# *U.S. Air Dominance in a Fiscally Constrained Environment: Defining a Path to the Future*

## Summary Report

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## Dominant Air Power: The Core of U.S. Military Preeminence

While the U.S. has the best ground, naval and amphibious forces in the world, one thing makes it a 21st Century superpower: its dominance as an air power. The United States alone is capable of deploying its aerial assets anywhere in the world. U.S. air power can hold at risk any target set in any country and can do so from multiple directions. The U.S. Air Force is the only one capable of delivering specially-designed conventional bombs large enough to destroy deeply buried and hardened structures. Over the past two decades, the U.S. military has repeatedly demonstrated that it can destroy an adversary's air force and air defenses in a matter of weeks. After that, hostile ground units were toast. The ability to rapidly seize control of the air means that no soldier has died in an air attack since 1953. Over a decade of wars, American air power from the land and sea provided continual responsive fire support for tactical units on the ground.

Other nations have fighters and bombers, although America's are the best. The U.S. also has the largest and most capable fleets of air transports, refueling aircraft and airborne ISR assets in the world. During Operation Iraqi Freedom, the Air Force flew soldiers and heavy armor deep into Iraq to seize a critical target, the Haditha Dam. Since 2001, the Air Force has maintained a continuous air bridge to Afghanistan, more than 8,000 miles from the continental United States. U.S. C-17 transports are today flying French troops and equipment into Mali. The U.S. Navy has a fleet of fixed wing transports, the C-2 Greyhounds, specifically for the purpose of moving parts and people to and from its aircraft carriers. The United States has crafted an intelligence, surveillance and reconnaissance (ISR) and strategic warning capability based on a sophisticated array of satellites, manned platforms and unmanned aerial systems.

Dominant air power is about much more than just platforms and weapons. It requires also the trained people and processes to plan and manage air operations, process, exploit and disseminate intelligence, identify targets and plan attacks, move supplies and route transports and repair and maintain complex systems. The U.S. had to send hundreds of targeteers to NATO to support the Libyan operation. Over decades, the U.S. military has developed an unequalled training establishment and set of ranges that ensure the highest quality pilots and other personnel.

Finally, the U.S. is the dominant air power in the world because of its aerospace industrial base. Whether it is designing and producing fifth-generation fighters such as the F-22 and F-35, providing an advanced tanker like the new KC-46 or inventing high-flying unmanned aerial systems like the Global Hawk, the U.S. aerospace industry continues to set the bar. In addition, the private and public parts of the aerospace industrial base, often working together based on collaborative arrangements such as performance-based logistics contracts, are able to move aircraft, weapons and systems through the nationwide system of depots, Air Logistics Centers and other facilities at a rate unmatched by any other nation. The ability to rapidly repair or overhaul aircraft is itself a force multiplier, providing more aircraft on the flight line to support the warfighters.

## Challenges to U.S. Dominant Air Power

Air dominance is essential to virtually every operation the U.S. military conducts. It is an essential component of the U.S. military's "DNA." Budget cuts, shrinking force structure, poor investments in modernization, technological innovation and a growing anti-access/area denial (A2/AD) threat are combining to call into question the Department of Defense's ability to maintain air dominance in future conflicts. Without air dominance, the U.S. military's concepts of operations will unravel.

The value of air power dominance is not lost on our competitors and adversaries. Consequently, they are pursuing asymmetric strategies intended to neutralize the U.S. advantage. Their approaches are generally subsumed under the rubric of "anti-access/area denial." This phrase includes deployment of significant arsenals of more precise ballistic and cruise missiles for the purpose of neutralizing U.S. and allied airbases and related infrastructure. A2/AD also involves the deployment of sophisticated multi-layered integrated air defense systems. In addition to active defenses, countries are investing in electronic warfare and cyber capabilities with which to attack or neutralize U.S. intelligence, surveillance and reconnaissance, command and control and precision strike capabilities. Fourth-generation fighters are proliferating and several countries are developing their own fifth-generation combat aircraft.

Even as the threat is evolving the U.S. military is emerging from a decade of war with forces that are battle-worn, aging and in need of modernization. The U.S. military, in general, and the Air Force, in particular, is in the early stages of a major effort to reset equipment worn out by a decade of war as well as a program to modernize its asset base. At the same time, currently programmed defense budget cuts of nearly $500 billion may make modernization plans impossible to execute. Should deeper cuts occur, particularly sequestration, an entirely new force structure and modernization plan will have to be created.

The pressure on the Air Force is particularly severe. The U.S. Air Force today is smaller than at any time since its creation. Yet, the demands on both it and naval aviation remain extremely high. Both the Air Force and Navy have undertaken significant force structure reductions in recent years in order to fund critical modernization programs. The Air Force vision is of a force that is "smaller, but superb." Yet, program terminations and delays in the introduction of new aircraft have created a situation in which the U.S. aerial fleets are both smaller and older. It is not certain that proposed defense budgets will be sufficient to support current modernization plans. In the event of sequestration, there is no clear bottom to the decline in U.S. air power. As a senior member of the U.S. Congress warned recently with respect to the Air Force, the cumulative effect of these challenges could be catastrophic to the U.S. military's ability to maintain aerospace dominance.

> That dominance is now at risk, however, as current defense cuts threaten to do what no enemy can: end U.S. control of the skies. If we weaken our air superiority, our country's entire war-fighting strategy will be forced to change. We will no longer be able to operate anywhere on the globe without risk. (Rep. Randy Forbes (R-VA), "The Air Force We Need," *Politico*, April 29, 2009)

## The Elements of Air Power Dominance

The first air dominant conflict, Operation Desert Storm, occurred more than two decades ago. Since then, all conflicts in which the United States has engaged and those of other advanced military nations such as Israel have been marked by the extensive, even overwhelming, application of similar sets of capabilities and principles. In fact, the U.S. military worked for decades to achieve its current level of capability, which can be described simply as "one aircraft, one weapon, one target." This condition is true regardless of type of platform or target.

Air dominant power is not based on a single technology, system or capability. Rather it reflects a number of key attributes. Advances in each of these capabilities have raised dominance from the tactical level of one-on-one engagements to the operational and even strategic levels of war.

What are the key elements of today's U.S. air power dominance? They include the following:

**Extremely Accurate Navigation and Near-Perfect Weapons Delivery**

Even before the introduction of precision weapons, the ability of military aircraft to reliably find their way to the target constituted a significant step forward in the ability to conduct strike operations. Additionally, modern air operations still are very complex affairs, requiring the coordination of a host of enablers including ISR platforms, electronic warfare and air defense suppression assets, fighter sweeps, as well as strike aircraft and aerial refueling tankers. Knowing with precision the location and flight paths of all aircraft involved in a mission has been an important feature of modern aerial operations.

Over the past several decades, weapons guidance technology has evolved to reduce targeting errors and allow for the employment of smaller, lower-weight weapons with equal or greater lethality. The development of both onboard precision targeting systems and the Sniper and Litening targeting pods allow the accurate delivery of even so-called dumb munitions. In addition, as demonstrated in Iraq and Afghanistan, these pods can be employed to provide high-fidelity real-time ISR in support of the Joint Force.

**Air Superiority, SEAD and Stealth**

One of the distinctive features of the current revolution in air dominance is the ability to circumvent or, as necessary defeat, hostile air forces and integrated air defense and surveillance systems. It is noteworthy that since World War II the number of U.S. combat air casualties has declined steadily but not coincidentally as the percentage of all sorties devoted to the suppression of enemy air defenses (SEAD) has increased sharply.

The Navy and Air Force have long employed a combination of superior aircraft and weapons, electronic warfare and kinetic means to conduct SEAD missions. For the past two decades the combination of fighter and strike forces has allowed U.S. air forces to quickly seize air superiority. The last coordinated air opposition from "red" fighters came during the first few days of NATO's 1999 air war in Kosovo. The current fighter force has done a superb job of rapidly achieving air superiority even air dominance, in conflicts with relatively inferior air

forces. However, the sizing of forces could change at the high end as the confrontation with Iran and new challenges in the Asia-Pacific theater alter the requirements for air dominance.

The U.S. Navy and Marine Corps maintain a dedicated fleet of electronic warfare aircraft based on the EF-18G Growler. U.S. strike campaigns as far back as Operation Desert Storm have generally begun with large-scale cruise missile strikes intended to destroy critical air defense sensors and command and control systems. A portion of the tactical fighter fleet -- F-15Es, F-16s and F/A-18s -- some equipped with the High Speed Anti-Radiation Missile, can conduct SEAD missions. In addition, both tactical and strategic platforms are equipped with passive measures including chaff and decoys with which to confuse surface-based air defenses.

Today, the United States deploys a very small number of stealth aircraft. The current program for the F-35 Joint Strike Fighter will increase the presence of U.S. combat aircraft fleet with significant stealth features to nearly 70 percent by 2035. The percentage may be even higher if force structure reductions result in a smaller but “all stealth” tactical fighter force. Moreover, with the deployment of the Marine Corps’ short-takeoff and vertical landing F-35B and the Navy’s F-35C both the Sea Services will for the first time deploy stealth aircraft.

**Intelligence, Surveillance and Reconnaissance**

Precision weapons lose their utility in the absence of high-quality target information. Advances in ISR, intelligence processing, exploitation and dissemination and dynamic data sharing have proven a major contributor to the revolution in air dominance. So too has the ability of intelligence assets to accurately identify a target and characterize its location in three dimensions (what is termed "mensuration"). In addition, the miniaturization of sensors now enables single platforms to perform the entire kill chain process.

The evolution of the modern precision strike regime has been driven by a dynamic relationship between the increasing precision of modern weapons and improvements in the character and quality of ISR. More precise weapons require more accurate ISR and the ability of ISR assets to find, fix, characterize and track even small and highly mobile targets has enabled the development of even more precise weapons.

To date, the interplay of increased precision and more accurate ISR has taken place in relatively benign air defense environments. This will not be the case in the future. Moreover, a greater percentage of target identification and tracking will be required in a dynamic planning environment not only en-route but during combat.

**Networking**

A central feature of the ongoing revolution in air power is the explosion in the application of networks and networking solutions to tactical, operational and even strategic problems. The clearest examples of how the ability to connect sensors to shooters to command and control platforms have been in the ongoing conflicts in Iraq and Afghanistan. The ability to pass data from special forces on the ground to overhead air assets that could retarget weapons in flight

allowed the U.S. Air Force and Navy to apply their overwhelming long-range precision strike capability to the close air support mission.

The effort to make each sortie -- each weapon launch -- precise and effective has now led to the growing requirement to network and coordinate actions on the ground, at sea and in the air. The greatest impact of smaller weapons results from their precise placement. As the number of tactical and strategic platforms declines due to inexorable budget pressures, it will become all the more important to ensure that each weapon is delivered precisely for maximum effect.

Network-empowered strike platforms such as the F-35 and new bomber equipped with sophisticated sensor and communications suites will be able to share data during the course of a mission. This will not only allow them to better counter advanced air defense threats but to dynamically retarget weapons based on a continually changing common operating picture. As a result, the need for restrikes is likely to be significantly reduced. Similar capabilities are being backfitted to current platforms, including both the F-22 and older strategic bombers.

The network is also empowering another form of collaboration; that between defensive systems. The U.S. Navy's Integrated Fire Control-Counter Air (NIFC-CA) is designed to integrate both dedicated sensor platforms such as the E-2D Advanced Hawkeye and Aegis air defense system with Army and Air Force sensors and weapons to enhance defenses against both ballistic missiles and air-breathing threats. The Army's JLENS tethered aerostat surveillance system has demonstrated the ability to support both air and missile defense launches. The Aegis ballistic missile defense system has successfully fired a Standard Missile 3 based on remote data from forward-deployed land-based radar. The goal is eventually to be able to employ high quality data from dispersed sensors to conduct the actual engagement remotely, without additional guidance data from the system that launches the missile.

## Reach

The United States, alone among the nations of the world, is able to conduct global precision strike. This is a result of both the Air Force's fleet of long-range bombers and the Navy's combination of carrier-based aviation and sea-based cruise missiles. In addition to guided bombs such as the JDAMs and Small Diameter Bomb capable of ranges up to approximately 50 nautical miles, both tactical and strategic platforms now are capable of carrying an array of longer-range munitions such as the air-launched cruise missiles, the Joint Standoff Weapon and the Joint Air-to-Surface Standoff Munition.

Some 200 U.S. Navy ships and submarines have the capacity to carry thousands of Tomahawk cruise missiles in several variants with ranges approaching 1,000 nautical miles. The four *Ohio*-class submarines can carry up to 154 cruise missiles each. Since first introduced into the fleet and provided to a select number of allies, more than 2,000 Tomahawk missiles have been launched.

These numbers belie the reality that the U.S. military possesses only a handful of platforms capable of reaching targets deep in enemy territory, particularly if in the presence of heavy and

advanced air defenses. The problem is even more challenging if the targets are hardened requiring the employment of very large, deep-penetration weapons or are mobile.

**Numbers**

The evolution of U.S. air forces over the past twenty-odd years has seen a significant reduction in numbers of Air Force and Navy/Marine Corps platforms even as the overall ability of this smaller fleet to service targets has expanded. Over the past decade, armed unmanned aerial systems (UASs) have further enhanced the ability to conduct some missions.

Nevertheless, if the size of the fleet continues to shrink, the time will soon come when the number of tactical fighters and strategic bombers is simply insufficient to meet current demand. The quantitative adequacy of U.S. air forces must be judged based on their ability to meet three basic requirements: a rotational base; surge capacity; and ongoing operational, training and maintenance activities. Surge capacity can be further defined based on the number of conflicts for which the U.S. military is required to be able to fight. Historically, the requirement to conduct two conflicts in widely separated theaters at approximately the same time, the canonical "Two Major Theater Conflicts" standard, required a force of approximately 200 strategic bombers, 20 tactical fighter wings and 11 aircraft carriers. The requirement to rapidly halt aggression by two adversaries means the early deployment of substantial numbers of tactical aircraft and rapid initiation of large-scale strategic strikes. The projected force over the next decade is expected to fall well short of these levels.

Moreover, in the face of the proliferation of advanced anti-aircraft systems and the creation of integrated air defense systems by prospective adversaries, the requirement for stealthy aircraft and electronic warfare platforms is likely to rise substantially in the years to come. It is much more difficult to defeat an integrated air defense system if the number of stealth aircraft remains relatively small.

## Maintaining U.S. Dominant Air Power in an Era of Fiscal Austerity

Freeing up the resources to make critical investments in modern forces is achievable. It will require reducing the size of overall air and naval forces as well as retiring legacy air fleets -- something recently proposed by the Air Force Chief of Staff -- and curtailing upgrades to those legacy platforms retained in the force. In addition, the Air Force should examine ways of making greater use of the Air National Guard so as to reduce the wear and tear on a smaller Active Component.

**A More Rapid Transition to a Fifth-Generation Tactical Fighter Fleet**

The case for investing in fifth-generation platforms is unassailable. It is the consensus of experts that fourth-generation aircraft will not be effective against the emerging A2/AD threat. A robust program to develop and deploy advanced air superiority and strike platforms and systems in order to provide both the capability and capacity to conduct a wide range of operations at all ranges is absolutely vital.

The existing fleet of F-22s is simply too small to be able defeat a large integrated air defense system (IADS) or overcome the numerical advantage of emerging regional powers. The decision to cut off the procurement of F-22s at 187 was based on the assumption that large numbers of carrier-based F-35Cs would be available from the opening moments of a future major regional contingency to "knock down the door" for legacy forces.

The only way for the U.S. military and that of its major allies to transition to a fifth-generation force is by the acquisition of the F-35 Joint Strike Fighter. The current program for the F-35 will increase the presence of U.S. combat aircraft fleet with significant stealth features to nearly 70 percent when the Air Force, Navy and Marine Corps acquire the full complement of more than 2,400 aircraft. The effect of the F-35 will be even greater when planned procurements are completed to the eight international partners in the Joint Strike Fighter program.

The Department of Defense needs to accelerate its acquisition of the F-35. On the original procurement plan, there would now be some 1,000 operational F-35s. Because of delays in the program, the Air Force faces a fighter shortfall of some 800 aircraft and the Navy/Marine Corps of around 100. A sensible strategy would be one that reduces expenditures on legacy platforms in order to increase the number of F-35s acquired each year so that the total reaches approximately 1,000 by 2020. An early "buy out" of portions of the F-35 program would also reduce the overall cost of the program by establishing an economical rate of production and would free up resources post-2020 for the procurement of a new long-range bomber.

A combination of stealthy aircraft, dedicated electronic warfare platforms and legacy aircraft with enhancements will be required to secure dominant air power over the next several decades. This will necessitate continuing investment in a robust fleet of EF-18 Growlers, the Next Generation Jammer and additional electronic countermeasure capabilities. In addition, the retention of a relatively small some number of modernized F-15s and F-16s will be necessary in order to provide sufficient capacity to address large contingencies.

**Develop and Deploy A Robust Complement of Deep Precision Strike Capabilities**

A robust U.S. long-range precision strike capability for the next two to three decades will likely rest on three pillars. One is a large inventory of sea-launched cruise missiles deployed on Navy surface ships and submarines. The second is a new Air Force strategic bomber. The third is a new long-range, carrier-based strike platform, probably unmanned.

The Navy must go forward with the plan to add the Virginia Payload Module (VPM) to all *Virginia*-class boats procured from FY2019 onward. The VPM will house four large-diameter, vertical launch tubes capable of holding seven additional Tomahawk cruise missiles or other payloads. This would permit an increase in the total number of Tomahawk cruise missiles carried by the *Virginia*-class design from about 36 without the VPM to about 65. The 22 *Virginia*-class boats planned to be built with VPMs could carry up to 616 Tomahawks in their VPMs alone, equaling the number of cruise missiles carried by the four nuclear submarines.

The critical issue for the maintenance of U.S. global precision strike dominance is the Air Force's ability to deploy a next-generation bomber, sometimes referred to as the Long-Range Strike family of systems. A new bomber must be able to penetrate robust IADS. Prospective adversaries are pursuing a variety of passive protective measures including hardening and mobility to secure high-value targets. A new strategic platform must be able both to hunt, find and attack mobile targets but also to carry very large weapons with which to penetrate extremely hard structures. Therefore, it must have advanced stealth features as well as electronic warfare and electronic countermeasures capabilities.

The current plan is to acquire between 80 and 100 new bombers. It is not clear why this will provide an adequate number. Properly sizing the bomber fleet should be based on several considerations. One is the number of operational platforms needed to address the high end of the A2/AD threat involving multiple layers of offensive and defensive capabilities as well as a very large potential set of critical targets. New operational concepts for dismantling A2/AD defenses from long range may require protracted strikes on multiple axes over a lengthy period of time. Therefore, the Air Force should consider options for building a larger fleet of bombers, perhaps as many as 200, if, as is likely, the A2/AD threat continues to intensify and air power remains a key asymmetric U.S. advantage in low- and medium-intensity conflicts.

The development and deployment of a new strategic bomber will take decades to complete. Over that time, improvements must be made in the legacy fleet to ensure its effectiveness even in the face of growing A2/AD challenges. The current fleet requires upgrades to enhance connectivity, expand the range of munitions that can be delivered, and cope with the inevitable problems associated with aging.

The third pillar is an extended range capability to complement the F-35C. The Navy is seeking to develop and deploy an initial Unmanned Carrier Launched Airborne Surveillance and Strike (UCLASS) system with limited capabilities to fill holes in the capabilities of the current carrier air wing, particularly for long-range, persistent ISR. The real increase in capability is likely to have to wait for the development of an as-yet undefined next-generation UCLASS drone. This system will need a range equal to that of the current proposed design, but it also will have to carry a significantly larger payload and have the ability to deploy long-range air-to-ground weapons. This would allow the carrier air group to engage targets at or beyond the range of current and projected anti-ship ballistic and cruise missiles. A large payload capacity could also allow the UCLASS to fill a yawning gap in current carrier air wing capabilities -- air-to-air refueling of both manned and other unmanned platforms.

**Develop and Deploy a Family of Advanced Weapons**

New and modernized platforms are not enough to maintain U.S. dominance in air-to-air and precision strike operations. Continuing preeminence will require investments in weapons/ payloads as well. Simply extending the range of existing precision weapons can both expand the effectiveness of existing and planned platforms and help counter the danger posed by longer-range air defense systems. Investments in networks and joint fires can enable weapons engagement delivery without the need for active illumination of the target by either the delivery

platform or even the weapon itself. Either passive detection systems or off-board assets can provide cueing.

Extremely precise, long-range, high speed and stealthy weapons will be required to ensure the ability of U.S. forces to conduct future air superiority, SEAD campaigns and simultaneously hold at risk the full range of targets. In view of the reliance of U.S. precision strike campaigns on air- and sea-launched cruise missiles, particularly in the initial wave of strikes on hostile IADS and command, control and communications targets, it is vital to ensure the effectiveness of this class of weapons. Consequently, the Air Force and Navy should explore development of stealthy long-range land-attack cruise missiles capable of carrying a wide variety of payloads to replace both the Tomahawk and Air-Launched Cruise Missile.

There is a limit to what can be done to make air-to-surface weapons stealthier. A new design approach will be required. One such approach that holds promise, although it is currently in early development, is hypervelocity. A long-range weapon with multi-Mach speed would be capable of addressing all three challenges posed to precision strike dominance: A2/AD, distance and mobile or fleeting targets. The Air Force has a plan to develop a hypersonic strike weapon by 2020. Hypervelocity weapons could also provide a means to conduct conventional prompt global strike.

**Ensure Today's Advantage in Theater ISR for the Future**

Even in an austere budget environment, maintaining global reach and the scale of air operations expected in mid to high-end conflict scenarios also will require additional investments in selected enablers. Most notable of these is a new aerial tanker, the KC-46A. Critical legacy ISR platforms, notably the E-3 AWACS and E-8 JSTARS, will have to undergo critical life extension modernization. New production programs such as the E-2D Hawkeye, P-8 and Broad Area Maritime Surveillance will need to be continued. It should be noted that while recapitalization of the ISR fleet cannot be justified in the current budget environment, the absence of a plan for replacing key systems could make the joint force increasingly vulnerable in the years ahead.

In addition, the joint force has spent the last dozen years fighting elusive adversaries who lacked aircraft and air defenses. That has enabled it to rely heavily on remotely-piloted aircraft in conducting ISR missions. However, Air Force leaders believe the service is now over-invested in collection systems requiring "permissive" air space to operate -- systems that might not fare well in conflicts with more capable enemies. A key requirement for the future identified in recent studies is the acquisition of ISR aircraft capable of surviving in contested air space, meaning air space defended by integrated surface-based air defenses and/or fighter-interceptors.

**Connect Air, Sea and Ground Platforms and Systems**

Many experts believe that the key to preserving U.S. dominant air power in the near-term is the exploitation of information systems and networks to integrate both legacy and fifth-generation platforms. Advanced networks will be required to support distributed operations, "combat cloud," and near real-time sensor-shooter collaboration. A key contributor to the success of U.S. air forces is the development of integrated communications and data sharing networks. In the

future, the close integration of ISR systems, cyber capabilities, airborne platforms and even weapons will be required not only for the defeat of A2/AD threats, but also to the conduct of effective precision strike campaigns across the conflict spectrum.

In addition to the deployment of the Link-16 tactical data link and the creation of the Joint Tactical network based on the F-35's Multifunction Advanced Data Link, there needs to be significant investment in future network capabilities. The Air Force has initiated a New Common Data Link capabilities program. The Navy is investigating an Advanced Tactical Data Link intended to overcome the inherent limitations in a Link-16-based system. The Navy also has begun the Integrated Targeting and Fire Control roadmap effort, which seeks to integrate current and planned platforms and sensors into "vertical" kill chains.

**Enhance Base Defense and Prepare for Proliferated Basing**

The Department of Defense recognizes the need to expand its deployments of air and missile defense capabilities in both the Middle East and Western Pacific. The Navy and Army both have effective air and missile defense systems. The Aegis ballistic missile defense system will be installed on some 100 cruisers and destroyers as well as in an ashore form currently planned for deployment in Europe. The Army operates the Patriot air and missile system as the Theater High Altitude Air Defense.

The U.S. Navy's NIFC-CA is designed to integrate both dedicated sensor platforms such as the E-2D Advanced Hawkeye and Aegis air defense system with Army and Air Force sensors and weapons to enhance defenses against both ballistic and air breathing threats. The Army's JLENS tethered aerostat surveillance system has demonstrated the ability to support both air and missile defense launches. The Aegis ballistic missile defense system has successfully fired a Standard Missile 3 based on remote data from forward-deployed radar.

Complementing the active defense of forward facilities should be programs to enhance base survivability as well as to develop alternative basing modes. Established bases such as Osan and Kusan in South Korea, Kadena in Japan and Guam could be hardened against conventional missile attack. The Air Force needs to prepare alternative airfields, perhaps on the U.S.-controlled islands of Tinian and Saipan, for use in the event of a regional conflict. At these and other locations, the positioning of additional stockpiles of repair materials, spare parts, munitions and fuel would allow for continuing operation even when bases were under attack.