA, AL	FAA, ATLANTA ARTCC	187 FW, AL ANG	009999AMSL	00500AGL	USAF(ANG)	2,053
	W453	FAA, HOUSTON ARTCC	ANG CRTC GULFPORT, Gulfport, MS	FL500	SURFACE	USAF(ANG)	1,208
	AIRBURST A MOA, CO	FAA, DENVER ARTCC	Buckley ANGB	017999AMSL	01500AGL	USAF(ANG)	157
	AIRBURST B MOA, CO	FAA, DENVER ARTCC	Buckley ANGB	017999AMSL	00500AGL	USAF(ANG)	13
	AIRBURST C MOA, CO	FAA, DENVER ARTCC	Buckley ANGB	008499AMSL	00500AGL	USAF(ANG)	10
	CHEYENNE HIGH MOA, CO	FAA, DENVER ARTCC	Buckley ANGB	017999AMSL	09000AMSL	USAF(ANG)	1,752
	CHEYENNE LOW MOA, CO	FAA, DENVER ARTCC	Buckley ANGB	009000AMSL	00300AGL	USAF(ANG)	1,599
	LA VETA HIGH MOA, CO	FAA, DENVER ARTCC	Buckley ANGB	017999AMSL	13000AMSL	USAF(ANG)	1,193
	LA VETA LOW MOA, CO	FAA, DENVER ARTCC	Buckley ANGB	013000AMSL	01500AGL	USAF(ANG)	191
	TWO BUTTES HIGH MOA, CO	FAA, DENVER ARTCC	Buckley ANGB	017999AMSL	10000AMSL	USAF(ANG)	1,352
	TWO BUTTES LOW MOA, CO	FAA, DENVER ARTCC	Buckley ANGB	009999AMSL	00300AGL	USAF(ANG)	1,352
	DEEPWOODS MOA, ME	FAA, BANGOR APP CON	CO, Army Avn Support Fac/ME ANG	003000AMSL	SURFACE	USAF(ANG)	192
	VOLK SOUTH MOA, WI	FAA, CHICAGO ARTCC	Hardwood (Volk Field)	017999AMSL	00500AGL	USAF(ANG)	482
	GOOSE NORTH MOA, OR	FAA, SEATTLE ARTCC	Kingsley Fld	017999AMSL	03000AGL	USAF(ANG)	1,303
	GOOSE SOUTH MOA, OR	FAA, SEATTLE ARTCC	Kingsley Fld	017999AMSL	10000AMSL	USAF(ANG)	693
	A683	WICHITA TRACON	McConnell AFB (184 ARW, KS ANG)	004500AMSL	SURFACE	USAF(ANG)	108
	EUREKA HIGH MOA, KS	FAA, KANSAS CITY ARTCC	McConnell AFB (184 ARW, KS ANG)	017999AMSL	06000AMSL	USAF(ANG)	1,552
	EUREKA LOW MOA, KS	FAA, KANSAS CITY ARTCC	McConnell AFB (184 ARW, KS ANG)	005999AMSL	02500AMSL	USAF(ANG)	1,552
	CONDOR 1 MOA, ME	FAA, BOSTON ARTCC	NE ADS/DOOS, NY ANG	017999AMSL	07000AMSL	USAF(ANG)	2,280
	CONDOR 2 MOA, ME	FAA, BOSTON ARTCC	NE ADS/DOOS, NY ANG	017999AMSL	07000AMSL	USAF(ANG)	578
	FALCON 1 MOA, NY	FAA, BOSTON ARTCC	NE ADS/DOOS, NY ANG	017999AMSL	06000AMSL	USAF(ANG)	1,918
	FALCON 3 MOA, NY	FAA, BOSTON ARTCC	NE ADS/DOOS, NY ANG	017999AMSL	06000AMSL	USAF(ANG)	228
	R4207	FAA, MINNEAPOLIS ARTCC	Phelps-Collins ANGB	FL450	SURFACE	USAF(ANG)	950

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	FALLS 1 MOA, WI	FAA, MINNEAPOLIS ARTCC	Volk Field ANGB	017999AMSL	00500AGL	USAF(ANG)	782
	FALLS 2 MOA, WI	FAA, MINNEAPOLIS ARTCC	Volk Field ANGB	017999AMSL	00500AGL	USAF(ANG)	494
	MINNOW MOA, WI	FAA, CHICAGO ARTCC	Volk Field ANGB	017999AMSL	10000AMSL	USAF(ANG)	1,638
	R6903	FAA, CHICAGO ARTCC	Volk Field ANGB	FL450	SURFACE	USAF(ANG)	887
	R6904A	FAA, MINNEAPOLIS ARTCC	Volk Field ANGB	FL230	00150AGL	USAF(ANG)	65
	R6904B	FAA, MINNEAPOLIS ARTCC	Volk Field ANGB	FL230	SURFACE	USAF(ANG)	11
	VOLK EAST MOA, WI	FAA, CHICAGO ARTCC	Volk Field ANGB	017999AMSL	08000AMSL	USAF(ANG)	1,753
	VOLK WEST MOA, WI	FAA, MINNEAPOLIS ARTCC	Volk Field ANGB	017999AMSL	00100AGL	USAF(ANG)	483
NASA / USN / USAF	R6604A	FAA, WASHINGTON, DC ARTCC	Wallops Island	UNLTD	SURFACE	NASA / USN / USAF	61
NASA / USN / USAF	R6604B	FAA, WASHINGTON, DC ARTCC	Wallops Island	UNLTD	SURFACE	NASA / USN / USAF	12

* Users from various Service units and installations share special use airspace (SUA). For this reason, a simple one-to-one linking of airspace to installations or units does not depict actual airspace usage. As a general rule, this inventory links SUA to the installations or units responsible for scheduling their use.
** Area and length calculations were performed using an Albers Equal Area Conic projection for the conterminous United States and the appropriate Universal Transverse Mercator zones for Alaska (6N), Hawaii(4N), and Guam(55N).
Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005)). Please refer to DoD Flight Information Publications for more information.

Table B-3. Military Training Route (MTR) Inventory

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
IR002	20 OSS/OSTA, Shaw AFB, SC 29152-5000 DSN 965-1121/1122, C 803-895-1121/1122, Fax	20 OSS/OSOS, Shaw AFB, SC 29152 Duty hrs DSN 965-1118/1119, C803-895-1118/1119.	Continuous	125
IR012	4 OSS/OSR, Seymour Johnson AFB, NC 27531-5004 DSN 722-2672, C919-722-2672.	4 OSS/OSOSF, Seymour Johnson AFB, NC 27531-5004 DSN 722-2129/2124, C919-722-2129	Continuous	143
IR015	347 OSS/OSTA, Moody AFB, GA 31699-5000 DSN 460-4131, C229-257-4131.	347 OSS/OSOS, Moody AFB, GA 31699-1899 (Advance Mon-Fri 0800-1600 local, DSN 460	Continuous	164
IR016	347 OSS/OSTA, Moody AFB, GA 31699-5000 DSN 460-4131, C229-257-4131.	347 OSS/OSOS, Moody AFB, GA 31699-1899 (Advance Mon-Fri 0800-1600 local, DSN 460	Continuous	168
IR017	187 FW, 5187 Selma Highway, Montgomery, AL 36108-4824 DSN 358-9255, C334-394-725	Same as Originating Activity	Continuous	202
IR018	FACSFAC JAX, NAS Jacksonville, FL 32212 DSN 942-2004/2005, C904-542-2004/2005, A	Same as Originating Activity	0700-2400 local daily	401
IR019	FACSFAC JAX, NAS Jacksonville, FL 32212 DSN 942-2004/2005, C904-542-2004/2005, A	Same as Originating Activity	0700-2400 local daily	455
IR020	FACSFAC JAX, NAS Jacksonville, FL 32212 DSN 942-2004/2005, C904-542-2004/2005, A	Same as Originating Activity	0700-2400 local daily	394
IR021	FACSFACNPA, Pensacola, FL 32508-5217 DSN 922-2735, C850-452-2735.	Same as Originating Activity	1200-0400Z++ Mon-Fri, occasionally on weekends	452
IR022	FACSFACNPA, Pensacola, FL 32508-5217 DSN 922-2735, C850-452-2735.	Same as Originating Activity	1200-0400Z++ weekdays, occasional weekends	321
IR023	CG MCAS CHERRY POINT, ATTN RAC-DIROPS, Cherry Point, NC 28533 DSN 582-3466, C252	Central Scheduling Division, MCAS Cherry Point, NC 28533 DSN 582-4040/4041, C252	Continuous	224
IR026	AFWTF USNS Roosevelt Roads, Box 34 FPO Miami, FL 34051 DSN 831-5218/4194, C809-8	Same as Originating Activity	Daily	55
IR027	AFWTF USNS Roosevelt Roads, Box 34 FPO Miami, FL 34051 DSN 831-5218/4194, C809-8	Same as Originating Activity	Daily	13
IR030	Commander Naval Air Warfare Center, Weapons Division, Code 52911GE, NAWS, Point	Same as Originating Activity	Daylight hours only, daily	260
IR031	Commander Naval Air Warfare Center, Weapons Division, Code 52911GE, NAWS, Point	Same as Originating Activity	Daylight hours only, daily	260
IR032	Commander Naval Air Warfare Center, Weapons Division, Code 52911GE, NAWS, Point	Commander Fleet Area Control and Surveillance Facility Jacksonville, Naval Air S	Daylight hours	168
IR033	Commander Naval Air Warfare Center, Weapons Division, Code 52911GE, NAWS, Point	Commander Fleet Area Control and Surveillance Facility Jacksonville, Naval Air S	Daylight hours	212

* Data fields are limited to 80 characters in the source database (National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File)); therefore, some data field entries are not complete. Please refer to DoD Flight Information Publications for complete originating and scheduling activity information.
** Length calculations were performed using an Albers Equal Area Conic projection for the conterminous United States and the appropriate Universal Transverse Mercator zones for Alaska (6N), Hawaii(4N), and Guam(55N).
Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
IR034	347 Rescue Wing, Detachment 1/RO, 8707 North Golf Course St., MacDill AFB, FL 33	347 Rescue Wing, Detachment 1/ROA, 8707 North Golf Course St., MacDill AFB, FL 3	0600-2400 local	151
IR035	437 AW/C-17 OSS/OSOT Charleston AFB, SC 29404 DSN 673-5613, C803-566-5613.	20 OSS/OSOS, Shaw AFB, SC 29152-5000 Duty hours DSN 965-1118/1119 C803-895-1118,	0600-2200 local, daily	198
IR036	437 AW/C-17 OSS/OSOT Charleston AFB, SC 29404 DSN 673-5613, C803-566-5613.	20 OSS/OSOS, Shaw AFB, SC 29152-5000 Duty hours DSN 965-1118/1119 C803-895-1118,	0600-2200 local, daily	178
IR037	FACSFACNPA, NAS Pensacola, FL 32508-5000 DSN 922-2735, C850-452-2735.	Same as Originating Activity	Mon-Fri 1200-0400Z++, occasional weekends	213
IR038	FACSFACNPA, NAS Pensacola, FL 32508-5000 DSN 922-2735, C904-452-2735.	Same as Originating Activity	Sunrise-Sunset, Mon-Fri, occasional weekends	400
IR040	FACSFACNPA, NAS Pensacola, FL 32508-5000 DSN 922-2735, C850-452-2735.	Same as Originating Activity	Mon-Fri 1200-0400Z++, occasional weekends	176
IR044	COMTRAWING ONE, NAS Meridian, MS 39309-0136 DSN 637-2487, C601-637-2487.	Same as Originating Activity	Sunrise-Sunset	161
IR046	347 Rescue Wing, Detachment 1/RO, 8707 North Golf Course St., MacDill AFB, FL 33	347 Rescue Wing, Detachment 1/ROA, 8707 North Golf Course St., MacDill AFB, FL 3	0700-2400 local, daily	172
IR047	347 Rescue Wing, Detachment 1/RO, 8707 North Golf Course St., MacDill AFB, FL 33	347 Rescue Wing, Detachment 1/ROA, 8707 North Golf Course St., MacDill AFB, FL 3	0700-2400 local, daily	68
IR048	347 Rescue Wing, Detachment 1/RO, 8707 North Golf Course St., MacDill AFB, FL 33	347 Rescue Wing, Detachment 1/ROA, 8707 North Golf Course St., MacDill AFB, FL 3	0700-2400 local, daily	32
IR049	347 Rescue Wing, Detachment 1/RO, 8707 North Golf Course St., MacDill AFB, FL 33	347 Rescue Wing, Detachment 1/ROA, 8707 North Golf Course St., MacDill AFB, FL 3	0700-2400 local, daily	88
IR050	347 Rescue Wing, Detachment 1/RO, 8707 North Golf Course St., MacDill AFB, FL 33	347 Rescue Wing, Detachment 1/ROA, 8707 North Golf Course St., MacDill AFB, FL 3	0700-2400 local, daily	110
IR051	347 Rescue Wing, Detachment 1/RO, 8707 North Golf Course St., MacDill AFB, FL 33	347 Rescue Wing, Detachment 1/ROA, 8707 North Golf Course St., MacDill AFB, FL 3	0700-2400 local, daily	198
IR053	347 Rescue Wing, Detachment 1/RO, 8707 North Golf Course St., MacDill AFB, FL 33	347 Rescue Wing, Detachment 1/ROA, 8707 North Golf Course St., MacDill AFB, FL 3	0600-2400 local, daily	138
IR055	347 WG, Detachment 1/RO, 8707 North Golf Course St., MacDill AFB, FL 33621-5205	347 WG, Detachment 1/ROA, 8707 North Golf Course St., MacDill AFB, FL 33621-5205	0600-2400 local, daily	138
IR056	347 WG, Detachment 1/RO, 8707 North Golf Course St., MacDill AFB, FL 33621-5205	347 WG, Detachment 1/ROA, 8707 North Golf Course St., MacDill AFB, FL 33621-5205	0600-2400 local	207
IR057	16 OSS/DOAA, Hurlburt Field, FL 32544 DSN 579-7409, C850-884-7409.	16 OSS/DOO, Hurlburt Field, FL 32544 DSN 579-6877/7812, C850-884-6877/7812.	Continuous	417
IR059	16 OSS/DOAA, Hurlburt Field, FL 32544 DSN 579-7409, C850-884-7409.	16 OSS/DOO, Hurlburt Field, FL 32544 DSN 579-6877/7812, C850-884-6877/7812.	Continuous	438
IR062	COMFITWINGLANT, Oceana, NAS Virginia Beach, VA 23460 DSN 433-4014, C757-433-4014	FACSFAC VACAPES, Oceana , NAS Virginia Beach, VA 23460 DSN 433-1228, C757-433-12	Continuous	507

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** Length calculations were performed using an Albers Equal Area Conic projection for the conterminous United States and the appropriate Universal Transverse Mercator zones for Alaska (6N), Hawaii(4N), and Guam(55N).
Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
IR066	14 OSS/OSOP, Columbus AFB, MS 39710 DSN 742-7560/7521, C662-434-7560/7521.	50 FTS, Columbus AFB, MS 39710 DSN 742-7734/7735, C662-434-7734. (When 14 FTW is	Sunrise-Sunset Mon-Fri	284
IR067	14 OSS/OSOP, Columbus AFB, MS 39710 DSN 742-7560/7633, C662-434-7560/7521.	48 FTS, Columbus AFB, MS 39710 DSN 742-7840/7847, C662-434-7840/7847. (When 14 F	Sunrise-Sunset Mon-Fri	312
IR068	14 OSS/OSOP, Columbus AFB, MS 39710 DSN 742-7560/7633, C662-434-7560/7521.	48 FTS, Columbus AFB, MS 39710 DSN 742-7840/7847, C662-434-7840/7847. (When 14 F	Sunrise-Sunset Mon-Fri	149
IR070	14 OSS/OSOP, Columbus AFB, MS 39710-5000 DSN 742-7560/7633, C662-434-7560/7633.	48 FTS, Columbus AFB, MS 39710-5000 DSN 742-7840/7847, C662-434-7840/7847. (When	Sunrise-Sunset daily	260
IR074	20 OSS/OSTA, Shaw AFB, SC 29152-5000 DSN 965-1121/1122, C803-895-1121/1122, Fax	20 OSS/OSOS, Shaw AFB, SC 29152 Duty hrs DSN 965-1118/1119, C803-895-1118/1119.	0600-2400 local, daily, OT require prior approval by Atlanta ARTCC	192
IR077	FACSFACNPA, NAS Pensacola, FL 32508-5000 DSN 922-2735, C850-452-2735.	Same as Originating Activity	1200-0400Z++ Mon-Fri; occasional weekends	276
IR078	FACSFACNPA, NAS Pensacola, FL 32508-5000 DSN 922-2735, C850-452-2735.	Same as Originating Activity	1200-0400Z++ Mon-Fri; occasional weekends	276
IR079	FACSFACNPA, NAS Pensacola, FL 32508-5000 DSN 922-2735, C850-452-2735.	Same as Originating Activity	1200-0400Z++ Mon-Fri; occasional weekends	246
IR080	FACSFACNPA, NAS Pensacola, FL 32508-5000 DSN 922-2735, C850-452-2735.	Same as Originating Activity	1200-0400Z++ Mon-Fri; occasional weekends	266
IR081	FACSFACNPA, NAS Pensacola, FL 32508-5000 DSN 922-2735, C850-452-2735.	Same as Originating Activity	1200-0400Z++ Mon-Fri; occasional weekends	215
IR082	FACSFACNPA, NAS Pensacola, FL 32508-5000 DSN 922-2735, C850-452-2735.	Same as Originating Activity	1200-0400Z++ Mon-Fri; occasional weekends	270
IR083	FACSFACNPA, NAS Pensacola, FL 32508-5000 DSN 922-2735, C850-452-2735.	Same as Originating Activity	1200-0400Z++ Mon-Fri; occasional weekends	298
IR089	20 OSS/OSTA, Shaw AFB, SC 29152-5000 DSN 965-1121/1122, C 803-895-1121/1122, Fax	20 OSS/OSOS, Shaw AFB, SC 29152 Duty hrs DSN 965-1118/1119, C803-895-1118/1119.	0600-2400 local, daily, OT require prior approval by Atlanta ARTCC	177
IR090	20 OSS/OSTA, Shaw AFB, SC 29152-5000 DSN 965-1121/1122, C 803-895-1121/1122, Fax	20 OSS/OSOS, Shaw AFB, SC 29152 Duty hrs DSN 965-1118/1119, C803-895-1118/1119.	0600-2400 local, daily, OT require prior approval by Atlanta ARTCC	177
IR091	14 OSS/OSOP Columbus AFB, MS 39710 DSN 742-7560/7633 C662-434-7560/7633.	50 FTS Columbus AFB, MS 39710 DSN 742-7734, C662-434-7734. (When 14 FTW is ngt f	Sunrise-Sunset Mon-Fri	179
IR102	49 OSS/OSTA, 700 Delaware Ave., Holloman AFB, NM 88330-8017 DSN 572-3244, C505-5	49 OSS/OSOS, 744 Delaware Ave., Holloman AFB, NM 88330-8014 DSN 572-3536, C505-5	Daylight hours by NOTAM	522

* Data fields are limited to 80 characters in the source database (National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File)); therefore, some data field entries are not complete. Please refer to DoD Flight Information Publications for complete originating and scheduling activity information.
** Length calculations were performed using an Albers Equal Area Conic projection for the conterminous United States and the appropriate Universal Transverse Mercator zones for Alaska (6N), Hawaii(4N), and Guam(55N).
Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
IR103	301 OG/SUA, NAS JRB Fort Worth, TX 76127 DSN 739-6903/6904/6905, C817-782-6903/6	Same as Originating Activity	0600-2200 local, daily	117
IR105	301 OG/SUA, NAS JRB Fort Worth, TX 76127 DSN 739-6903/6904/6905, C817-782-6903/6	Same as Originating Activity.	0600-2200 local, daily	212
IR107	27 OSS/OSOH 110 E. Sextant Ave., Suite 1081, Cannon AFB, NM 88103 DSN 681-2279 C	27 OSS/OSOS 110 E. Sextant Ave., Suite 1080, Cannon AFB, NM 88103 DSN 681-2276.	Continuous	654
IR109	27 OSS/OSOH 110 E. Sextant Ave., Suite 1081, Cannon AFB, NM 88103 DSN 681-2279.	27 OSS/OSOS 110 E. Sextant Ave., Suite 1080, Cannon AFB, NM 88103 DSN 681-2276,	Continuous	747
IR110	7 OSS/OSTA, 949 Ave. D-1., Ste 102, Dyess AFB, TX 70607 DSN 461-3665, C915-696-3	Same as Originating Activity	Continuous	265
IR111	27 OSS/OSOH 110 E. Sextant Ave., Suite 1081, Cannon AFB, NM 88103 DSN 681-2279 C	27 OSS/OSOS 110 E. Sextant Ave., Suite 1080, Cannon AFB, NM 88103 DSN 681-2276.	Continuous	660
IR112	58 OSS/DOO, Kirtland AFB, NM 87117-5861 DSN 263-5979/5888, C505-853-5979/5888/57	Same as Originating Activity	Continuous	640
IR113	27 OSS/OSOH 110 E. Sextant Ave., Suite 1081, Cannon AFB, NM 88103 DSN 681-2279 C	27 OSS/OSOS 110 E. Sextant Ave., Suite 1080, Cannon AFB,NM 88103. Request for us	Continuous	971
IR115	49 OSS/OSTA, 700 Delaware Ave., Holloman AFB, NM 88330-8017 DSN 572-3244, C505-5	49 OSS/OSOS, 744 Delaware Ave., Holloman AFB, NM 88330-8014 DSN 572-3536, C505-5	Daylight hours by NOTAM	62
IR116	49 OSS/OSTA, 700 Delaware Ave., Holloman AFB, NM 88330-8017 DSN 572-3244, C505-5	49 OSS/OSOS, 744 Delaware Ave., Holloman AFB, NM 88330-8014 DSN 572-3536, C505-5	Daylight hours by NOTAM	62
IR117	188 FW/XP, 4850 Leigh Ave., Fort Smith, AR 72903-6096 DSN 778-5185/5271.	Same as Originating Activity. Route scheduled no more than 24 hr in advance. Min	Continuous (except Sunday 1000-1200 local)	188
IR120	188 FW/XP, 4850 Leigh Ave., Fort Smith, AR 72903-6096 DSN 778-5185/5271.	Same as Originating Activity. Route scheduled no more than 24 hr in advance. Min	Continuous (except Sunday 1000-1200 local)	81
IR121	188 FW/XP, 4850 Leigh Ave., Fort Smith, AR 72903-6096 DSN 778-5185/5271.	Same as Originating Activity. Route scheduled no more than 24 hr in advance. Min	Continuous (except Sunday 1000-1200 local)	120
IR122	49 OSS/OSTA, 700 Delaware Ave., Holloman AFB, NM 88330-8017 DSN 572-3244, C505-5	49 OSS/OSOS, 744 Delaware Ave., Holloman AFB, NM 88330-8014 DSN 572-3536, C505-5	Continuous (except Sunday 1000-1200 local)	28
IR123	301 OG/SUA, NAS JRB Fort Worth, TX 76127 DSN 739-6903/6904/6905, C817-782-6903/6	Same as Originating Activity	0700-2200 local	405
IR124	301 OG/SUA, NAS JRB Fort Worth, TX 76127 DSN 739-6903/6904/6905, C817-782-6903/6	Same as Originating Activity	0700-2200 local	246
IR126	7 OSS/OSOR, 966 Ave. D-4, Ste. 118, Dyess AFB, TX 79607 DSN 461-3666, C325-696-3	7 OSS/OSOR, 966 Ave. D-4, Ste. 118, Dyess AFB, TX 79607 DSN 461-3665, C325-696-3	Continuous	805
IR127	2 OSS/OSOSB, 41 Orville Wright Ave., Barksdale AFB, LA 71110 DSN 781-3828/5396,	Same as Originating Activity	Continuous	244

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** Length calculations were performed using an Albers Equal Area Conic projection for the conterminous United States and the appropriate Universal Transverse Mercator zones for Alaska (6N), Hawaii(4N), and Guam(55N).
Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
IR128	7 OSS/OSOR, 966 Ave. D-4, Ste. 118, Dyess AFB, TX 79607 DSN 461-3666, C325-696-3	7 OSS/OSOR, 966 Ave. D-4, Ste. 118, Dyess AFB, TX 79607 DSN 461-3665, C325-696-3	Continuous	651
IR129	2 OSS/OSOSB, 41 Orville Wright Ave., Barksdale AFB, LA 71110 DSN 781-3828/5396,	Same as Originating Activity	0700-2200 local	279
IR130	49 OSS/OSTA, 700 Delaware Ave., Holloman AFB, NM 88330-8017 DSN 572-3244, C505-5	49 OSS/OSOS, 744 Delaware Ave., Holloman AFB, NM 88330-8014 DSN 572-3536, C505-5	Daylight hours by NOTAM	28
IR131	49 OSS/OSTA, 700 Delaware Ave., Holloman AFB, NM 88330-8017 DSN 572-3244, C505-5	49 OSS/OSOS, 744 Delaware Ave., Holloman AFB, NM 88330-8014 DSN 572-3536, C505-5	Daylight hours by NOTAM	32
IR132	49 OSS/OSTA, 700 Delaware Ave., Holloman AFB, NM 88330-8017 DSN 572-3244, C505-5	49 OSS/OSOS, 744 Delaware Ave., Holloman AFB, NM 88330-8014 DSN 572-3536, C505-5	Daylight hours by NOTAM	32
IR133	49 OSS/OSTA, 700 Delaware Ave., Holloman AFB, NM 88330-8017 DSN 572-3244, C505-5	49 OSS/OSOS, 744 Delaware Ave., Holloman AFB, NM 88330-8014 DSN 572-3536, C505-5	0700-2300 local	316
IR134	49 OSS/OSTA, 700 Delaware Ave., Holloman AFB, NM 88330-8017 DSN 572-3244, C505-5	49 OSS/OSOS, 744 Delaware Ave., Holloman AFB, NM 88330-8014 DSN 572-3536, C505-5	Sunrise-0600Z++	236
IR135	COMTRAWING TWO, NAS Kingsville, TX 78363 DSN 876-6518/6283/6108, C361-516-6518/6	Same as Originating Activity. Scheduling hrs 0800-1600 Mon-Fri ONLY (excluding h	Sunrise-Sunset, daily	137
IR136	COMTRAWING TWO, NAS Kingsville, TX 78363 DSN 876-6518/6283/6108, C361-516-6518/6	Same as Originating Activity. Scheduling hrs 0800-1600 Mon-Fri ONLY (excluding h	Sunrise-Sunset, daily	163
IR137	58 OSS/DOO, Kirtland AFB, NM 87117-5861 DSN 263-5979/5888, C505-853-5979/5888/57	Same as Originating Activity	Continuous	218
IR139	301 OG/SUA, NAS JRB Fort Worth, TX 76127 DSN 739-6903/6904/6905, C817-782-6903/6	Same as Originating Activity	0600-2200 local, daily	102
IR141	49 OSS/OSTA, 700 Delaware Ave., Holloman AFB, NM 88330-8017 DSN 572-3244, C505-5	49 OSS/OSOS, 744 Delaware Ave., Holloman AFB, NM 88330-8014 DSN 572-3536, C505-5	Daylight hours by NOTAM	522
IR142	49 OSS/OSTA, 700 Delaware Ave., Ste. 131, Holloman AFB, NM 88310 DSN 572-3244, C	49 OSS/OSOS, 744 Delaware Ave., Holloman AFB, NM 88330-8017 DSN 572-3536, C505-5	Sunrise-0600Z++	207
IR145	71 FTW/OSOP, Vance AFB, OK 73705-5202 DSN 448-7850, C580-213-7850.	25 FTS/DISP, Vance AFB, OK 73705-5202 DSN 448-6038, C580-213-6038.	30 min after Sunrise-30 min before Sunset and active days per local directives	187
IR146	71 FTW/OSOP, Vance AFB, OK 73705-5202 DSN 448-7850, C580-213-7850.	25 FTS/DISP, Vance AFB, OK 73705-5202 DSN 448-6038, C580-213-6038.	30 min after Sunrise-30 min before Sunset and active days per local directives	185
IR147	COMTRAWING TWO, NAS Kingsville, TX 78363 DSN 876-6518/6283/6108, C361-516-6518/6	Same as Originating Activity. Scheduling hrs 0800-1600 Mon-Fri ONLY (excluding h	Sunrise to 30 minutes after Sunset, daily	123
IR148	COMTRAWING TWO, NAS Kingsville, TX 78363 DSN 876-6518/6283/6108, C361-516-6518/6	Same as Originating Activity. Scheduling hrs 0800-1600 Mon-Fri ONLY (excluding h	Daily 0600-2230 local	172

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** Length calculations were performed using an Albers Equal Area Conic projection for the conterminous United States and the appropriate Universal Transverse Mercator zones for Alaska (6N), Hawaii(4N), and Guam(55N).
Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
IR149	COMTRAWING TWO, NAS Kingsville, TX 78363 DSN 876-6518/6283/6108, C361-516-6518/6	Same as Originating Activity. Scheduling hrs 0800-1600 Mon-Fri ONLY (excluding h	Daily 0600-2230 local	214
IR150	7 OSS/OSOR, 966 Ave. D-4, Ste. 117, Dyess AFB, TX 79607 DSN 461-3666, C325-696-3	7 OSS/OSOR, 966 Ave. D-4, Ste. 117, Dyess AFB, TX 79607 DSN 461-3665, C325-696-3	Continuous	295
IR154	97 OSS/DOA, 400 N. Sixth Street, Bldg 164, Rm 4, Altus AFB, OK 73522 DSN 866-609	97 OSS/OSK, 516 S. Sixth Street, Ste A, Altus AFB, OK 73523 DSN 866-7110/6617.	0830-0230 local Mon-Fri	220
IR155	97 OSS/DOA, 400 N. Sixth Street, Bldg 164, Rm 4, Altus AFB, OK 73522 DSN 866-609	97 OSS/OSK, 516 S. Sixth Street, Ste A, Altus AFB, OK 73523 DSN 866-7110/6617.	0830-0230 local Mon-Fri	213
IR160	2 OSS/OSTP, 41 Orville Wright Ave., Suite 213, Barksdale AFB, LA 71110-2085 DSN	2 OSS/OSOSB, 41 Orville Wright Ave., Barksdale AFB, LA 71110 DSN 781-3828/5396,	0700-1600 local, daily	236
IR161	2 OSS/OSTP, 41 Orville Wright Ave., Suite 213, Barksdale AFB, LA 71110-2085 DSN	2 OSS/OSOSB, 41 Orville Wright Ave., Barksdale AFB, LA 71110 DSN 781-3828/5396,	0700-1600 local, daily	178
IR164	188 FW/XP, 4850 Leigh Ave., Fort Smith, AR 72903-6096 DSN 778-5185/5271.	Same as Originating Activity. Route scheduled no more than 24 hr in advance. Min	Continuous (except Sunday 1000-1200 local)	110
IR165	2 OSS/OSTP, 41 Orville Wright Ave., Suite 213, Barksdale AFB, LA 71110-2085 DSN	2 OSS/OSOSB, 41 Orville Wright Ave., Barksdale AFB, LA 71110 DSN 781-3828/5396,	Continuous	325
IR166	COMTRAWING TWO, NAS Kingsville, TX 78363 DSN 876-6518/6283/6108, C361-516-6518/6	Same as Originating Activity. Scheduling hrs 0800-1600 Mon-Fri ONLY (excluding h	0600-2400 local, daily	186
IR167	COMTRAWING TWO, NAS Kingsville, TX 78363 DSN 876-6518/6283/6108, C361-516-6518/6	Same as Originating Activity. Scheduling hrs 0800-1600 Mon-Fri ONLY (excluding h	0600-2400 local, daily	120
IR169	47 OSS/OSOR, 570 2nd Street, Ste. 6, Laughlin AFB, TX 78843-5222 DSN 732-5864, C	87 FTS/DOS, 570 2nd Street, Laughlin AFB, TX 78843 DSN 732-5484, C830-298-5484.	Sunrise-Sunset daily	176
IR170	47 OSS/OSOR, 570 2nd Street, Ste. 6, Laughlin AFB, TX 78843-5222 DSN 732-5864, C	87 FTS/DOS, 570 2nd Street, Laughlin AFB, TX 78843 DSN 732-5484, C830-298-5484.	Sunrise-Sunset daily	192
IR171	71 FTW/OSOP, Vance AFB, OK 73705-5202 DSN 448-7850, C580-213-7850.	25 FTS/DISP, Vance AFB, OK 73705-5202 DSN 448-6038, C580-213-6038.	30 min after Sunrise-30 min before Sunset and active days per local directives	175
IR172	71 FTW/OSOP, Vance AFB, OK 73705-5202 DSN 448-7850, C580-213-7850.	Same as Originating Activity.	30 min after Sunrise-30 min before Sunset and active days per local directives	165
IR173	71 FTW/OSOP, Vance AFB, OK 73705-5202 DSN 448-7850, C580-213-7850.	Same as Originating Activity.	30 min after Sunrise-30 min before Sunset and active days per local directives	159
IR174	509 OSS/OSKA, 905 Spirit Blvd., Whiteman AFB, MO 65305 DSN 975-1713/1754, C660-6	Same as Originating Activity	Continuous	545

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Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
IR175	71 FTW/OSOP, Vance AFB, OK 73705-5202 DSN 448-7850, C580-213-7850.	25 FTS/DISP, Vance AFB, OK 73705-5202 DSN 448-6038, C580-213-6038.	30 min after Sunrise-30 min before Sunset and active days per local directives	203
IR177	7 OSS/OSOR, 966 Ave. D-4, Ste. 117, Dyess AFB, TX 79607 DSN 461-3666, C325-696-3	7 OSS/OSOR, 966 Ave. D-4, Ste. 117, Dyess AFB, TX 79607 DSN 461-3665, C325-696-3	Continuous	363
IR178	7 OSS/OSOR, 966 Ave. D-4, Ste. 117, Dyess AFB, TX 79607 DSN 461-3666, C325-696-3	7 OSS/OSOR, 966 Ave. D-4, Ste. 117, Dyess AFB, TX 79607 DSN 461-3665, C325-696-3	Continuous	1029
IR180	7 OSS/OSOR, 966 Ave. D-4, Ste. 118, Dyess AFB, TX 79607 DSN 461-3666, C325-696-3	7 OSS/OSOR, 966 Ave. D-4, Ste. 118, Dyess AFB, TX 79607 DSN 461-3665, C325-696-3	Continuous	563
IR181	71 FTW/OSOP, Vance AFB, OK 73705-5202 DSN 448-7850, C580-213-7850.	25 FTS/DISP, Vance AFB, OK 73705-5202 DSN 448-6038, C580-213-6038.	30 min after Sunrise-30 min before Sunset and active days per local directives	175
IR182	71 FTW/OSOP, Vance AFB, OK 73705-5202 DSN 448-7850, C580-213-7850.	Same as Originating Activity.	30 min after Sunrise-30 min before Sunset and active days per local directives	165
IR183	71 FTW/OSOP, Vance AFB, OK 73705-5202 DSN 448-7850, C580-213-7850.	Same as Originating Activity.	30 min after Sunrise-30 min before Sunset and active days per local directives	159
IR185	71 FTW/OSOP, Vance AFB, OK 73705-5202 DSN 448-7850, C580-213-7850.	25 FTS/DISP, Vance AFB, OK 73705-5202 DSN 448-6038, C580-213-6038.	30 min after Sunrise-30 min before Sunset and active days per local directives	203
IR192	49 OSS/OSTA, 700 Delaware Ave., Holloman AFB, NM 88330-8017 DSN 572-3244, C505-5	49 OSS/OSOS, 744 Delaware Ave., Holloman AFB, NM 88330-8014 DSN 572-3536, C505-5	Sunrise-0600Z++	558
IR194	49 OSS/OSTA, 700 Delaware Ave., Holloman AFB, NM 88330-8017 DSN 572-3244, C505-5	49 OSS/OSOS, 744 Delaware Ave., Holloman AFB, NM 88330-8014 DSN 572-3536, C505-5	Sunrise-0600Z++	649
IR195	49 OSS/OSTA, 700 Delaware Ave., Holloman AFB, NM 88330-8017 DSN 572-3244, C505-5	49 OSS/OSOS, 744 Delaware Ave., Holloman AFB, NM 88330-8017 DSN 572-3536, C505-5	Sunrise-0600Z++	186
IR200	Commander Naval Air Warfare Center, Weapons Division, Code P529800E, (Naval Base	Commander Naval Air Warfare Center, Weapons Division, Code P529800E, (Naval Base	Sunrise-Sunset by NOTAM	649
IR203	Commander Strike Fighter Wing, US. Pacific Fleet, 001 (K) Street, Room 121, NAS	Same as Originating Activity	Daylight hours, OT by NOTAM	409
IR206	Commander Naval Air Warfare Center, Weapons Division, Code P3524, NAWS, Pt. Mugu	Commander Naval Air Warfare Center, Weapons Division, Code P3506, NAWS, Pt. Mugu	Daylight hours by NOTAM	119

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Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
IR207	Commander Strike Fighter Wing, US. Pacific Fleet, 001 (K) Street, Room 121, NAS	Same as Originating Activity	Daylight hours, OT by NOTAM	448
IR211	G-3, 3D MAW, MCAS Miramar, San Diego, CA 92145 DSN 267-9462, C858-577-9462. Non-	Same as Originating Activity	Continuous	152
IR212	G-3, 3D MAW, MCAS Miramar, San Diego, CA 92145 DSN 267-9462, C858-577-9462. Non-	Same as Originating Activity	Continuous	136
IR213	G-3, 3D MAW, MCAS Miramar, San Diego, CA 92145 DSN 267-9462, C858-577-9462. Non-	Same as Originating Activity	Continuous	269
IR214	G-3, 3D MAW, MCAS Miramar, San Diego, CA 92145 DSN 267-9462, C858-577-9462. Non-	Same as Originating Activity	Even numbered days only	265
IR216	G-3, 3D MAW, MCAS Miramar, San Diego, CA 92145 DSN 267-9462, C858-577-9462. Non-	Same as Originating Activity	Even numbered days-daylight only	53
IR217	G-3, 3D MAW, MCAS Miramar, San Diego, CA 92145 DSN 267-9462, C858-577-9462. Non-	Same as Originating Activity	Continuous	283
IR218	G-3, 3D MAW, MCAS Miramar, San Diego, CA 92145 DSN 267-9462, C858-577-9462. Non-	Same as Originating Activity	Continuous	229
IR234	Commander AFFTC, 412 OSS/OSAA, 235 S. Fightline Rd, Edwards AFB, CA 93524-6460 D	Commander AFFTC, 412 OSS/OSR, 300 East Yeager Blvd, Edwards AFB, CA 93524 DSN 52	Daylight hours by NOTAM	164
IR235	Commander AFFTC, 412 OSS/OSAA, 235 S. Fightline Rd, Edwards AFB, CA 93524-6460 D	Commander AFFTC, 412 OSS/OSR, 300 East Yeager Blvd, Edwards AFB, CA 93524 DSN 52	Daylight hours by NOTAM	164
IR236	Commander AFFTC, 412 OSS/OSAA, 235 S. Fightline Rd, Edwards AFB, CA 93524-6460 D	Commander AFFTC, 412 OSS/OSR, 300 East Yeager Blvd, Edwards AFB, CA 93524 DSN 52	0600-2200 local, daily	320
IR237	Commander AFFTC, 412 OSS/OSAA, 235 S. Fightline Rd, Edwards AFB, CA 93524-6460 D	Commander AFFTC, 412 OSS/OSR, 300 East Yeager Blvd, Edwards AFB, CA 93524 DSN 52	Daylight hours by NOTAM	130
IR238	Commander AFFTC, 412 OSS/OSAA, 235 S. Fightline Rd, Edwards AFB, CA 93524-6460 D	Commander AFFTC, 412 OSS/OSCS, 306 E. Popson, Edwards AFB, CA 93524-6680 DSN 527	Daylight hours by NOTAM	130
IR250	G-3, 3D MAW, MCAS Miramar, San Diego, CA 92145 DSN 267-9462, C858-577-9462. Non-	Same as Originating Activity	Daylight hours on even even numbered days	251
IR252	G-3, 3D MAW, MCAS Miramar, San Diego, CA 92145 DSN 267-9462, C858-577-9462. Non-	Same as Originating Activity	Daylight hours on odd numbered days	158
IR254	G-3, 3D MAW, MCAS Miramar, San Diego, CA 92145 DSN 267-9462, C858-577-9462. Non-	Same as Originating Activity	Daylight hours, Mon-Fri	99
IR255	G-3, 3D MAW, MCAS Miramar, San Diego, CA 92145 DSN 267-9462, C858-577-9462. Non-	Same as Originating Activity	Daylight hours, daily	67
IR264	366 OSS/OSTA, Mountain Home AFB, ID 83648 DSN 728-4722, C208-828-4722.	366 OSS/OSOS, Mountain Home AFB, ID 83648 DSN 728-2172, C208-828-4722.	By NOTAM	338
IR266	7 OSS/OSOR, 966 Ave. D-4, Ste. 118, Dyess AFB, TX 79607 DSN 461-3666, C325-696-3	7 OSS/OSOR, 966 Ave. D-4, Ste. 117, Dyess AFB, TX 79607 DSN 461-3663, C325-696-3	Continuous	457
IR275	366 OSS/OSTA, Mountain Home AFB, ID 83648 DSN 728-4722, C208-828-4722.	366 OSS/OSOS, Mountain Home AFB, ID 83648 DSN 728-2172, C208-828-2172.	By NOTAM	379

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Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
IR279	57 OSS/OSM, Nellis AFB, NV 89191 DSN 682-7891, C702-652-7891.	57 OSS/OSOS, 4450 Tyndall Ave., Nellis AFB, NV 89191 DSN 682-2040, C702-652-2040	Continuous	49
IR280	366 OSS/OSTA, Mountain Home AFB, ID 83648 DSN 728-4722, C208-828-4722.	366 OSS/OSOS Mountain Home AFB, ID 83648 DSN 728-2172, C208-828-2172. 366 WG/CP	By NOTAM	283
IR281	366 OSS/OSTA, Mountain Home AFB, ID 83648 DSN 728-4722, C208-828-4722.	366 OSS/OSOS Mountain Home AFB, ID 83648 DSN 728-2172, C208-828-2172. 366 WG/CP	By NOTAM	295
IR282	366 OSS/OSTA, Mountain Home AFB, ID 83648 DSN 728-4722, C208-828-4722.	366 OSS/OSOS Mountain Home AFB, ID 83648 DSN 728-2172, C208-828-2172. 366 WG/CP	By NOTAM	191
IR286	57 OSS/OSM, Nellis AFB, NV 89191 DSN 682-7891, C702-652-7891.	57 OSS/OSOS, 4450 Tyndall Ave., Nellis AFB, NV 89191 DSN 682-2040, C702-652-2040	Continuous	385
IR293	366 OSS/OSTA, Mountain Home AFB, ID 83648 DSN 728-4722, C208-828-4722.	366 OSS/OSOS, Mountain Home AFB, ID 83648 DSN 728-2172, C208-828-2172. (Scheduli	By NOTAM	311
IR300	366 OSS/OSOS, Mountain Home AFB, ID 83648 DSN 728-2172, C208-828-2172. (Scheduli	Same as Originating Activity	By NOTAM	390
IR301	124 WG/OGAM (ANG), 3996 W. Aeronca St., Boise Air Terminal, ID 83705-8004 DSN 42	124 WG/OSS (ANG), 3996 W. Aeronca St., Boise Air Terminal, ID 83705-8004 DSN 422	Continuous or by NOTAM	402
IR302	124 WG/OGAM (ANG), 3996 W. Aeronca St., Boise Air Terminal, ID 83705-8004 DSN 42	124 WG/OSS (ANG), 3996 W. Aeronca St., Boise Air Terminal, ID 83705-8004 DSN 422	Continuous or by NOTAM	452
IR303	366 OSS/OSAS, Mountain Home AFB, ID 83648 DSN 728-4722, C208-828-4722.	366 OSS/OSOS, Mountain Home AFB, ID 83648 DSN 728-2172, C208-828-2172. (Scheduli	By NOTAM	278
IR304	366 OSS/OSAS, Mountain Home AFB, ID 83648 DSN 728-4722, C208-828-4722.	366 OSS/OSOS, Mountain Home AFB, ID 83648 DSN 728-2172, C208-828-2172. (Scheduli	By NOTAM	314
IR305	124 WG/OGAM (ANG), 3996 W. Aeronca St., Boise Air Terminal, ID 83705-8004 DSN 42	124 WG/OSS (ANG), 3996 W. Aeronca St., Boise Air Terminal, ID 83705-8004 DSN 422	Continuous or by NOTAM	421
IR307	124 WG/OGAM (ANG), 3996 W. Aeronca St., Boise Air Terminal, ID 83705-8004 DSN 42	124 WG/OSS (ANG), 3996 W. Aeronca St., Boise Air Terminal, ID 83705-8004 DSN 422	Continuous or by NOTAM	402
IR308	58 OSS/DOO, Kirtland AFB, NM 87117-5861 DSN 263-5979/5888, C505-853-5979/5888/57	Same as Originating Activity	Continuous	218
IR320	7 OSS/OSOR, 966 Ave. D-4, Ste. 118, Dyess AFB, TX 79607 DSN 461-3663, C325-696-3	7 OSS/OSOR, 1001 Ave. D-4, Ste. 107, Dyess AFB, TX 79607 DSN 461-3663, C325-696-	Continuous	853
IR324	62 OSS/OSK, 1172 E. Street, McCord AFB, WA 98438 DSN 382-4057, C253-982-4057.	62 OSS/OSO, 100 Main St., McChord AFB, WA 98438 DSN 382-9925, C253-982-9925. Dut	Continuous	174
IR325	62 OSS/OSK, 1172 E. Street, McCord AFB, WA 98438 DSN 382-4057, C253-982-4057.	62 OSS/OSO, 100 Main St., McChord AFB, WA 98438 DSN 382-9925, C253-982-9925. Dut	Continuous	163
IR326	62 OSS/OSK, 1172 E. Street, McCord AFB, WA 98438 DSN 382-4057, C253-982-4057.	62 OSS/OSO, 100 Main St., McChord AFB, WA 98438 DSN 382-9925, C253-982-9925. Dut	Continuous	185
IR327	62 OSS/OSK, 1172 E. Street, McCord AFB, WA 98438 DSN 382-4057, C253-982-4057.	62 OSS/OSO, 100 Main St., McChord AFB, WA 98438 DSN 382-9925, C253-982-9925. Dut	Continuous	168

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Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
IR328	62 OSS/OSK, 1172 E. Street, McCord AFB, WA 98438 DSN 382-4057, C253-982-4057.	62 OSS/OSO, 100 Main St., McChord AFB, WA 98438 DSN 382-9925, C253-982-9925. Dut	Continuous	156
IR329	62 OSS/OSK, 160 McCarthy Blvd., McCord AFB, WA 98438 DSN 382-3615, C253-982-3615	62 OSS/OSO, 100 Main St., McChord AFB, WA 98438 DSN 382-9925, C253-982-9925. Dut	Continuous	156
IR330	62 OSS/OSK, 1172 E. Street, McCord AFB, WA 98438 DSN 382-4057, C253-982-4057.	62 OSS/OSO, 100 Main St., McChord AFB, WA 98438 DSN 382-9925, C253-982-9925. Dut	Continuous	113
IR340	62 OSS/OSK, 1172 E. St., McCord AFB, WA 98438 DSN 382-3615, C253-982-3615.	62 OSS/OSO, 100 Main St., McChord AFB, WA 98438 DSN 382-9925, C253-982-9925. Dut	Continuous	396
IR341	Commanding Officer (N38), NAS Whidbey Island, 3730 N. Charles Porter Ave., Oak H	Same as Originating Activity. Scheduling hours 0700-1700 local, Mon-Fri only. Sa	Continuous	294
IR342	Commanding Officer (N38), NAS Whidbey Island, 3730 N. Charles Porter Ave., Oak H	Same as Originating Activity. Scheduling hours 0700-1700 local, Mon-Fri only. Sa	Continuous	329
IR343	Commanding Officer (N38), NAS Whidbey Island, 3730 N. Charles Porter Ave., Oak H	Same as Originating Activity. Scheduling hours 0700-1700 local, Mon-Fri only. Sa	Continuous	473
IR344	Commanding Officer (N38), NAS Whidbey Island, 3730 N. Charles Porter Ave., Oak H	Same as Originating Activity. Scheduling hours 0700-1700 local, Mon-Fri only. Sa	Continuous	323
IR346	Commanding Officer (N38), NAS Whidbey Island, 3730 N. Charles Porter Ave., Oak H	Same as Originating Activity. Scheduling hours 0700-1700 local, Mon-Fri only. Sa	Continuous	333
IR348	Commanding Officer (N38), NAS Whidbey Island, 3730 N. Charles Porter Ave., Oak H	Same as Originating Activity. Scheduling hours 0700-1700 local, Mon-Fri only. Sa	Continuous	299
IR409	140th OG/CC Buckley ANGB Aurora, CO 80011-9546 DSN 847-9466, C720-847-9466.	140th OG/CC Buckley AFB Aurora, CO 80011-9546. Duty Hrs 0700-1700 DSN 847-9472,	0800-1600 local, Tue-Sat	194
IR414	140th OG/CC Buckley ANGB Aurora, CO 80011-9546 DSN 847-9466, C720-847-9466.	140th OG/CC Buckley AFB Aurora, CO 80011-9546. Duty Hrs 0700-1700 DSN 847-9472,	0800-1600 local, Tue-Sat; OT by NOTAM	106
IR415	140th OG/CC Buckley ANGB Aurora, CO 80011-9546 DSN 847-9466, C720-847-9466.	140th OG/CC Buckley AFB Aurora, CO 80011-9546. Duty Hrs 0700-1700 DSN 847-9472,	0800-1600 local, Tue-Sat; OT by NOTAM	174
IR416	140th OG/CC Buckley ANGB Aurora, CO 80011-9546 DSN 847-9466, C720-847-9466.	140th OG/CC Buckley AFB Aurora, CO 80011-9546. Duty Hrs 0700-1700 DSN 847-9472,	0800-1600 local, Tue-Sat; OT by NOTAM	320
IR418	388 RANS/DOA, 5948 Southgate Ave., Suite 211, Hill AFB, UT 84056-5232 DSN 777-69	388 RANS/DOA, D Ave., Bldg 120, Hill AFB, UT 84056-5232 DSN 777-4401, C801-777-4	0700-2400 local Mon-Thu, 0700-1800 local Fri, 0800-1700 local Sat	47
IR420	388 RANS/DOA, 5948 Southgate Ave., Suite 211, Hill AFB, UT 84056-5232 DSN 777-69	388 RANS/DOA, D Ave., Bldg 120, Hill AFB, UT 84056-5232 DSN 777-4401, C801-777-4	0700-2400 local Mon-Thu, 0700-1800 local Fri, 0800-1700 local Sat	40
IR424	140th OG/CC Buckley ANGB Aurora, CO 80011-9546 DSN 847-9466, C720-847-9466.	140th OG/CC Buckley AFB Aurora, CO 80011-9546. Duty Hrs 0700-1700 DSN 847-9472,	0800-1600 local, Tue-Sat; OT by NOTAM	151
IR425	Commander AFFTC, 412 OSS/OSAA, 235 S. Flightline Rd. Edwards AFB, CA 93523-6460	Commander AFFTC, 412 OSS/OSR, 300 East Yeager Blvd, Edwards AFB, CA 93524 DSN 52	Sunrise-Sunset by NOTAM	649

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Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
IR473	28 OSS/OSXA, 1956 Scott Dr., Ste. 201, Ellsworth AFB, SD 57706-4710 DSN 675-1230	28 OSS/OSXS, 1956 Scott Dr., Ste. 201, Ellsworth AFB, SD 57706-4710 DSN 675-4246	Continuous	708
IR479	120 FW/OSO (ANG) 2800 Airport Ave. B, Great Falls, MT 59404 DSN 279-2292, C406-7	Same as Originating Activity	By NOTAM	581
IR480	120 FW/ACC (ANG) 2800 Airport Ave. B, Great Falls, MT 59404 DSN 279-2292, C406-7	Same as Originating Activity	By NOTAM	421
IR485	28 OSS/OSXA, 1956 Scott Dr., Ste. 201, Ellsworth AFB, SD 57706-4710 DSN 675-1230	28 OSS/OSXS, 1956 Scott Dr., Ste. 201, Ellsworth AFB, SD 57706-4710 DSN 675-4246	Continuous	305
IR492	28 OSS/OSXA, 1956 Scott Dr., Ste. 201, Ellsworth AFB, SD 57706-4710 DSN 675-1230	28 OSS/OSXS, 1956 Scott Dr., Ste. 201, Ellsworth AFB, SD 57706-4710 DSN 675-4246	Continuous	583
IR499	28 OSS/OSXA, 1956 Scott Dr., Ste. 201, Ellsworth AFB, SD 57706-4710 DSN 675-1230	28 OSS/OSXS, 1956 Scott Dr., Ste. 201, Ellsworth AFB, SD 57706-4710 DSN 675-4246	Continuous	355
IR500	7 OSS/OSOR, 966 Ave. D-4, Ste. 117, Dyess AFB, TX 79607 DSN 461-3666, C325-696-3	7 OSS/OSOR, 966 Ave. D-4, Ste. 117, Dyess AFB, TX 79607 DSN 461-3665, C325-696-3	Continuous	541
IR501	7 OSS/OSOR, 966 Ave. D-4, Ste. 117, Dyess AFB, TX 79607 DSN 461-3666, C325-696-3	7 OSS/OSOR, 966 Ave. D-4, Ste. 117, Dyess AFB, TX 79607 DSN 461-3665, C325-696-3	Continuous	723
IR502	509 OSS/OSKA, 905 Spirit Blvd., Whiteman AFB, MO 65305 DSN 975-1713/1754, C660-6	Same as Originating Activity	1200-0500Z ++ daily	383
IR503	184 ARW, Det 1, (SHANGR), Smoky Hill ANG Range, 8429 West Farrelly Road, Salina,	184 ARW (Kansas ANG), McConnell AFB, KS 67221-9010 (1330-2215Z wkd, sked rqr 2 h	Continuous	402
IR504	509 OSS/OSKA, 905 Spirit Blvd., Whiteman AFB, MO 65305 DSN 975-1713/1754, C660-6	Same as Originating Activity	Continuous	427
IR505	185 FW/OGS, Sioux City, IA 51111-1300 DSN 585-0203.	Same as Originating Activity	By NOTAM, 2 Hr and 15 min prior to entry time required	138
IR506	185 FW/OGS, Sioux City, IA 51111-1300 DSN 585-0203.	Same as Originating Activity	By NOTAM, 2 Hr and 15 min prior to entry time required	299
IR507	185 FW/OGS, Sioux City, IA 51111-1300 DSN 585-0203.	Same as Originating Activity	By NOTAM, 2 Hr and 15 min prior to entry time required	251
IR508	114 FW (ANG), Joe Foss Field, Sioux Falls, SD 57104-0264 DSN 798-7745, C605-988-	114 FW (ANG), Joe Foss Field, Sioux Falls, SD 57104-0264 DSN 798-7754/7746, C605	Daylight hours, Mon-Sat, OT by NOTAM	239
IR509	114 FW (ANG), Joe Foss Field, Sioux Falls, SD 57104-0264 DSN 798-7745, C605-988-	114 FW (ANG), Joe Foss Field, Sioux Falls, SD 57104-0264 DSN 798-7754/7746, C605	Daylight hours, Tue-Sat, OT by NOTAM	306
IR514	114 FW (ANG), Joe Foss Field, Sioux Falls, SD 57104-0264 DSN 798-7745, C605-988-	114 FW (ANG), Joe Foss Field, Sioux Falls, SD 57104-0264 DSN 798-7754/7746, C605	Daylight hours, Tue-Sat, OT by NOTAM	223

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Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
IR517	185 FW/OGS, Sioux City, IA 51111-1300 DSN 585-0203.	Same as Originating Activity	By NOTAM, 2 Hr and 15 min prior to entry time required	284
IR518	114 FW (ANG), Joe Foss Field, Sioux Falls, SD 57104-0264 DSN 798-7745, C605-988-	114 FW (ANG), Joe Foss Field, Sioux Falls, SD 57104-0264 DSN 798-7754/7746, C605	Daylight hours, Mon-Sat, OT by NOTAM	239
IR524	509 OSS/OSKA, 905 Spirit Blvd., Whiteman AFB, MO 65305 DSN 975-1713/1754, C660-6	Same as Originating Activity	Continuous	433
IR527	183 FW/OSF, Capital Airport, Springfield, IL 62707 DSN 892-8202.	Same as Originating Activity	Sunrise-Sunset	173
IR592	509 OSS/OSKA, 905 Spirit Blvd., Whiteman AFB, MO 65305 DSN 975-1683, C660-687-16	509 OSS/OSOS, 905 Spirit Blvd., Whiteman AFB, MO 65305 DSN 975-1713/1754, C660-6	Continuous	648
IR605	148th FIG (ANG), Duluth Intl., MN 55811 DSN 825-7265.	Same as Originating Activity	Daily 1400-0500Z++, available OT	136
IR606	148th FIG (ANG), Duluth Intl., MN 55811 DSN 825-7265.	Same as Originating Activity	Daily 1400-0500Z++, Usage between 0500-1400Z++ is allowable	136
IR608	FACSFACNPA, Pensacola NAS, FL 32508 DSN 922-2735, C904-452-2735.	Same as Originating Activity	1200-0400Z++ Mon-Fri, weekends by NOTAM	257
IR609	5 OSS/OSTC, 300 Summit Dr., Minot AFB, ND 58705-5044 DSN 453-2967, C701-723-2967	23 BS/DOS, 300 Summit Dr., Minot AFB, ND 58705 DSN 453-2002/3527, C701-723-2002.	Continuous	796
IR610	5 OSS/OSTC, 300 Summit Dr., Minot AFB, ND 58705-5044 DSN 453-2967, C701-723-2967	23 BS/DOS, 300 Summit Dr., Minot AFB, ND 58705 DSN 453-2002/3527, C701-723-2002/	Continuous	779
IR613	114 FW (ANG), Joe Foss Field, Sioux Falls, SD 57104-0264 DSN 798-7745, C605-988-	114 FW (ANG), Joe Foss Field, Sioux Falls, SD 57104-0264 DSN 798-7754/7746, C605	Daylight hours, Tue-Sat, OT by NOTAM	198
IR614	183 FW/OSF, Capital Airport, Springfield, IL 62707 DSN 892-8202.	Same as Originating Activity	Daylight hours	135
IR618	181 FW (ANG), Hulman Regional Airport, 1100 S. Petercheff St., Tere Haute, IN 47	Same as Originating Activity	Sunrise-Sunset, Tue-Sun, OT by NOTAM	134
IR644	5 OSS/OSTC, 300 Summit Dr., Minot AFB, ND 58705-5044 DSN 453-2967, C701-723-2967	23 BS/DOS, 300 Summit Dr., Minot AFB, ND 58705 DSN 453-2639/3527, C701-723-2639/	Continuous	461
IR649	5 OSS/OSTC, 300 Summit Dr., Minot AFB, ND 58705-5044 DSN 453-2967, C701-723-2967	23 BS/DOS, 300 Summit Dr., Minot AFB, ND 58705 DSN 453-2639/3527, C701-723-2639/	Continuous	187
IR654	5 OSS/OSTC, 300 Summit Dr., Minot AFB, ND 58705-5044 DSN 453-2967, C701-723-2967	23 BS/DOS, 300 Summit Dr., Minot AFB, ND 58705 DSN 453-2002/3527, C701-723-2002/	Continuous	703
IR655	5 OSS/OSTC, 300 Summit Dr., Minot AFB, ND 58705-5044 DSN 453-2967, C701-723-2967	23 BS/DOS, 300 Summit Dr., Minot AFB, ND 58705 DSN 453-2002/3527, C701-723-2002/	Continuous	1078
IR656	5 OSS/OSTC, 300 Summit Dr., Minot AFB, ND 58705-5044 DSN 453-2967, C701-723-2967	23 BS/DOS, 300 Summit Dr., Minot AFB, ND 58705 DSN 453-2002/3527, C701-723-2002/	Continuous	953
IR678	5 OSS/A-3C, 300 Summit Dr., Minot AFB, ND 58705-5044 DSN 453-2967, C701-723-2967	23 BS/DOS, 300 Summit Dr., Minot AFB, ND 58705-5044 DSN 453-2002/3527, C701-723-	Continuous	528

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Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
IR714	COMFITWINGLANT, Oceana NAS, Virginia Beach, VA 23460 DSN 433-4014, C757-433-4014	FACSFAC VACAPES, Oceana NAS, Virginia Beach, VA 23460 DSN 433-1228, C757-433-122	Continuous	335
IR715	COMFITWINGLANT, Oceana NAS, Virginia Beach, VA 23460 DSN 433-4014, C757-433-4014	FACSFAC VACAPES, Oceana NAS, Virginia Beach, VA 23460 DSN 433-1228, C757-433-122	Continuous	397
IR718	COMFITWINGLANT, Oceana NAS, Virginia Beach, VA 23460 DSN 433-4014, C757-433-4014	FACSFAC VACAPES, Oceana NAS, Virginia Beach, VA 23460 DSN 433-1228, C757-433-122	Continuous	493
IR719	COMFITWINGLANT, Oceana NAS, Virginia Beach, VA 23460 DSN 433-4014, C757-433-4014	FACSFAC VACAPES, Oceana NAS, Virginia Beach, VA 23460 DSN 433-1228, C757-433-122	Continuous	423
IR720	COMFITWINGLANT, Oceana NAS, Virginia Beach, VA 23460 DSN 433-4014, C757-433-4014	FACSFAC VACAPES, Oceana NAS, Virginia Beach, VA 23460 DSN 433-1228, C757-433-122	Continuous	406
IR721	20 OSS/OSTA, Shaw AFB, SC 29152-5000 DSN 965-1121/1122, C803-895-1121/1122, Fax	20 OSS/OSOS, Shaw AFB, SC 29152 Duty hrs DSN 965-1118/1119, C803-895-1118/1119.	Continuous	199
IR723	FACSFACNPA, NAS Penscola, FL DSN 922-2735, C904-452-2735.	Same as Originating Activity	1200-0400Z++ Mon-Fri, occasionally weekends	262
IR726	20 OSS/OSTA, Shaw AFB, SC 29152-5000 DSN 965-1121/1122, C803-895-1121/1122, Fax	20 OSS/OSOS, Shaw AFB, SC 29152-5000 Duty hours DSN 965-1118/1119, C803-895-1118	Continuous	144
IR743	20 OSS/OSTA, Shaw AFB, SC 29152-5000 DSN 965-1121/1122, C803-895-1121/1122, Fax	20 OSS/OSOS, Shaw AFB, SC 29152 Duty hrs DSN 965-1118/1119, C803-895-1118/1119.	Continuous	143
IR760	COMFITWINGLANT, Oceana NAS, Virginia Beach, VA 23460 DSN 433-4014, C757-433-4014	FACSFAC VACAPES, Oceana NAS, Virginia Beach, VA 23460 DSN 433-1228, C757-433-122	Continuous	361
IR761	COMFITWINGLANT, Oceana NAS, Virginia Beach, VA 23460 DSN 433-4014, C757-433-4014	FACSFAC VACAPES, Oceana NAS, Virginia Beach, VA 23460 DSN 433-1228, C757-433-122	Continuous	323
IR762	COMFITWINGLANT, Oceana NAS, Virginia Beach, VA 23460 DSN 433-4014, C757-433-4014	FACSFAC VACAPES, Oceana NAS, Virginia Beach, VA 23460 DSN 433-1228, C757-433-122	Continuous	324
IR800	104 FW, Barnes ANGB, Westfield, MA 01085-1385 DSN 636-9228/9229, C413-568-9151 e	Same as Originating Activity	Continuous	895
IR801	174 FW, Det 1, Ft. Drum, NY 13608 DSN 772-5990/2835, C315-772-5990.	Same as Originating Activity	Continuous	296
IR802	5 OSS/OSTC, 300 Summit Dr., Minot AFB, ND 58705-5044 DSN 453-2967, C701-723-2967	23 BS/DOS, 300 Summit Dr., Minot AFB, ND 58705 DSN 453-2002/3527, C701-723-2002/	Continuous	546
IR803	5 OSS/OSTC, 300 Summit Dr., Minot AFB, ND 58705-5044 DSN 453-2967, C701-723-2967	23 BS/DOS, 300 Summit Dr., Minot AFB, ND 58705 DSN 453-2002/3527, C701-723-2002/	Continuous	386
IR804	5 OSS/OSTC, 300 Summit Dr., Minot AFB, ND 58705-5044 DSN 453-2967, C701-723-2967	23 BS/DOS, 300 Summit Dr., Minot AFB, ND 58705 DSN 453-2002/3527, C701-723-2002/	Continuous	1221
IR805	5 OSS/OSTC, 300 Summit Dr., Minot AFB, ND 58705-5044 DSN 453-2967, C701-723-2967	23 BS/DOS, 300 Summit Dr., Minot AFB, ND 58705 DSN 453-2002/3527, C701-723-2002/	Continuous	589
IR850	Commander, Naval Air Warfare Center Weapons Division, Code 52EOOOE, NAWS, Pt. Mu	Commander, Naval Air Warfare Center Weapons Division, Code 52911GE, NAWS, Pt. Mu	Sunrise-Sunset by NOTAM	295

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Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
IR851	Commander, Naval Air Warfare Center Weapons Division, Code 52EOOOE, NAWS, Pt. Mu	Commander, Naval Air Warfare Center Weapons Division, Code 52911GE, NAWS, Pt. Mu	Daily Sunrise-Sunset	391
IR852	Commander, Naval Air Warfare Center Weapons Division, Code 52EOOOE, NAWS, Pt. Mu	Commander, Naval Air Warfare Center Weapons Division, Code 52911GE, NAWS, Pt. Mu	Sunrise-Sunset	199
IR900	611 AOG/CC, 9480 Pease Ave., Ste. 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	179
IR901	611 AOG/CC, 9480 Pease Ave., Ste. 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-	3 OSS/OSOS, Elmendorf AFB, AK 99506 DSN 317-552-2406, C907-552-2406.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	69
IR902	611 AOG/CC, 9480 Pease Ave., Ste. 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-	3 OSS/OSOS, Elmendorf AFB, AK 99506 DSN 317-552-2406, C907-552-2406.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	190
IR903	611 AOG/CC, 9480 Pease Ave., Ste. 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-	3 OSS/OSOS, Elmendorf AFB, AK 99506 DSN 317-552-2406, C907-552-2406.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	216
IR905	611 AOG/CC, 9480 Pease Ave., Ste. 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-	3 OSS/OSOS, Elmendorf AFB, AK 99506 DSN 317-552-2406, C907-552-2406.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	495
IR909	611 AOG/CC, 9480 Pease Ave., Ste. 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	83
IR911	611 AOG/CC, 9480 Pease Ave., Ste. 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-	3 OSS/OSOS, Elmendorf AFB, AK 99506 DSN 317-552-2406, C907-552-2406.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	69
IR912	611 AOG/CC, 9480 Pease Ave., Ste. 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-	3 OSS/OSOS, Elmendorf AFB, AK 99506 DSN 317-552-2406, C907-552-2406.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	190
IR913	611 AOG/CC, 9480 Pease Ave., Ste. 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-	3 OSS/OSOS, Elmendorf AFB, AK 99506 DSN 317-552-2406, C907-552-2406.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	216

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Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
IR915	611 AOG/CC, 9480 Pease Ave., Ste. 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-	3 OSS/OSOS, Elmendorf AFB, AK 99506 DSN 317-552-2406, C907-552-2406.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	189
IR916	611 AOG/CC, 9480 Pease Ave., Ste. 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	156
IR917	611 AOG/CC, 9480 Pease Ave., Ste. 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	164
IR918	611 AOG/CC, 9480 Pease Ave., Ste. 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	141
IR919	611 AOG/CC, 9480 Pease Ave., Ste. 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	221
IR921	611 AOG/CC, 9480 Pease Ave., Ste. 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	171
IR922	611 AOG/CC, 9480 Pease Ave., Ste. 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	114
IR923	611 AOG/CC, 9480 Pease Ave., Ste. 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	114
IR926	611 AOG/CC, 9480 Pease Ave., Ste. 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	113
IR927	611 AOG/CC, 9480 Pease Ave., Ste. 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	58

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Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
IR928	611 AOG/CC, 9480 Pease Ave., Ste. 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	41
IR929	611 AOG/CC, 9480 Pease Ave., Ste. 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	41
IR939	611 AOG/CC, 9480 Pease Ave., Ste. 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	83
IR952	611 AOG/CC, 9480 Pease Ave., Ste. 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	731
IR953	611 AOG/CC, 9480 Pease Ave., Ste. 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	513
IR983	PACAF/DOCS, 25 E ST, SUITE I232, HICKAM AFB, HI 96853-5426 DSN 449-4173.	36 OSS/OSA, UNIT 14035, APO AP 96542-4035 DSN(315)-366-2770.	Continuous	582
SR029	815 AS, Keesler AFB, MS 39534 DSN 597-1920, C601-377-1920.	Same as Originating Activity	0600-2200 local	140
SR030	815 AS, Keesler AFB, MS 39534 DSN 597-1920, C601-377-1920.	Same as Originating Activity	0600-2200 local	147
SR031	815 AS, Keesler AFB, MS 39534 DSN 597-1920, C601-377-1920.	Same as Originating Activity	0600-2200 local	101
SR038	Base Operations, Lawson AAF, Fort Benning, Ga. DSN 835-3524/2857 C706-545-3524.	Same as Originating Activity	Continuous	159
SR039	Base Operations, Lawson AAF, Fort Benning, Ga. DSN 835-3524/2857 C706-545-3524.	Same as Originating Activity	Continuous	95
SR040	940SS/Dobbins AFB, GA 30069-5009 DSN 625-4107.	Same as Originating Activity	1200-0300Z ++	107
SR059	118 AW, 240 Knapp Blvd, Nashville, TN 37217, DSN 778-6362/6342, C615-399-5662/56	Same as Originating Activity	Continuous	177
SR060	118 AW, 240 Knapp Blvd, Nashville, TN 37217, DSN 778-6362/6342, C615-399-5662/56	Same as Originating Activity	Continuous	173
SR061	118 AW, 240 Knapp Blvd, Nashville, TN 37217, DSN 778-6362/6342, C615-399-5662/56	Same as Originating Activity	Continuous	125

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Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
SR062	118 AW, 240 Knapp Blvd, Nashville, TN 37217, DSN 778-6362/6342, C615-399-5662/56	Same as Originating Activity	Continuous	122
SR069	908 AW, 401 W Maxwell Blvd, Maxwell AFB, AL 36112-6591 DSN 493-5016, C334-953-50	Same as Originating Activity	1400-0400Z++	124
SR070	908 AW, 401 W Maxwell Blvd, Maxwell AFB, AL 36112-6591 DSN 493-5016, C334-953-50	Same as Originating Activity	1400-0400Z++	155
SR071	908 AW, 401 W Maxwell Blvd, Maxwell AFB, AL 36112-6591 DSN 493-5016, C334-953-50	Same as Originating Activity	1300-0500Z++	150
SR072	908 AW, 401 W Maxwell Blvd, Maxwell AFB, AL 36112-6591 DSN 493-5016, C334-953-50	Same as Originating Activity	1300-0500Z++	156
SR073	164th TAG (ANG), Memphis Intl, TN 38118 DSN 966-8130.	Same as Originating Activity	Continuous	147
SR074	164th TAG (ANG), Memphis Intl, TN 38118 DSN 966-8130.	Same as Originating Activity	Continuous	163
SR075	164th TAG (ANG), Memphis Intl, TN 38118 DSN 966-8130.	Same as Originating Activity	Continuous	119
SR1001	3 OSS/DOH, 10460 L Street, Elmendorf AFB, AK 99506-2670 DSN 317-552-4658, C907-5	3 OSS/DOTS, DSN 317-552-3457, C907-552-3457.	Continuous	180
SR1002	3 OSS/DOH, 10460 L Street, Elmendorf AFB, AK 99506-2670 DSN 317-552-4658, C907-5	3 OSS/DOTS, DSN 317-552-3457, C907-552-3457.	Continuous	79
SR1003	3 OSS/DOH, 10460 L Street, Elmendorf AFB, AK 99506-2670 DSN 317-552-4658, C907-5	3 OSS/DOTS, DSN 317-552-3457, C907-552-3457.	Continuous	112
SR1004	3 OSS/DOH, 10460 L Street, Elmendorf AFB, AK 99506-2670 DSN 317-552-4658, C907-5	3 OSS/DOTS, DSN 317-552-3457, C907-552-3457.	Continuous	81
SR1005	3 OSS/DOH, 10460 L Street, Elmendorf AFB, AK 99506-2670 DSN 317-552-4658, C907-5	3 OSS/DOTS, DSN 317-552-3457, C907-552-3457.	Continuous	145
SR1006	3 OSS/DOH, 10460 L Street, Elmendorf AFB, AK 99506-2670 DSN 317-552-4658, C907-5	3 OSS/DOTS, DSN 317-552-3457, C907-552-3457.	Continuous	56
SR1007	3 OSS/DOH, 10460 L Street, Elmendorf AFB, AK 99506-2670 DSN 317-552-4658, C907-5	3 OSS/DOTS, DSN 317-552-3457, C907-552-3457.	Continuous	74
SR1008	3 OSS/DOH, 10460 L Street, Elmendorf AFB, AK 99506-2670 DSN 317-552-4658, C907-5	3 OSS/DOTS, DSN 317-552-3457, C907-552-3457.	Continuous	114
SR1009	3 OSS/DOH, 10460 L Street, Elmendorf AFB, AK 99506-2670 DSN 317-552-4658, C907-5	3 OSS/DOTS, DSN 317-552-3457, C907-552-3457.	Continuous	190
SR101	16 OSS/DOO, Hurlburt Field, FL 32544 DSN 579-6877/7812, C850-884-6877/7812.	Same as Originating Activity	Continuous	907
SR1010	3 OSS/DOH, 10460 L Street, Elmendorf AFB, AK 99506-2670 DSN 317-552-4658, C907-5	3 OSS/DOTS, DSN 317-552-3457, C907-552-3457.	Continuous	154
SR102	16 OSS/DOO, Hurlburt Field, FL 32544 DSN 579-6877/7812, C850-884-6877/7812.	Same as Originating Activity	Continuous	291

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Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
SR103	16 OSS/DOO, Hurlburt Field, FL 32544 DSN 579-6877/7812, C850-884-6877/7812.	Same as Originating Activity	Continuous	434
SR104	16 OSS/DOO, Hurlburt Field, FL 32544 DSN 579-6877/7812, C850-884-6877/7812.	Same as Originating Activity	Continuous	823
SR105	16 OSS/DOO, Hurlburt Field, FL 32544 DSN 579-6877/7812, C850-884-6877/7812.	Same as Originating Activity	Continuous	226
SR106	16 OSS/DOO, Hurlburt Field, FL 32544 DSN 579-6877/7812, C850-884-6877/7812.	Same as Originating Activity	Continuous	427
SR119	16 OSS/DOO, Hurlburt Field, FL 32544 DSN 579-6877/7812, C850-884-6877/7812.	Same as Originating Activity	Continuous	801
SR137	14 OSS/OSOP, Columbus AFB, MS 39701-5000 DSN 742-7560, C662-434-7560.	37/41 FTS, Columbus AFB, MS 39701-5000 DSN 742-7666/7667, C662-434-7666/7667. (W	SR-SS, Daily	143
SR138	14 OSS/OSOP, Columbus AFB, MS 39701-5000 DSN 742-7560, C662-434-7560.	37/41 FTS, Columbus AFB, MS 39701-5000 DSN 742-7666/7667, C662-434-7666/7667.	SR-SS, Mon-Fri	143
SR166	437 0SS/0STA, Charleston AFB, SC 29404-5054 DSN 673-5613, C843-963-5613.	20 OSS/OSOS, Shaw AFB, SC 29152-5000 DSN 965-1118/1119, FAX DSN 965-4804. After	Continuous	153
SR200	58 OSS/DOO, Kirtland AFB, NM 87117-5861 DSN 263-5979/5888/5701, C505-853-5979/58	Same as Originating Activity	Continuous	242
SR201	58 OSS/DOO, Kirtland AFB, NM 87117-5861 DSN 263-5979/5888/5701, C505-853-5979/58	Same as Originating Activity	Continuous	420
SR205	97 OSS/DOA, 400 N. 6th Street, Altus AFB, OK 73521 DSN 866-6098.	Same as Originating Activity	Continuous	88
SR206	97 OSS/DOA, 400 N. 6th Street, Altus AFB, OK 73521 DSN 866-6098	Same as Originating Activity	Continuous	99
SR208	97 OSS/DOA, 400 N. 6th Street, Altus AFB, OK 73521 DSN 866-6098.	Same as Originating Activity	Continuous	116
SR210	58 OSS/DOO, Kirtland AFB, NM 87117-5861 DSN 263-5979/5888/5701, C505-853-5979/58	Same as Originating Activity	Continuous	148
SR211	58 OSS/DOO, Kirtland AFB, NM 871175861 DSN 263-5979/5888/5701, C505-853-5979/588	Same as Originating Activity	Continuous	189
SR212	58 SOW, 4249 Hercules Way SE, Kirtland AFB, NM 87117 DSN 263-5701, C505-853-5701	58 OSS/DOO, 4249 Hercules Way SE, Kirtland AFB, NM 87117 DSN 263-5701, C505-853-	Continuous	230
SR213	58 SOW, 4249 Hercules Way SE, Kirtland AFB, NM 87117 DSN 263-5701, C505-853-5701	58 OSS/DOO, 4249 Hercules Way SE, Kirtland AFB, NM 87117 DSN 263-5701, C505-853-	Continuous	234
SR214	58 SOW, 4249 Hercules Way SE, Kirtland AFB, NM 87117 DSN 263-5701, C505-853-5701	58 OSS/DOO, 4249 Hercules Way SE, Kirtland AFB, NM 87117 DSN 263-5701, C505-853-	Continuous	249
SR216	97 OSS/DOA, 400 N. 6th Street, Altus AFB, OK 73521 DSN 866-6098.	Same as Originating Activity	Continuous	111
SR217	97 OSS/DOA, 400 N. 6th Street, Altus AFB, OK 73521 DSN 866-6098.	Same as Originating Activity	Continuous	114

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** Length calculations were performed using an Albers Equal Area Conic projection for the conterminous United States and the appropriate Universal Transverse Mercator zones for Alaska (6N), Hawaii(4N), and Guam(55N).
Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
SR218	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-33	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-37	Continuous	303
SR219	314 OSS/OSK, 380 CMSGT WilliamsDrive, Little Rock AFB, AR 72099-4983 DSN 731-330	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4983 DSN 731-37	Continuous	275
SR220	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-33	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-37	Continuous	198
SR221	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4836 DSN 731-33	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4983 DSN 731-37	Continuous	1016
SR222	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-33	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-37	Continuous	129
SR223	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-33	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-37	Continuous	137
SR224	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-33	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-37	Continuous	291
SR225	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-33	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-37	Continuous	278
SR226	314 OSS/OSK, 380 CMSGT Williams Street, Little Rock AFB, AR 72099-4976 DSN 731-3	314 OSS/OSK, 380 CMSGT Williams Street, Little Rock AFB, AR 72099-4976 DSN 731-3	Continuous	73
SR227	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-33	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-37	Continuous	278
SR228	136 TAW/Operations Hensley Field , Dallas, TX 75211 DSN 874-6207.	Same as Originating Activity	Continuous	193
SR229	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-33	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-37	Continuous	234
SR230	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-33	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-37	Continuous	311
SR231	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-33	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-37	Continuous	302
SR232	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-33	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-37	Continuous	239
SR233	7 WG, Dyess AFB, TX 79607 DSN 461-2318.	Same as Originating Activity	Continuous	204
SR234	7 WG, Dyess AFB, TX 79607 DSN 461-2318.	Same as Originating Activity	Continuous	127
SR235	71 FTW/OSOP, Vance AFB, OK 73705-5202 DSN 448-7850 C580-213-7850.	8 FTS/DOO, Vance AFB, OK 73705-5202 DSN 448-6037 C580-213-6037	Sunrise -Sunset and active days per local directives	126
SR236	7 WG, Dyess AFB, TX 79607 DSN 461-2318.	Same as Originating Activity	Continuous	196
SR237	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-33	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-37	Continuous	107

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** Length calculations were performed using an Albers Equal Area Conic projection for the conterminous United States and the appropriate Universal Transverse Mercator zones for Alaska (6N), Hawaii(4N), and Guam(55N).
Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
SR238	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-33	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-37	Continuous	98
SR239	314 OSS/OSK, 380 CMSGT Williams Street, Little Rock AFB, AR 72099-4976 DSN 731-3	314 OSS/OSK, 380 CMSGT Williams Street, Little Rock AFB, AR 72099-4976 DSN 731-3	Continuous	139
SR240	7 WG, Dyess AFB, TX 79607 DSN 461-2318.	Same as Originating Activity	Continuous	134
SR241	71 FTW/OSOP, Vance AFB, OK 73705-5202 DSN 448-7850 C580-213-7850.	8 FTS/DOO, Vance AFB, OK 73705-5202 DSN 448-6037 C580-213-6037.	Sunrise-Sunset and active days per local directives	143
SR242	7 WG, Dyess AFB, TX 79607 DSN 461-2318.	Same as Originating Activity	Continuous	195
SR243	7 WG, Dyess AFB, TX 79607 DSN 461-2318.	Same as Originating Activity	Continuous	163
SR244	7 WG, Dyess AFB, TX 79607 DSN 461-2318.	Same as Originating Activity	Continuous	120
SR245	7 WG, Dyess AFB, TX 79607 DSN 461-2318.	Same as Originating Activity	Continuous	129
SR246	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-33	314 OSS/OSK, 380 CMSGT Williams Drive, Little Rock AFB, AR 72099-4976 DSN 731-37	Continuous	230
SR247	71 FTW/OSOP, Vance AFB, OK 73705-5202 DSN 448-7850 C580-213-7850.	8 FTS/DOO, Vance AFB, OK 73705-5202 DSN 448-6037 C580-213-6037.	Sunrise-Sunset and active days per local directives	143
SR249	7 WG, Dyess AFB, TX 79607 DSN 461-2318.	Same as Originating Activity	Continuous	197
SR250	463 TAW, Dyess AFB, TX 79607 DSN 461-2318.	Same as Originating Activity	Continuous	80
SR251	7 WG, Dyess AFB, TX 79607 DSN 461-2318.	Same as Originating Activity	Continuous	73
SR253	71 FTS/OSOP, Vance AFB, OK 73705-5202 DSN 448-7850 C580-213-7850.	8FTS/DOO, Vance AFB, OK 73705-5202 DSN 448-6037 C580-213-6037.	Sunrise-Sunset and active days per local directives	126
SR255	7 WG, Dyess AFB, TX 79607 DSN 461-2318.	Same as Originating Activity	Continuous	86
SR258	317 WG, Dyess AFB, TX 79607 DSN 461-2318.	Same as Originating Activity	Continuous	172
SR261	317 WG, Dyess AFB, TX 79607 DSN 461-2318.	Same as Originating Activity	Continuous	133
SR267	7 WG, Dyess AFB, TX 79607 DSN 461-2318.	Same as Originating Activity	Continuous	172
SR270	136 TAW/Operations Hensley Field, Dallas, TX 75211 DSN 874-6207.	Same as Originating Activity	0700-2200 local	182
SR273	7 WG, Dyess AFB, TX 79607 DSN 461-2318.	Same as Originating Activity	Continuous	156
SR274	71 FTW/OSOP, Vance AFB, OK 73705-5202 DSN 448-7850, C580-213-7850.	32 FTS/DOOT, Vance AFB, OK 73705-5202 DSN 448-6251, C580-213-6251.	Sunrise to Sunset daily	169
SR275	71 FTW/OSOP, Vance AFB, OK 73705-5202 DSN 448-7850, C580-213-7850.	32 FTS/DOOT, Vance AFB, OK 73705-5202 DSN 448-6251, C580-213-6251.	Sunrise to Sunset daily	169
SR276	47 OSS/OSOR, 570 2nd St., Ste 6, Laughlin AFB, TX 78843-5222 DSN 732-5864, C830-	86 FTS/DOS, 80 Rio Lobo Ln, Laughlin AFB, TX 78843 DSN 732-5584, C830-298-5584.	Sunrise-Sunset daily	185
SR277	47 OSS/OSOR, 570 2nd St., Ste. 6, Laughlin AFB, TX 78843-5222 DSN 732-5864, C830	86 FTS/DOS, 80 Rio Lobo Ln, Laughlin AFB, TX 78843 DSN 732-5584, C830-298-5584.	Sunrise-Sunset daily	183
SR280	7 WG, Dyess AFB, TX 79607 DSN 461-2318.	Same as Originating Activity	Continuous	47

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Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
SR281	47 OSS/OSOR, 570 2nd St., Ste 6, Laughlin AFB, TX 78843-5222 DSN 732-5864/5337,	85 FTS/DOS, 570 2nd St., Laughlin AFB, TX 78843-5220 DSN 732-5121/5429, C830-298	Sunrise-Sunset daily	686
SR282	47 OSS/OSOR, 570 2nd St., Ste. 6, Laughlin AFB, TX 78843-5222 DSN 732-5864/5337,	85 FTS/DOS, 570 2nd St., Laughlin AFB, TX 78843-5220 DSN 732-5121/5429, C830-298	Sunrise-Sunset daily	670
SR283	47 OSS/OSOR, 570 2nd St., Ste 6, Laughlin AFB, TX 78843-5222 DSN 732-5864, C830-	85 FTS/DOS, 570 2nd St., Laughlin AFB, TX 78843-5220 DSN 732-5121, C830-298-5121	Sunrise-Sunset daily	133
SR284	47 OSS/OSOR, 570 2nd St., Ste. 6, Laughlin AFB, TX 78843-5222 DSN 732-5864, C830	85 FTS/DOS, 570 2nd St., Laughlin AFB, TX 78843-5220 DSN 732-5121, C830-298-5121	Sunrise-Sunset daily	133
SR286	12 OSS/OSOA, Randolph AFB, TX 78150-5000 DSN 487-5580, C210-652-5580.	559 FTS, Randolph AFB, TX 78150 DSN 487-5661, C210-652-5661.	Sunrise-Sunset Daily, except holidays	115
SR287	12 OSS/OSOA, Randolph AFB, TX 78150-5000 DSN 487-5580, C210-652-5580.	559 FTS, Randolph AFB, TX 78150 DSN 487-5661, C210-652-5661.	Sunrise-Sunset Daily, except holidays	118
SR290	12 OSS/OSOA, Randolph AFB, TX 78150-5000 DSN 487-5580, C210-652-5580.	559 FTS, Randolph AFB, TX 78150 DSN 487-5661, C210-652-5661.	Sunrise-Sunset Daily, except holidays	120
SR292	12 OSS/OSOA, Randolph AFB, TX 78150-5000 DSN 487-5580, C210-652-5580.	559 FTS, Randolph AFB, TX 78150 DSN 487-5661, C210-652-5661.	Sunrise-Sunset daily except holidays	114
SR293	12 OSS/OSOA, Randolph AFB, TX 78150-5000 DSN 487-5580, C210-652-5580.	559 FTS, Randolph AFB, TX 78150 DSN 487-5661, C210-652-5661.	Sunrise- Sunset daily	109
SR294	71 FTW/OSOP, Vance AFB, OK 73705-5202 DSN 448-7850 C580-213-7850.	8 FTS/DOO, Vance AFB, OK 73705-5202 DSN 448-6037 C580-213-6037.	Sunrise-Sunset	198
SR295	71 FTW/OSOP, Vance AFB, OK 73705-5202 DSN 448-7850 C580-213-7850.	8 FTS/DOO, Vance AFB, OK 73705-5202 DSN 448-6037 C580-213-6037.	Sunrise-Sunset	194
SR296	71 FTW/OSOP, Vance AFB, OK 73705-5202 DSN 448-7850 C580-213-7850.	8 FTS/DOO, Vance AFB, OK 73705-5202 DSN 448-6037 C580-213-6037.	Sunrise-Sunset	179
SR300	129 RQW/DOW, PO Box 103, Stop 14, Moffett Federal Afld, CA 94035-5000 DSN 359-93	Same as Originating Activity	Continuous	761
SR301	129 RQW/DOW, PO Box 103, Stop 14, Moffett Federal Afld, CA 94035-5000 DSN 359-93	Same as Originating Activity	Continuous	761
SR311	129 RQW/DOW, PO Box 103, Stop 14, Moffett Federal Afld, CA 94035-5000 DSN 359-93	Same as Originating Activity	Continuous	145
SR353	129 RQW/DOW, PO Box 103, Stop 14, Moffett Federal Afld, CA 94035-5000 DSN 359-93	Same as Originating Activity	Continuous	110
SR359	129 RQW/DOW, PO Box 103, Stop 14, Moffett Federal Afld, CA 94035-5000 DSN 359-93	Same as Originating Activity	Continuous	145
SR381	129 RQW/DOW, PO Box 103, Stop 14, Moffett Federal Afld, CA 94035-5000 DSN 359-93	Same as Originating Activity	Continuous	141
SR390	146 AW/DOXT (ANG), 106 Mulcahey Dr., Port Hueneme, CA 93041-4003 DSN 893-7590/75	Same as Originating Activity	Continuous	97

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Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
SR397	146 AW/DOXT (ANG), 106 Mulcahey Dr., Port Hueneme, CA 93041-4003 DSN 893-7590/75	Same as Originating Activity	Continuous	114
SR398	129 RQW/DOW, PO Box 103, Stop 14, Moffett Federal Afld, CA 94035-5000 DSN 359-93	Same as Originating Activity	Continuous	43
SR470	62 OSS/OSO, McChord AFB, WA 98438-1109 DSN 382-9925, C253-982-9925. During non-d	Same as Originating Activity	Continuous	175
SR471	62 OSS/OSO, McChord AFB, WA 98438-1109 DSN 382-9925, C253-982-9925. During non-d	Same as Originating Activity	Continuous	119
SR472	62 OSS/OSO, McChord AFB, WA 98438-1109 DSN 382-9925, C253-982-9925. During non-d	Same as Originating Activity	Continuous	118
SR473	62 OSS/OSO, McChord AFB, WA 98438-1109 DSN 382-9925, C253-982-9925. During non-d	Same as Originating Activity	Continuous	185
SR474	62 OSS/OSO, McChord AFB, WA 98438-1109 DSN 382-9925, C253-982-9925. During non-d	Same as Originating Activity	Continuous	355
SR475	62 OSS/OSO, McChord AFB, WA 98438-1109 DSN 382-9925, C253-982-9925. During non-d	Same as Originating Activity	Continuous	162
SR476	62 OSS/OSO, McChord AFB, WA 98438-1109 DSN 382-9925, C253-982-9925. During non-d	Same as Originating Activity	Continuous	334
SR477	62 OSS/OSO, McChord AFB, WA 98438-1109 DSN 382-9925, C253-982-9925. During non-d	Same as Originating Activity	Continuous	192
SR478	62 OSS/OSO, McChord AFB, WA 98438-1109 DSN 382-9925, C253-982-9925. During non-d	Same as Originating Activity	Continuous	310
SR488	62 OSS/OSO, McChord AFB, WA 98438-1109 DSN 382-9925, C253-982-9925. During non-d	Same as Originating Activity	Continuous	31
SR489	62 OSS/OSO, McChord AFB, WA 98438-1109 DSN 382-9925, C253-982-9925. During non-d	Same as Originating Activity	Continuous	23
SR540	153 TAG, Cheyenne, WY 82001 DSN 553-1347.	Same as Originating Activity	0900-2200 Lcl Tue-Wed; 1900-2200 Lcl Fri; 0800-2200 Lcl Sat-Sun	124
SR541	153 TAG, Cheyenne, WY 82001 DSN 553-1347.	Same as Originating Activity	0900-2200 Lcl Tue-Wed; 1900-2200 Lcl Fri; 0800-2200 Lcl Sat-Sun	232
SR542	153 TAG, Cheyenne, WY 82001 DSN 553-1347.	Same as Originating Activity	0900-2200 Lcl Tue-Wed; 1900-2200 Lcl Fri; 0800-2200 Lcl Sat-Sun	155
SR616	139 Airlift Wg., 705 Memorial Drive, St. Joseph, MO 64503-9307 DSN 356-3225/3470	Same as Originating Activity	1300-0500Z++ daily	148

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Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
SR617	139 Airlift Wg., 705 Memorial Drive, St. Joseph, MO 64503-9307 DSN 356-3225/3470	Same as Originating Activity	1300-0500Z++ daily	147
SR618	139 Airlift Wg., 705 Memorial Drive, St. Joseph, MO 64503-9307 DSN 356-3225/3470	Same as Originating Activity	1300-0500Z++ daily	128
SR619	139 Airlift Wg., 705 Memorial Drive, St. Joseph, MO 64503-9307 DSN 356-3225/3470	Same as Originating Activity	1300-0500Z++ daily	136
SR701	191 AG, Selfridge ANGB, MI 48045 DSN 273-4498/4441, C810-463-3664.	Same as Originating Activity	1600-0400Z++ Tue-Sat, 1600-2200Z++ Sun	177
SR702	191 AG, Selfridge ANGB, MI 48045 DSN 273-4498/4441, C810-463-3664.	Same as Originating Activity	1600-0400Z++ Tue-Sat, 1600-2200Z++ Sun	166
SR703	191 AG, Selfridge ANGB, MI 48045 DSN 273-4498/4441, C810-463-3664.	Same as Originating Activity	1600-0400Z++ Tue-Sat, 1600-2200Z++ Sun	75
SR707	179 AW, Mansfield Lahm Airport, OH 44903-0179 DSN 696-6165.	Same as Originating Activity	0700-2300 local daily	142
SR708	179 AW, Mansfield Lahm Airport, OH 44903-0179 DSN 696-6165.	Same as Originating Activity	0700-2300 local daily	164
SR709	179 AW, Mansfield Lahm Airport, OH 44903-0179 DSN 696-6165.	Same as Originating Activity	0700-2300 local daily	105
SR710	179 AW, Mansfield Lahm Airport, OH 44903-0179 DSN 696-6165.	Same as Originating Activity	0700-2300 local daily	110
SR711	179 AW, Mansfield Lahm Airport, OH 44903-0179 DSN 696-6165.	Same as Originating Activity	0700-2300 local daily	115
SR712	179 AW, Mansfield Lahm Airport, OH 44903-0179 DSN 696-6165.	Same as Originating Activity	0700-2300 local daily	140
SR713	179 AW, Mansfield Lahm Airport, OH 44903-0179 DSN 696-6165.	Same as Originating Activity	0700-2300 local daily	117
SR714	179 AW, Mansfield Lahm Airport, OH 44903-0179 DSN 696-6165.	Same as Originating Activity	0700-2300 local daily	88
SR715	179 AW, Mansfield Lahm Airport, OH 44903-0179 DSN 696-6165.	Same as Originating Activity	0700-2300 local daily	148
SR727	133 TAW, Minneapolis-St. Paul Intl, MN 55111, DSN 825-5680.	Same as Originating Activity	1930-2230 lcl Tue and Thu; 1000-1500 Lcl third Sat each month; OT by NOTAM	200

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** Length calculations were performed using an Albers Equal Area Conic projection for the conterminous United States and the appropriate Universal Transverse Mercator zones for Alaska (6N), Hawaii(4N), and Guam(55N).
Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
SR728	133 TAW, Minneapolis-St. Paul Intl, MN 55111, DSN 825-5680.	Same as Originating Activity	1930-2230 lcl Tue and Thu; 1000-1500 lcl third Sat each month; OT by NOTAM	179
SR729	133 TAW, Minneapolis-St. Paul Intl, MN 55111, DSN 825-5680.	Same as Originating Activity	1930-2230 lcl Tue and Thu; 1000-1500 lcl third Sat each month; OT by NOTAM	142
SR730	133 TAW, Minneapolis-St. Paul Intl, MN 55111, DSN 825-5680.	Same as Originating Activity	1930-2230 lcl Tue and Thu; 1000-1500 lcl third Sat each month; OT by NOTAM	136
SR731	133 TAW, Minneapolis-St. Paul Intl, MN 55111, DSN 825-5680.	Same as Originating Activity	1930-2230 lcl Tue and Thu; 1000-1500 lcl third Sat each month; OT by NOTAM	88
SR771	440 AW/DOO, General Mitchell IAP, Milwaukee, WI 53207, DSN 741-5155/5157, FAX DS	Same as Originating Activity	2200-0330Z++ Tue-Fri; 1500-2200Z++ Sat-Sun	255
SR776	440 AW/DOO, General Mitchell IAP, Milwaukee, WI 53207, DSN 741-5155/5157, FAX DS	Same as Originating Activity	2000-0400Z++ Tue-Fri; 1600-2200Z++ Sat-Sun	159
SR781	Alpena CRTC/OTM (ANG), 5884 A Street, Alpena MI 49707-8125 DSN 741-3509/3226.	Same as Originating Activity	0700-2300 local daily	119
SR782	Alpena CRTC/OTM (ANG), 5884 A Street, Alpena MI 49707-8125 DSN 741-3509/3226.	Same as Originating Activity	0700-2300 local daily	152
SR785	440 AW/DOO, General Mitchell IAP, Milwaukee, WI 53207, DSN 741-5155/5157, FAX DS	Same as Originating Activity	2000-0400Z++ Tue-Fri; 1600-2200Z++ Sat-Sun	141
SR800	913 AG (AFRC), Willow Grove ARS, Willow Grove, PA 19090 DSN 991-1910/1981, C215-	Same as Originating Activity	0800-2300 local	155
SR801	913 AG (AFRC), Willow Grove ARS, Willow Grove, PA 19090 DSN 991-1910/1981, C215-	Same as Originating Activity	0800-2300 local	207
SR802	167 TAG, Eastern West Virginia Regional, Martinsburg, WV 25401 DSN 242-9250.	Same as Originating Activity	Continuous	80
SR803	167 TAG, Eastern West Virginia Regional, Martinsburg, WV 25401 DSN 242-9250.	Same as Originating Activity	Continuous	87
SR804	167 TAG, Eastern West Virginia Regional, Martinsburg, WV 25401 DSN 242-9250.	Same as Originating Activity	Continuous	95
SR805	913 AG (AFRC), Willow Grove ARS, Willow Grove, PA 19090 DSN 991-1910/1981, C215-	Same as Originating Activity	0800-2300 local	156
SR806	167 TAG, Eastern West Virginia Regional, Martinsburg, WV 25401 DSN 242-9250.	Same as Originating Activity	Continuous	121

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** Length calculations were performed using an Albers Equal Area Conic projection for the conterminous United States and the appropriate Universal Transverse Mercator zones for Alaska (6N), Hawaii(4N), and Guam(55N).
Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
SR807	167 TAG, Eastern West Virginia Regional, Martinsburg, WV 25401 DSN 242-9250.	Same as Originating Activity	Continuous	141
SR808	167 TAG, Eastern West Virginia Regional, Martinsburg, WV 25401 DSN 242-9250.	Same as Originating Activity	Continuous	170
SR820	327 AS/DOXT,1146 Fairchild Street, Willow Grove ARS, PA DSN 991-1910, C215-443-1	Same as Originating Activity	0900-2300 local daily	141
SR821	327 AS/DOXT,1146 Fairchild Street, Willow Grove ARS, PA DSN 991-1910, C215-443-1	Same as Originating Activity	0900-2300 local daily	129
SR822	911 AW, Pittsburgh Intl, PA DSN 277-8722/8761.	Same as Originating Activity	1000-0300Z Mon-Sat	125
SR823	914 AW/328 AS,10460 Wagner Dr, Niagra Falls Intl Airport, NY 14304-5010, DSN 238	Same as Originating Activity	1500-0300Z++	183
SR825	914 AW/328 AS,10460 Wagner Dr, Niagra Falls Intl Airport, NY 14304-5010, DSN 238	Same as Originating Activity	1500-0300Z++	181
SR835	327 AS/DOXT,1146 Fairchild Street, Willow Grove ARS, PA DSN 991-1910, C215-443-1	Same as Originating Activity	0900-2300 local	132
SR844	166 Airlift Gp, 166 OSF/DOW, 2600 Spruance Dr, Corporate Commons, New Castle, DE	Same as Originating Activity	0800-2359 local	153
SR845	166 Airlift Gp, 166 OSF/DOW, 2600 Spruance Dr, Corporate Commons, New Castle, DE	Same as Originating Activity	0800-2359 local	199
SR846	166 Airlift Gp, 166 OSF/DOW, 2600 Spruance Dr, Corporate Commons, New Castle, DE	Same as Originating Activity	0800-2359 local	111
SR847	166 Airlift Gp, 166 OSF/DOW, 2600 Spruance Dr, Corporate Commons, New Castle, DE	Same as Originating Activity	0800-2359 local	66
SR867	Commander, Ft Pickett, VA 23824-5000 DSN 438-8506, C804-292-8506.	Same as Originating Activity	Continuous	196
SR871	130 AG (ANG), Kanawha County, Charleston, WV 25311 DSN 366-6291.	Same as Originating Activity	0800-2300 local	149
SR872	130 AG (ANG), Kanawha County, Charleston, WV 25311 DSN 366-6291.	Same as Originating Activity	0800-2300 Local	156
SR873	130 AG (ANG), Kanawha County, Charleston, WV 25311 DSN 366-6291.	Same as Originating Activity	0800-2300 local	155
SR874	130 AG (ANG), Kanawha County, Charleston, WV 25311 DSN 366-6291.	Same as Originating Activity	0800-2300 local	129
SR900	143 AW/Operations, 7 Flightline Dr, North Kingstown, RI 02852-7548 DSN 476-3405,	Same as Originating Activity	1200-0400Z++ Daily	152
SR901	143 AW/Operations, 7 Flightline Dr, North Kingstown, RI 02852-7548 DSN 476-3405,	Same as Originating Activity	1200-0400Z++ Daily	98

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** Length calculations were performed using an Albers Equal Area Conic projection for the conterminous United States and the appropriate Universal Transverse Mercator zones for Alaska (6N), Hawaii(4N), and Guam(55N).
Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
SR902	143 AW/Operations, 7 Flightline Dr, North Kingstown, RI 02852-7548 DSN 476-3405,	Same as Originating Activity	1200-0400Z++ Daily	160
SR904	143 AW/Operations, 7 Flightline Dr, North Kingstown, RI 02852-7548 DSN 476-3405,	Same as Originating Activity	1000-2200 local	183
SR905	143 AW/Operations, 7 Flightline Dr, North Kingstown, RI 02852-7548 DSN 476-3405,	Same as Originating Activity	1000-2200 local	97
VR054	4 OSS/OSR, Seymour Johnson AFB, NC 27531-5004 DSN 722-2672, C919-722-2672.	4 OSS/OSOSF, Seymour Johnson AFB, NC 27531-5004 DSN 722-2129/2124, C919-722-2129	0700-2100 local Mon-Fri, OT by NOTAM	34
VR058	20 OSS/OSTA, Shaw AFB, SC 29152 DSN 965-1121/1122, C803-895-1121/1122, Fax DSN 9	20 OSS/OSOS, Shaw AFB, SC 29152 DSN 965-1118/1119, C803-895-1118/1119. Non-duty	Continuous (Jan, Mar, May, Jul, Sep, Nov) VR-092 reverse direction other months	199
VR060	187 FW, 5187 Selma Highway , Montgomery, AL 36108-4824 DSN 358-9255, C334-394-72	Same as Originating Activity	0700-1700 Local or by NOTAM	123
VR071	4 OSS/OSR, Seymour Johnson AFB, NC 27531-5004 DSN 722-2672, C919-722-2672.	4 OSS/OSOSF, Seymour Johnson AFB, NC 27531-5004 DSN 722-2129/2124, C919-722-2129	0700-2100 local Mon-Fri, OT by NOTAM	29
VR073	4 OSS/OSR, Seymour Johnson AFB, NC 27531-5004 DSN 722-2672, C919-722-2672.	4 OSS/OSOSF, Seymour Johnson AFB, NC 27531-5004 DSN 722-2129/2124, C919-722-2129	Continuous	222
VR083	4 OSS/OSE, Seymour Johnson AFB, NC 27531 DSN 722-2672, C919-722-2672	4 OSS/OSOSF Seymour Johnson AFB, NC 27531-5004 Duty hrs DSN 722-2129/2124, C919-	Continuous	238
VR084	4 OSS/OSR, Seymour Johnson AFB, NC 27531-5004 DSN 722-2672, C919-722-2672.	4 OSS/OSOSF, Seymour Johnson AFB, NC 27531-5004 DSN 722-2129/2124, C919-722-2129	0700-2100 local Mon-Fri, OT by NOTAM	204
VR085	4 OSS/OSR, Seymour Johnson AFB, NC 27531 DSN 722-2672, C919-722-2672.	4 OSS/OSOSF Seymour Johnson AFB, NC 27531-5004 Duty hrs DSN 722-2129/2124, C919-	Continuous	168
VR086	4 OSS/OSR, Seymour Johnson AFB, NC 27531 DSN 722-2672, C919-722-2672.	4 OSS/OSOSF, Seymour Johnson AFB, NC 27531-5004 Duty hrs DSN 722-2129/2124, C919	Continuous	203
VR087	20 OSS/OSTA, Shaw AFB, SC 29152 DSN 965-1121/1122, C803-895-1121/1122, Fax DSN 9	20 OSS/OSOS, Shaw AFB, SC 29152 Duty hrs DSN 965-1118/1119, C803-895-1118/1119.	Continuous	185
VR088	20 OSS/OSTA, Shaw AFB, SC 29152 DSN 965-1121/1122, C803-895-1121/1122, Fax DSN 9	20 OSS/OSOS, Shaw AFB, SC 29152 Duty hrs DSN 965-1118/1119, C803-895-1118/1119.	Continuous	164
VR092	20 OSS/OSTA, Shaw AFB, SC 29152 DSN 965-1121/1122, C803-895-1121/1122, Fax DSN 9	20 OSS/OSOS, Shaw AFB, SC 29152 Duty hrs DSN 965-1118/1119, C803-895-1118/1119.	Continuous (Feb, Apr, Jun, Aug, Oct, Dec) VR-058 opposite direction other months	199
VR093	20 OSS/OSTA, Shaw AFB, SC 29152 DSN 965-1121/1122, C803-895-1121/1122, Fax DSN 9	20 OSS/OSOS, Shaw AFB, SC 29152 Duty hrs DSN 965-1118/1119, C803-895-1118/1119.	Continuous	209
VR094	20 OSS/OSTA, Shaw AFB, SC 29152 DSN 965-1121/1122, C803-895-1121/1122, Fax DSN 9	20 OSS/OSOS, Shaw AFB, SC 29152 Duty hrs DSN 965-1118/1119, C803-895-1118/1119.	Continuous	152
VR095	20 OSS/OSTA, Shaw AFB, SC 29152 DSN 965-1121/1122, C803-895-1121/1122, Fax DSN 9	20 OSS/OSOS, Shaw AFB, SC 29152 Duty hrs DSN 965-1118/1119, C803-895-1118/1119.	Continuous	267

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** Length calculations were performed using an Albers Equal Area Conic projection for the conterminous United States and the appropriate Universal Transverse Mercator zones for Alaska (6N), Hawaii(4N), and Guam(55N).
Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
VR096	4 OSS/OSR, Seymour Johnson AFB, NC 27531 DSN 722-2672, C919-722-2672.	4 OSS/OSOSF, Seymour Johnson AFB, NC 27531-5004 DSN 722-2129/2124, C919-722-2129	Continuous	144
VR097	20 OSS/OSTA, Shaw AFB, SC 29152 DSN 965-1121/1122, C803-895-1121/1122, Fax DSN 9	20 OSS/OSOS, Shaw AFB, SC 29152, Duty hrs DSN 965-1118/1119, C803-895-1118/1119.	0600-2400 local daily	341
VR100	27 OSS/OSOH, 110 E Sextant Ave, Suite 1081, Cannon AFB, NM 88103 DSN 681-2279.	27 OSS/OSOS, 110 E Sextant Ave, Suite 1080, Cannon AFB, NM 88103 DSN 681-2276.	Continuous	317
VR1001	FACSFACJAX, P.O. Box 40, NAS Jacksonville, FL 32212-0040 DSN 942-2004/2005, C904	Same as Originating Activity	Continuous	390
VR1002	FACSFACJAX, P.O. Box 40, NAS Jacksonville, FL 32212-0040 DSN 942-2004/2005, C904	Same as Originating Activity	Continuous	435
VR1003	FACSFACJAX, P.O. Box 40, NAS Jacksonville, FL 32212-0040 DSN 942-2004/2005, C904	Same as Originating Activity	Continuous	489
VR1004	FACSFACJAX, P.O. Box 40, NAS Jacksonville, FL 32212-0040 DSN 942-2004/2005, C904	Same as Originating Activity	Continuous	570
VR1005	FACSFACJAX, P.O. Box 40, NAS Jacksonville, FL 32212-0040 DSN 942-2004/2005, C904	Same as Originating Activity	Continuous	281
VR1006	FACSFACJAX, P.O. Box 40, NAS Jacksonville, FL 32212-0040 DSN 942-2004/2005, C904	Same as Originating Activity	Continuous	686
VR1007	FACSFACJAX, P.O. Box 40, NAS Jacksonville, FL 32212-0040 DSN 942-2004/2005, C904	Same as Originating Activity	Continuous	174
VR1008	FACSFACJAX, P.O. Box 40, NAS Jacksonville, FL 32212-0040 DSN 942-2004/2005, C904	Same as Originating Activity	Continuous	74
VR1009	FACSFACJAX, P.O. Box 40, NAS Jacksonville, FL 32212-0040 DSN 942-2004/2005, C904	Same as Originating Activity	Continuous	76
VR101	301 OG/SUA, NAS JRB, Fort Worth, TX 76127 DSN 739-6903/04/05, C817-782-6903/04/0	Same as Originating Activity	0700-2200 local	72
VR1010	FACSFACJAX, P.O. Box 40, NAS Jacksonville, FL 32212-0040 DSN 942-2004/2005, C904	Same as Originating Activity	Continuous	26
VR1013	FACSFACJAX, P.O. Box 40, NAS Jacksonville, FL 32212-0040 DSN 942-2004/2005, C904	Same as Originating Activity	Continuous	62
VR1014	14 OSS/OSOP, Columbus AFB, MS 39710-5000 DSN 742-7560/7633, C662-434-7560/7633.	37/41 FTS, Columbus AFB, MS 39710-5000 DSN 742-7666/7667, C662-434-7666/7667.	Sunrise-Sunset weekdays	177
VR1016	14 OSS/OSOP Columbus AFB, MS 39701 DSN 742-7633 C662-434-7633	48 FTS Columbus AFB, MS 39701 DSN 742-7847 C662-434-7847	Sunrise-Sunset daily	395
VR1017	187 FW, 5187 Selma Highway, Montgomery, AL 36108-4824 DSN 358-9255, C334-394-725	Same as Originating Activity	0700-1730 local, OT by NOTAM	176

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** Length calculations were performed using an Albers Equal Area Conic projection for the conterminous United States and the appropriate Universal Transverse Mercator zones for Alaska (6N), Hawaii(4N), and Guam(55N).
Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
VR1020	FACSFACNPA, NAS Pensacola, FL 32508-5000 DSN 922-2735, C850-452-2735.	Same as Originating Activity	1200-0400Z++ weekdays, occasional weekends	147
VR1021	FACSFAC, NAS Pensacola, FL 32508-5000 DSN 922-4671/4672, C850-452-4671/4672.	Same as Originating Activity	1200-0400Z++ weekdays, occasional weekends	419
VR1022	FACSFACNPA, NAS Pensacola, FL 32508-5000 DSN 922-2735, C850-452-2735.	Same as Originating Activity	1200-0400Z++ weekdays, occasional weekends	173
VR1023	FACSFACNPA, NAS Pensacola, FL 32508-5000 DSN 922-2735, C850-452-2735.	Same as Originating Activity	1200-0400Z++ weekdays, occasional weekends	301
VR1024	FACSFACNPA, NAS Pensacola, FL 32508-5000 DSN 922-2735, C850-452-2735.	Same as Originating Activity	1200-0400Z++ weekdays, occasional weekends	298
VR1030	COMTRAWING ONE, NAS MERIDIAN, MS 39309-0136 DSN 637-2487, C601-679-2487.	Same as Originating Activity	1100-0600Z++ daily	255
VR1031	COMTRAWING ONE, NAS MERIDIAN, MS 39309-0136 DSN 637-2487, C601-679-2487.	Same as Originating Activity	1100-0600Z++ daily	342
VR1032	COMTRAWING ONE, NAS MERIDIAN, MS 39309-0136 DSN 637-2487, C601-679-2487.	Same as Originating Activity	1100-0600Z++ daily	212
VR1033	COMTRAWING ONE, NAS MERIDIAN, MS 39309-0136 DSN 637-2487, C601-679-2487.	Same as Originating Activity	1100-0600Z++ daily	323
VR1039	FACSFACJAX, P.O. Box 40, NAS Jacksonville, FL 32212-0040 DSN 942-2004/2005, C904	Same as Originating Activity	Continuous	8
VR104	301 OG/SUA, NAS JRB, Fort Worth, TX 76127 DSN 739-6903/04/05, C817-782-6903/04/0	Same as Originating Activity	0700-2200 local	220
VR1040	CG MCAS CHERRY POINT, ATTN RAC-DIROPS, Cherry Point, NC 28533 DSN 582-3466, C252	Central Scheduling Division MCAS Cherry Point, NC 28533 DSN 582-4040/4041, C252-	Continuous	421
VR1041	CG MCAS CHERRY POINT, ATTN RAC-DIROPS, Cherry Point, NC 28533 DSN 582-3466, C252	Central Scheduling Division MCAS Cherry Point, NC 28533 DSN 582-4040/4041, C252-	Continuous	384
VR1043	CG MCAS CHERRY POINT, ATTN RAC-DIROPS, Cherry Point, NC 28533 DSN 582-3466, C252	Central Scheduling Division MCAS Cherry Point, NC 28533 DSN 582-4040/4041, C252-	0700-2300 Local Daily	455
VR1046	CG MCAS CHERRY POINT, ATTN RAC-DIROPS, Cherry Point, NC 28533 DSN 582-3466, C252	Central Scheduling Division MCAS Cherry Point, NC 28533 DSN 582-4040/4041, C252-	0600-1800 Local Mon-Fri	243
VR1050	14 OSS/OSOP, Columbus AFB, MS 39710-5000 DSN 742-7560/7633, C662-434-7560/7633.	48 FTS, Columbus AFB, MS 39710-5000 DSN 742-7840/7847, C662-434-7840/7847.	1300-0500Z++ daily	359
VR1051	14 OSS/OSOP, Columbus AFB, MS 39710-5000 DSN 742-7560/7633/3011, C662-434-7560/7	48 FTS, Columbus AFB, MS 39710-5000 DSN 742-7840/7847, C662-434-7840/7847.	1300-0500Z++ daily	439

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Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
VR1052	FACSFACNPA, NAS Pensacola, FL 32508-5000 DSN 922-2735, C850-452-2735.	Same as Originating Activity	1200-0500Z++	358
VR1054	FACSFACNPA, NAS Pensacola, FL 32508-5000 DSN 922-2735, C850-452-2735.	Same as Originating Activity	1300-0500Z++ daily	293
VR1055	FACSFAC NPA, NAS Pensacola, FL 32508-5000 DSN 922-2735, C850-452-2735.	Same as Originating Activity	1300-0500Z++ 7 days a week	299
VR1056	FACSFACNPA, NAS Pensacola, FL 32508-5000 DSN 922-2735, C850-452-2735.	Same as Originating Activity	1200-0500Z++	358
VR1059	20 OSS/OSTA, Shaw AFB, SC 29152 DSN 965-1121/1122, C803-895-1121/1122, Fax DSN 9	20 OSS/OSOS, Shaw AFB, SC 29152 Duty hrs DSN 965-1118/1119, C803-895-1118/1119.	Continuous	312
VR106	2 OSS/OSTP, 41 Orville Wright Ave., Suite 215, Barksdale AFB, LA 71110-2085 DSN	2 OSS/OSOSB, 41 Orville Wright Ave., Barksdale AFB, LA 71110 DSN 781-3828/5396 C	0700-2200 local	72
VR1061	4 OSS/OSR, Seymour Johnson AFB, NC 27531 DSN 722-2672, C919-722-2672.	4 OSS/OSOSF, Seymour Johnson AFB, NC 27531-5004 Duty hrs DSN 722-2129/2124, C919	Continuous	149
VR1065	347 OSS/OSTA, Moody AFB, GA 31699-5000 DSN 460-4131, C229-257-4131.	347 OSS/OSOS, Moody AFB, GA 31699-1899 Advance Mon-Fri 0800-1600 local DSN 460-4	0700-0000 local daily	163
VR1066	347 OSS/OSKA, Moody AFB, GA 31699-1899 DSN 460-4131, C229-257-4131.	3 FTS, Moody AFB, GA 31699-1899 Mon-Fri 0830-1700 local (excluding holidays) DSN	0700-0000 local daily	208
VR1070	187 FW, 5187 Selma Highway, Montgomery, AL 36108-4824 DSN 358-9255 C334-394-7255	Same as Originating Activity	0700-2000 local, OT by NOTAM	99
VR1072	14 OSS/OSOP, Columbus AFB, MS 39710-5000 DSN 742-7560/7633/3011, C662-434-7560/7	48 FTS, Columbus AFB, MS 39710-5000 DSN 742-7840/7847, C662-434-7840/7847.	Normally 0800-2100 local, Use other times not prohibited	240
VR1076	156 AW (PRANG) Muniz ANGB, 200 Jose A. (Tony) Santana Ave., Carolina, Puerto Ric	Same as Originating Activity	0700-2000 local daily	121
VR1077	156 AW (PRANG) Muniz ANGB, 200 Jose A. (Tony) Santana Ave., Carolina, Puerto Ric	Same as Originating Activity	1100-2400Z++ daily	202
VR1078	156 AW (PRANG) Muniz ANGB, 200 Jose A. (Tony) Santana Ave., Carolina, Puerto Ric	Same as Originating Activity	1100-2400Z++ daily	253
VR1079	156 AW (PRANG) Muniz ANGB, 200 Jose A. (Tony) Santana Ave., Carolina, Puerto Ric	Same as Originating Activity	1000-2400Z++, 7 days a week	219
VR108	27 OSS/OSOH, 110 E Sextant Ave, Suite 1081 Cannon AFB, NM 88103 DSN 681-2279.	27 OSS/OSOS, 110 E Sextant Ave, Suite 1080 Cannon AFB, NM 88103 DSN 681-2276.	Continuous	235
VR1080	156 AW (PRANG) Muniz ANGB, 200 Jose A. (Tony) Santana Ave., Carolina, Puerto Ric	Same as Originating Activity	0700-2000 local daily	121
VR1081	156 AW (PRANG) Muniz ANGB, 200 Jose A. (Tony) Santana Ave., Carolina, Puerto Ric	Same as Originating Activity	1000-2400Z++ 7 days a week	185

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Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
VR1082	46 OSS/OSCM, 505 North Barrancas Ave, Suite 104, Eglin AFB, FL 32542-6818 DSN 87	46 OSS/OSCS, 505 North Barrancas Ave, Suite 104, Eglin AFB, FL 32542-6818 DSN 87	Normally 1200-2300Z++ Mon-Fri, available OT	190
VR1083	USAFAWC-79 Test and Evaluation Group/CD, Eglin AFB, FL 32542 DSN 872-2024, C904-	85 Test and Evaluation Squadron/DOOS, Eglin AFB, FL 32542 DSN 872-2622, C904-882	Normally 1200-2300Z++ Mon-Fri, route usage is allowable OT	209
VR1084	USAFAWC-79 Test and Evaluation Group/CD, Eglin AFB, FL 32542 DSN 872-2024, C904-	85 Test and Evaluation Squadron/DOOS, Eglin AFB, FL 32542 DSN 872-2622, C904-882	Normally 1200-2300Z++ Mon-Fri, route usage is allowable OT	102
VR1085	46 OSS/OSCM, 505 North Barrancas Ave, Suite 104, Eglin AFB, FL 32542-6818 DSN 87	46 OSS/OSCS (ROCC), 505 North Barrancas Ave, Suite 104, Eglin AFB, FL 32542-6818	Normally 1200-2300Z++ Mon-Fri, route usage is allowable OT	288
VR1087	347 Rescue Wing, Detachment 1/RO, 8707 North Golf Course St., MacDill AFB, FL 33	347 Rescue Wing, Detachment 1/ROA, 8707 North Golf Course St., MacDill AFB, FL 3	Normally 0900-2400Z++ daily, available OT	90
VR1088	347 Rescue Wing, Detachment 1/RO, 8707 North Golf Course St., MacDill AFB, FL 33	347 Rescue Wing, Detachment 1/ROA, 8707 North Golf Course St., MacDill AFB, FL 3	Normally 0900-2400Z++ daily, available OT	83
VR1089	347 Rescue Wing, Detachment 1/RO, 8707 North Golf Course St., MacDill AFB, FL 33	347 Rescue Wing, Detachment 1/ROA, 8707 North Golf Course St., MacDill AFB, FL 3	Normally 0900-2400Z++ daily, available OT	107
VR1097	347 WG, Detachment 1/RO, 8707 North Golf Course St., MacDill AFB, FL 33621-5205	347 WG, Detachment 1/ROA, 8707 North Golf Course St., MacDill AFB, FL 33621-5205	Continuous	69
VR1098	347th Rescue WG, Detachment 1/RO, 8707 North Golf Course St., MacDill AFB, FL 33	347th Rescue WG, Detachment 1/ROA, 8707 North Golf Course St., MacDill AFB, FL 3	Continuous	168
VR1102	188 FW/XP, 4850 Leigh Ave., Fort Smith, AR 72903-6096 DSN 778-5185/5271.	Same as Originating Activity. Route scheduled no more than 24 hr in advance. Min	Continuous (except Sunday 1000-1200 local)	83
VR1103	188 FW/XP, 4850 Leigh Ave., Fort Smith, AR 72903-6096 DSN 778-5185/5271.	Same as Originating Activity. Route scheduled no more than 24 hr in advance. Min	Continuous (except Sunday 1000-1200 local)	120
VR1104	188 FW/XP, 4850 Leigh Ave., Fort Smith, AR 72903-6096 DSN 778-5185/5271.	Same as Originating Activity. Route scheduled no more than 24 hr in advance. Min	Continuous (except Sunday 1000-1200 local)	109
VR1105	149 FTR GP (TX-ANG), Kelly AFB, TX 78241 DSN 945-5934, C210-925-5934.	Same as Originating Activity	0800-1830 local daily	94
VR1106	149 FTR GP (TX-ANG), Kelly AFB, TX 78241 DSN 969-5934.	Same as Originating Activity	0800-1830 local daily	94
VR1107	150 FW OG/CC, 2251 Air Guard Rd. SE, Kirtland AFB, NM 87117-5875 DSN 246-7426.	Same as Originating Activity	Sunrise-2200 local daily	243

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** Length calculations were performed using an Albers Equal Area Conic projection for the conterminous United States and the appropriate Universal Transverse Mercator zones for Alaska (6N), Hawaii(4N), and Guam(55N).
Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
VR1108	47 OSS/OSOR, 570 2nd St., Ste 6, Laughlin AFB, TX 78843-5222 DSN 732-5864, C830-	87 FTS/DOS, 570 2nd St., Laughlin AFB, TX 78843 DSN 732-5484, C830-298-5484. Sch	Sunrise-Sunset only	125
VR1109	47 OSS/OSOR, 570 2nd St., Ste. 6, Laughlin AFB, TX 78843-5222 DSN 732-5864, C830	87 FTS/DOS, 570 2nd St., Laughlin AFB, TX 78843 DSN 732-5484, C830-298-5484. Sch	Sunrise-Sunset daily	115
VR1110	301 OG/SUA, NAS JRB, Fort Worth, TX 76127 DSN 739-6903/04/05, C817-782-6903/04/0	Same as Originating Activity	0600-2200 local daily	80
VR1113	188 FW/XP, 4850 Leigh Ave., Fort Smith, AR 72903-6096 DSN 778-5185/5271.	Same as Originating Activity. Route scheduled no more than 24 hr in advance. Min	Continuous (except Sunday 1000-1200 local)	188
VR1116	OC-ALC/10 FLTS, 4805 West Dr, Tinker AFB, OK 73145-3300 DSN 336-7719/7710, C405-	Same as Originating Activity	Daylight hours only	164
VR1117	47 OSS/OSOR, 570 2nd St., Ste. 6, Laughlin AFB, TX 78843-5222 DSN 732-5864, C830	87 FTS/DOS, 570 2nd St., Laughlin AFB, TX 78843 DSN 732-5484, C830-298-5484. Sch	Sunrise-Sunset Sat-Sun	115
VR1120	149 FW (TX ANG), 107 Hensley Street, Kelly AFB, TX 78241-5544 DSN 945-5934, C210	Same as Originating Activity	Sunrise-Sunset	128
VR1121	149 FW (TX ANG), 107 Hensley Street, Kelly AFB, TX 78241-5544 DSN 945-5934, C210	Same as Originating Activity	Sunrise-Sunset	128
VR1122	149 FW (TX ANG), 107 Hensley Street, Kelly AFB, TX 78241-5544 DSN 945-5934, C210	Same as Originating Activity	Sunrise-Sunset	194
VR1123	149 FW (TX ANG), 107 Hensley Street, Kelly AFB, TX 78241-5544 DSN 945-5934, C210	Same as Originating Activity	Sunrise-Sunset	194
VR1124	301 OG/SUA, NAS JRB, Fort Worth, TX 76127 DSN 739-6903/04/05, C817-782-6903/04/0	Same as Originating Activity	0600-2200 local daily	57
VR1128	301 OG/SUA, NAS JRB, Fort Worth, TX 76127 DSN 739-6903/04/05, C817-782-6903/04/0	Same as Originating Activity	0600-2200 local daily	206
VR1130	188 FW/XP, 4850 Leigh Ave., Fort Smith, AR 72903-6096 DSN 778-5185/5271.	Same as Originating Activity. Route scheduled no more than 24 hr in advance. Min	Continuous (except Sunday 1000-1200 local)	109
VR1137	301 OG/SUA, NAS JRB, Fort Worth, TX 76127 DSN 739-6903/04/05, C817-782-6903/04/0	Same as Originating Activity	0600-2200 local daily	193
VR1138	80th Flying Training Wing, 1911 J. Ave. Ste 6, Sheppard AFB, TX 76311-2056 DSN 7	90 FTS/DOTOD, Sheppard AFB, TX 76311 DSN 736-2675/4995, C940-676-2675/4995.	Sunrise-Sunset Mon-Fri, OT by NOTAM	193
VR1139	80th Flying Training Wing, 1911 J. Ave. Ste 6, Sheppard AFB, TX 76311-2056 DSN 7	90 FTS/DOTOD, Sheppard AFB,TX 76311 DSN 736-2675/4995, C940-676-2675/4995.	Sunrise-Sunset Mon-Fri, OT by NOTAM	210
VR114	27 OSS/OSOH, 110 E. Sextant Ave, Suite 1081, Cannon AFB, NM 88103 DSN 681-2279.	27 OSS/OSOS, 110 E. Sextant Ave, Suite 1080, Cannon AFB, NM 88103 DSN 681-2276.	Continuous	172
VR1140	80th Flying Training Wing, 1911 J. Ave. Ste 6, Sheppard AFB, TX 76311-2056 DSN 7	90 FTS/DOTOD, Sheppard AFB, TX 76311 DSN 736-2675/4995, C940-676-2675/4995.	Sunrise-Sunset Mon-Fri, OT by NOTAM	210

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Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
VR1141	80th Flying Training Wing, 1911 J. Ave. Ste 6, Sheppard AFB, TX 76311-2056 DSN 7	90 FTS/DOTOD, Sheppard AFB, TX 76311 DSN 736-2675/4995, C940-676-2675/4995.	Sunrise-Sunset Mon-Fri, OT by NOTAM	217
VR1142	80th Flying Training Wing, 1911 J. Ave. Ste 6, Sheppard AFB, TX 76311-2056 DSN 7	90 FTS/DOTOD, Sheppard AFB, TX 76311 DSN 736-2675/4995, C940-676-2675/4995.	Sunrise-Sunset Mon-Fri, OT by NOTAM	217
VR1143	80th Flying Training Wing, 1911 J. Ave. Ste 6, Sheppard AFB, TX 76311-2056 DSN 7	90 FTS/DOTOD, Sheppard AFB, TX 76311 DSN 736-2675/4995, C940-676-2675/4995.	Sunrise-Sunset Mon-Fri, OT by NOTAM	248
VR1144	80th Flying Training Wing, 1911 J. Ave. Ste 6, Sheppard AFB, TX 76311-2056 DSN 7	90 FTS/DOTOD, Sheppard AFB, TX 76311 DSN 736-2675/4995, C940-676-2675/4995.	Sunrise-Sunset Mon-Fri, OT by NOTAM	248
VR1145	80th Flying Training Wing, 1911 J. Ave. Ste 6, Sheppard AFB, TX 76311-2056 DSN 7	90 FTS/DOTOD, Sheppard AFB, TX 76311 DSN 736-2675/4995, C940-676-2675/4995.	Sunrise-Sunset Mon-Fri, OT by NOTAM	230
VR1146	80th Flying Training Wing, 1911 J. Ave. Ste 6, Sheppard AFB, TX 76311-2056 DSN 7	90 FTS/DOTOD, Sheppard AFB, TX 76311 DSN 736-2675/4995, C940-676-2675/4995.	Sunrise-Sunset Mon-Fri, OT by NOTAM	230
VR1175	OC-ALC/10 Flight Test Sqdn, 4805 West Dr, Tinker AFB, OK 73145-3300 DSN 336-7719	Same as Originating Activity	Sunrise-Sunset	314
VR1176	OC-ALC/10 Flight Test Sqdn, 4805 West Dr, Tinker AFB, OK 73145-3300 DSN 336-7719	Same as Originating Activity	Sunrise-Sunset	314
VR118	301 OG/SUA, NAS JRB, Fort Worth, TX 76127 DSN 739-6903/04/05, C817-782-6903/04/0	Same as Originating Activity	Sunrise-Sunset Mon-Sat	82
VR1182	188 FW/XP, 4850 Leigh Ave., Fort Smith, AR 72903-6096 DSN 778-5185/5271.	Same as Originating Activity. Route scheduled no more than 24 hr in advance. Min	Continuous	187
VR119	184 ARW (Kansas ANG), McConnell AFB, KS 67221-9010 (1330-2215Z wkd, sked rqr are	Same as Originating Activity	0700-1730 local daily	165
VR1195	150 FW OG/CC, 2251 Air Guard Rd. SE, Kirtland AFB, NM 87117-5875 DSN 246-7426.	Same as Originating Activity	Sunrise-2200 local daily	243
VR1196	ANG CRTC-Gulfport/OSA, 4715 Hewes Ave, Gulfport, MS 39507-4324 DSN 363-6027, C22	Same as Originating Activity	Continuous	202
VR1205	412 OSS/OSAA, 235 S. Flightline Rd, Edwards AFB, CA 93524-6460 DSN 527-2446, C66	412 OSS/OSR, 300 E. Yeager Blvd, Edwards AFB, CA 93524 DSN 527-4110, C661-277-41	Continuous	193
VR1206	412 OSS/OSAA, 235 S. Flightline Rd, Edwards AFB, CA 93524-6460 DSN 527-2446, C66	412 OSS/OSR, 300 E. Yeager Blvd, Edwards AFB, CA 93524 DSN 527-4110, C661-277-41	Continuous	45
VR1211	452 OSS/DOT, March Fld, CA 92518 DSN 447-3846, C909-655-3846.	452 OSS/DOT, March Fld, CA 92518 DSN 447-4404/2422, C909-655-4404/2422.	Continuous	106
VR1214	412 OSS/OSAA, 235 S. Flightline Rd, Edwards AFB, CA 93524-6460 DSN 527-2446, C66	412 OSS/OSR, 300 E. Yeager Blvd, Edwards AFB, CA 93524 DSN 527-4110, C661-277-41	Continuous	224
VR1215	412 OSS/OSAA, 235 S. Flightline Rd, Edwards AFB, CA 93524-6460 DSN 527-2446, C66	412 OSS/OSR, 300 E. Yeager Blvd, Edwards AFB, CA 93524 DSN 527-4110, C661-277-41	Sunrise-Sunset daily	118
VR1217	412 OSS/OSAA, 235 S. Flightline Rd, Edwards AFB ,CA 93524 DSN 527-2446, C661-277	412 OSS/OSR, 300 E. Yeager Blvd, Edwards AFB, CA 93524 DSN 527-4110, C661-277-41	Sunrise-Sunset daily	111
VR1218	412 OSS/OSAA, 235 S. Flightline Rd, Edwards AFB, CA 93524 DSN 527-2446, C661-277	412 OSS/OSR, 300 E. Yeager Blvd, Edwards AFB, CA 93524 DSN 527-4110, C661-277-41	Sunrise-Sunset daily	207

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Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
VR1233	355 OSS/OSOA, Davis-Monthan AFB, AZ 85707 DSN 228-4680 C520-228-4680.	355 OSS/OSOSO, Davis-Monthan AFB, AZ 85707-4932, 0730-1630 local Mon- Fri, same	1300-0530Z	276
VR125	27 OSS/OSOH, 110 E Sextant Ave, Suite 1081, Cannon AFB, NM 88103 DSN 681-2279.	27 OSS/OSOS, 110 E Sextant Ave, Suite 1080, Cannon AFB, NM 88103 DSN 681-2276.	Continuous	317
VR1250	Commander, Strike Fighter Wing, U.S. Pacific Fleet, 001 K Street, NAS Lemoore, C	Same as Originating Activity	Daylight hours, OT by NOTAM	354
VR1251	Commander, Strike Fighter Wing, U.S. Pacific Fleet, 001 K Street, NAS Lemoore, C	Same as Originating Activity	Daylight hours, OT by NOTAM	517
VR1252	Commander, Strike Fighter Wing, U.S. Pacific Fleet, 001 K Street, NAS Lemoore, C	Same as Originating Activity	Daylight hours, OT by NOTAM	185
VR1253	Commander, Strike Fighter Wing, U.S. Pacific Fleet, 001 K Street, NAS Lemoore, C	Same as Originating Activity	Daylight hours, OT by NOTAM	443
VR1254	Commander, Strike Fighter Wing, U.S. Pacific Fleet, 001 K Street, NAS Lemoore, C	Same as Originating Activity	Daylight hours, OT by NOTAM	246
VR1255	Commander, Strike Fighter Wing, U.S. Pacific Fleet, 001 K Street, NAS Lemoore, C	Same as Originating Activity	Daylight hours, OT by NOTAM	296
VR1256	Commander, Strike Fighter Wing, U.S. Pacific Fleet, 001 K Street, NAS Lemoore, C	Same as Originating Activity	Daylight hours, OT by NOTAM	91
VR1257	Commander, Strike Fighter Wing, U.S. Pacific Fleet, 001 K Street, Rm 121, NAS Le	Same as Originating Activity	Daylight hours, OT by NOTAM	436
VR1259	Commander, Strike Fighter Wing, U.S. Pacific Fleet, 001 K Street, NAS Lemoore, C	Same as Originating Activity	Daylight hours, OT by NOTAM	424
VR1260	Commander, Strike Fighter Wing, U.S. Pacific Fleet, 001 K Street, NAS Lemoore, C	Same as Originating Activity	Daylight hours, OT by NOTAM	292
VR1261	Commander, Strike Fighter Wing, U.S. Pacific Fleet, 001 K Street, NAS Lemoore, C	Same as Originating Activity	Daylight hours, OT by NOTAM	386
VR1262	Commander, Strike Fighter Wing, U.S. Pacific Fleet, 001 K Street, NAS Lemoore, C	Same as Originating Activity	Daylight hours, OT by NOTAM	339
VR1264	Commander, Strike Fighter Wing, U.S. Pacific Fleet, 001 K Street, NAS Lemoore, C	Same as Originating Activity	Daylight hours, OT by NOTAM	150
VR1265	G-3, 3D MAW, MCAS Miramar, San Diego, CA 92145 DSN 267-9462, C858-577-9462. Non-	Same as Originating Activity	Continuous	405
VR1266	Commanding Officer, Yuma MCAS, Box 99160 Yuma, AZ 85369-9160 DSN 269-2326/2077,	Same as Originating Activity	0700-1800 local (daylight hours)	158
VR1267	Commanding Officer, Yuma MCAS, Box 99160 Yuma, AZ 85369-9160 DSN 269-2326/2077,	Same as Originating Activity	0700-1800 local	216
VR1267A	Commanding Officer, Yuma MCAS, Box 99160 Yuma, AZ 85369-9160 DSN 269-2326/2077,	Same as Originating Activity	0700-1800 local	101

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Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
VR1268	Commanding Officer, Yuma MCAS, Box 99160 Yuma, AZ 85369-9160 DSN 269-2326/2077,	Same as Originating Activity	0700-1800 local	371
VR1293	412 OSS/OSAA, 235 S. Flightline Rd, Edwards AFB, CA 93524-6460 DSN 527-2446, C66	412 OSS/OSR, 300 E. Yeager Blvd, Edwards AFB, CA 93524 DSN 527-4110, C661-277-41	Continuous	20
VR1300	124 WG/OGAM (ANG), 3996 W. Aeronca St., Boise, ID 83705-8004 DSN 422-5310, C208-	124 WG/OSS (ANG), 3996 W. Aeronca St., Boise, ID 83705-8004 DSN 422-5348, C208-4	Continuous or by NOTAM	420
VR1301	124 WG/OGAM (ANG), 3996 W. Aeronca St., Boise, ID 83705-8004 DSN 422-5310, C208-	124 WG/OSS (ANG), 3996 W. Aeronca St., Boise, ID 83705-8004 DSN 422-5348, C208-4	Continuous	319
VR1302	124 WG/OGAM (ANG), 3996 W. Aeronca St., Boise, ID 83705-8004 DSN 422-5310, C208-	124 WG/OSS (ANG), 3996 W. Aeronca St., Boise, ID 83705-8004 DSN 422-5348, C208-4	Continuous	190
VR1303	124 WG/OGAM (ANG), 3996 W. Aeronca St., Boise, ID 83705-8004 DSN 422-5310, C208-	124 WG/OSS (ANG), 3996 W. Aeronca St., Boise, ID 83705-8004 DSN 422-5348, C208-4	Continuous or by NOTAM	431
VR1304	124 WG/OGAM (ANG), 3996 W. Aeronca St., Boise, ID 83705-8004 DSN 422-5310, C208-	124 WG/OSS (ANG), 3996 W. Aeronca St., Boise, ID 83705-8004 DSN 422-5348, C208-4	Continuous or by NOTAM	452
VR1305	124 WG/OGAM (ANG), 3996 W. Aeronca St., Boise, ID 83705-8004 DSN 422-5310, C208-	124 WG/OSS (ANG), 3996 W. Aeronca St., Boise, ID 83705-8004 DSN 422-5348, C208-4	Continuous or by NOTAM	452
VR1350	Commanding Officer (N38), NAS Whidbey Island, 3730 N. Charles Porter Ave, Oak Ha	Same as Originating Activity	Continuous	262
VR1351	Commanding Officer (N38), NAS Whidbey Island, 3730 N. Charles Porter Ave, Oak Ha	Same as Originating Activity	Continuous	374
VR1352	Commanding Officer (N38), NAS Whidbey Island, 3730 N. Charles Porter Ave, Oak Ha	Same as Originating Activity	Continuous	315
VR1353	Commanding Officer (N38), NAS Whidbey Island, 3730 N. Charles Porter Ave, Oak Ha	Same as Originating Activity	Continuous	315
VR1354	Commanding Officer (N38), NAS Whidbey Island, 3730 N. Charles Porter Ave, Oak Ha	Same as Originating Activity	Continuous	130
VR1355	Commanding Officer (N38), NAS Whidbey Island, 3730 N. Charles Porter Ave, Oak Ha	Same as Originating Activity	Continuous	223
VR137	99 ECRG/XON, 41 Orville Wright Ave., Barksdale AFB, LA 71110-2085.	2 OSS/OSOSB, 41 Orville Wright Ave., Barksdale AFB, LA 71110 DSN 781-3828/5396 C	0700-1600 local daily	213
VR138	184 ARW (Kansas ANG), McConnell AFB, KS 67221-9010 (1330-2215Z wkd, scheduling r	Same as Originating Activity	0700-2100 local daily	190
VR140	12 OSS/OSOA, Randolph AFB, TX 78150-5000 DSN 487-5580, C210-652-5580.	560 FTS, Randolph AFB, TX 78150 DSN 487-3518, C210-652-3518.	Sunrise-Sunset, daily	242
VR142	12 OSS/OSOA, Randolph AFB, TX 78150 DSN 487-5580, C210-652-5580.	99 FTS, Randolph AFB, TX 78150 DSN 487-6746, C210-652-6746.	Sunrise-Sunset, daily	178
VR1422	388 RANS/AM, 5948 Southgate Ave., Suite 211, Hill AFB, UT 84056-5232.	388 RANS/DOOS, D Ave., Bldg 120, Hill AFB, UT 84056-5232 DSN 777-4401, C801-777-	0700-2400 lcl Mon-Thurs, 0700-1800 lcl Fri, 0800-1700 lcl Sat	151

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Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
VR1423	388 RANS/AM, 5948 Southgate Ave., Suite 211, Hill AFB, UT 84056-5232.	388 RANS/DOOS, D Ave., Bldg 120, Hill AFB, UT 84056-5232 DSN 777-4401, C801-777-	0700-2400 lcl Mon-Thurs, 0700-1800 lcl Fri, 0800-1700 lcl Sat	90
VR1427	140th Wing /DOT, Buckley ANGB, Aurora, CO 80011-9546 DSN 847-9466, C303-340-9470	140th Wing /DOT, Buckley ANGB, Aurora, CO 80011-9546 DSN 847-9472, C720-847-9472	0800-1600 local Tue-Sat, OT by NOTAM	196
VR143	301 OG/SUA, NAS JRB, Fort Worth, TX 76127 DSN 739-6903/04/05, C817-782-6903/04/0	Same as Originating Activity	0700-2200 local	372
VR144	97 OSS/DOA, 400 N. 6th St. Altus AFB, OK 73521 DSN 866-6098.	Same as Originating Activity	0600-0300 local Mon-Fri, OT by NOTAM	98
VR1445	388 RANS/AM, 5948 Southgate Ave., Suite 211, Hill AFB, UT 84056-5232.	388 RANS/DOOS, D Ave., Bldg 120, Hill AFB, UT 84056-5232 DSN 777-4401, C801-777-	0700-2400 lcl Mon-Thurs, 0700-1800 lcl Fri, 0800-1700 lcl Sat	10
VR1446	388 RANS/AM, 5948 Southgate Ave., Suite 211, Hill AFB, UT 84056-5232.	388 RANS/DOOS, D Ave., Bldg 120, Hill AFB, UT 84056-5232 DSN 777-4401, C801-777-	0700-2400 lcl Mon-Thurs, 0700-1800 lcl Fri, 0800-1700 lcl Sat	10
VR151	COMTRAWING TWO, NAS Kingsville, TX 78363 DSN 876-6518, C361-516-6518.	Same as Originating Activity. Scheduling hrs-0700-1600 Mon-Fri ONLY (excluding h	Daily 0600-2200 local	229
VR1515	185 FG/OGW, Sergeant Bluff, IA 51054-1002 DSN 939-6578.	Same as Originating Activity	0700-1730 local Tue-Fri, OT by NOTAM	251
VR152	184 ARW (Kansas ANG), McConnell AFB,KS 67221-9010 (1330-2215Z wkd, sked rqr 2 hr	Same as Originating Activity	0600-2200 local	191
VR1520	114 FW (ANG), Joe Foss Field, Sioux Falls, SD 57104-0264 DSN 798-7745, C605-988-	114 FW (ANG), Joe Foss Field, Sioux Falls, SD 57104-0264 DSN 798-7754/7746, C605	Daylight hours, Mon-Sat, OT By NOTAM	279
VR1521	114 FW (ANG), Joe Foss Field, Sioux Falls, SD 57104-0264 DSN 798-7745, C605-988-	114 FW (ANG), Joe Foss Field, Sioux Falls, SD 57104-0264 DSN 798-7754/7746, C605	Daylight hours, Mon-Sat, OT by NOTAM	279
VR1522	185 FW/OGS, Sioux City, IA 51111-1300 DSN 585-0203.	Same as Originating Activity	By NOTAM, (2 hours and 15 minutes prior to entry time required)	299
VR1523	185 FW/OGS, Sioux City, IA 51111-1300 DSN 585-0203.	Same as Originating Activity	By NOTAM, (2 hours and 15 minutes prior to entry time required)	299
VR1525	509 OSS/OSKA, 905 Spirit Blvd, Whiteman AFB, MO 65305 DSN 975-1713/1754, C660-68	Same as Originating Activity	Sunrise-Sunset Tue-Sun	124
VR1546	188 FW/XP, 4850 Leigh Ave., Fort Smith, AR 72903-6096 DSN 778-5185/5271.	Same as Originating Activity. Route scheduled no more than 24 hr in advance. Min	Continuous (except Sunday 1000-1200 local)	122

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** Length calculations were performed using an Albers Equal Area Conic projection for the conterminous United States and the appropriate Universal Transverse Mercator zones for Alaska (6N), Hawaii(4N), and Guam(55N).
Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
VR156	149 FTR GP (TX-ANG), Kelly AFB, TX 78241 DSN 945-5934, C210-925-5934.	Same as Originating Activity	0800-1830 local daily, Prior coordination required for Sun-Mon operations	211
VR158	80th Flying Training Wing, 1911 J. Ave. STE 6, Sheppard AFB, TX 76311-2056 DSN 7	90 FTS/DOTOD, Sheppard AFB, TX 76311 DSN 736-2675/4995, C940-676-2675/4995.	Sunrise-Sunset Mon-Fri; OT by NOTAM	211
VR159	80th Flying Training Wing, 1911 J. Ave. STE 6, Sheppard AFB, TX 76311-2056 DSN 7	90 FTS/DOTOD, Sheppard AFB, TX 76311 DSN 736-2675/4995, C940-676-2675/4995.	Sunrise-Sunset Mon-Fri, OT by NOTAM	206
VR1616	ANG CRTC, Camp Douglas, WI 54618-5001 DSN 871-1445 C608-427-1445.	Same as Originating Activity	Sunrise to Sunset Mon-Sat, OT by NOTAM	169
VR1617	180th TFG/DO (ANG), Toledo Express Airport, Swanton, OH 43558 DSN 580-4084.	Same as Originating Activity	Sunrise-2100 local	190
VR162	80th Flying Training Wing, 1911 J. Ave. STE 6, Sheppard AFB, TX 76311-2056 DSN73	90 FTS/DOTOD, Sheppard AFB, TX 76311 DSN 736-2675/4995, C817-676-2675/4995.	Sunrise-Sunset Mon-Fri, OT by NOTAM	233
VR1624	127th TFW/DO, Selfridge ANGB, MI 48045-5029 DSN 273-5055.	Same as Originating Activity	Sunrise-Sunset	233
VR1625	127th TFW/DO, Selfridge ANGB, MI 48045-5029 DSN 273-5055.	Same as Originating Activity	Sunrise-Sunset	167
VR1626	127th TFW/DO, Selfridge ANGB, MI 48045-5029 DSN 273-5055/5719.	Same as Originating Activity	Sunrise-Sunset	145
VR1627	127th TFW/DO, Selfridge ANGB, MI 48045-5029 DSN 273-5055.	Same as Originating Activity	Sunrise-Sunset	227
VR1628	127th TFW/DO, Selfridge ANGB, MI 48045-5029 DSN 273-5055.	Same as Originating Activity	Sunrise-Sunset	284
VR1629	127th TFW/DO, Selfridge ANGB, MI 48045 DSN 273-5055/5719.	Same as Originating Activity	Sunrise-Sunset	219
VR163	80th Flying Training Wing, 1911 J. Ave. STE 6, Sheppard AFB, TX 76311-2056 DSN 7	90 FTS/DOTOD, Sheppard AFB, TX 76311 DSN 736-2675/4995, C940-676-2675/4995.	Sunrise-Sunset Mon-Fri, OT by NOTAM	195
VR1631	123 ACS, Blue Ash, OH 45242 DSN 340-2950, C513-936-2950.	Same as Originating Activity	Continuous	230
VR1632	123 ACS, Blue Ash, OH 45242 DSN 340-2950, C513-936-2950.	Same as Originating Activity	Continuous	202
VR1633	123 ACS, Blue Ash, OH 45242 DSN 340-2950, C513-936-2950.	Same as Originating Activity	Continuous	217
VR1635	183 FW/OSF, Capital Airport, Springfield, IL 62707 DSN 892-8202.	Same as Originating Activity	Sunrise-Sunset only	135
VR1636	Alpena CRTC/OTM (ANG), 5884 A. Street, Alpena, MI 49707-8125 DSN 741-3509/3226.	Same as Originating Activity	Continuous	137
VR1638	180TH TFG/DO, Toledo Express Airport, Swanton, OH 43558 DSN 580-4084.	Same as Originating Activity	Sunrise-2100 local	152
VR1639	127th TFW/DO, Selfridge ANGB, MI 48045 DSN 273-5055.	Same as Originating Activity	Sunrise-Sunset	219
VR1640	122 FW, Ft. Wayne IAP, IN 46809-0122 DSN 786-1202.	Same as Originating Activity	1300-0300Z++ daily	227

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Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
VR1641	122 FW, Ft. Wayne IAP, IN 46809-0122 DSN 786-1202.	Same as Originating Activity	1300-0300Z++ daily	135
VR1642	122 FW, Ft. Wayne IAP, IN 46809-0122 DSN 786-1202.	Same as Originating Activity	1300-0100Z++ daily	176
VR1644	127TH TFW/DO, Selfridge ANGB, MI 48045-5029 DSN 273-5055.	Same as Originating Activity	Sunrise-Sunset	190
VR1645	127TH TFW/DO, Selfridge ANGB, MI 48045-5029 DSN 273-5055.	Same as Originating Activity	Sunrise-Sunset	167
VR1647	127TH TFW/DO, Selfridge ANGB, MI 48045-5029 DSN 273-5055.	Same as Originating Activity	Sunrise-Sunset	227
VR1648	127TH TFW/DO, Selfridge ANGB, MI 48045-5029 DSN 273-5055.	Same as Originating Activity	Sunrise-Sunset	284
VR1650	ANG CRTC, Camp Douglas, WI 54618-5001 DSN 871-1445 C608-427-1445.	Same as Originating Activity	0730 local-Sunset Tue-Sat, OT by NOTAM	84
VR1666	Alpena CRTC/OTM (ANG), 5884 A. Street, Alpena, MI 49707-8125 DSN 741-3509/3226.	Same as Originating Activity	Continuous	137
VR1667	180 TFG/DO, Toledo Express Airport, Swanton, OH 43558 DSN 580-4084.	Same as Originating Activity	Sunrise - 0200Z++	190
VR1668	180 TFG/DO, Toledo Express Airport, Swanton, OH 43558 DSN 580-4084.	Same as Originating Activity	Sunrise-2100 local	152
VR1679	181st TFG (ANG), Hulman Regional, Terre Haute, IN 47803 DSN 724-1234.	Same as Originating Activity	Sunrise-Sunset Tue-Sun, OT by NOTAM	264
VR168	COMTRAWING TWO, NAS Kingsville, TX 78363 DSN 876-6518, C361-516-6518.	Same as Originating Activity. Scheduling hrs-0700-1600 Mon-Fri ONLY (excluding h	0600-2400 local daily	249
VR1709	177th FW/Det 1 (ANG), Atlantic City ANGB, NJ 08234-9500 DSN 455-6707. E-mail wgr	Same as Originating Activity	Sunrise-Sunset daily	294
VR1711	113 WG, Andrews AFB, MD 20331 DSN 857-3307/08, C240-857-3307/3308/4190.	Same as Originating Activity	0730 local-Sunset daily	158
VR1712	113 WG, Andrews AFB, MD 20331 DSN 857-3307/08, C240-857-3307/3308/4190.	Same as Originating Activity	0730 local-Sunset daily	186
VR1713	113 WG, Andrews AFB, MD 20331 DSN 857-3307/08, C240-857-3307/3308/4190.	Same as Originating Activity	0730 local-Sunset daily	194
VR1721	20 OSS/OSTA, Shaw AFB, SC 29152 DSN 965-1121/1122, C803-895-1121/1122, Fax DSN 9	20 OSS/OSOS, Shaw AFB, SC 29152-5000 DSN 965-1118/1119, C803-895-1118, Fax DSN 9	Continuous	172
VR1722	192nd FG (ANG), Byrd Intl, Richmond, VA 23150 DSN 864-6411/6410.	Same as Originating Activity	Sunrise-Sunset	302
VR1726	20 OSS/OSTA, Shaw AFB, SC 29152 DSN 965-1121/1122, C803-895-1121/1122, Fax DSN 9	20 OSS/OSOS, Shaw AFB, SC 29152-5000 DSN 965-1118/1119, C803-895-1118, Fax DSN 9	Continuous	144
VR1743	20 OSS/OSTA, Shaw AFB, SC 29152 DSN 965-1121/1122, C803-895-1121/1122, Fax DSN 9	20 OSS/OSOS, Shaw AFB, SC 29152-5000 DSN 965-1118/1119, C803-895-1118, Fax DSN 9	Continuous	143

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Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
VR1751	4 OSS/OSR, Seymour Johnson AFB, NC 27531-5004 DSN 722-2672, C919-722-2672.	4 OSS/OSOSF, Seymour Johnson AFB, NC 27531-5004 DSN 722-2129/2124, C919-722-2129	Continuous	423
VR1752	4 OSS/OSR, Seymour Johnson AFB, NC 27531-5004 DSN 722-2672, C919-722-2672.	4 OSS/OSOSF, Seymour Johnson AFB, NC 27531-5004 DSN 722-2129/2124, C919-722-2129	Continuous	502
VR1753	COMFITWINGLANT NAS Oceana, Virginia Beach, VA 23460-5200 DSN 433-4013, C757-433-	COMMANDING OFFICER, FACSFAC/VACAPES, NAS Oceana, Virginia Beach, VA 23460 DSN 43	Continuous	172
VR1754	COMFITWINGLANT NAS Oceana, Virginia Beach, VA 23460-5200 DSN 433-4014, C757-433-	COMMANDING OFFICER, FACSFAC/VACAPES, NAS Oceana, Virginia Beach, VA 23460 DSN 43	Continuous	370
VR1755	COMFITWINGLANT, NAS Oceana, Virginia Beach, VA 23460-5200 DSN 433-4013, C757-433	COMMANDING OFFICER, FACSFAC/VACAPES, NAS Oceana, Virginia Beach, VA 23460 DSN 43	Continuous	223
VR1756	COMFITWINGLANT, NAS Oceana, Virginia Beach, VA 23460-5200 DSN 433-4013, C757-433	FACSFAC/VACAPES, NAS Oceana, Virginia Beach, VA 23460 DSN 433-1228 C757-433-1228	Continuous	362
VR1757	COMFITWINGLANT, NAS Oceana, Virginia Beach, VA 23460-5200 DSN 433-4013, C757-433	FACSFAC/VACAPES, NAS Oceana, Virginia Beach, VA 23460 DSN 433-1228 C757-433-1228	Continuous	168
VR1758	4 OSS/OSR, Seymour Johnson AFB, NC 27531-5004 DSN 722-2672, C919-722-2672.	4 OSS/OSOSF, Seymour Johnson AFB, NC 27531-5004 DSN 722-2129/2124, C919-722-2129	Continuous	368
VR1759	COMFITWINGLANT, NAS Oceana, Virginia Beach, VA 23460-5200 DSN 433-4013, C757-433	COMMANDING OFFICER, FACSFAC/VACAPES, NAS Oceana, Virginia Beach, VA 23460 DSN 43	0900 local-Sunset	194
VR176	150 FW OG/CC 2251, Air Guard Rd. SE, Kirtland AFB, NM 87117-5875 DSN 246-7426.	Same as Originating Activity	Normally 1500-2400Z++ daily, usage between 2400-1500Z++ is available	470
VR179	ANG CRTC-Gulfport/OSA, 4715 Hewes Ave, Gulfport, MS 39507-4324 DSN 363-6027, C22	Same as Originating Activity	Continuous	172
VR1800	174th FW, 6001 E. Molloy Rd, Syracuse, NY 13211-7099 DSN 489-9217.	174th FW, Det. 1, Ft. Drum, NY 13608 DSN 772-5990/2835 C315-772-5990.	0800 local-Sunset daily	136
VR1801	174th FW, 6001 E. Molloy Rd, Syracuse, NY 13211-7099 DSN 489-9217.	174th FW, Det. 1, Ft. Drum, NY 13608 DSN 772-5990/2835, C315-772-5990.	0800 local-Sunset daily	130
VR184	97 OSS/DOA, 400 N. 6th St., Altus AFB, OK 73521 DSN 866-6098.	Same as Originating Activity	0600-0300 local Mon-Fri, OT by NOTAM	99
VR186	301 OG/SUA, NAS JRB, Fort Worth, TX 76127 DSN 739-6903/04/05, C817-782-6903/04/0	Same as Originating Activity	0700-2200 local	296
VR187	2 OSS/OSTP, 41 Orville Wright Ave., Suite 215, Barksdale AFB, LA 71110-2085 DSN	2 OSS/OSOSB, 41 Orville Wright Ave., Barksdale AFB, LA 71110 DSN 781-3828/5396 C	0700-2200 local	243
VR188	2 OSS/OSTP, 41 Orville Wright Ave., Suite 215, Barksdale AFB, LA 71110-2085 DSN	2 OSS/OSOSB, 41 Orville Wright Ave., Barksdale AFB, LA 71110 DSN 781-3828/5396 C	0700-2200 local	213
VR189	188 FW/XP, 4850 Leigh Ave., Fort Smith, AR 72903-6096 DSN 778-5185/5271.	Same as Originating Activity. Route scheduled no more than 24 hr in advance. Min	Continuous	219
VR190	97 OSS/DOA, 400 N. 6th St., Altus AFB, OK 73521 DSN 866-6098.	Same as Originating Activity	0600-0300 local, Mon-Fri, OT by NOTAM	179

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Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
VR1900	611 AOG/CC, 9480 Pease Ave., Ste 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-4	353 CTS/JSO, Eielson AFB, AK 99702 C907-377-3005 DSN 317-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	179
VR1902	611 AOG/CC, 9480 Pease Ave., Ste 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-4	3 OSS/OSOS, Elmendorf AFB, AK 99506 DSN 317-552-2406 C907-552-2406.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	190
VR1905	611 AOG/CC, 9480 Pease Ave., Ste 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-4	3 OSS/OSOS, Elmendorf AFB, AK 99506 DSN 317-552-2406, C907-552-2406.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	396
VR1909	611 AOG/CC, 9480 Pease Ave., Ste 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-4	353 CTS/JSO, Eielson AFB, AK 99702 C907-377-3005 DSN 317-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	83
VR191	97 OSS/DOA, 400 N. 6th St., Ste. A, Altus AFB, OK 73521 DSN 866-6098.	Same as Originating Activity	0600-0300 local, Mon-Fri, OT by NOTAM	179
VR1912	611 AOG/CC, 9480 Pease Ave., Ste 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-4	3 OSS/OSOS, Elmendorf AFB, AK 99506 DSN 317-552-2406, C907-552-2406.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	190
VR1915	611 AOG/CC, 9480 Pease Ave., Ste 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-4	3 OSS/OSOS, Elmendorf AFB, AK 99506 DSN 317-552-2406, C907-552-2406.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	362
VR1916	611 AOG/CC, 9480 Pease Ave., Ste 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-4	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	156
VR1926	611 AOG/CC, 9480 Pease Ave., Ste 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-4	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	113
VR1927	611 AOG/CC, 9480 Pease Ave., Ste 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-4	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	58

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Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
VR1928	611 AOG/CC, 9480 Pease Ave., Ste 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-4	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	41
VR1929	611 AOG/CC, 9480 Pease Ave., Ste 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-4	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	41
VR1939	611 AOG/CC, 9480 Pease Ave., Ste 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-4	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	83
VR196	47 OSS/OSOR, 570 2nd St., Ste 6, Laughlin AFB, TX 78843-5222 DSN 732-5864, C830-	86 FTS/DOS, 80 Rio Lobo Ln, Laughlin AFB, TX 78843 DSN 732-5584, C830-298-5584.	Sunrise-Sunset daily	189
VR197	47 OSS/OSOR, 570 2nd St., Ste 6, Laughlin AFB, TX 78843-5222 DSN 732-5864, C830-	86 FTS/DOS, 80 Rio Lobo Ln, Laughlin AFB, TX 78843 DSN 732-5584, C830-298-5584.	Sunrise-Sunset daily	189
VR198	97 OSS/DOA, 400 N. 6th St., Ste. A, Altus AFB, OK 73521 DSN 866-6098.	Same as Originating Activity	0600-0300 local, Mon-Fri, OT by NOTAM	195
VR199	97 OSS/DOA, 400 N. 6th St., Ste. A, Altus AFB, OK 73521 DSN 866-6098.	Same as Originating Activity	0600-0300 local, Mon-Fri, OT by NOTAM	195
VR201	Commander, Strike Fighter Wing, U.S. Pacific Fleet, 001 K Street, NAS Lemoore, C	Same as Originating Activity	Daylight hours, OT by NOTAM	167
VR202	Commander, Strike Fighter Wing, U.S. Pacific Fleet, 001 K Street, NAS Lemoore, C	Same as Originating Activity	Daylight hours, OT by NOTAM	311
VR208	Commander, Strike Fighter Wing, U.S. Pacific Fleet, 001 K Street, NAS Lemoore, C	Same as Originating Activity	0800-1630 local	194
VR209	Commander, Strike Fighter Wing, U.S. Pacific Fleet, 001 K Street, NAS Lemoore, C	Same as Originating Activity	Daylight hours, OT by NOTAM	592
VR222	57 OSS/OSM, Nellis AFB, NV 89191 DSN 682-7891, C702-652-7891.	57 OSS/OSOS, Nellis AFB, NV 89191 DSN 682-2040, C702-652-2040.	Continuous	359
VR223	56 RMO/ASM, 7224 N. 139th Drive, Luke AFB, AZ 85309-1420 DSN 896-5855, C623-856-	56 RMO/ASMS, 7224 N. 139th Drive, Luke AFB, AZ 85309-1420 DSN 896-7654, C623-856	0600-2400 Mon-Fri local, Wkend/hol when sked with Goldwater Rng/Sell MOA Msn	127
VR231	56 RMO/ASM, 7224 N. 139th Drive, Luke AFB, AZ 85309-1420 DSN 896-5855, C623-856-	56 RMO/ASMS, 7224 N. 139th Drive, Luke AFB, AZ 85309-1420 DSN 896-7654, C623-856	0600-2400 Mon-Fri local, Wkend/hol when sked with Goldwater Rng/Sell MOA Msn	109

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Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
VR239	56 RMO/ASM, 7224 N. 139th Drive, Luke AFB, AZ 85309-1420 DSN 896-5855, C623-856-	56 RMO/ASMS, 7224 N. 139th Drive, Luke AFB, AZ 85309-1420 DSN 896-7654, C623-856	0600-2400 Mon-Fri local, Wkend/hol when sked with Goldwater Rng/Sell MOA Msn	300
VR241	56 RMO/ASM, 7224 N. 139th Drive, Luke AFB, AZ 85309-1420 DSN 896-5855, C623-856-	56 RMO/ASMS, 7224 N. 139th Drive, Luke AFB, AZ 85309-1420 DSN 896-7654, C623-856	0600-2400 Mon-Fri local, Wkend/hol when sked with Goldwater Rng/Sell MOA Msn	218
VR242	56 RMO/ASM, 7224 N. 139th Drive, Luke AFB, AZ 85309-1420 DSN 896-5855, C623-856-	56 RMO/ASMS, 7224 N. 139th Drive, Luke AFB, AZ 85309-1420 DSN 896-7654, C623-856	0600-2400 Mon-Fri local, Wkend/hol when sked with Goldwater Rng/Sell MOA Msn	217
VR243	56 RMO/ASM, 7224 N. 139th Drive, Luke AFB, AZ 85309-1420 DSN 896-5855, C623-856-	56 RMO/ASMS, 7224 N. 139th Drive, Luke AFB, AZ 85309-1420 DSN 896-7654, C623-856	0600-2400 Mon-Fri local, Wkend/hol when sked with Goldwater Rng/Sell MOA Msn	269
VR244	56 RMO/ASM, 7224 N. 139th Drive, Luke AFB, AZ 85309-1420 DSN 896-5855, C623-856-	56 RMO/ASMS, 7224 N. 139th Drive, Luke AFB, AZ 85309-1420 DSN 896-7654, C623-856	0600-2400 Mon-Fri local, Wkend/hol when sked with Goldwater Rng/Sell MOA Msn	272
VR245	56 RMO/ASM, 7224 N. 139th Drive, Luke AFB, AZ 85309-1420 DSN 896-5855, C623-856-	56 RMO/ASMS, 7224 N. 139th Drive, Luke AFB, AZ 85309-1420 DSN 896-7654, C623-856	0600-2400 Mon-Fri local, Wkend/hol when sked with Goldwater Rng/Sell MOA Msn	208
VR249	G-3, 3D MAW, MCAS Miramar, San Diego, CA 92145 DSN 267-9462, C858-577-9462. Non-	Same as Originating Activity	Continuous	101
VR259	355th Wing, OSS/OSOA, 5350 E. Madera St, Davis-Monthan AFB, AZ 85707-4932 DSN 22	355 OSS/OSOSO, Davis-Monthan AFB, AZ 85707 0730-1630 local Mon-Fri, same day onl	1300-0530Z++	310
VR260	355 OSS/OSOA, Davis-Monthan AFB, AZ 85707 DSN 228-4680, C520-228-4680.	355 OSS/OSOSO, Davis-Monthan AFB, AZ 85707 0730-1630 local Mon-Fri, same day onl	1300-0530Z++	277
VR263	162 FW/OGC, 1660 E. El Tigre Way, Tucson, AZ, 85706-6086 DSN 844-6371.	Same as Originating Activity	Continuous	434
VR267	355 OSS/OSOA, Davis-Monthan AFB, AZ 85707 DSN 228-4680, C520-228-4680.	355 OSS/OSOSO, Davis-Monthan AFB, AZ 85707 0730-1630 local Mon-Fri, same day onl	1300-0530Z	199
VR268	355 OSS/OSOA, Davis-Monthan AFB, AZ 85707 DSN 228-4680, C520-228-4680.	355 OSS/OSOSO, Davis-Monthan AFB, AZ 85707 0730-1630 local Mon-Fri, same day onl	1300-0530Z++	155
VR269	355 OSS/OSOA, Davis-Monthan AFB, AZ 85707 DSN 228-4680, C520-228-4680.	355 OSS/OSOSO, Davis-Monthan AFB, AZ 85707 0730-1630 local Mon-Fri, same day onl	1300-0530Z++	181

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** Length calculations were performed using an Albers Equal Area Conic projection for the conterminous United States and the appropriate Universal Transverse Mercator zones for Alaska (6N), Hawaii(4N), and Guam(55N).
Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
VR288	452 OSS/OSK, March ARB, CA 92518 DSN 447-4376, C909-655-4376.	452 OSS/OSAA, March ARB, CA 92518 DSN 447-4404/2422, C909-655-4404/2422.	Continuous	110
VR289	452 OSS/OSK, March ARB, CA 92518 DSN 447-4376, C909-655-4376.	452 OSS/OSAA, March ARB, CA 92518 DSN 447-4404/2422, C909-655-4404/2422.	Continuous	157
VR296	452 OSS/OSK, March ARB, CA 92518 DSN 447-4376, C909-655-4376.	452 OSS/OSAA, March ARB, CA 92518 DSN 447-4404/2422, C909-655-4404/2422.	Continuous	226
VR299	452 OSS/DOT, March Fld, CA 92518 DSN 447-3846, C909-655-3846.	452 OSS/DOT, March Fld, CA 92518 DSN 447-4404/2422, C909-655-4404/2422.	Continuous	208
VR316	124 WG/OGAM (ANG), 3996 W. Aeronca St., Boise, ID 83705-8004 DSN 422-5310, C208-	124 WG/OSS (ANG), 3996 W. Aeronca St., Boise, ID 83705-8004 DSN 422-5348, C208-4	Continuous or by NOTAM	300
VR319	124 WG/OGAM (ANG), 3996 W. Aeronca St., Boise, ID 83705-8004 DSN 422-5310, C208-	124 WG/OSS (ANG), 3996 W. Aeronca St., Boise, ID 83705-8004 DSN 422-5348, C208-4	Continuous or by NOTAM	300
VR331	62 OSS/OSK, 1172 E Street, McChord AFB, WA 98438 DSN 382-4057, C253-982-4057.	62 OSS/OSO, 100 Main St., McChord AFB, WA 98438 DSN 382-9925, C253-982-9925. Dut	Continuous	180
VR410	140th Wing /Airspace, Buckley ANGB, Aurora Co, 80011-9546 DSN 847-9466, C303-677	140th Wing /Airspace, Buckley ANGB, Aurora Co, 80011-9546 DSN 847-9472, C720-847	0800-1600 local Tue-Sat, OT by NOTAM	15
VR411	140th Wing /Airspace, Buckley ANGB, Aurora Co, 80011-9546 DSN 847-9466, C303-677	140th Wing /Airspace, Buckley ANGB, Aurora Co, 80011-9546 DSN 847-9472, C720-847	0800-1600 local Tue-Sat, OT by NOTAM	15
VR413	140th Wing /Airspace, Buckley ANGB, Aurora Co, 80011-9546 DSN 847-9466, C303-677	140th Wing /Airspace, Buckley ANGB, Aurora Co, 80011-9546 DSN 847-9472, C720-847	0800-1600 local Tue-Sat, OT by NOTAM	180
VR510	114 FW (ANG), Joe Foss Fld, Sioux Falls, SD 57104-0264 DSN 798-7754/7746, C605-9	Same as Originating Activity	Daylight Hours Tue-Sat, OT by NOTAM	315
VR511	132 FW OG/CC (ANG), 3100 McKinley Ave, Des Moines, IA 50321-2799 DSN 946-8250.	Same as Originating Activity	By NOTAM, (2 hr prior notification required)	264
VR512	132 FW OG/CC (ANG), 3100 McKinley Ave, Des Moines, IA 50321-2799 DSN 946-8250.	Same as Originating Activity	0930-2130 local Tue-Sat, OT by NOTAM	264
VR531	184 ARW (Kansas ANG), McConnell AFB,KS 67221-9010 (1330-2215Z wkd, sked rqr 2 hr	Same as Originating Activity	0700-1730 local daily	181
VR532	184 ARW (Kansas ANG),McConnell AFB, KS 67221-9010 (1330-2215Z wkd, sked rqr 2 hr	Same as Originating Activity	0700-1700 local daily	328
VR533	184 ARW (Kansas ANG),McConnell AFB, KS 67221-9010 (1330-2215Z wkd, sked rqr 2 hr	Same as Originating Activity	0700-2200 local daily	165
VR534	184 ARW (Kansas ANG),McConnell AFB, KS 67221-9010 (1330-2215Z wkd, sked rqr 2 hr	Same as Originating Activity	0730-2000 local daily	168
VR535	184 ARW (Kansas ANG),McConnell AFB, KS 67221-9010 (1330-2215Z wkd, sked rqr 2 hr	Same as Originating Activity	0700-1900 local daily	179
VR536	184 ARW (Kansas ANG),McConnell AFB, KS 67221-9010 (1330-2215Z wkd, sked rqr 2 hr	Same as Originating Activity	0700-1700 local daily	157
VR540	132 FW OG/CC (ANG), 3100 McKinley Ave, Des Moines, IA 50321-2799 DSN 946-8250.	Same as Originating Activity	By NOTAM, 2 hr prior notification required	318

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Source: Department of Defense based on data from the National Geospatial-Intelligence Agency (Digital Aeronautical Flight Information File, Edition 0413 (effective: December 23, 2004 through January 19, 2005).

Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
VR541	132 FW OG/CC (ANG), 3100 McKinley Ave, Des Moines, IA 50321-2799 DSN 946-8250.	Same as Originating Activity	By NOTAM, 2 hr prior notification required	288
VR544	185 FW/OGS, Sioux City, IA 51111-1300 DSN 585-0203.	Same as Originating Activity	By NOTAM, 2 hours and 15 minutes prior to entry time required	121
VR545	185 FW/OGS, Sioux City, IA 51111-1300 DSN 585-0203.	Same as Originating Activity	By NOTAM, 2 hours and 15 minutes prior to entry time required	121
VR552	184 ARW (Kansas ANG),McConnell AFB, KS 67221-9010 (1330-2215Z wkd, sked rqr 2 hr	Same as Originating Activity	Sunrise-Sunset daily	191
VR604	148TH FIG (ANG), Duluth Intl, MN 55811 DSN 825-7265.	Same as Originating Activity	1400-0500Z++ daily, 0500-1400Z++ allowable	682
VR607	148TH FIG (ANG), Duluth Intl, MN 55811 DSN 825-7265.	Same as Originating Activity	1400-0500Z++ daily, 0500-1400Z++ allowable	682
VR615	183 FW/OSF, Capital Airport, Springfield, IL 62707 DSN 892-8202.	Same as Originating Activity	Daylight hours	167
VR619	181 TFG (ANG), Hulman Rigional Airport, Terre Haute, IN 47803 DSN 724-1234.	Same as Originating Activity	Sunrise-Sunset Tue-Sun, OT by NOTAM	135
VR634	Alpena CRTC/OTM (ANG), 5884 A. Street, Alpena, MI 49707-8125 DSN 741-3509/3226.	Same as Originating Activity	Continuous	180
VR664	Alpena CRTC/OTM (ANG), 5884 A. Street, Alpena, MI 49707-8125 DSN 741-3509/3226.	Same as Originating Activity	Continuous	181
VR704	DET 1, 193 SOG, 26139 Ammo Road, Annville, PA 17003-5180 C717-861-2475/2912 Toll	Same as Originating Activity	0800 local to Sunset daily	284
VR705	DET 1, 193 SOG, 26139 Ammo Road, Annville, PA 17003-5180 C717-861-2475/2912 Toll	Same as Originating Activity	0800 local-Sunset daily	213
VR707	DET 1, 193 SOG, 26139 Ammo Road, Annville, PA 17003-5180 C717-861-2475/2912 Toll	Same as Originating Activity	0800 local-Sunset daily	286
VR708	175 FG (ANG), Baltimore, MD 21220-2899 DSN 243-6375.	Same as Originating Activity	Sunrise-Sunset	126
VR724	174th FW, 6001 E. Molloy Rd, Syracuse, NY 13211-7099 DSN 489-9217.	174 FW, Det 1, Ft. Drum, NY 13608 DSN 772-5990/2835, C315-772-5990.	0800-Sunset daily, OT by NOTAM	141
VR725	174th FW, 6001 E. Molloy Rd, Syracuse, NY 13211-7099 DSN 489-9217.	174 FW, Det 1. Ft. Drum, NY 13608 DSN 772-5990/2835, C315-772-5990.	0800-Sunset daily, OT by NOTAM	114
VR840	104 FW, Barnes ANGB, Westfield, MA 01085-1385 DSN 636-9228/9229, C413-568-9151 e	Same as Originating Activity	0800 local-Sunset daily	175
VR841	104 FW, Barnes ANGB, Westfield, MA 01085-1385 DSN 636-9228/9229, C413-568-9151 e	Same as Originating Activity	0800 local-Sunset daily	97

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Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
VR842	104 FW, Barnes ANGB, Westfield, MA 01085-1385 DSN 636-9228/9229, C413-568-9151 e	Same as Originating Activity	0800 local-Sunset daily	87
VR931	611 AOG/CC, 9480 Pease Ave., Ste 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-4	3 OSS/OSOS, Elmendorf AFB, AK 99506 DSN 317-552-2406, C907-552-2406.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	69
VR932	611 AOG/CC, 9480 Pease Ave., Ste 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-4	3 OSS/OSOS, Elmendorf AFB, AK 99506-2130 DSN 317-552-2406, C907-552-2406.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	69
VR933	611 AOG/CC, 9480 Pease Ave., Ste 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-4	3 OSS/OSOS, Elmendorf AFB, AK 99506-2130 DSN 317-552-2406, C907-552-2406.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	216
VR934	611 AOG/CC, 9480 Pease Ave., Ste 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-4	3 OSS/OSOS, Elmendorf AFB, AK 99506-2130 DSN 317-552-2406, C907-552-2406.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	216
VR935	611 AOG/CC, 9480 Pease Ave., Ste 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-4	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	253
VR936	611 AOG/CC, 9480 Pease Ave., Ste 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-4	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	231
VR937	611 AOG/CC, 9480 Pease Ave., Ste 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-4	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	221
VR938	611 AOG/CC, 9480 Pease Ave., Ste 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-4	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	177
VR940	611 AOG/CC, 9480 Pease Ave., Ste 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-4	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	114

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Military Training Route Inventory				
MTR	Originating Agency*	Scheduling Agency*	Effective Times	Length** (NM)
VR941	611 AOG/CC, 9480 Pease Ave., Ste 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-4	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	114
VR954	611 AOG/CC, 9480 Pease Ave., Ste 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-4	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	398
VR955	611 AOG/CC, 9480 Pease Ave., Ste 102, Elmendorf AFB, AK 99506-2100 DSN 317-552-4	353 CTS/JSO, Eielson AFB, AK 99702 DSN 317-377-3005, C907-377-3005.	Normal use 0800-2000 local Mon-Fri, Not available 2200-0700 local	288

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** Length calculations were performed using an Albers Equal Area Conic projection for the conterminous United States and the appropriate Universal Transverse Mercator zones for Alaska (6N), Hawaii(4N), and Guam(55N).
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APPENDIX C: LIST OF ACRONYMS

AAAV	Advanced Amphibious Assault Vehicle
AAW	Air to Air Weapon
AAW	Anti-Air Warfare
ACC	Air Combat Command
ACCG	Association of County Commissioners of Georgia
ACP	Army Campaign Plan
ACSIM	Assistant Chief of Staff for Installation Management
AEDA	Ammunition, Explosives, and Other Dangerous Articles
AETC	Air Education and Training Command
AF	Air Force
AFB	Air Force Base
AFCEE	Air Force Center For Environmental Excellence
AFSOC	Air Force Special Operations Command
AGS	Advanced Gun System
AICUZ	Air Installations Compatibility Use Zones
AIRLANT	Commander, Naval Air Forces Atlantic
AMF	Army Modular Force
AMW	Amphibious Warfare
ANG	Air National Guard
APAFR	Avon Park Air Force Range
APZ	Accident Potential Zone
ARB	Air Resource Board
ARNG	Army National Guard
ARSIC	Army Range Sustainment Council
ASN(I&E)	Assistant Secretary of the Navy (Installations & Environment)

ASW	Antisurface Ship Warfare
ASW	Anti-Submarine Warfare
AT/FP	Anti-Terrorism/Force Protection Plan
AT&L	Acquisition, Technology & Logistics
ATCAA	Air Traffic Control Assisted Air Space
ATTACC	Army Training and Testing Area Carrying Capacity
AUTEC	Atlantic Undersea Test and Evaluation Center
AV	All View
BCT	Brigade Combat Team
BDU	Bomb Dummy Unit
BEC	Barry M. Goldwater Range Executive Council
BLM	Bureau of Land Management
BMGR	Barry M. Goldwater Range
BMMP	Business Management Modernization Program
BNOISE	Blast Noise
BOMEX	Bombing Exercise
BOS	Base Operating Support
BRAC	Base Realignment and Closure
BSTRC	Bob Stump Training Range Complex
CAA	Clean Air Act
CA	Cooperative Agreement
CAD	Civil Air Department
CAF-MSP	Combat Air Force Mission Support Plan
CBP	Customs and Boarder Protection
CCD	Camouflage, Concealment, and Detection
CERCLA	Comprehensive Environmental Response Compensation and Liability Act

CERL	Construction Engineering Research Laboratory
CFFC	Commander Fleet Forces Command
CHPPM	Center for Health Promotion and Preventive Medicine
CIT	Community Initiatives Team
CJCS	Chairman of the Joint Chiefs of Staff
CMC	Commandant of the Marine Corps
CNAP	Commander Naval Air Forces Pacific
CNMI	Commonwealth of Northern Mariana Islands
CNO	Chief of Naval Operations
COI	Community of Interest
COMPTUEX	Composite Training Unit Exercise
CONUS	Continental United States
CORRS	Commanding Officers Readiness Reporting System
CRTC	Combat Readiness Training Center
CSAR	Combat Search and Rescue
CSE	Center Scheduling Enterprise
CSG	Council of State Governments
CSG/ESG	Carrier Strike Group/Expeditionary Strike Group
CSL	Cooperative Security Locations
CTF	Combined Task Force
CVNX	Aircraft Carrier, Nuclear, Experimental
CWA	Clean Water Act
CZ	Clear Zone
C2W	Command and Control Warfare
DASN	Deputy Assistant Secretary of the Navy
DBRAC	Dare Bomb Range Advisory Council

DCNO	Deputy Chief of Naval Operations
DDX	Multi-Mission Surface Combatant
DEPSECDEF	Deputy Secretary of Defense
DISDI	Defense Installations Spatial Data Infrastructure
DLA	Defense Logistics Agency
DNWG	Defense Noise Working Group
DoN	Department of the Navy
DoD	Department of Defense
DoDAF	Department of Defense Architectural Framework
DoDD	Department of Defense Directive
DoDI	Department of Defense Instruction
DPTM	Directory of Plans, Training and Mobilization (Army)
DUSD-R	Deputy Under Secretary of Defense - Readiness
DUSD(I&E)	Deputy Under Secretary of Defense (Installations & Environment)
EAP	Encroachment Action Plan
EC	Electronic Combat
ECM	Electronic Counter Measures
ECM	Environmental Climate Model
ECM	Encroachment Condition Model
ECP	Encroachment Condition Plan
ECP	Encroachment Control Plan
EIS	Environmental Impact Statement
ELW	Electronic Warfare
EO	Executive Order
EOD	Explosive Ordnance Disposal
EP	Encroachment Partnering

EP	Encroachment Plan
EPA	Environmental Protection Agency
EPAT	Encroachment Partnering Acquisition Team
EPCRA	Emergency Planning and Community Right-To-Know Act
ERC	Emission Reduction Credits
ERDC	U.S. Army Engineering Research and Development Center
ERGM	Extended Range Guided Munition
ESOH	Environmental Safety and Occupational Health
EU	European Union
EW	Electronic Warfare
FAA	Federal Aviation Administration
FACSFAC	Fleet Air/Area Control and Surveillance Facility
FAPA	Florida Chapter of the American Planning Association
FASCFAC	Fleet Aviation Surveillance Control Facility
FDM	Farallon de Medinilla
FDNF	Forward Deployed Naval Forces
FFCA	Federal Facilities Compliance Act
FHL	Fort Hunter-Liggett
FOC	Full Operational Capability
FOL	Forward Operating Locations
FOS	Forward Operating Sites
FRP	Fleet Response Plan
FR	Federal Register
FRTC	Fallon Range Training Complex
FTX	Field Training Exercise
FWS	Fish and Wildlife Service

FY	Fiscal Year
FYDP	Future Year Defense Program
GAO	Government Accountability Office
GIG	Global Information Grid
GIS	Geographic Information System
GOMEX	Gulf of Mexico
GPR	Global Posture Review
GUNEX	Gun Exercise
HQ	Headquarters
HQDA	Headquarters Department of the Army
HQMC	Headquarters Marine Corps
HUD	Housing and Urban Development
IADS	Integrated Air Defense System
ICC	Installation Capabilities Council
ICEP	Intergovernmental Coordination for Environmental Planning
ICMA	International City/County Management Association
ICO	Installation Commanding Officer
ICRMP	Integrated Cultural Resource Management Plan
ICUZ	Installation Compatible Use Zone
IGPBS	Integrated Global Posture and Basing Strategy
IICEP	Interagency/Intergovernmental Coordination for Environmental Planning
IMA	Installation Management Agency
INRMP	Integrated Natural Resource Management Plan
IOC	Initial Operational Capability
IONMP	Installation Operational Noise Management Program
ISR-NI	Installation Status Report - Natural Infrastructure

ISR-NIC	Installation Status Report - Natural Infrastructure Capability
ITAM	Integrated Training Area Management
IVT	Installation Visualization Tool
JCSG	Joint Cross Service Group
JFCOM	Joint Forces Command
JLUS	Joint Land Use Study
JMETL	Joint Mission Essential Task List
JMSDF	Japanese Maritime Defense Force
JNTC	Joint National Training Capability
JRB	Joint Reserve Base
JSF	Joint Strike Fighter
JTFEX	Joint Task Force Exercise
JWFC	Joint War Fighting Center
K	Thousand
LANTFLT	Atlantic Fleet
LATR	Large Area Tracking Range
LTC	Littoral Combat Ship
M	Million
MACOM	Major Command
MAGTF	Marine Air Ground Task Force
MAJCOM	Major Command
MCAGCC	Marine Corps Air Ground Combat Center
MCAS	Marine Corps Air Station
MCB	Marine Corps Base
MCCDC	Marine Corps Combat Development Command
MCO	Marine Corps Order

MEB	Marine Expeditionary Brigade
MEG	Military Environmental Group
MINEX	Aircraft Mine Exercise
MIRC	Mariana Islands Range Complex
MISSILX	Missile Exercise
MIW	Mine Warfare
MLRS	Multiple Launch Rocket System
MMPR	Military Munitions Proposed Rule
MMR	Massachusetts Military Reservation
MOA	Military Operation Area
MOA	Memorandum of Agreement
MOUT	Military Operations in Urban Terrain
MR	Munitions Rule
MRA	Marine Resource Assessment
MRTFB	Major Range and Test Facility Base
MSDD	Marine Species Density Data
MTR	Military Training Route
NAAQS	National Ambient Air Quality Standards
NACo	National Association of Counties
NAS	Naval Air Station
NAS	National Air Space System
NAVFAC	Naval Facilities
NAVSPECWARCOM	Naval Special Warfare Command
NCSL	National Council of State Legislators
NDAA	National Defense Authorization Act
NEPA	National Environmental Policy Act

NFO	Navy Flight Officer
NGO	Non-Governmental Organization
NHH	New Horizons Haiti
NI	Natural Infrastructure
NIC	Natural Infrastructure Capability
NICIPT	Natural Infrastructure Capability Integrated Product Team
NICRM	Natural Infrastructure Capability Resource Management
NICWG	Natural Infrastructure Capability Working Group
NIMEP	Natural Infrastructure Management Encroachment Prevention
NOx	Nitrogen Oxide
NS	Naval Station
NSW	Naval Special Warfare
NSAWC	Naval Strike and Air Warfare Center
NTC	National Training Center
NWSTF	Naval Weapons Systems Training Facility
OAG	Operational Advisory Group
O&M	Operation and Maintenance
OBC	Overseas Basing Commission
OCP	Oahu Conservation Partnership
ODCS	Office of the Deputy Chief of Staff
ODJ	Okino Diato Jima
OEA	Office of Economic Adjustment
OEESCM	Operational and Environmental Executive Steering Committee for Munitions
OIPT	Overarching Integrated Product Team
OLF	Outlying Landing Field
OMB	Office of Management and Budget

OPAREA	Operating Area
OPNAV	Office of the Chief of Naval Operations
OpOrd	Operations Order
OPR	Office of Planning and Research
OPSEC	Operations Security
ORAP	Operational Range Assessment Plan
ORC	Operational Range Clearance
OSD	Office of the Secretary of Defense
ORED	Operational Range Environmental Database
OV	Operational (DoDAF)
PACAF	Pacific Air Force
PLI	Private Land Initiative
PM2.5	Particulate Matter (2.5 microns)
POM	Program Objective Memorandum
PPBE	Planning, Programming, Budgeting and Execution
PRT	BEC (Barry M. Goldwater Range Executive Council) Pronghorn Recovery Team
PSYOP	Psychological Operations
RAICUZ	Range Air Installations Compatibility Use Zones
RAPCON	Radar Approach Control
RCA	Range Condition Assessment
RCD	Range Capabilities Document
RC	Resource Capability
RCMP	Range Complex Master Plan
RCMP	Range Complex Management Plan
RCRA	Resource Conservation and Recovery Act
RCO	Range Commanding Officer

RDP	Range Development Plan
RDT&E	Research, Development, Test and Evaluation
REPI	Readiness and Environmental Protection Initiative
REVA	Range Environmental Vulnerability Assessment
RFMSS	Range Facility Management Support System
RIMPAC	Rim of the Pacific
RMAST	Range Managers' Software Tool
RMO	Range Management Officer
RMS	Range Management System
RMTK	Range Managers ToolKit
RPPB	Range Program Planning Board
RRPB	Requirements Review and Prioritization Board
RRPI	Readiness and Range Preservation Initiative
RSEPA	Range Sustainability and Environmental Program Assessment
RSIP	Regional Shore Infrastructure Plan
RTAMS	Range and Training Area management System
RUSWG	Range Use Standardization Working Group
RTLP	Range and Training Land Program
RV	Resource Valuation
SAFE	Safety, Ammunition, Fire Protection and Environmental
SAF/IEE	Deputy Assistant Secretary of the Air Force for Environment, Safety and Occupational Health
SAM	Surface to Air Missile
SAR	Search and Rescue
SARNAM	Small Arms Range Noise Assessment Model
SBCT	Stryker Brigade Combat Team

SCIRC	San Clemente Island Range Complex
SCORE	Southern California Offshore Range
SDSFIE	Special Data Standard for Facilities, Installation, and Environment
SDWA	Safe Drinking Water Act
SDZ	Surface Danger Zone
SERM	Sustainability, Encroachment, and Room to Maneuver
SEW	Space and Electronic Warfare
SFTI	Strike Fighter Tactics Instructor
SIP	State Implementation Plan
SIRRA	Sustainable Installation Regional Resource Assessment
SLC	Southern Legislative Conference
SOCAL	Southern California Complex
SOW	Statement of Work or Scope of Work
sq nm	Square nautical mile
SRP	Sustainable Range Program (ARMY)
SRPWeb	Sustainable Range Program Web Portal
SRWG	Sustainable Range Working Group
SRWIPT	Sustainable Range Working Integrated Product Team
STW	Strike Warfare
SUA	Special Use Airspace
SURFLANT	Surface Forces Atlantic
SV	System (DoDAF)
TACTS	Tactical Air Combat Training System
TAP	Tactical Training Theater Assessment Planning
TAPR	TAP Repository
T&E	Test and Evaluation

TCSI	Training Center Sustainment Initiative
TECOM	Training and Education Command
TES	Threatened and Endangered Species
TNC	The Nature Conservancy
TSCA	Toxic Substance Control Act
TSP	Technical Support Package
TYCOM	Type Commander
T2	Training Transformation
TV	Technical (DoDAF)
USA	United States Army
USACHPPM	U.S. Army Center for Health Promotion and Preventive Medicine
USAF	United States Air Force
USAFE	United States Air Force in Europe
USC	United States Code
USCG	United States Coast Guard
USD	Under Secretary of Defense
USDA	United States Department of Agriculture
USD(AT&L)	Under Secretary of Defense (Acquisition, Technology & Logistics)
USD(P&R)	Under Secretary of Defense (Personnel & Readiness)
USFWS	U.S. Fish and Wildlife Service
USJFCOM	United States Joint Forces Command
USMC	United States Marine Corps
USN	United States Navy
USWTR	Under Sea Warfare Training Range
UTTR	Utah Test and Training Range
UUV	Unmanned Underwater Vehicle

UXO	Unexploded Ordnance
VACAPES	Virginia Capes
WI	Whidbey Island
WIPT	Working Integrated Product Team