

**DEPARTMENT OF THE AIR FORCE**

**PRESENTATION TO THE ARMED SERVICES COMMITTEE**

**UNITED STATES SENATE**

**SUBJECT: FISCAL YEAR 2008 AIR FORCE POSTURE**

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## ***1.0 Maintaining America's Edge***

We are America's Airmen. Our mission is to deliver sovereign options for the defense of the United States of America and its global interests – to fly and fight in air, space and cyberspace.

Our Air Force Core Values of Integrity First, Service Before Self and Excellence in All We Do – embodied in every Airman – guide our actions and ensure your Air Force remains committed and ready to deter, dissuade or defeat any adversary anywhere in the world.

As Airmen, we are the Nation's premier multi-dimension maneuver force, with the agility, reach, speed, stealth, payload, precision and persistence to achieve global effects. Control of the air, space and cyberspace domains provides the essential bedrock for effective Joint operations – securing freedom to attack and freedom from attack.

In 2005, we revised the Air Force mission statement to include cyberspace. This inclusion of cyberspace reflects our recognition of cross-domain interdependence and emphasizes our non-negotiable commitment to deliver sovereign options for the US through not only air and space but also cyberspace.

Our 2007 Posture Statement articulates the major elements required to fulfill our mission. It reaffirms our commitment to focus our energies on the Global War on Terror (GWOT); to develop and care for our Airmen and their families; and to recapitalize and modernize our aging aircraft, spacecraft, and equipment.

Our top acquisition priorities include: the KC-X Tanker; the CSAR-X Combat Search and Rescue Helicopter; space communications, space situational awareness and early warning programs; the F-35A Joint Strike Fighter (JSF); and Next Generation Long Range Strike – a new bomber.

Our Posture Statement further reaffirms our commitment to be good stewards of the resources entrusted to us and our resolve to dominate air, space and cyberspace in defense of our Nation now and in the future.

### **1.1 Challenges**

America's Air Force faces significant challenges. We have been engaged in combat for 16 years while transforming into a smaller, leaner and more capable force. Fiscal constraints combined with operational challenges and a dynamic international security environment translate into risks we continue to manage and mitigate in order to provide capabilities America needs. The Air Force continues to fight the GWOT and prepares to face and overcome threats and conflicts of the future. In order to remain dominant, we must maintain our air, space and cyberspace power advantages over potential adversaries.

Modern warfare is changing. This is nothing new to America's Airmen, whose heritage spans and embraces change and whose culture embodies courage and innovation for America. We are ensuring a lean, lethal, and agile Air Force for America. We are building and posturing our force structure to meet future threats emerging on the dynamic world stage, and we are strengthening the interdependent Joint team.

We face a security environment that poses an array of dynamic challenges and threats. The 2005 *Quadrennial Defense Review* (QDR) characterized this threat environment and mandated force structure goals for all of DoD. The Air Force and all of the Services must be able to operate and defend against *traditional, irregular, disruptive* and *catastrophic* threats. In the future, the Air Force and the entire Joint Team will operate within a strategic environment involving one or more of these challenges. We will prepare to defend against high-end conventional forces, asymmetric threats and irregular forces such as terrorists or insurgents. To mitigate potential for disruptive surprises, we will strive to stay ahead of adversaries' technology efforts. Most importantly, we will protect our Homeland from hostile states' and non-state actors' use of weapons of mass destruction (WMD) and attacks in and through cyberspace. The threat array requires that we prepare the Air Force for a broad spectrum of future conflicts. At the same time, several factors have created a difficult and challenging fiscal environment in which to organize, train, and equip for the future.

The 2005 QDR specified a Force Planning Construct to shape the entire DoD force to protect our Nation, its ideals and interests now and in the future. Originally presented in the *National Military Strategy* (NMS), the Force Planning Construct provides guidance for determining the capacity and capabilities needed to meet both steady state and surge demands for homeland defense, irregular warfare, and conventional campaigns. As a result of the NMS guidance

and comprehensive analysis, the QDR determined America's Air Force needs to organize, train and equip 86 "modern combat wings."

### ***1.1.1 Emerging National Security Concerns and Threats***

While the GWOT is our immediate priority, America's Airmen must also stay ahead of competitors preparing for conventional conflict and attempting to counter the asymmetric advantage our air, space and cyberspace power currently gives our Joint Team. Sustaining US advantages in such conflicts will become increasingly more challenging as advanced air defense, aircraft, WMD, cyber and anti-satellite (ASAT) capabilities proliferate.

Integrated Air Defense Systems (IADS) continue to evolve, placing current generation aircraft at increasing risk. Modern IADS incorporate more data sources, process and pass information faster, and are increasingly mobile. Man-portable air defense systems (MANPADS), shoulder-fired SAMs, also are an increasingly serious threat. Their availability, affordability, and proliferation increases the likelihood of modern MANPADS ending up in the hands of non-state actors, placing US civil and military aircraft at risk around the world.

The lethality and availability of fourth-generation combat aircraft is also increasing, and potential adversaries are already purchasing and fielding these complex and capable weapon systems. Many nations are enhancing the capabilities of their existing fighter and bomber aircraft through use of aerial refueling, signature reduction technology, and cyberspace weapons that inject confusion or mask operations. Ever greater numbers of states are not only

acquiring advanced aircraft, but are developing indigenous production capability, increasing the likelihood of proliferation.

Proliferation of WMD to countries and non-state actors remains a significant challenge to US interests and a top priority in the QDR. While nuclear weapons and materials proliferation always pose grave dangers, chemical and biological weapons pose arguably greater detection challenges. Easier and less costly to make than nuclear weapons, chemical and biological weapons are easier to transport, produce and mask from detection because they can be camouflaged as dual-use civilian industrial products. Proliferation may also enable future adversaries, especially terrorist groups, to develop, use, or threaten to use WMD as an asymmetric response to American conventional warfighting dominance, which might otherwise deter them from directly challenging the US.

Perhaps less obvious, but all the more insidious, is the adversary's use of the cyberspace domain to support and carry out their attacks world-wide and on our shores. The adversary knows that they can contest our use of the electromagnetic spectrum and conduct their war of ideas from a supposed sanctuary in this domain.

Finally, we see challenges to our current advantages in the space domain. Employment of Global Positioning System (GPS) jammers in an attempt to reduce US and coalition air strike precision is an example. While we can currently overcome this threat through a variety of methods, such a challenge presents a warning and a valuable lesson as we posture our air, space and cyberspace forces for the future.

Recent foreign testing of kinetic ASAT weapon capabilities further demonstrates an explicit willingness to challenge, disrupt, or destroy America's space assets and capabilities. This testing also demonstrates a disregard for both American and global concerns over space debris and the damage it may inflict upon any object stationed in or traversing through low Earth orbit.

As technology matures and proliferates, and as access to space becomes available to more countries, organizations and individuals, threats to America's air, space, and cyberspace capabilities will continue to grow and evolve. America's Airmen aim to be ready to meet these and all other threats to our Nation.

### ***1.1.2 Irregular Warfare***

Our Nation is now in its sixth year waging the GWOT while the Air Force is entering its 17<sup>th</sup> year of engagement in Southwest Asia. Current conditions portend this to remain a long war. The enemy chooses not to operate as a "uniformed military," but rather uses criminal networks and terror tactics to attack from the shadows. They use indiscriminate violence against combatants and non-combatants alike. They extensively use propaganda to advance their radical ideology of tyranny and hatred. Iraq and Afghanistan are two current fronts in this war, but the struggle extends beyond these vital campaigns. The Air Force and the entire Joint Team must wage this war on a global scale, in multiple locations and domains at simultaneous times, and for a number of years.

We are strengthening our ability to deter and defend against non-state threats and our ability to conduct globally distributed irregular operations of

varying duration. We stand ready to conduct a large-scale, long-duration irregular warfare campaign as an integral part of the Joint Team, to include counterinsurgency, security, stability, transition and reconstruction operations.

### ***1.1.3 Adapting to Non-Traditional Roles***

Airmen are finding innovative new uses for our current systems while successfully executing irregular warfare operations in Afghanistan and Iraq. Airmen increasingly find themselves engaged in non-traditional roles requiring ingenuity and the use of Joint warfighting technology. Our missions and taskings range from standard close air support and armed reconnaissance to non-traditional taskings like convoy escort, infrastructure protection, provincial reconstruction, and host nation election support.

Still other Airmen have stepped in to fill Joint warfighter taskings in stressed skill areas in which other Services are shorthanded. The Air Force currently provides over 7,700 Airmen to fulfill these "In-Lieu Of" (ILO) ground force taskings. These Airmen fulfill ILO requirements in areas such as detainee operations, convoy operations and protection, Explosive Ordnance Disposal, Police Training Teams, Provincial Reconstruction Teams, Military Transition Teams, civil engineering, security, interrogation, communications, fuels, medical services, logistics, intelligence, and base operating support. The Air Force also fills another 1,200 Joint Individual Augmentee positions. Airmen began fulfilling these requirements in 2003 and will continue to do so through 2007 and beyond – until the ground force component recaptures these missions and our job is done.



Finally, Air Force mission, training, and force structure requirements will necessarily increase correspondingly as Joint ground force, Army and Marine Corps requirements and end strength increase. The full range of Air Force air, space and cyberspace capabilities and personnel are interdependently woven into Joint ground forces operations.

Recognizing there will be an impact of increased ground forces on our budget, we are assessing our programs. We forecast there may be increased requirements in the areas of inter- and intra-theater airlift; command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR) capabilities; Close Air Support (CAS); Tactical Air Control Party (TACP) personnel; and extended ILO personnel requirements. While the Army and Marine Corps reset and recapitalize, we are following through in every way with our Joint teammates.

#### ***1.1.4 Defending Our Homeland***

Future threats to our Homeland are constantly evolving. They present challenges to the established methods and structures of homeland defense. Development, fielding and proliferation of standoff weapons, such as long-range cruise missiles, provide potential adversaries with offensive capabilities of increasing accuracy and range. In addition, we can expect many of these future weapons to be of relatively small size, presenting an extremely difficult detection and tracking challenge.

As we safeguard the aerial, maritime and cyber approaches to our Nation, the Air Force will continue to play a large role in providing the full spectrum of air

sovereignty options, including air defense, missile defense and support to civil authorities for consequence management. Additionally, as illustrated by our response to Hurricane Katrina, the Air Force will surge and contribute to national responses in the event of natural disasters or catastrophic events, supplying airlift, communications, imagery from unmanned aerial vehicles (UAVs) and space assets, and combat search and rescue capabilities.

## **1.2 Cyberspace**

America's Air Force is redefining air and space power for the 21<sup>st</sup> Century.

Our current and potential adversaries already operate in cyberspace, exploiting the low entry costs and minimal technological investment needed to inflict serious harm. We cannot allow them to expand their foothold. We seek to deny our adversaries cyberspace sanctuary while ensuring our access and operations in this domain. Our Nation's ability to deliver effects in air, in space, on land, and at sea depends on control of this domain.

Cyberspace dominance goes beyond communications and information technology. It requires superiority across the entire electromagnetic spectrum – DC to daylight – radio waves, micro-waves, infra-red, x-rays, directed energy, and applications we have not even begun to think about – to ensure global command and control, global reach, and global power. We have a well-established capability to operate in cyberspace. We take advantage of physics, technology, and synergies to operate in and through it. Therefore, we are establishing a new Cyberspace Command to stand alongside Air Force Space Command and Air Combat Command. America's Airmen are force providers the

President, Combatant Commanders (COCOMs) and the American people can rely on to preserve freedom of access and operations in air, space and cyberspace.

The newly designated Air Force Cyberspace Command will provide combat ready forces trained and equipped to conduct sustained combat operations through the electromagnetic spectrum and fully integrate these with air and space operations. In November 2006, we held a Cyberspace Summit and, in January 2007, we hosted the first-ever integrated cyber exercise, CYBER VISION 2007, at the US Air Force Warfare Center (USAFWC). This exercise focused on dominating the cyberspace domain in a potential conflict. These events and future integration of Cyber Aggressor Teams into RED FLAG will build upon the significant cyberspace capabilities we already contribute to homeland defense and the Joint fight.

Cyberspace Command will leverage, consolidate and integrate unique Air Force cyber capabilities and functions across the spectrum of conflict from peace, to crisis and war: Command and Control; Electronic Warfare; Network Warfare; and Intelligence, Surveillance and Reconnaissance (ISR). Many Air Force programs, while contributing to air and space power, also directly contribute to our dominance of the cyberspace domain.

### ***1.3 Loss of Buying Power***

While the Air Force is postured to meet our Nation's near-term requirements, our ability to meet steady state and surge requirements over the long term hinges on our ability to organize, train and equip 86 modern combat

wings, as mandated in the QDR. Achieving these goals will be difficult, as we balance fighting the GWOT, maintaining our readiness, maintaining America's air, space and cyberspace advantages, modernizing our equipment and capabilities, and shaping our Airmen, organizations and force structure for the future.

Several factors have applied pressure to the Air Force budget: GWOT and operations costs; increasing costs of fuel, utilities, manpower, and health care; increased costs to own, operate and maintain our aging aircraft; unforeseen BRAC costs; and lost savings due to congressional restrictions on retirement and divestment of our least useful legacy aircraft. Although recent congressional support for planned legacy aircraft retirements has aided our divestment strategy, unnecessary restrictions draw critical resources away from our aircraft modernization programs and degrade our efforts to recapitalize our aircraft inventory.

We are meeting our current wartime commitments. We are also operating within the resources entrusted to our service – we are staying in bounds. We are self-financing our modernization and recapitalization efforts to the maximum extent possible through initiatives such as Force Shaping, Air Force Smart Operations for the 21<sup>st</sup> Century (AFSO21) and aircraft retirements, while focusing on a “mission first” basis. Furthermore, we are committed to operate, organize, train and equip to meet the projected demands of the future – they are many. The Future Years Defense Plan (FYDP) involves taking acceptable risk in lower

priority areas in order to meet future readiness, capability, force structure and National Security requirements.

#### ***1.4 Next Generation Air Force***

Our loss of overall buying power means the Air Force must attempt to rebalance our available resources and force structure to achieve Force Planning Construct goals. To reach our 2025 force structure objectives, we will synchronize our investments to maximize their effect.

In 2005, we began divesting significant numbers of our oldest, least capable, and most costly and difficult to maintain aircraft. In 2006, we also initiated a carefully calculated reduction in personnel end strength to match our declining force structure. As investments in research, development, and procurement grow, we will continue building our force structure towards 86 modern combat wings. Our personnel end strength must concurrently keep pace as we modernize our force structure. These two elements – force structure and personnel end strength – drive our resource requirements.

The Air Force is committed – now and in the future – to not only defend our Nation but also provide good stewardship of the resources entrusted to us. We look forward to working closely with Congress to ensure our force structure and personnel investments are synchronized, and our efforts to posture, recapitalize and modernize America's Air Force fly together in close formation.

## **1.5 Air Force Priorities**

As the Air Force strives to defend America's interests within a dynamic strategic environment, we remain committed to our top service priorities, as stated by Air Force leaders and outlined in our Vision:

- Fighting and Winning the GWOT
- Developing and Caring for our Airmen and their Families
- Recapitalizing and Modernizing our aging aircraft and spacecraft inventories

These priorities, together with our Enduring Core Values of Integrity, Service and Excellence, provide America's Airmen a steady beacon, guiding how we organize, train and equip in defense of our Nation. Our national strategic requirements, global complexities and threats, and fiscal elements within the overall strategic environment will continue to shape how we execute these priorities. We remain focused on the GWOT, our people, and a modern, capable force.

Your Air Force is dedicated to maintaining, evolving, and expanding America's capabilities in air, space and cyberspace. These capabilities are America's Edge – the foundation of America's unparalleled Global Vigilance, Reach and Power.

## ***2.0 Fighting and Winning the Global War on Terror***

Our Air Force has been engaged in over sixteen years of continuous combat in Iraq, currently a central front in the GWOT. In addition to OIF, the Air Force is a critical player on the Joint and coalition team in Operation Enduring Freedom (OEF) in Afghanistan. Airmen also vigilantly defend the skies of our Homeland in Operation Noble Eagle (ONE). Our enemies are vile, unrelenting, adaptive and global. They are motivated by extremist ideologies and bent on subjugation and denial of basic freedoms of expression, government and religion. It will ultimately require all elements of national power to defeat them. Militarily, the Air Force remains committed to finding and destroying our Nation's enemies wherever they seek sanctuary, fighting side by side with friendly nations in this struggle against violent extremism.

America's Airmen operate on a global scale every day. The full, complete impact of Air Force engagement includes Airmen deployed outside of the Continental United States (OCONUS) to contingencies, forward deployed in Europe and the Pacific, and employed from their home stations as they execute global missions. The Air Force has nearly 30,000 Airmen deployed in Central Command conducting theater operations. Similarly, 60,000 Pacific Air Forces and US Air Forces Europe Airmen are fully engaged in the full spectrum of dissuasion, deterrence, coalition training, and military-to-military activities.

Furthermore, the inherent qualities of air, space and cyberspace – speed, range, and payload – allow the forward deployed Air Force footprint to be smaller, less vulnerable, and vastly more flexible. Airmen are also fully engaged

in the GWOT from their home stations, controlling satellites, standing on alert with intercontinental ballistic missiles (ICBMs), providing intelligence assessments, operating UAVs, and launching airlift, tanker and other aircraft missions essential to Joint operations worldwide. Every day over 200,000 Active, Guard, and Reserve Airmen fulfill COCOM missions around the world.

## ***2.1 A Day in the Life of America's Airmen***

The Air Force delivers Global Vigilance, Global Reach and Global Power for our Nation. America's Airmen provide vigilance that is persistent, focused and predictive; reach that is reliable, rapid and agile; and power that is flexible, precise, stealthy and decisive.

A snapshot of current Air Force operations illustrates the myriad ways in which COCOMs employ air, space and cyberspace power to accomplish their missions.

### ***2.1.1 Global Vigilance***

Air Force Global Vigilance capabilities are critical elements of the GWOT, at home and abroad. For instance, the Air Force currently operates and maintains satellites directly serving Central Command and providing the communications, sensor, and navigation capabilities on which the lives and missions of Soldiers, Sailors, Airmen, Marines and Coast Guardsmen depend. From bases in the continental US, our Airmen also maintain space situational awareness (SSA) for the region, tracking over 500 daily orbital passes over Baghdad of satellites of all nations.



Theater-based aircraft have become critical elements in the Counter-Improvised Explosive Device (Counter-IED) effort by “scanning and jamming.” On a daily basis U-2s, Global Hawk and Predator UAVs, and E-8C Joint Surveillance Target Attack Radar System (Joint STARS) aircraft survey, track, identify – and sometimes destroy – insurgents and safe houses. In fact, the Air Force maintains over ten 24/7 UAV Combat Air Patrols (CAP) in Central Command, providing persistent ISR and – in the case of Predator – a lethal strike option. In addition to their global responsibilities, stateside Airborne Warning and Control System (AWACS) crews and airplanes fly and stand on alert as part of our homeland defense surveillance requirements.

### ***2.1.2 Global Reach***

Air Force airlifters and tankers provide the global reach that underwrites the Joint effort in the GWOT. An Air Mobility Command aircraft departs a runway somewhere on the planet every 90 seconds, 24 hours a day, 365 days a year. On a typical day, the Air Force flies over 250 airlift sorties, moves over 1,000 tons of cargo, and transports nearly 2,500 passengers. In Central Command, intra-theater airlift aircraft like the C-130 and C-17 have borne heavy loads, taking thousands of convoys off dangerous roads and reducing the threat of IEDs to about 8,500 people each month.

Aeromedical evacuation (AE) has emerged as a critical capability for the Joint Force. In fact, Air Force AE is responsible for the transport and care of over 36,000 patients in the GWOT. Our Airmen have achieved a record-setting average patient movement time of 72 hours, a dramatic reduction from the 10-14

days required during the 1991 Persian Gulf War. Such rapid global movement provides US service men and women the highest survival rates in the history of warfare.

Air Force tankers provide global mobility and reach for Air Force aircraft, the Joint Team and coalition forces. While the average tanker is over 40 years old, KC-135s and KC-10s nonetheless fly 30 tanker missions on a typical day in Central Command and stand on alert to provide additional endurance for our aircraft performing homeland defense missions.

### ***2.1.3 Global Power***

At the sharp end of Air Force capabilities, America's Airmen deliver Global Power in the GWOT. Using UAVs, tight air-ground integration, and time sensitive targeting, we have eliminated several high-value terrorist and insurgent targets in Afghanistan, Somalia and Iraq. In a war where intelligence is fleeting, the Air Force has made constant innovations to shorten the time cycle it takes to deliver rapid, precise effects. Fighters originally designed for strike missions are now using their targeting pods as non-traditional ISR sensors over Iraq and Afghanistan, providing a unique extension of both vigilance and power for the Joint Force Commander (JFC). Battlefield Airmen serve side by side with our Joint partners on the ground and use live streaming video from Predators or targeting pods to orchestrate rapid air and ground attacks on insurgents. The successful June 2006 strike against Al-Qaeda leader Abu Musab al-Zarqawi is only one illustration of how the Active Duty, Air National Guard, and Air Force

Reserve Command seamlessly integrate capabilities from around the globe into precise, dislocating, and decisive effect.

Since the beginning of the GWOT, the typical strike mission has evolved from a pre-planned sortie against a fixed target to a flexible, on-call mission profile responsive to a rapidly changing battlefield. In Central Command, fighters typically fly nearly 80 strike, electronic warfare, or non-traditional ISR sorties each day. Back in the US, fighters stand guard over our Homeland, ready to launch at a moment's notice. Worldwide, Air Force fighters and bombers, coupled with the strength of America's space and cyberspace capabilities, are the tools of reassurance, deterrence and dissuasion. America's Airmen are the global, strategic muscle behind US diplomacy, providing a lethal over-the-horizon capability to directly influence events on the ground – whether based in Japan, Guam, or Whiteman AFB, Missouri.

## ***2.2 Fostering Joint Interdependence***

Air Force dedication to Joint interdependence is illustrated in the GWOT. Around the world, we are committed to providing COCOMs an increased ability to integrate air, space and cyberspace capabilities and gain cross-dimensional synergies in pursuit of National Security Joint Force objectives.

### ***2.2.1 Fifth-Generation Fighters***

Currently in production and fully operational at Langley AFB, Virginia, the F-22A is the newest member of the Air and Space Expeditionary Force – our Airmen are putting the world's first fifth-generation fighter into action. Its

attributes of speed, stealth, maneuverability, advanced sensors and adaptable, integrated avionics will meet our Nation's enduring national security requirement to gain and maintain Joint air dominance, as well as enable precise engagement against a broad range of surface targets.

America's Airmen are understandably proud of their contributions to the Joint fight. They have prevented enemy aircraft from inflicting any US ground force casualties for over 50 years. We dedicate our efforts and risk our lives to sustain this record. Production in sufficient numbers of fifth-generation fighters – both the F-22A Raptor and the F-35A Lightning II – remains the best guarantee of homeland air sovereignty and Joint air dominance.

### ***2.2.2 Numbered Air Forces***

The Air Force has established component Numbered Air Forces (NAFs) dedicated to supporting each COCOM across the full range of military operations. Each component NAF provides an integrated and technologically advanced command and control capability, adaptable to contingencies across the spectrum of conflict. Over the next several years, we will continue to refine this command and control structure through the development of centralized “reach back” capabilities, integration of Guardsmen and Reservists, and more advanced cyber technologies.

### ***2.2.3 Air and Space Expeditionary Force***

The Air and Space Expeditionary Force (AEF) organizational construct is a modern design for the modern world.

Since the end of the Cold War, the Air Force has evolved from a force based at large, permanent US and overseas bases to an expeditionary force, requiring fewer permanent bases and using an expanded network of temporary forward bases. As we adapted to this new operating environment, we quickly recognized the deployment construct for our force also had to change. Since 1999, we have organized our Air Force combat forces into ten AEFs that present capability to COCOMs, provide trained and ready forces for emerging threats and contingencies, and help manage high deployment tempo through a stable and predictable rotation schedule. When demand for American air power skyrocketed after 9/11, the Air Force extended the deployment period from 90 to 120 days to accommodate the COCOMs' demands.

We continue to adapt our people and organizational constructs to ensure Airmen are highly motivated, exceptionally well trained, and equipped with the right skill sets to present the Joint warfighter with a broad set of capabilities. We realigned the AEF Center under the Air Force Personnel Center at Randolph Air Force Base, Texas, to leverage similar functions and merge permanent authorizations, wartime requirements, and assignments under a single commander. The Air Force is also moving forward with fielding of Contingency Response Groups (CRGs), organized, trained and equipped to provide an initial "Open the Base" capability to COCOMs. The CRG provides a rapid response team to assess the location-specific support requirements necessary to open an expeditionary airfield, as well as provide a rapid projection of America's vigilance, reach and power.

#### ***2.2.4 Joint Warfighting Integration***

Due to the dynamic demands of the GWOT, Airmen fly strike, ISR, combat search and rescue (CSAR), AE, electronic warfare and airlift sorties everyday over Afghanistan and Iraq. They also augment ground forces to provide security and stability in both countries. Airmen are working hand-in-hand with ground and naval forces training and augmenting both Iraqi and Afghan security forces, rebuilding critical infrastructure, and providing medical services to these war-torn countries.

Air Force CSAR helicopters remain on alert in Iraq and Afghanistan, providing commanders with the capability to rescue isolated military and civilian personnel. Air Force CSAR crews answer the moral obligation to safely secure and return any and every member of our Joint team.

The effectiveness CAS provides Soldiers and Marines is another example of interdependence. Tactical training at the National Training Center provides Soldiers and Airmen the opportunity to see how they will deploy and fight together on future battlefields. The Army's Stryker Brigade Combat Teams now in service and the Future Combat System under development both rely heavily on Air Force strike capabilities to remain effective. Therefore, we are adding 700 TACP Airmen to serve with ground components to ensure the Air Force's timely and precise effects are always available.

### ***2.2.5 Building Global Partnerships***

Fighting and winning the GWOT requires commitment, capability, and cooperation from allies and partners around the world. We depend on our international partners to secure their territory, support regional stability, provide base access and overflight rights, and contribute a host of air, space and cyber power capabilities as interoperable coalition partners. As the pace of economic, political and cultural globalization increases, the importance of strong global partnerships – both now and in the future – is abundantly clear.

The Air Force leads the way in developing enduring air force-to-air force relationships around the world. To strengthen these relationships, we are expanding RED FLAG access to our allies and partners. We are also working to establish the Gulf Air Warfare Center as a tactical center of excellence. In addition to integrating coalition partners into our most robust combat training scenarios, we have established the Coalition and Irregular Warfare Center of Excellence to facilitate development of relevant airpower capabilities, capacities, and relationships in partner nations in the GWOT, and to facilitate development of innovative Air Force irregular warfare applications. We are also expanding the 6<sup>th</sup> Special Operations Squadron to bolster our ability to train foreign air forces and expand our repertoire of non-kinetic capabilities in the GWOT. Furthermore, our aircrews, especially Airmen executing global mobility and airlift missions, interact daily with host nation personnel, representatives and citizenry, enhancing America's image of strength, freedom, and hope.

Through the Air Force Security Cooperation Strategy, we continue working with allies and friends to help them attain capabilities that complement our own air, space and cyberspace capabilities. This document uses the OSD Security Cooperation Guidance as a foundation and aligns with COCOM Theater Security Cooperation strategies. This comprehensive, coordinated effort builds capability in potential partner air forces using the six US Air Force Distinctive Capabilities as driving tenets.

Recent commitments, such as procurement of C-17 airlifters by Australia and the NATO Alliance, and broad international participation in the F-35A Joint Strike Fighter (JSF) program, will further reinforce our current and future interoperability with global partners. Finally, we have infused expeditionary, regional, cultural and linguistic education throughout our training programs at every level. The Air Force executes a global mission. Our approaches to operations, interoperability and training exemplify our global, international perspective.

### ***2.2.6 Air Staff Intelligence Directorate***

Intelligence is becoming more critical in today's rapidly changing security environment. Collection, analysis, and timely distribution of information are essential to kinetic and non-kinetic approaches to our Nation's security challenges. Accordingly, we moved Intelligence directly under the Chief of Staff, creating the position of Deputy Chief of Staff for Intelligence (A2) and elevating the position to a three-star billet from its former two-star billet.



### ***2.2.7 Partnership with the National Reconnaissance Office***

The Air Force and the National Reconnaissance Office achieved a groundbreaking agreement on 7 June 2006 to share expertise and best practices. The agreement focuses specifically on sharing lessons learned in developing, acquiring, fielding and operating modern space systems. Both organizations recognize the need to enhance their respective capabilities, as well as to work collaboratively to respond to future challenges.

### ***2.2.8 Combat Search and Rescue Realignment***

The transfer of the CSAR mission from Air Force Special Operations Command to Air Combat Command provides a clearer presentation of forces to Joint commanders and ensures a direct CSAR link to the Combat Air Forces and the personnel they serve. In addition, the Air Force's Next Generation Combat Search and Rescue aircraft (CSAR-X) will modernize an aging CSAR fleet, provide greatly improved all-weather combat search and rescue worldwide – an essential component of our commitment to the Joint team and our allies.

### ***2.2.9 Air and Space Operations Centers***

In June 2005, we achieved an Initial Operational Capability with our Air and Space Operations Center (AOC) Weapon System and are well on our way to a Full Operational Capability for the entire AOC inventory. The Air Force leads the way in delivering sovereign options to defend our Homeland and our global interests by providing a global command and control (C2) capability to COCOMs,

enabling them to orchestrate air, space and cyberspace effects in pursuit of national military objectives. AOCs are the central operational nodes in this capability, and the Combined AOC in operation at Al Udeid, Qatar, exemplifies the most advanced and robust AOC system in the Air Force today.

### ***2.2.10 Aeromedical Evacuation***

Air Force AE contributes a unique, nationally vital capability to the Joint fight. Air Force AE innovations include use of “designated vs. dedicated” aircraft, “universally-qualified” AE crewmembers, able to fly on any AE-configured aircraft, and the extensive use of Critical Care Air Transport Teams to transport stabilized patients.

Air Force AE is combat proven. Since late 2001, we have orchestrated the care and transfer of more than 36,000 overseas patients to CONUS facilities. We continue to refine this remarkable capability and the “en route care” system built upon our expeditionary medical system.

Air Force AE is a Total Force system, and both AE and en route care are built on teamwork, synergy and Joint execution. Technological advances such as the single integrated patient data system, high-flow ventilators, high deck patient loading system, and the Joint Patient Isolation Unit are under development and will further enable safe patient movement regardless of transportation mode.

America’s Air Force has provided Soldiers, Sailors, Marines, Coast Guardsmen and Airmen the highest casualty survival rates in the history of

warfare. By leveraging AE and en route care, we will continue to improve our ability to save and sustain lives.

### ***2.3 Space Capabilities in Joint Operations***

The entire Joint force depends on Air Force space-based capabilities to meet not only the needs of military operations, but also the full spectrum of civil, economic, and diplomatic activities. Moreover, rescue and recovery operations in 2005 following Hurricanes Katrina and Rita clearly demonstrated the humanitarian mission utility of space-based communications, positioning and navigation services, and environmental monitoring. America's Airmen safeguard the high ground of space and ensure America's unimpeded access to vital space capabilities.

#### ***2.3.1 Space Applications in Afghanistan and Iraq***

Operations in Iraq and Afghanistan highlight the importance of space-based capabilities to US and coalition forces. An example of Air Force response to warfighter needs is the successful deployment of the Satellite Interference Response System (SIRS), a defensive counterspace prototype. It aids in the identification, geolocation and reduction of interference sources for critical satellite communications. SIRS has improved the response time to unknown interference sources within the CENTCOM AOR and reduced friendly interference sources from impacting operations.

Blue Force Tracking capability is another success story. Joint Blue Force Tracking has fundamentally changed ground warfare. The ability to accurately

locate friendly forces with GPS timing and positioning information, and then share that information, dramatically improves understanding on the battlefield and reduces the risk of friendly fire. The unprecedented real-time knowledge of friendly force locations renders all operations – especially night and urban operations – less dangerous and more effective.

### ***2.3.2 Joint Space Operations Center***

The 14<sup>th</sup> Air Force Air and Space Operations Center (Space AOC) at Vandenberg AFB, California, serves as the core of the United States Strategic Command (USSTRATCOM) Joint Space Operations Center (JSpOC). The Space AOC/JSpOC is the primary command and control node for integrating the full resources of space-based sensor and command-control systems. The Space AOC/JSpOC proactively reaches forward to COCOMs, ensuring accomplishment of theater and global space objectives, while providing a continually updated space common operating picture for integration into current wartime and peacetime missions.

The Space AOC/JSpOC consists of personnel, facilities, and resources providing long-term strategy development, short-term crisis and contingency planning, real-time execution, space asset reallocation, and space forces assessment. The Space AOC/JSpOC provides tailored space effects to Joint forces worldwide.

The Space AOC/JSpOC maintains SSA through the fusion of intelligence, space- and ground-based sensor readings, and operational indications to allow US and allied forces unfettered access to space. The Space AOC/JSpOC also

provides predictive analysis of adversary space activity and supports the protection of National Security Space assets.

### **2.3.3 Counterspace**

Air, space and cyberspace superiority are the foundational elements of Joint success in any action. Counterspace and Countercyber technologies and operations provide America with the tools to achieve space and cyber superiority, allowing America freedom of action while denying freedom of action to an adversary or enemy. SSA, Defensive Counterspace (DCS) and Offensive Counterspace (OCS) capabilities comprise the main elements of Air Force counterspace efforts.

SSA provides Airmen with detailed knowledge of the space environment, enabling responsive, effective execution of DCS and OCS actions. Enhanced ground-based and new space-based SSA assets would provide the needed information. In the near-term, the Rapid Attack Identification Detection and Reporting System (RAIDRS), along with SIRS, will test detection and geo-location technologies. The Space Based Space Surveillance (SBSS) and Space Fence programs will deliver transformational capabilities to improve responsiveness, surveillance coverage, and small object detection. We expect to field these improved capabilities in the FY09 and FY13 timeframes, respectively.

Air Force Defensive Counterspace efforts will protect National Security Space capabilities vital to Joint success. Some defensive strategies comprise technical solutions integrated into satellite designs. We will design other systems specifically to counter adversarial threats. Additionally, our Airmen are

continuously developing new tactics to mitigate potential threats to our space systems.

Offensive Counterspace technologies and operations seek to disrupt, deny or degrade an adversary's ability to leverage space capabilities. The Counter Communications System (CCS) provides COCOMs a method to deny an adversary's access to satellite communications through temporary, reversible and non-destructive means. CCS expands the options available for the COCOM to address the proliferation of advanced space technologies and their availability to potential adversaries.

### ***3.0 Developing and Caring for Our Airmen***

Your Air Force today is a seamless Total Force, with over 690,000 Airmen serving on Active Duty, in the Air National Guard (ANG), in the Air Force Reserve Command (AFRC) and as Air Force civilians. While modern equipment, technology and capability are essential to success, your Airmen are the bedrock of America's ability to succeed in an era of challenge and uncertainty.

While emphasizing our global expeditionary culture, organization and mission, we remain committed to providing and maintaining the highest possible standards of education, training, health care and installation services for America's Airmen.

### **3.1 Force Shaping**

When the Air Force began to develop a long-term force structure plan, we started with divestment of legacy aircraft. While we have achieved some success, significant investment gaps remain. Moreover, the costs of personnel continue to rise. Personnel costs have increased 57% in the past decade. In early 2006, Program Budget Decision 720 directed additional end strength reductions over the FYDP. As we manage this downsizing, we remain committed to a balanced force. We will increase manning in stressed career fields, and expand opportunities for career development and training. Our goal is a lean, more capable, more lethal Air Force, organized, trained and equipped for our global, expeditionary mission.

To tailor our personnel mix to the new security environment, we authorized implementation of annual Force Shaping Boards (FSBs). The purpose of the FY06 FSB was to reduce officer overages by identifying eligible officers for separation, while balancing career fields and officer commissioned year groups. Prior to the board, eligible officers were offered voluntary options to transition to other forms of service in and out of the Air Force. The Air Force also waived most Active Duty Service Commitments (ADSC) to allow officers to separate early. In addition, the Air Force is offering Voluntary Separation Pay to officers in overage career fields, and we will convene a Selective Early Retirement Board to identify retirement-eligible officers for early retirement if necessary.

To achieve the required reductions of enlisted Airmen, the Air Force instituted a date of separation rollback for personnel with limitations on their assignment or enlistment eligibility. We also offered a limited number of ADSC waivers for eligible members in overage career fields. These initiatives to shape the enlisted force join the tools already in place: Career Job Reservations, reduction in accessions, and the Non-Commissioned Officer Retraining Program.

Overall, the Air Force aims for a reduction of over 4,000 officers and 10,000 enlisted members by the end of FY07. These reductions are difficult but necessary to ensure the Air Force maintains the right size and mix of forces to meet the fiscal and global challenges of today and tomorrow.

### ***3.2 Total Force Integration***

A distinguishing hallmark of the Air Force is the ease with which Airmen from Active Duty, ANG, and AFRC work together at home and abroad. From the build-up of the ANG after World War II, the first Reserve Associate unit in 1968 and the full integration of Guard and Reserve units into the Air & Space Expeditionary Force in the 1990s, the Air Force has a history of employing Airmen from all components in innovative and effective ways.

One of the Air Force's significant commitments to long-term transformation is Total Force Integration (TFI). The Total Force construct seeks to maximize the Air Force's overall Joint combat capability with Active Duty, Air National Guard and Air Force Reserve Airmen working together cohesively. TFI is critical to meeting the challenges of competing resource demands, an aging aircraft inventory, and emerging missions.



### ***3.2.1 New and Emerging Missions***

As the Air Force transforms to a smaller, more agile and lethal force, we will retain the strengths of the Guard and Reserve and use them in new ways to reflect a changing mission set. Increased integration allows Air Force personnel to capitalize on experience levels inherent in the Guard and Reserve, while building vital relationships necessary to sustain successful combat operations.

Ongoing Total Force initiatives integrate Air Force components into missions critical to future warfighting, and include ISR, UAVs, space and cyberspace operations. Given the ease of employing these capabilities from home station, these missions are ideally suited for the Guard and Reserve. In a time of increasing demand for these capabilities, it only makes sense to use reachback technologies to tap into our Air Reserve Component. Using this approach improves our operational effectiveness, reduces reliance on involuntary mobilization, and provides more stability for our Airmen and their civilian employers. It also allows the Air Force to capitalize on the state-of-the-industry advanced skills and best practices residing in the ranks of the ANG and AFRC.

### ***3.2.2 Way Ahead***

The Air Force continues to make significant progress on our Total Force initiatives. We have identified 136, secured funding for 98 opportunities and are executing 19. We have established associate units at several locations including F-22As in Virginia and Alaska, C-17s in Hawaii, F-16s in Utah, and C-130s in Wyoming. Additionally, Guardsmen are analyzing GWOT intelligence in Kansas,

and Reservists are flying operational GWOT UAV missions from Nevada. With over 100 initiatives in the planning phase and many more in the development phase, Total Force Integration is paving the way for a smaller, more capable, more affordable Air Force.

### ***3.3 Improving Training Opportunities***

Spanning six decades of Air Force history, particularly over the past sixteen years, our Airmen have proven themselves as the global first responders in times of crisis – taking action anytime, anywhere. The foundation for this well-deserved reputation is the quality and frequency of the training and education we provide. Our Air Force training initiatives continue to evolve, improving our ability to develop and retain the world’s best air, space and cyberspace warriors – expeditionary, knowledge-enabled, ethical, and prepared for the interdependent fight.

#### ***3.3.1 Air Force Basic Military Training***

We changed Air Force Basic Military Training (BMT) curriculum to stress an expeditionary mindset in all phases of training, providing Airmen with more expeditionary capability from day one. These changes are the most significant in BMT history. The Air Force basic training experience now mirrors the AEF cycle with a pre-deployment, deployment and reconstitution phases. We emphasize basic war skills and practical application throughout BMT. Beginning 1st quarter FY09, BMT will incorporate two additional weeks of instruction – lasting 8.5 weeks total – to provide more opportunities for practical application and field

exercises. Finally, we have added “Airman's Time,” mentoring sessions in which our veteran instructors share their real world experiences, relate daily training events to warrior and Airmanship qualities, and reinforce the Core Values expected of all Airmen.

### ***3.3.2 Space Professional Development***

Space capabilities have become vital in the defense of our Nation and the continued growth of the US and world economies. Developing, fielding, operating, and maintaining the Air Force’s broad array of space systems demands a highly trained, expertly managed workforce of space professionals. As we begin to field even more capable and complex systems, the demands on our space professionals will only increase. We have brought these personnel together within the Space Professional Development Program, ensuring our operations, acquisition and support personnel receive the training, education and experience necessary to accomplish our mission in space – now and in the future.

### ***3.3.3 US Air Force Warfare Center***

The US Air Force Warfare Center (USAFWC) integrates initiatives across the Air Force. USAFWC sets the standard for executing Joint and coalition air, space and cyberspace operations. The USAFWC provides advanced training designed to ensure our Air Force warfighting capability remains unrivaled. USAFWC provides performance assessment and Joint integrated exercise venues for units from the USAF, USN, USMC and USA – as well as our allies.

They provide adversary analysis through a unified and coordinated “Red Force” ready to “combat” the United States' and their coalition partners during all phases of testing, tactics development, training programs, and integrated exercises.

#### **3.3.4 RED FLAG**

In addition to its original location at Nellis AFB, Nevada, the Air Force now conducts RED FLAG exercises in Alaska using Eielson AFB, Elmendorf AFB, and the Pacific Alaska Range Complex. The two exercises are designated RED FLAG-Nellis and RED FLAG-Alaska, respectively.

RED FLAG is expanding aggressor capabilities to provide enhanced training at both locations. The Air Force added an F-15 aggressor unit in Nevada and, starting in October 2007, we will establish an F-16 Aggressor Squadron at Eielson AFB ready to participate in RED FLAG-Alaska exercises in 2008. Aggressor functions have expanded to include air defense, space, and cyber operations. This integrated aggressor force provides all RED FLAG exercises with a consistent, world-class training capability. Bolstering the dissimilar combat experience, the Air Force also has taken steps to expand the participation of coalition partners and allies in RED FLAG.

Overall, enhanced aggressor operations and common training concepts will increase the quality of RED FLAG training, and two locations will increase the quantity of training opportunities. When complete, these changes will make a great program even better – saving lives in the next fight.

### ***3.3.5 Military Personnel Exchange Program***

Through the Military Personnel Exchange Program, the Air Force builds, sustains, and expands international relationships that are critical enablers for our Expeditionary Air and Space Force. Long-term success in the GWOT calls for broad international partnership and integration. Expanding our exchange programs to Eastern Europe, the Middle East, and Southeast Asia is critical to the conduct of the GWOT and in building lasting partnerships with our Allies.

### ***3.4 Quality of Life***

Your Air Force has been at war for nearly 17 consecutive years. These challenging times underscore the importance of properly maintaining the capabilities of the primary weapons in our Air Force arsenal – our Airmen. Our focus on their Quality of Life ensures these vital “weapon systems” remain ready when called upon.

#### ***3.4.1 Expeditionary Support***

We ensure the best possible facilities and programs at all our expeditionary locations. Our dining facilities are unequalled – currently serving over 36,000 meals daily to deployed forces. We also provide fitness and recreation support to help maintain the health and morale of our Airmen. Additionally, our Learning Resource Centers provide the necessary means for distance learning, continued professional development, and connectivity with friends and family.

Our Airman and Family Readiness Program is an aggressive effort to prepare Airmen and their families for deployment challenges. Mandatory pre-deployment briefings provide information on personal planning and stressors related to extended duty away from home, while mandatory post-deployment briefings prepare Airmen for the dynamics of reuniting with their families.

### ***3.4.2 Language and Cultural Education Opportunities***

We are moving beyond traditional Air Force and Joint warfighting skills development. Our educational programs provide increased opportunities for Airmen to receive focused cultural and language training, facilitating greater professional interaction, deeper understanding, and more effective operations.

The expanded instruction includes cultural awareness, regional affairs, and foreign language proficiency. All Air Force Academy cadets and Reserve Officer Training Corps (ROTC) non-technical scholarship cadets will be required to take language courses. Additionally, both Academy and ROTC cadets have increased opportunities for Foreign Language and Area Studies degrees and have expanded Cultural Immersion and Foreign Exchange Programs. Our enlisted basic military training also will provide instruction on cultural sensitivity.

Once in the Air Force, each level of Officer and Enlisted professional military education (PME) provides additional cultural, regional and foreign language instruction, developing leaders who can articulate US policy and operate effectively in foreign settings. Furthermore, we will increase Developmental Educational opportunities for global skills, including overseas professional military education and the Olmstead Scholars Program. We will

then vector these Airmen into Political-Military Affairs or Regional Affairs Strategist career tracks, maximizing America's return-on-investment.

### ***3.4.3 Housing and Military Construction***

Air Force investments in housing underscore our emphasis on developing and caring for Airmen. Through Military Construction (MILCON) and housing privatization, we are providing quality homes faster than ever before. Over the next two years, the Air Force will renovate or replace more than 4,200 homes through military construction. We are on track to meet our FY09 goal of eliminating inadequate housing at overseas locations.

Investment in dormitories continues to provide superior housing to our unaccompanied members. We have over 3,000 dormitory rooms programmed for funding over the next six years. Approximately 75 percent of these initiatives rectify inadequate dormitory conditions for permanent party members. Our new "Dorms-4-Airmen" standard is a concept designed to increase camaraderie, social interaction and accountability. The remaining dormitory program modernizes inadequate "pipeline" dormitories that house young enlisted students during their initial technical training.

MILCON is an essential enabler of Air Force missions; however, we are accepting risk in facilities and infrastructure funding in order to bolster our efforts to recapitalize and modernize our aging aircraft and equipment. We have prioritized the most critical requirements to support the Air Force and DoD requirements. Our MILCON strategy supports these priorities by focusing on

new mission beddowns, dormitories, fitness centers, childcare centers, and depot transformation.

#### ***3.4.4 Joint Basing***

The Air Force has a long and successful history of working toward common goals in a Joint environment, without compromising Air Force principles and the well-being of our people. Joint Basing initiatives are no exception. We want Joint Basing to be a raging success. Therefore, each Joint Base should be required to provide an attractive setting to all of its assigned personnel.

To accomplish this end, we advocate the establishment of the highest Quality of Life standards of individual bases as the Joint Base Quality of Life standards. Joint Basing is an opportunity to improve efficiency, Quality of Life standards and common delivery of Installation Support Services. Joint Basing will consider best business practices to ensure enhancement of Joint warfighting capabilities, eliminate duplication, and ultimately achieve synergy for base support services. These actions will optimize Joint use of limited resources and result in more efficient installations from which all Services will project combat power for our Nation.

Through the establishment of the highest level of Quality of Life standards at each Joint Base, our Airmen, Soldiers, Sailors, Marines, DoD Civilians and their families will benefit from efficient, consistent Installation Support Services. These standards will ensure the Air Force and our sister Services continue to provide all personnel with the level of Installation Support Services they deserve. As we work with OSD and our sister Services, we will ensure all Joint Basing



initiatives guard against any interference with the DoD's ability to perform its mission. Joint Basing allows us to build closer relationships and forge stronger ties among the Services. We will not only train as we fight, we will live as we fight.

#### ***4.0 Recapitalizing and Modernizing the Force***

To meet the needs of our Nation at war and successfully build the 86 modern combat wings necessary to maintain a credible defense posture in the future, we are committed to aggressively recapitalizing and modernizing our inventories of aircraft, space systems, equipment and operational infrastructure. Executing a successful recapitalization plan is a balancing act. We will continue to meet today's operational needs while striving to ensure America and our future Airmen inherit an Air Force that is ready, capable and sustainable. We are committed to maintaining air, space and cyberspace advantages and America's unparalleled Global Vigilance, Reach and Power – America's Edge.

#### ***4.1 Comprehensive Plan***

Our recapitalization and modernization plan follows an integrated strategy of retirement, procurement, selective Service Life Extension Programs (SLEPs) and modifications – coupled with the broadest, most innovative science and technology program in DoD. We will progressively shed our oldest, most costly, and least capable legacy aircraft, while reinvesting in a smaller – but more capable – expeditionary force, emphasizing global and Joint capabilities. While these strategies will sustain selected legacy systems for near term, we will avoid

billions of dollars on further SLEPs by working our stewardship of funds today. It has become far more expensive to continuously extend the life of older aircraft. We are fast approaching the point where it is cheaper to buy new aircraft.

Our plan will allow effective, efficient modernization and replacement of our air superiority, strike, space, ISR, mobility, special operations, and combat support systems. Fully recapitalized, America's Air Force will remain dominant in the conduct of modern, networked, cross-dimensional 21st Century warfare.

#### ***4.1.1 An Aging Inventory***

The Air Force is meeting today's combat requirements – but not without increasing risks and costs. We have an aging and increasingly unfit inventory of aircraft, space systems and equipment. Of our inventory of approximately 6,000 aircraft, a significant number operate under flight restrictions. Many transport aircraft and aerial refueling tankers are more than 40 years old. The average age of the bomber force exceeds 30 years. The fighter force is the oldest it has ever been, at an average age of more than 18 years. Additionally, our Airmen operate and maintain many satellites well in excess of their originally designed mission durations. Across every mission, the Air Force is experiencing detrimental effects of high tempo operations and age, including engine and structural fatigue, deterioration, corrosion and increased rates of component failure.

As a result, the Air Force's ability to meet the combat requirements of tomorrow is in question. The increased tempo of current operations delays

routine maintenance and we find our systems becoming progressively less effective and more costly to own and operate. Aircraft and equipment modifications currently absorb 20 percent of the Air Force's procurement budget. This is the highest percentage in the history of the Air Force. In fact, 14 percent of our Air Force fleet is either grounded or operating under mission-limiting flight restrictions. Our comprehensive plan for modernization and recapitalization outlines the prudent investments necessary today to avoid the future capability risks and spiraling maintenance and modernization costs we currently experience with our legacy systems.

#### ***4.1.2 Inventory Management***

Fiscal responsibility is a critical element of our plan. The Air Force is committed to planning and operating within our allocated resources. However, we face fiscal constraints that introduce risk into our efforts to successfully posture America's Air Force for the future. We appreciate congressional language in the 2007 National Defense Authorization Act supporting our efforts to retire older aircraft and manage our inventory of aging equipment. However, remaining legislative restrictions on aircraft retirements remain the biggest obstacle to efficient divestiture of our oldest, least capable, and most costly to maintain platforms and equipment. Keeping these legacy aircraft on the flightline levies additional operations and maintenance costs at the expense of modernization programs and funding. These costs cascade into procurement delays for future platforms and divert resources away from expanded Joint capabilities. We welcome the opportunity to work with Congress to overcome

these fiscal challenges, reduce risks to meeting our National Security and Joint requirements, and successfully prepare our Air Force for the future.

#### ***4.1.3 Procurement Priorities***

We design and structure every Air Force program throughout our diverse, comprehensive recapitalization and modernization plan to meet critical Air Force, Joint, and National requirements. Several programs currently receive our highest attention and represent our top priorities within the plan.

Our top acquisition priorities include: the KC-X Tanker; the CSAR-X Combat Search and Rescue Helicopter; space communications, space situational awareness and early warning programs; the F-35A Joint Strike Fighter (JSF); and Next Generation Long Range Strike – a new bomber. We will continue to advocate and advance these and many other modern elements of air, space and cyberspace capability. Collectively they will strengthen America's advantages in Global Vigilance, Reach and Power for years to come.

#### ***4.2 Global Vigilance***

The Air Force acts as the global eyes and ears of the Joint Team and our Nation. Using a vast array of terrestrial, airborne and spaceborne sensors, we monitor and characterize the earth's sea, air, space, land, and cyber domains around the clock and around the world. Our Command, Control, Communications and Computers (C4) networks link the Joint Team together and speed information to users at the point of action, from commanders in AOCs, to

ground units engaged with the enemy, to a pilot dropping a precision-guided munition.

The future vision of all the US military Services is information-driven. Success will hinge on America's cyberspace advantages. Air Force assets like Joint STARS, AWACS, Rivet Joint, Global Hawk, Predator and our constellations of satellites, contribute vital networking and C4ISR products and services to every aspect of every Joint operation. Our recapitalization and modernization plan aims to increase dramatically the quantity and quality of C4ISR capabilities, products and services available to the Joint Team and the Nation. Our plan especially focuses on ensuring Air Force space communications, SSA and early warning missions provide uninterrupted continuity of service for America and our allies.

#### ***4.2.1 Transformational Satellite Communications System***

The Air Force continues to pursue next-generation satellite communications technology with the Transformational Satellite Communications System (TSAT). The TSAT program will employ Internet Protocol networks, on-board routing and high-bandwidth laser communication relays in space, dramatically increasing warfighter connectivity. TSAT capabilities will enable the realization and success of all DoD and Joint visions of future network-centric operations, such as the Army's Battle Command-on-the-Move and the Navy's Sea Power 21 vision and Fleet FORCEnet/FORCEview concepts. In 2007, we expect the TSAT program to complete system design milestones.

#### ***4.2.2 Advanced Extremely High Frequency System***

The Advanced Extremely High Frequency (AEHF) satellite communications system reaches Assembly Integration and Test in 2007, preparing for first launch in spring 2008. When deployed, AEHF will provide the secure, survivable, anti-jam communications that MILSTAR currently provides. AEHF will, however, also provide greater bandwidth, larger throughput, faster dissemination, and better service quality to US and Allied users.

#### ***4.2.3 Wideband Global SATCOM System***

In 2007, the Air Force will take the first major step in the modernization of its satellite communications architecture with launch of the first satellite in the Wideband Global Satellite Communications (SATCOM) System (WGS), a program formerly known as Wideband Gapfiller Satellite. A single WGS satellite has more communications capacity than the entire Defense Satellite Communications System it replaces, enabling direct broadcast of digital multimedia, high-bandwidth imagery and digital video information directly from global and theater sites to deployed warfighters.

#### ***4.2.4 Terminal Programs***

Air- and ground-based satellite communications terminals provide warfighters with critical links to America's space assets from anywhere in the world. Our terminal modernization programs are maintaining pace with the high performance satellites they support. Through programs like the Family of

Advanced Beyond Line of Sight Terminals (FAB-T) and the Ground Multi-band Terminal, the Air Force will transform its air- and ground-based space capabilities with terminals that consolidate logistics support, provide increased communications throughput, and ensure seamless command and control.

#### ***4.2.5 Space Based Missile Warning Capabilities***

The Air Force is America's only provider of Space-Based Missile Warning. Providing a robust missile warning capability to the Nation through enhanced space-based ISR systems remains a priority in 2007. We expect to launch the final Defense Support Program launch (DSP-23) in spring 2007, continuing 36 years of the DSP constellation's outstanding service.

The Space Based Infrared System (SBIRS) represents the next generation of Early Warning satellites. The first SBIRS Highly Elliptical Orbit (HEO) payload is currently deployed on-orbit and undergoing operational testing. The HEO-2 payload has been delivered for integration. Launch of the SBIRS Geosynchronous Earth Orbit (GEO)-1 satellite is scheduled for late 2008. Once fielded, SBIRS will provide a transformational leap in capability over our current DSP system.

#### ***4.2.6 Space Radar***

Space Radar (SR), another key transformational space-based ISR program, will have the ability to look into denied areas and to cue additional sensors, such as those on Predator and Global Hawk. The SR will provide COCOMs unprecedented surface wide-area surveillance capabilities, updating its

AOR coverage report several times per hour. SR will characterize objects and activities of interest for target development in conjunction with other assets to meet critical Joint warfighter requirements. In 2007, the program will focus on building engineering development hardware while emphasizing risk reduction, integration, and systems engineering.

#### ***4.2.7 National Polar-orbiting Operational Environmental Satellite System***

The National Polar-orbiting Operational Environmental Satellite System (NPOESS) is a tri-agency program sponsored by DoD, the Department of Commerce, and NASA. NPOESS will support DoD forces worldwide as well as Homeland Security agencies. The system will provide assured, timely and high-quality environmental data to our warfighters for weather forecasting, mission planning and weapons employment. NPOESS environmental data will also enhance our domestic preparedness when dealing with natural disasters.

#### ***4.2.8 Rapid Attack Identification Detection and Reporting System***

Meeting the requirement to assist in the protection of our space assets, the Rapid Attack Identification Detection and Reporting System (RAIDRS) will provide a capability to detect and locate satellite communications interference using fixed and deployable ground systems. A fully operational RAIDRS Spiral 1 will be delivered in FY08 and provide detection and location of SATCOM interference. Future developments will automate data analysis and fusion, as well as provide decision support tools for near-real-time actions.



#### **4.2.9 Global Hawk**

The RQ-4A Global Hawk is a high altitude, long endurance UAV providing the Joint warfighter with persistent vigilance and observation of targets in day, night and adverse weather. Global Hawk entered development in 2001 after completing a successful Advanced Concept Technology Demonstration. We plan to develop and field the aircraft in blocks of increasing capability, allowing accelerated delivery to the warfighter, while the system evolves and expands to its full potential.

We have already employed block 10, the first of four production variants, in support of GWOT. It provides an effective, persistent imagery capability using synthetic aperture radar (SAR) and electro-optical/infrared (EO/IR) sensors. The larger Block 20 aircraft, which will begin development test in early 2007, will provide 50 percent more payload capacity carrying enhanced SAR and EO/IR sensors for even clearer images at greater ranges.

In 2012, Block 30 will field a more versatile, multi-intelligence capability by integrating Block 20 imagery sensors with a robust signals intelligence (SIGINT) suite. The fourth Global Hawk variant, Block 40, will be available for operations in 2011. It will carry a single payload – a Multi-Platform Radar Technology Insertion Program sensor – to provide the warfighter a highly advanced radar imagery and moving target indicator capability. Global Hawk has demonstrated its combat value in GWOT and the Air Force will continue to mature and enhance its capabilities in the coming years.

#### **4.2.10 MQ-1 Predator**

Leading the way in armed reconnaissance, the Air Force is currently flying MQ-1 Predator missions 24 hours a day, 7 days a week. The MQ-1 Predator is a medium-altitude, multi-role, long endurance UAV, providing persistent ISR and strike capabilities to COCOMs. Predator aircraft are able to transmit live, full motion digital video to ground-based and airborne targeting teams equipped with the Remote Operations Video Enhanced Receiver (ROVER) system.

The Predator is operational, and by 2010, we will expand its capability from 10 to 21 total CAPs to meet increased COCOM and warfighter demands. We also plan to incorporate Target Location Accuracy improvements to rapidly provide targeting data for GPS-guided munitions.

Total Force Airmen in Nevada and California control Predator aircraft operating in numerous locations around the world, including Iraq and Afghanistan. By 2010, this capability will spread to Air National Guard units in Arizona, North Dakota and Texas. The Predator has transformed the way we fight, providing persistent ISR, reliable target acquisition and lethal strike capability for COCOMs and our Joint warfighters.

#### **4.2.11 RC-135 Rivet Joint**

The RC-135 Rivet Joint continues its four decades of success in providing SIGINT capabilities across the full spectrum of Joint operations and national information needs. Most missions directly support OEF and OIF tactical

operations, adding to Rivet Joint's outstanding record of accomplishment and continuous presence in CENTCOM since 1990.

In addition to mission equipment upgrades, we have completed re-engining and cockpit modernization, keeping the force viable until 2040. In 2007, the Air Force will procure Rivet Joint 17, a GWOT acquisition for additional medium-altitude SIGINT capacity.

Rivet Joint has become the cornerstone of an airborne targeting modernization effort known as Net-Centric Collaborative Targeting. Rivet Joint has demonstrated the capability to horizontally integrate C4ISR assets across the entire Joint Force and dramatically improve target location accuracy, timeliness and identification.

#### ***4.2.12 Joint Surveillance Target Attack Radar System***

The E-8C Joint Surveillance Target Attack Radar System (Joint STARS) is an airborne battle management, command and control, intelligence, surveillance, and reconnaissance platform. Its primary mission is to provide theater ground and air commanders with surface moving target indications (SMTI) and tailored surveillance in support of operations and targeting. Joint STARS has been a significant contributor to US Air Force fighting effectiveness in Operations DESERT STORM, JOINT ENDEAVOR, ALLIED FORCE, OEF, and OIF. Continuing modifications and enhancements will sustain Joint STARS viability beyond 2034.

#### ***4.2.13 E-3 Airborne Warning and Control System***

The E-3 Airborne Warning and Control System (AWACS) is the premier airborne command and control platform in the DoD and a key element of all airborne operations. AWACS supports decentralized execution of the Joint air component missions and provides theater commanders with the ability to find, fix, track and target airborne or maritime threats, and to detect, locate and identify radars. AWACS has been the key airborne asset in all operations since its fielding in 1983. Our ongoing modernization of the platform will position AWACS to remain a viable airborne command and control platform beyond 2035.

#### ***4.2.14 Air and Space Operations Center***

The Air and Space Operations Center (AOC) Weapon System is the Combined/Joint Force Air Component Commander's (C/JFACC's) tool for employing air, space and cyberspace power. The AOC enables decision-makers to focus and synchronize our air, space and cyber superiority, global attack, precision engagement, information superiority, and rapid global mobility capabilities across the full range of military operations in multiple, geographically separated arenas.

The AOC weapon system, with its Theater Battle Management Core System (TBMCS), has evolved significantly since its designation as a weapon system in 2001. We used the Al Udeid Combined AOC model to establish the AOC Weapon System Block 10.1 baseline. Creating this baseline enabled us to standardize our development, procurement and presentation of C2 capabilities to

Joint and Combined Commanders worldwide. Increment 10.1 standardizes configuration among the five deployed FALCONER systems, providing operators with greater and faster access to air battle management information. The program team efforts continue to generate greater system performance for warfighters, with major improvements planned for delivery over the next two years.

The Air Force has committed to continue evolving and modernizing our AOC Weapon System through the FYDP, building toward a fully operational, cross-dimensional C2 enterprise by FY14.

#### ***4.2.15 Battle Control System – Fixed***

The Battle Control System – Fixed (BCS-F) system is a cooperative program with Canada. The system provides air defense and surveillance capability for the entire North American continent. BCS-F supports ONE and serves as the Air Force's homeland defense battle management, command, and control system. The BCS-F system integrates data from multiple radar sensors providing tactical communications and data link capabilities with other military and civil systems responsible for air surveillance, air defense and control of sovereign US air space.

#### ***4.2.16 Battle Control System – Mobile***

The Battle Control System – Mobile (BCS-M) is the next generation of Low Density / High Demand (LD/HD) ground-based tactical C2 nodes supporting the warfighter with theater air defense, airspace management, aircraft identification,

wide-area surveillance and tactical data link management. These are the same missions the current legacy system, the Control and Reporting Center, performs in support of OIF, OEF, and ONE, as well as homeland defense activities such as counter-drug operations and special security events.

#### ***4.2.17 Air Force Distributed Common Ground System***

The Air Force Distributed Common Ground System (AF-DCGS) is the Air Force's premier ISR Tasking, Collection, Processing, Exploitation and Dissemination (TCPED) weapon system. From reach back locations, AF-DCGS operators collect raw sensor data from the Global Hawk, Predator, and other platforms around the world, turn it into decision-quality intelligence in near-real-time, and send it directly to those in need at the Joint Task Force level and below. Its proven capabilities in sharing and correlating multi-source SIGINT, imagery intelligence, and signature intelligence data will be enhanced with the fielding of the AF-DCGS Block 10.2, which is leading the way in DoD's net-centric ISR enterprise transformation.

#### ***4.3 Global Reach***

America's Airmen provide not only the long legs and heavy lifting for Joint warfighters' rapid global mobility, but also the long arms for global strike and high endurance for global persistence and presence. On a daily basis, Air Force mobility forces support all DoD branches as well as other government agency operations all over the world. Increased demand and decreased availability underscore the critical need for tanker recapitalization and investment to ensure

the long-term viability of this national capability. Without prudent, timely investment, our national defense, global vigilance, reach, presence and power are put in serious peril.

#### ***4.3.1 Tanker Recapitalization***

Aerial refueling capability is essential to the expeditionary nature of America's armed forces. Aerial refueling serves as a Joint force multiplier, providing American and coalition air forces with increased range, persistence, and endurance. We are committed to maintaining an inventory of tankers that guarantees the projection of US combat power.

For the past 50 years, the Air Force's primary tanker platform has been the KC-135, and it has served with distinction. However, we are carrying great risk operating this aircraft beyond expected service life. Some of the oldest models already operate well beyond the point of cost-effective repair. Tanker recapitalization is not a new idea. In 1999, a thorough GAO report presaged the declining operational utility of our aging tankers and underscored the need for immediate investments in recapitalization. Given the increased operational requirements of the GWOT, procurement of a new tanker aircraft – the KC-X – has become both an operational necessity and the most fiscally prudent option to maintain America's global presence and expeditionary capabilities.

The KC-X is our number one procurement priority. KC-X tankers will provide increased aircraft availability, more adaptable technology, and greater overall capability than the current inventory of KC-135E and KC-135R tankers they will replace. Enhancements in every aspect of aircraft operation will provide

the Joint warfighter with more flexible employment options. It is imperative we begin a program of smart, steady reinvestment in a new tanker – coupled with measured, timely retirements of the oldest, least capable tankers. Recapitalizing our tankers will ensure the viability of the vital national capability they provide.

#### ***4.3.2 Intra-Theater Airlift***

The Air Force has a two-pronged approach to modernize America's intra-theater airlift capabilities. First, we are striving to replace our oldest aircraft with a mixture of new C-130Js and Joint Cargo Aircraft (JCA). The JCA offers the potential for additional solutions to the Air Force's intra-theater airlift recapitalization strategy. JCA will provide a modern mobility platform suited to accessing an array of demanding and remote worldwide locations, including short, unimproved and austere airfields.

Second, we will standardize remaining C-130s via the C-130 Avionics Modernization Program (AMP) and center-wing box replacement programs. C-130 modernization extends operational lifetime, reduces operation and sustainment costs, and increases the combat effectiveness of our intra-theater airlift capability.

For decades, C-130s have been the workhorses for intra-theater airlift during numerous contingences. Additionally, the C-17 has done a superb job augmenting the C-130s in the intra-theater airlift role. Similarly, the new C-130Js, which are far more capable than legacy C-130s, have proved their worth supporting GWOT and humanitarian operations since December 2004.



### **4.3.3 Inter-Theater Airlift**

The C-17 continues its outstanding support for Joint operations across the spectrum of conflict. During the past year, C-17s flew over 44,000 sorties, bringing the total number of OEF and OIF missions to over 123,000. Additionally, the C-17 flew 900 humanitarian and disaster relief sorties following Hurricanes Katrina, Rita and Wilma, as well as the Southeast Asian tsunami, Pakistani earthquake, and the Lebanon non-combatant evacuation operations. Given this high operational tempo, the Air Force appreciates congressional action to procure additional C-17s to sustain a fleet of 190.

During 2006, the Air Force's other heavy lifter, the C-5 Galaxy, flew 5,500 sorties in support of the GWOT. Since 11 September 2001, C-5 have flown over 50,000 sorties in support of the Joint warfighter and provided humanitarian aid around the world. To keep the C-5 mission capable and maximize capability, the Air Force is continuing the C-5 Avionics Modernization Program (AMP) and the Reliability Enhancement and Re-engining Program (RERP). The AMP and RERP efforts ensure compliance with emerging airspace requirements, upgrade aircraft propulsion, and improve over 70 other unreliable C-5 systems, enabling this large airlifter to remain viable through 2040.

Together, the C-17 and C-5 weapons systems provide complementary capabilities and are critical to meeting our US inter-theater airlift requirements today and in the future – for the entire Joint force.

#### **4.3.4 Space Launch Operations**

The Air Force continues to fulfill its role as the guardian of the world's premier gateways to space and America's vital national space launch capabilities. Space launch is another element of Air Force space capability that is vital to American global military, political and economic success.

With fourteen operational launch successes, the Evolved Expendable Launch Vehicle (EELV) program provides assured access to space in support of operational requirements. In FY 2007, we expect to continue building upon our DoD launch successes with seven EELV and three Delta II launches.

##### **4.3.4.1 Launch and Test Range System**

The Eastern and Western Ranges, located at Cape Canaveral Air Force Station, Florida and Vandenberg AFB, California, respectively, comprise the Launch and Test Range System (LTRS). The LTRS, part of the DoD's Major Range and Test Facility Base (MRTFB) infrastructure, provides tracking, telemetry, communications, command and control to support the testing of ballistic missiles, precision weapons, national missile defense and advanced aeronautical systems. The LTRS also provides the vital infrastructure necessary to support manned and unmanned space launches for DoD, National, civil and commercial space missions. We will continue LRTS modernization and further reinforce our capabilities to ensure space launch safety and mission success.

#### ***4.4 Global Power***

The US Air Force provides the Joint Team a historically unprecedented ability to deliver a precise, tailored effects whenever, and wherever and however needed – kinetic and non-kinetic, lethal and non-lethal, at the speed of sound and at the speed of light. It is an integrated cross-dimensional capability that rests on our ability to control air, space and cyber. We exploit these domains to hold at risk any target on the surface of the Earth. As we continue to transform this capability, we will focus on expanding our effectiveness in multiple dimensions. We will continue to refine our abilities to deliver lethal and non-lethal effects at the time and place of our choosing, shortening the sensor-to-shooter “kill chain.”

##### ***4.4.1 Combat Search and Rescue***

Uniquely within DoD the Air Force organizes, trains and equips dedicated forces for Combat Search and Rescue (CSAR) mission. Air Force CSAR crews fulfill our absolute moral imperative to safely secure and return all of our Airmen and any member of our Joint team.

We are recapitalizing this vital combat capability with the CSAR-X aircraft. This effort represents one of our top Air Force acquisition priorities. These modern aircraft will enable COCOMs to recover isolated Joint or coalition personnel engaged across the spectrum of military operations as well as perform non-combatant evacuation and disaster relief operations. CSAR-X aircraft will relieve the high OPSTEMPO strain placed on the current LD/HD inventory of HH-

60G Pave Hawk helicopters, and they will present COCOMs with key combat and non-combat mission options.

This new aircraft will dramatically improve Air Force CSAR mission capabilities. It will provide our personnel recovery forces with an aircraft that is quickly deployable and capable of operations from austere locations. It will operate day or night, during adverse weather conditions, and in all environments including nuclear, biological and chemical conditions. On-board defensive capabilities will permit the CSAR-X aircraft to operate in an increased threat environment, and in-flight refueling will provide an airborne alert capability and extend its combat mission range.

These increased capabilities are crucial to meeting current and future Joint operational needs, while providing greater capability to Air Force CSAR forces, “that others may live.”

#### ***4.4.2 F-35A Lightning II***

The F-35A Lightning II JSF is a fifth-generation multi-role strike fighter aircraft optimized for air-to-ground attack. The F-35A is the Conventional Take-off and Landing (CTOL) variant, and it will recapitalize F-117, F-16 and A-10 combat capabilities. The F-35A will complement the capabilities of the F-22A. Like the Raptor, the F-35A reaps the benefits of decades of advanced research, development and field experience.

The F-35A will provide affordable precision engagement and global attack capabilities for the Air Force, Navy, Marines, and our international partners. In

2006, the JSF program delivered the first CTOL variant test aircraft and completed its first flight on 15 December 2006.

#### ***4.4.3 Next Generation Long Range Strike***

Range and payload are the soul of an Air Force. These elements form the foundation of strategic military deterrence. The LRS mission, a primary reason the Air Force became a separate Service in 1947, continues as a vital and unique Air Force contribution to national defense. The Air Force has a three-phased strategy to help ensure the US meets its enduring LRS capability requirements. Phase One includes near-term maintenance and modernization of current bombers and air-to surface weapons.

By 2018 and in accordance with QDR goals, Phase Two will deliver a new LRS bomber incorporating highly advanced technologies. This next generation bomber will combine speed, stealth, payload, and improved avionics/sensors suites. This new bomber will bring America's bomber forces up to the same high standard we are setting with our F-22A and F-35A fifth-generation fighters. It will ensure our bomber force will continue to be effective in meeting COCOMs' global needs across the full range of military operations. The Analysis of Alternatives will be complete in the spring of 2007.

In Phase Three, the Air Force plans to field a revolutionary LRS capability in the 2035 time frame using an advanced system-of-systems approach. We expect technology maturation to yield advancements in several areas, including hypersonic propulsion, advanced materials and non-kinetic weapons.

#### **4.4.4 F-22A Raptor**

The F-22A Raptor is the Air Force's primary air superiority fighter, providing unmatched capabilities for operational access, homeland defense, cruise missile defense and force protection for the Joint Team. The F-22A's combination of speed, stealth, maneuverability and integrated avionics gives this remarkable aircraft the ability to penetrate denied, anti-access environments. The F-22A's unparalleled ability to find, fix, track, and target enemy air- and surface-based threats ensures air dominance and freedom of maneuver for all Joint forces. In addition, the F-22A is the only airborne system in the US military that can conduct network-centric warfare and provide ISR capability from inside adversary battlespace in the opening moments of any contingency.

Until the F-22A became operational in 2005, America's Air Force had not fielded a new fighter since the 1970s. Today, combat-capable Raptors are in full-rate production on the world's only fifth-generation fighter production line. As of 1 January 2007, 84 aircraft have been delivered, including 44 combat coded aircraft, and another 25 are in production. The first operational F-22A unit declared initial operational capability at Langley AFB, Virginia in December 2005,. The second operational F-22A unit will pick up the AEF rotation in May 2007. Meanwhile, the third operational unit is standing up at Elmendorf AFB, Alaska with a projected AEF rotation of May 2008. We will also station a fourth unit at Elmendorf, followed by fifth and sixth units at Holloman AFB, New Mexico and the seventh unit at Hickam AFB, HI.

The F-22A flew its first operational mission in support of ONE in January 2006, participated in the Alaskan NORTHERN EDGE exercise in July 2006, and is preparing for upcoming AEF deployments.

#### ***4.4.5 MQ-9 Reaper***

Similar to its smaller MQ-1 Predator sibling, the MQ-9 Reaper is a medium-altitude, multi-role, long endurance UAV that will provide persistent ISR and improved strike capabilities to COCOMs. MQ-9 incorporates MQ-1 operational design improvements, a larger airframe, battle-proven sensors, full motion digital video, ROVER connectivity and expanded munitions capability.

Initial mission capability will begin at Nellis AFB Nevada, with future expansion to New York ANG. In 2007, we expect to continue rigorous MQ-9 development and demonstration, as well as operational employment with pre-production aircraft to meet urgent Joint warfighter needs.

The MQ-9, like the MQ-1, will also incorporate Target Location Accuracy improvements to support GPS-guided munitions. Ultimately, the MQ-9 will provide theater commanders with expanded employment options in a vastly improved Hunter-Killer UAV, incorporating a larger payload, automatic cueing, and self-contained capabilities to strike time sensitive and hard targets.

#### ***4.4.6 CV-22 Osprey***

The Air Force will procure 50 CV-22s, with an Initial Operational Capability scheduled for FY09. The CV-22 is a V-22 tilt-rotor aircraft designed to meet a US Special Operations Command (USSOCOM) requirement for long-range

infiltration, exfiltration, and re-supply of Special Operations Forces. The CV-22's advanced systems include Terrain Following/Terrain Avoidance Radar, Integrated RF Countermeasures, Directional Infrared Countermeasures, the Multi-mission Advanced Tactical Terminal, and additional fuel tanks and tactical communications gear.

#### ***4.4.7 Global Positioning System***

The Global Positioning System (GPS) constellation serves as a global utility for precision navigation and timing. GPS is yet another Air Force mission that has become vital to American military and global economic activity. As with all elements of the Air Force space mission, we are dedicated to ensuring uninterrupted continuity of GPS services.

GPS modernization continues in 2007 with additional launches of GPS IIR-M satellites. The GPS IIR-M satellites will provide a new military signal more resistant to jamming and a new civil signal for improved position accuracy for civil, commercial, and recreational GPS users. The follow-on system, GPS IIF, will provide IIR-M capabilities plus an additional civil signal for aviation safety-of-flight services. The development of the next-generation GPS-III will further enhance navigation and precision-engagement capabilities and improve resistance to jamming, as well as add a third civil signal compatible with the European Galileo System.



#### **4.4.8 Counter Communications System**

As part of the broader Counterspace mission, the ground-based, theater-deployable CCS provides COCOMs with a non-destructive, reversible capability to deny space-based communication services to our adversaries. CCS enhances our capability to ensure air, space and cyberspace superiority for the Nation.

We plan to procure three additional operational CCS and one training system. This comprises the full complement of systems for two Space Control Squadrons. We will continue block upgrades to the CCS to enhance our Offensive Counterspace capabilities and begin pre-acquisition work for the next generation CCS.

#### **4.4.9 Intercontinental Ballistic Missiles**

America's ICBM force remains the foundation of our Nation's nuclear deterrent capability. Modernization programs are crucial to the Minuteman ICBM, which, when initially deployed in the 1960s, were designed to last ten years. Service life extension programs are underway to ensure the Minuteman III remains mission capable through 2020. These programs replace obsolete, failing, and environmentally unsound materials, while maintaining missile reliability, survivability, security and sustainability. These efforts are critical to sustaining the ICBM force and are vital to America's nuclear deterrent posture.

#### ***4.4.10 Operationally Responsive Space***

The Air Force intends to continue its demonstration, acquisition, and deployment of an effective Operationally Responsive Space (ORS) capability in support of the DoD's focus on meeting the urgent needs of the COCOM.

ORS includes the ability to launch, activate and employ low-cost, militarily useful satellites to provide surge capability, reconstitute damaged or incapacitated satellites, or provide timely availability of tailored or new capabilities. ORS capabilities can lead to long-term benefits by advancing technology, improving space acquisitions, enhancing the skills of the technical workforce, and broadening the space industrial base.

##### ***4.4.10.1 Space Development and Test Wing***

In 2006, the Air Force established the Space Development and Test Wing (SDTW), headquartered at Kirtland AFB, New Mexico, to focus on the development and testing of orbital assets with the goal of encouraging innovation in the space mission area.

One of the Wing's responsibilities is ORS. Working with other services and agencies, it will perform concept development, design, manufacturing, and operation of small satellites, as well as other activities required to support the fielding of ORS capabilities. As capabilities are developed and fielded, the wing will directly interface with user organizations responsible for employing ORS capabilities in Joint and coalition operations.

During FY07, we will develop a plan further refining ORS. This plan will fully define ORS roles and missions, along with the organization and reporting structure. In addition, we plan to develop specific acquisition policies, implementation schedules, funding, and personnel requirements to support deployment of ORS capabilities.

#### ***4.5 Science and Technology***

True to our history over the past century of powered flight, the Air Force continues to maintain the most complex, diverse and ambitious Science and Technology (S&T) portfolio of all the Services. History clearly demonstrates the broad benefits to America of our S&T efforts, in terms of military power, industrial capability, economic growth, educational richness, cultural wealth, and national prestige. Examples include aerospace technology and propulsion, materials science, advanced computing and communications, atmospheric science, remote sensing and satellite navigation. What has been good for the Air Force has been great for America. We are committed to building upon this heritage.

The Air Force S&T Program develops, demonstrates and tests technologies and advanced warfighting capabilities against the spectrum of 21<sup>st</sup> century threats. As we continue to adapt to a volatile and uncertain world, today's focused investment in our S&T Program will strive to produce the future warfighting capabilities needed to ensure America's continued technological pre-eminence and military flexibility. Additionally, Air Force S&T organizations work closely with the other Services, Defense Agencies, Intelligence Community, and other Federal agencies, such as the National Aeronautics and Space

Administration, as well as partner nations. Through these partnerships, we leverage efforts, share information, and advance state-of-the-art technologies.

The Air Force S&T Program provides the foundation for future Joint warfighting capabilities, focusing on dominance of the air, space and cyberspace domains for America.

#### ***4.5.1 Improving Energy Efficiency***

The Air Force is taking the lead in reducing the DoD's dependence on foreign oil. As the DoD's leading consumer of jet fuel, we are currently engaged in evaluating alternative fuels and engine technologies leading to greater fuel efficiency. Air Force efforts focus on high-efficiency aerodynamic concepts, advanced gas turbines and variable cycle engines providing higher performance and greater efficiency.

As a part of this effort, the Air Force is performing flight tests on a B-52 using a blend of MILSPEC JP-8 fuel and a synthetic fuel derived from natural gas. We plan to continue airworthiness certification testing of synthetic fuel.

#### ***4.5.2 Cyber Technology***

Fulfilling its role as a leader in the Information Age, the Air Force is exploring technologies and concepts of operations within the cyberspace domain. Air Force Cyberspace initiatives will provide tools for offensive and defensive cyberspace operations as well as bolster our information assurance capabilities. The Air Force is investing in technology concepts to ensure reliable, operational links between individuals and systems – in addition to machine-to-machine

interfaces – to ensure cyberspace dominance, information delivery, situational awareness, and rich connectivity across the Joint Team.

#### **4.5.3 Small Satellites**

The Air Force is pursuing development of small satellite technologies, including modular buses with “plug-n-play” payloads, along with the development of low-cost launch systems. We aim to provide a greater range of responsive space applications for the tactical warfighter. Small satellite technology demonstrations have achieved lighter payloads and reduced development and integration timelines. Additionally, these achievements serve to mitigate technology risks for larger, more complex satellite programs in development. Small satellites with operationally responsive payloads could potentially provide either specifically tailored, stand-alone capabilities, or rapid augmentation capability for a satellite or constellation of satellites that suffer failure or attack.

#### **4.5.4 Directed Energy**

Directed energy weapons will profoundly transform how we fly, fight, and defend ourselves, and we are integrating them into our broader cyber operations effort. As lasers and radio frequency weapons find applications in the battlespace, their ability to operate at the speed of light will change both offensive and defensive capabilities and tactics. New designs and technology may be necessary to offer adequate protection for our people and capabilities.

Weapons in development include the Airborne Laser (ABL), a large aircraft carrying the High Energy Laser for missile defense. Additionally, the

Active Denial System has demonstrated the viability for a long-range, non-lethal, anti-personnel weapon.

These systems benefit from many years of technology development. Revolutionary technologies continue to be developed. These include versatile high power solid-state lasers; devices for aircraft self-protection; higher power Active Denial components for airborne applications; relay mirrors to extend the range of systems like ABL; and high power microwave devices to disable electronics covertly without affecting structures or people.

#### ***4.5.5 Hypersonics***

The Air Force is a world leader in the development of practical hypersonic air-breathing propulsion. Hypersonic research, relating to flight speeds greater than five times the speed of sound, offers dramatically reduced time-to-target for conventional weapons and, in the future, may provide “airplane-like” on-demand access to space. Our effort involving supersonic-combustion-ramjets (Scramjets) – specifically our planned flight tests of the X-51 Scramjet Engine Demonstrator – highlights our commitment to maintaining America’s leading role in this field.

We also expect advanced hypersonic munitions technologies to improve penetration capabilities and decrease collateral damage. These characteristics will allow us to expand our target attack ability, particularly in urban environments and against time critical, hardened, and buried targets.

#### **4.5.6 Composites**

Air Force S&T is exploring advancements in composite structures and manufacturing technologies for lightweight unconventional aircraft shapes. Example applications include short take-off and landing capabilities, high-lift aircraft wing systems, integrated propulsion inlet/diffuser geometries, and integrated flight control surfaces. We expect these efforts to shorten development times for next generation aircraft with lighter, stronger airframes offering far greater mission utility than legacy aircraft.

Simultaneously, we are addressing sustainment of composite structures, in order to ensure future aircraft built with these materials will be readily maintainable and serviceable.

#### **4.5.7 Nanotechnology**

Investment in nanotechnologies could provide stronger and lighter air vehicle structures including potential applications in unmanned vehicles. Other nano-materials show promise as high-performance water-repellant coatings. These coatings may protect Air Force systems against corrosion and chemical/biological contaminants, providing significant savings in maintenance costs and extending the lifetime of aircraft and other military equipment.

## **5.0 Delivering Excellence**

Fighting the GWOT, developing and caring for our Airmen and their families, and recapitalizing and modernizing the Air Force all require substantial national resources.

Throughout 2006, the Air Force embarked on several forward-leaning initiatives to improve our organization, efficiency, agility and lethality. We are committed to good stewardship of America's resources, while strengthening America's current and future air, space and cyberspace capabilities.

The Air Force is making strides in a range of activities and through multiple, overlapping initiatives to improve what the QDR refers to as "reshaping the defense enterprise." The Air Force is moving toward financial transparency and reinforcing our culture of efficiency and process improvement through the AFSO21 initiative. We are also transforming our approach to infrastructure and maintenance, executing an aggressive energy strategy, and reforming our acquisition practices – emphasizing a "Back to Basics" approach to space acquisitions, in particular.

All of these efforts will lead to greater efficiency, lower operating costs, and greater availability of resources for recapitalization and modernization of critical Air Force capabilities. In short, our Airmen are striving to provide an even higher return on America's national security investments.



## **5.1 Air Force Smart Operations for the 21st Century**

To meet the challenges of this environment and the road ahead, we have embarked on an Air Force-wide effort embracing efficiency and process improvement. AFSO21 applies many concepts developed and proven in industry – *Lean, Business Process Reengineering, Six Sigma, and Theory of Constraints* methodologies. We expect significant savings from this initiative.

The AFSO21 vision is to increase combat capability by integrating process improvement into the culture of all of the Active Duty, Air National Guard and Reserve Airmen, as well as our civilians and contractors. All Airmen must understand their role in improving daily processes. AFSO21 identifies and eliminates activities, actions and policies that do not contribute to efficient and effective operations.

We seek several outcomes from AFSO21. First, we want all Airmen to be fully aware of the importance of their work – how they contribute directly to the Air Force mission and national defense. Second, we will strive to improve safety and maintain quality of life for all Air Force personnel. Third, we push to decrease process cycle times, thereby increasing our ability to respond to rapidly changing demands. Fourth, we aim to cut costs and free up funds for modernization. Finally, we seek to eliminate waste.

Process changes have occurred at every level of the Air Force, resulting in significant savings. We have more work to do, but institutionalizing AFSO21 concepts into daily operations allows us to meet the enormous challenges of the

next decade and ultimately sustain and modernize the world's premier air, space and cyberspace force.

### ***5.1.1 Business Transformation***

The Air Force vision of Business Transformation creates rapid and predictive operational support and leads to greater situational awareness for commanders. Our high-level Business Transformation goals include improving warfighter effectiveness through fast, flexible, agile, horizontally integrated processes and systems; establishing a culture of continuous process improvement; achieving efficiencies allowing us to return resources for the recapitalization of aging weapons systems and infrastructure; and creating an acquisition process unparalleled in the federal government.

#### ***5.1.1.1 National Defense Authorization Act Certification and Portfolio Management***

The Air Force fully leverages DoD enterprise transition planning and DoD-mandated certification reviews. We ensure business systems development supports the effects and capabilities articulated in the Agile Combat Support concept of operations. These certification reviews have resulted in the shutdown and elimination of hundreds of legacy systems and allowed us to redirect additional resources to critical warfighting requirements.

### ***5.1.1.2 Transparency***

The Air Force is accelerating efforts to deliver authoritative information to decision makers at all levels, improving information availability and quality, realizing warfighter cross-service information requirements, and implementing DoD-wide information priorities. We will achieve transparency by using correct information at all echelons – trustworthy, traceable, auditable, and valuable. We will support cross-domain or cross-mission efforts by defining architecture and information standards necessary for easy discovery, use and reuse of data.

### ***5.1.2 Clean Audit Quick Look***

Warfighters perform their missions with increasingly limited resources and manpower. Decision-makers at every level need the best information when allocating these scarce resources. To achieve greater levels of information fidelity, the Air Force is committed to improving transparency in its business processes, to include Financial Management. A Clean Audit Opinion defines a major objective of this commitment. Financial transparency requires the Air Force to have processes and procedures in place ensuring data is accurately collected at the source, flows efficiently through to reporting systems and analytical tools, and is error-free.

The Air Force Information Reliability and Integration (AFIR&I) plan is our road map toward financial transparency. It is a key component of the DoD Financial Improvement and Audit Readiness (FIAR) Plan aimed at improving DoD financial health. The AFIR&I Action Plan reinforces our ongoing

commitment to ensuring the absolute highest level of stewardship of our Nation's investments in the Air Force.

## ***5.2 Energy Conservation***

We are pursuing an aggressive energy strategy and are committed to meeting and surpassing the energy goals mandated by the Energy Policy Act of 2005 (EPAAct 05) and other national policies. We successfully reduced our energy consumption in accordance with past legislation and continue to use a variety of programs aimed at reducing our use of fossil fuels and controlling cost growth. Our vision creates a culture where Airmen make energy considerations in all their actions. We aim to implement our vision with solutions that include alternate sources of domestic energy as well as an aggressive drive for greater efficiency in our facilities and vehicles.

The Air Force remains the largest renewable energy purchaser in the US. Our commitment to install 18 megawatts of solar photovoltaic energy at Nellis AFB is one example of our pursuit of on-base renewable power generation. Currently 37 bases meet some portion of their base-wide electrical requirements from commercial sources of wind, solar, geothermal or biomass. We have several projects planned, in design, or under construction to expand this capability. With our combined purchase and production strategy, the Air Force is poised to surpass the renewable goals set by the Energy Policy Act.

The Air Force applies sustainable development concepts in the planning, design, construction and operation of facilities using the Leadership in Energy

and Environmental Design (LEED) certification process. Our long-term goal is to ensure 100 percent of eligible new facilities are LEED certifiable by FY09. This complements our use of facilities construction and infrastructure improvement programs designed to create cost effective energy efficiencies in new and existing facilities.

We have also taken an aggressive stance on replacing our existing general-purpose vehicles with low speed vehicles (LSVs) without adversely affecting peacetime or wartime mission requirements. This measure will reduce vehicle acquisition cost, fuel expenditures and ozone-depleting exhaust emissions and free up funds for use in other critical areas. Our goal is to replace 30 percent of general-purpose vehicles with LSVs by FY10. Coupled with the goal to replace 100 percent our general-purpose vehicles with alternative fuel vehicles, the Air Force is taking the lead in the use of alternative energy technologies.

### ***5.3 Acquisition Excellence***

The Air Force continues its goal of streamlining the acquisition process to providing efficient and responsive services to the warfighter. A number of completed and ongoing projects have contributed to the improvement of acquisition, and FY08 promises more progress.

We have revitalized the Acquisition Strategy Panel, providing a systematic and disciplined approach to develop an effective acquisition program roadmap. The newly developed Air Force Review Board process provides a structured and repeatable system that aids decision-making on critical aspects of selected

acquisition programs. We have also streamlined periodic review processes by combining several independent reviews into a single event, saving preparation and travel time.

In 2006, the Defense Acquisition Performance Assessment (DAPA) made a number of recommendations for improving the acquisition system. The Air Force is in the process of evaluating and implementing key recommendations of the DAPA report. For example, the Air Force is exploring the concept of Time Certain Development (TCD) as the next step in evolutionary acquisition. TCD involves structuring a program to deliver its initial capability to the warfighter at an explicitly specified (and much shorter) interval. Such a policy helps improve the responsiveness of the acquisition system and keeps our warfighting capabilities aligned to current threat conditions.

To enhance the credibility of the acquisition system, the Air Force is strengthening its efforts to analyze risks prior to initiation and execution of a program. The Air Force is prototyping the Probability of Program Success model, a framework for identifying and reporting risk issues that threaten a developer's ability to deliver on time and budget. Use of this model has the potential to highlight risk areas requiring the program manager's attention.

The Air Force is improving the source selection process, ensuring appropriate use of incentives, assessing current contracting organizational alignments, and implementing strategic sourcing strategies. We are committed to providing support of contingencies and to the warfighter by acquiring commodities and services by the most effective means possible. We continue to

maintain the majority of the deployed contingency contracting assets in the Iraq/Afghanistan AOR, and we remain dedicated to supporting the COCOMs through Joint and Air Force taskings.

### **5.3.1 Space Acquisition**

The Air Force is committed to revitalizing and restructuring its overall space acquisition strategy. We will build upon our heritage of providing unmatched space capabilities to meet national, COCOM, and Joint Force objectives by developing and executing more deliberate plans focused on cost and schedule containment.

The Air Force “Back to Basics” initiative is part of our plan to improve space acquisitions. The initiative promotes a renewed emphasis on management techniques and engineering practices that lead to better definition of requirements as well as deliberate acquisition strategy planning. Clear and achievable requirements, appropriate resources, disciplined systems engineering, and effective management are the basic elements—the foundation upon which successful acquisition depends.

The “Back to Basics” initiative promotes a block approach strategy focused on delivering capability through value-added increments. This concept is consistent with current policy specifying “evolutionary acquisition as the preferred strategy” for DoD acquisition. Specific capability increments are based on a balance of capability, delivery timeline, technology maturity, risk, and budget. Well-defined increments reduce many of the instabilities plaguing our past efforts. We will deliberately apportion cost, schedule, and technical risk

across these increments to meet the primary objective – delivering combat capability on a predictable timeline and at a predictable cost.

In 2006, the Air Force restructured two major programs to comply with the “Back to Basics” strategy initiative. We have restructured the GPS III and TSAT programs to reduce risk and define executable block strategies. We expect these changes to deliver warfighting capabilities in the least amount of time.

In 2007, the Air Force will expand the implementation of its “Back to Basics” initiative by deliberately and establishing block development strategies for a greater number of programs within the Air Force space portfolio. We will continue our conscientious efforts to stabilize requirements, funding, and workforce within program blocks. This strategy will place increased emphasis on cost estimating, systems engineering, and risk management to provide capability to our warfighters.

### ***5.3.2 Small Business Programs***

The Air Force employs over 129 small business professionals across the country. They strengthen our Nation’s industrial base through their advocacy for the small business community. They also identify future procurement opportunities for small businesses and refer these companies to potential Air Force customers. We surpassed our small business goals for the third consecutive year across all Air Force primary small business programs. Small business prime contract awards, in both dollars awarded and percentage of total procurement, increased in every category. We awarded a record \$8B in Air Force contracts to small businesses, accounting for 16.9 percent of all awarded



contract dollars. Additionally, we awarded \$86M to Historically Black Colleges and Universities (HBCU) and other minority institutions, accounting for 9.1 percent of all awarded contract and grant dollars to institutions of higher education.

#### ***5.4 Operations and Maintenance Facility Projects***

The Air Force will continue to prioritize investments in facilities and infrastructure critical to mission operations. Maintenance and repair of runways, weapons system facilities, utility systems, and training facilities represent the Air Force's top projects. We will invest O&M funds to maximize the economic life and value of this critical infrastructure, minimizing mission disruptions. The Air Force continues to face significant challenges in preserving an aging inventory of utility systems, airfield pavements, and essential support facilities.

##### ***5.4.1 Depot Maintenance Transformation***

Throughout Air Force history, our depots have been vital to success. Our commitment to retain technically relevant depot-level maintenance and repair capability will ensure sustainment of the world's dominant air, space and cyberspace capabilities beyond the next decade. We programmed investments in depot infrastructure, equipment, and personnel throughout FY04-FY09 in order to implement the Air Force Depot Maintenance Strategy and Master Plan. The Air Force strategy benchmarks industry standards to improve depot maintenance infrastructure, implement re-engineering initiatives, and transform depot processes to maintain "world-class" status.

#### ***5.4.2 Repair Enterprise***

As an expeditionary air, space and cyberspace force, we challenged our logisticians to develop agile combat support concepts that enhance our current and future warfighting capabilities. Repair Enterprise (RE21) is a lean logistics initiative and an integral part of the Global Logistics Support Center (GLSC) concept of providing global logistics support to the Air Force. RE21 leverages global visibility of all repair assets, centralized funds management, strategic sourcing, and partnerships with industry to provide the Air Force highly technical logistical support. The main RE21 goal is to establish an enterprise-wide single repair network supporting the entire Air Force supply chain and to optimize support to the warfighter through the GLSC.

#### ***6.0 Minding the Future***

September 18<sup>th</sup>, 2007, will mark the 60<sup>th</sup> Anniversary of the creation of our independent United States Air Force. This year, we commemorate this anniversary of our proud Service – a service born of revolutionary ideas, forged in combat, and proven through decades of progress and achievement. The mission of the Air Force remains to fly, fight and win – in, through and from air, space and cyberspace.

While remembering our history and reaffirming our commitments to the current fight, we are ever mindful of the need for investment in future capabilities. We will remain focused on our top priorities: Fighting and Winning the GWOT; Developing and Caring for Our Airmen; and Recapitalizing and Modernizing the

Force. Meeting these priorities has become more challenging in light of current fiscal constraints. Nonetheless, we will move forward, striving to maintain the Global Vigilance, Reach and Power advantages America has come to expect. Our allies respect us, and our enemies fear us.

The Air Force has faced challenging times in its past and is meeting the stress of today's operating environment. It is our heritage and mission to fly, fight and win. Our Legacy inspires us. Our Mission propels us. Our Core Values guide us. We have inherited and will build upon a rich heritage – a heritage shaped through the ingenuity, courage and resolve of great Airmen who preceded us. Our proud heritage, focused priorities, and enduring Core Values will serve to guide our actions and reaffirm our commitments today, over the next 60 years, and beyond.