



AIR FORCE ASSOCIATION STATEMENT OF POLICY

AIR FORCE AIRPOWER IN A YEAR OF DECISION

2009

PROMOTING AIR FORCE AIRPOWER



About the Air Force Association

The Air Force Association, founded in 1946, exists to promote Air Force airpower.

We educate the public about the critical role of aerospace power in the defense of our nation, advocate aerospace power and a strong national defense, and support the United States Air Force, the Air Force family, and aerospace education.

AFA is a 501(c)(3) independent, nonpartisan, nonprofit educational organization, to which all donations are tax deductible. With your help we will be able to expand our programs and their impact. We need your support and ongoing financial commitment to realize our goals.

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AIR FORCE AIRPOWER IN A YEAR OF DECISION

“Our Air Force belongs to those who come from ranks of labor, management, the farms, the stores, the professions and colleges and legislative halls... Air Power will always be the business of every American citizen.”—General of the Air Force Henry H. “Hap” Arnold

America stands at a crossroads. The nature of war has changed and we seek a balance between the new disruptive forces of borderless warfare and the reality of significant increases in defense budgets in countries that could be future adversaries.

Our Air Force leadership has been given a specific charter from the Secretary of Defense. They must confront issues of balance: the imperative to support Combatant Commanders around the world balanced with the necessity to field systems that will remain relevant to conflicts 30–40 years in the future. This balance is more pronounced as we see the turbulence of disruptive warfare now being joined by a return to the very Cold War-like activities of old—Russian bombers in our hemisphere, saber rattling in Eastern Europe.

As our Chief of Staff (CSAF) has made clear, the Air Force and its leadership must reflect core Air Force values; draw strength from its heritage, warfighting ethos and expeditionary mindset; sustain the trust of the American people and civilian leaders; recapture

top-to-bottom excellence in its nuclear mission; and restore its reputation in the acquisition field.

AFA stands shoulder to shoulder with our Secretary and Chief of Staff of the Air Force and to sustain the trust of our civilian leaders, our joint and Coalition partners and the American people.

POWERFUL CHALLENGES

Never before in its six decades as a separate service has the Air Force faced such critical times. It possesses fewer airmen and aircraft than it had on Dec. 7, 1941, Pearl Harbor day. Its operational tempo is high and shows few signs of slackening. Airmen have been at war for 18 continuous years. The aircraft fleet is the oldest in US Air Force history, and is certain to grow even older, on average, in years to come.

It is not alarmist to say that our superiority is in jeopardy. We believe that losing our airpower edge at this time would be especially dangerous.

The Air Force is up against a powerful combina-

tion of challenges. Funding is inadequate and likely to decline. The nation remains largely complacent about national defense investment in general and Air Force investment in particular. *AFA supports reforms of the acquisition process that restore the Air Force credibility in program definition, oversight, development and execution.* This includes fully developed requirements based on concepts of operation to include the requirement to fully leverage new systems to the benefit of joint commanders. Aged air and space systems are being kept in service far beyond their intended service life. For all that, demand for airpower is increasing.

Vigilance and support are needed to ensure excellence in the Air Force's nuclear weapon enterprise.

AFA applauds the establishment of a Nuclear Weapons Center and supports Air Force efforts to restore the discipline of nuclear operations as a unique and distinct mission of utmost importance. AFA supports the dedicated training and resources that this "cannot fail" mission deserves.

AFA also supports early study on the future of nearly all nuclear warheads, as their effective "shelf life" will begin to rapidly degenerate in a few decades. Congress, the Department of Defense and the Department of Energy must work together to put in place a comprehensive plan for preserving US nuclear capabilities.

The Air Force Association salutes all members of the armed forces for their service in the Global War on Terrorism. Their sacrifices and steadfastness are awe-inspiring.

We in this association are especially proud of Air Force men and women—those 700,000 Active Airmen, Air National Guardsmen, Air Force Reservists, Air Force civilians—and their families. They are true national assets.

CLEAR AFFORDABILITY

Air Force strategic priorities are as follows: Winning the war on terror ... while preparing for the next conflict; developing and caring for Airmen and their families ... to maintain our competitive advantage; and recapitalizing and modernizing our aircraft, satellites and equipment ... to be able to meet present and future challenges.

AFA calls on the nation to make the necessary sacrifices that will be needed to preserve and protect this invaluable and essential instrument of national power.

The United States can well afford to defend this great country. The American people will support the

necessary investment to preserve freedoms and keep us safe. Defense spending today, measured in terms of percent of Gross Domestic Product, has rarely been lower. It is clear that the gargantuan \$15 trillion economy can absorb much higher levels of defense spending.

During the years of the Reagan Administration, the US devoted roughly six percent of its GDP to defense. The Air Force Association supports a return to such a "Six Percent Solution," and the sooner the better. Including the costs of the wars in Iraq and Afghanistan, Pentagon spending consumes from 4.0 to 4.5 percent of GDP. Of this, about one percent goes to fund the needs of the wars in Iraq and Afghanistan. Between 3.0 and 3.5 is all that goes to organizing, training, and equipping the force that will be needed not only today but also tomorrow.

For several years, the Air Force has maintained that it needs an extra \$20 billion per year for several years in order to carry out its basic program.

AFA calls on the Department of Defense to request that additional amount, and on Congress to provide it.

REQUIRED INITIATIVES

The Air Force Association believes the national interest requires DOD with the support of the Congress and Administration to undertake five broad initiatives. They are:

1. Maximize Airpower in Today's Wars

The US Air Force is currently performing three distinct roles in this fight. Air Force Global Power deters both nuclear and non-nuclear adversaries, and delivers swift, precise, decisive effects in the current fight. Having the capability to fight across the spectrum of conflict is essential.

Air Force Global Reach sustains the joint force, takes thousands of ground convoys off the road every month, and provides rapid aeromedical airlift that has helped to produce an unprecedented 97 percent survival rate of Americans wounded on a foreign battleground.

Air Force Global Vigilance keeps a persistent, unblinking eye on our current adversaries while also warning of the capabilities and intentions of future adversaries.

Preserving a powerful and modern combat force, mobility force, and intelligence-surveillance-reconnaissance (ISR) force, even while fighting the Global

War on Terrorism, is a mammoth challenge. History teaches that the next war, whenever it comes, will never be the same as the war that preceded it. Foresight is critical, but security requires us to hedge our bets and build in sufficient capability to handle any plausible threat.

In modern conflicts, airpower is both the first responder and the last to withdraw from the fight. Airpower is extensively used at the entry point of conflict preparing the battlefield and providing much needed ISR. It does not leave a zone until after the last of the ground troops are withdrawn.

In Iraq and Afghanistan, airpower forces attack hostile forces on the ground, provide continuous ISR of the battle space, keep the skies clear of dangers, provide highly responsive medical evacuation for the wounded, and contribute the massive airlift capabilities required to move and sustain a Joint Force across the globe.

Additionally, more than 5,000 Airmen are continuously employed in roles outside their specialties to assist the ground effort. The *pipeline* effect on the Air Force is much greater; thousands of Airmen prepare and train for these new roles, while others cycle back in retraining for Air Force duties.

AFA questions the wisdom of this policy at a time when ground forces are expanding. These same ground forces also are developing separate aviation capabilities, raising the question—why? Airmen are deeply committed to winning the current fight, but it is unclear why Airmen should function as ground forces when ground forces are sufficiently numerous to support separate air operations.

AFA believes it is time to phase out these ground-force taskings, focus Airmen on the growing demand for airpower, and make sure the 92,000 newly minted Army and Marine Corps troops are used to re-occupy these positions.

At the same time, the Air Force is pouring more resources into intelligence-surveillance-reconnaissance operations. The unmanned aerial system (UAS) plays a huge and growing role in the war effort. AFA applauds the Air Force commitment to a heavy investment in UAS capabilities. The Air Force has brought together all elements of ISR capability to support warfighting requirements.

The Air Force Association supports the appropriate changes in the nature of UAS employment to create a new career field for UAS operators not necessarily tied to the traditional pilot career field.

While the AFA agrees with the imperative that

a credentialed warrior must be responsible and accountable for weapons delivered from UAS vehicles, we believe that these credentials could be earned from sources other than the traditional pilot track. UAS technology should be advanced to change the current doctrine of one operator per UAS. Advances in networking technology should allow flights of unmanned aerial vehicles (UAVs) to perform missions in a self-organized cooperative network but also continue to evolve the current trend of use of non-traditional assets made possible by significant improvements in targeting pods and other appropriate airborne and space based sensors.

This mission plays an essential role in providing near real time ISR for field commanders. In 2007, ISR airborne assets monitored more than 70,000 potential roadside bombs. The Air Force rapidly exceeded DOD's requested 21 combat air patrols (CAPs) and projects 31 CAPs by the beginning of 2009.

In a remarkable development, such systems are being turned into formidable combat vehicles in their own right. The armed Predator and its heavier, more powerful stable mate, the Reaper, are now deployed to Iraq and Afghanistan and are making huge contributions to the fight.

Additionally, the Air Force is fielding RC-12s to add more full-motion video and real-time situational awareness capabilities.

While UAS and other ISR assets are growing in importance to the Air Force and the nation, their survival depends upon continued US air dominance and access to and through space. For now and the foreseeable future, the tremendous contributions of the UAS cannot be made without air and space supremacy.

AFA strongly supports the Air Force concept of operations for these systems. It calls for centralized control and decentralized execution of their missions. Continued adherence to this concept will enhance air-space deconfliction, optimize the use of scarce communications bandwidth, and provide a comprehensive view of the battle space to commanders at all levels.

The US military needs the Air Force to serve as executive agent for this capability. That would ensure interoperable standards and more-rational allocation of scarce assets. There will never be enough airpower available to carve it up among ground commanders. For example, while 85 percent of the Air Force's Predators are forward deployed, with 15 percent in maintenance and training, the call for more ISR capability continues to grow.

AFA supports extending this successful concept

of operations to all UAS vehicles operating above 3,500 feet with the Air Force as executive agent for that fleet.

2. Invest in Air Force Capabilities

The Air Force Association—always a strong advocate of airpower investment—believes that such investment is today more important than ever.

No American soldier on the ground has been killed by enemy airplanes since 1953—a direct result of control of battlefield airspace. Yet, the Air Force’s current inventory of aircraft mostly dates back to the buildup of the 1980s. We simply have not purchased replacements. As a result, the age of Air Force aircraft has been allowed to gradually rise until it today averages 25 years.

The Air Force has about 5,800 aircraft in total. At the rate of this past year’s buy—just 41 manned aircraft, plus 52 UAVs—it will take over 100 years to replace them all. No one truly believes we can keep this up much longer.

As aged aircraft inevitably retire and new ones are built, it is unlikely that the Air Force will replace them at a one-for-one rate. By focusing on net effects and capabilities, AFA is confident that the Air Force can still secure the defense of the nation with reasonable and well-placed investment—but it will undoubtedly require substantial and sustained recapitalization. It is clear that the global missions of the Air Force call for a strong, rejuvenated fleet, and that need cannot be ignored any longer.

The Air Force has long suffered underfunding of its recapitalization needs.

AFA calls upon the new Administration and Congress to work together to address the modernization and recapitalization needs of the Air Force.

Old systems are deteriorating and cost more and more to maintain. From ground equipment to aircraft to space systems, age is taking a toll. More than 800 aircraft, 14 percent of the Air Force fleet, are grounded or operating under various flight restrictions. This past year an additional 1,000 airplanes were grounded for months at a time. Thirty-five percent of key space systems are in danger of failure through single-component collapse. The Air Force must constantly balance the costs of extending the life of a current line against retirement and replacement of that line.

As fleet management and recapitalization decisions are debated, AFA urges the Department of Defense to keep the F-22 Raptor and the C-17 Globemaster

III lines open, to accelerate the purchase of the F-35 to reduce the fighter gap, and to continue to modernize and upgrade the C-5 fleet and the remainder of our transport and fighter fleets.

AFA urges the new Administration and Congress to allow the retirement of older aircraft to offset costs of maintaining newer and more capable airframes.

■ **Fighters.** Due to the reduced production numbers of the F-22 and the planned slow purchase pace of the F-35, the Air Force faces a deficit in fighter force structure that could reach 800 aircraft in less than two decades. AFA is concerned that currently planned funding for the F-22 will provide less than half the minimum strength required to field a squadron for each of 10 air and space expeditionary forces.

AFA believes the F-22 production line should not be terminated as we watch many countries procure next generation fighters in numbers far superior to any contemplated F-22 production numbers, and as we watch the return of Cold War-era Russian bomber operations in our hemisphere. AFA believes it would be premature to stop production of the F-22 before the capabilities of the F-35 are proven.

Legacy fighters are costly to maintain. The old F-15, F-16 and A-10 aircraft remain the workhorses of our current fighter fleet and must serve for years to come. Many of these are now effective only in low-threat environments. Increasingly, assuring air supremacy and penetrating high threat airspace will be the task of fifth-generation fighters. These fighters are an enormous deterrent to potential near-peer adversaries and ensure the reach of US airpower into hostile territories. The effectiveness of the F-22 is the reason that it, by law, cannot be sold to any other nation at this time.

It is unfortunate that the F-22 and F-35, which are complementary, are too often viewed as competing weapon systems. In fact, these two versatile fighters were designed to play different roles within a balanced fighter fleet. Most do not realize the F-22 has air-to-ground and ISR capabilities. The Air Force continues a high/low mix for affordability and effects. As near-peer competitors Russia and China develop and sell fifth-generation fighters to others, the presence of the F-22 and F-35 in the fleet in sufficient numbers becomes increasingly important to all future military strategies and operations.

AFA believes that a fleet of modern fighters, sufficiently numerous to deter threats, protect the US domestically, and project power globally to secure over-

seas interests, remains essential to national defense.

AFA urges a full buy of 381 F-22s which meets the requirement of the defense strategy and a swifter acquisition of the full F-35 program to minimize the fighter gap.

■ **Strategic Airlift.** Every operation demands airlift. The Berlin Airlift of 60 years ago was a huge achievement. Since then, airlift has become an integral part of US ability to deploy and employ forces. An air mobility mission takes off somewhere around the world every 90 seconds of every day. On a typical day, the Air Force moves over 1,000 tons of cargo and 2,500 passengers. Airlift in Iraq takes thousands of ground convoys off the road. Since 2001, the C-17 has flown more than 1 million flying hours, airlifted over 2 million passengers, evacuated more than 58,000 people from hostile environments while maintaining a mission capable rate of over 80 percent. The massive C-5, though widely used and valuable, has a mission capable rate around 50 percent with a goal of reaching 75 percent after much needed upgrades to enable it to operate in or near hostile regions. In the coming years, the increase in the numbers of Army and Marine Corps personnel will also require more airlift. It is likely airlift will continue to play a major role in Iraq and Afghanistan long after US ground forces redeploy. This unprecedented tempo of operations stresses our transport aircraft and the Airmen who fly and maintain them.

AFA supports a diverse set of airlift capabilities. This includes the C-17, balanced with the capabilities of a new tanker to absorb surges in airlift capacity, and outsized capacity available in refurbished C-5s and a robust tactical airlift capability.

■ **Tactical airlift.** For tactical airlift, the Air Force continues to use the C-130, many of which are in need of upgrade or retirement. Like the C-17, the C-130J line is also moving toward potential closure in 2010. Growth in the size of the Army and Marine Corps and creation of the Africa Command will continue to mandate more airlift capacity. The Air Force also needs to quickly acquire the C-27 aircraft to support Air National Guard and special operations requirements. Further, DOD needs to make the Air Force executive agent for the C-27.

AFA urges Congress to permit the Air Force to retire its aging C-130s. AFA also urges both the new Administration and Congress keep the C-130J production line open past 2010.

■ **Aerial tankers.** The tanker fleet is the oldest, over 46 years, in the Air Force's inventory. It is so crucial to the nation's ability to move aircraft, ground forces and equipment that it is the Air Force's top acquisition priority. All services and most coalition partners and allies depend on the air refueling capability of the United States Air Force. *It is essential that the nation proceed with all haste in replacing the oldest fleet of aircraft in Air Force history.* While the delay in new tanker procurement is regrettable, it also opens a new opportunity to leverage all the capability a new tanker may enable. By virtue of its position in the battlespace a new tanker could perform ISR, communications/data relay, electronic countermeasures (ECM), signals intelligence (SIGINT) and other functions, again challenging our traditional acquisition system to take full advantage of a capabilities-based approach to program definition.

The importance of the tanker fleet is demonstrated on a daily basis in support of DOD worldwide operations. However, a significant number of aging tankers are plagued with structural problems. The Air Force wants to retire as many as 110 KC-135E tankers by the end of the decade, and should finally be allowed to manage the fleet it knows best. But even if the replacement program were to manufacture 15 tankers per year following 2011, the last KC-135 will still be in use more than 90 years after the first one was assembled. A modernized tanker fleet is a national security priority.

AFA urges Congress and the Administration to support new tankers in yearly budgets. Furthermore, AFA urges the entire fleet of 505 aircraft be replaced as expeditiously as possible.

■ **Long-range bombers.** The US bomber fleet numbers only 180 aircraft, the smallest since the 1930s. It faces similar age and recapitalization concerns.

Strategic attack is the heart of an air force. Bombers provide the range, payload and persistence for air forces to project global power. However, with only 20 B-2s capable of penetrating modern air defenses, the Air Force has identified a need to field a new long-range strike aircraft by 2018.

While early development activities may have been pursued in classified programs, it is not yet clear whether future budgets will support that objective. The next generation of long-range bomber should focus on the most difficult mission of timely penetration

and persistence in contested airspace to find and destroy mobile and movable targets most troublesome to combatant commanders. This provides focus on defining a capability that takes full advantage of the predictive analysis, real-time ISR, and maneuver, made possible by cooperative networks and advanced battlespace forensics.

AFA supports the effort to develop a long-range bomber and other precision global strike capabilities to hold any target on the planet at risk. We applaud the Air Force for retiring the oldest B-52s which have served the nation admirably for nearly a half-century, allowing the preservation and upgrading of an operational fleet of 76 B-52s.

■ **Strategic missiles.** The Minuteman Intercontinental Ballistic Missile was designed in the late 1950s and deployed operationally in the early 1960s. The Minuteman III system deployed in the early 1970s is currently undergoing service life extension programs to ensure mission capability through at least 2020. This effort is critical to sustain it until a follow-on system is fielded.

AFA urges DOD to ensure viability of the Minuteman III system and determine the need, cost and schedule of an eventual replacement.

■ **Special Operations.** Serving on the front lines in the Global War on Terrorism, US Special Operations Forces are experiencing unparalleled growth. Today's Air Force Special Operations Command (AFSOC) personnel are heavily employed and must experience commensurate growth within the Joint Force. Recapitalization of its existing fleet is AFSOC's number one priority. AFSOC is also taking many steps to work through and with partner nations to achieve mutual benefits, thus supporting CSAF's vector to build partnership capacity. Demanding combat operations are taking a heavy toll on aging aircraft, many of which have four decades of use.

AFA urges the Administration and Congress to accelerate the timeline to replace AFSOC aging equipment.

■ **Combat search and rescue aircraft.** The CSAR-X is among the top five Air Force acquisition priorities. The US is fighting a war in which the enemy tortures and kills captives, so rapid extraction capability is even more essential. The pace of acquiring a new combat search and rescue aircraft has been unsatisfactory. The Air Force needs 141 of these helicopters, and AFA supports their acquisition.

AFA urges the end of further program delays and rapid acquisition of the CSAR-X.

3. Support the Nation's Airmen

We can never lose sight of what is most important: our Airmen. Airmen and their families make frequent permanent change of station moves; deal with unpredictable work and deployment schedules; bear absence from family during priceless milestones and holidays as they make selfless sacrifices. The Air and Space Expeditionary Force (AEF) concept has now put predictability into the lives of our Airmen. AEF maintains the right balance between being responsive to global contingencies and quality recruiting and retention.

AFA supports that Air Force manning must be tailored to support the 10-AEF concept that has proven successful.

AFA believes we should go above and beyond in our care of Airmen to demonstrate our understanding and appreciation for their unwavering dedication, and work to close the pay gap between the military and private sector. AFA applauds the improvements to the Montgomery GI Bill to increase educational opportunities for our Airmen. The Air Force Association has long been an advocate for the best living and working conditions and support functions for our Airmen and their families.

AFA also emphasizes that for the Air Force, its airbases are its fighting positions, like ships are to the Navy and forward fighting positions are to the ground forces. The Air Force practices at its airbases and the command relationships, operations and support structures must reflect processes and procedures used in forward-deployed AEF operations. The balance required for this means that adequate numbers of uniformed personnel must be available to fill AEF positions rather than constant pressure to view Air Force installations as peacetime structures that can function with outsourced resources.

AFA supports the Joint Basing Initiative consolidating support functions of our military bases to increase efficiency but only if Joint Basing does not degrade USAF's facilities, damage the ability to perform Air Force missions, or harm quality of life for Airmen. We do not support the DOD initiative to transfer ownership of Hickam Air Force Base, Hawaii, Andersen Air Force Base, Guam, and Bolling Air Force Base, D.C., to the Department of the Navy. We believe a joint basing concept is best achieved at the local level

with the consolidation of services—not the transfer of ownership.

Congress and the Administration should make changes to credit active-duty service time toward early retirement for Guard and Reserve personnel, recognize their expanded role by providing more spousal and family support, and improve transition services as they return and adjust to civilian life.

Congress and the DOD must work to slow the rising cost of Tricare without large cost-shifting. Congress should also continue to work on the Medicare physician reimbursement rates, as Tricare rates are directly tied to those of Medicare. Tricare recipients are at risk to lose access to physicians when Medicare rates drop. Access to care is the most pressing issue for Tricare recipients, particularly in rural areas.

Efforts to identify medical research into the causes of Traumatic Brain Injury, Post Traumatic Stress Disorder, and other mental health issues should increase as priorities of both the Military Health System and the Department of Veterans Affairs. Understanding and treating mental health problems is a quality of life issue for our wounded warriors and their families. It is a federal government responsibility.

AFA applauds much-needed enhancements to the budget for the Department of Veterans Affairs, and urges further attention to the needs of rural and homeless veterans.

Recruitment and retention are critical to the development of Air Force people, and traditionally have been Air Force strong points. Present operations have created shortfalls in certain specialties and these must be addressed by bonuses and quality of life initiatives. AFA commends the Air Force for its efforts to see that recruitment, retention and morale remain overall success stories, despite 18 straight years of combat operations, ongoing manpower reductions and continuous budget challenges.

There is no rear area in the Global War on Terrorism and it is critical our Airmen are prepared for the demands of combat. AFA applauds the Air Force for expanding basic training in the use of combat arms to ensure readiness and survivability. AFA also applauds the Air Force for increased survival and combat preparation courses at other locations prior to deployment.

■ **Total Force.** It's not just been the active-duty Air Force which deployed. The Air National Guard, Air Force Reserve, civilians and contractors have persevered through deployments and reduced manpower.

The Guard and Reserve components have proved themselves to be indispensable partners of the active-duty force in today's operations, and have integrated seamlessly in novel organizational constructs as Active/Guard/Reserve Associate units. Providing much of the airlift and tanker forces and flying the bulk of air sovereignty sorties, the sustained successful rate of mobilization of our Reserve Components is beyond what anyone would have expected. America's employers also have supported the Total Force by granting military leave to those serving in the Air National Guard and Air Force Reserve. These contributions deserve recognition and commendation.

In applauding the patriotism and dedication of our Guardsmen and Reservists, we should not underestimate the cumulative impact of extended call-ups on these components.

AFA believes the Guard and Reserve should be manned, equipped, modernized, and compensated commensurate with their increased contribution to the Total Force.

4. Strengthen the Foundation

■ **The Industrial Base.** Across the spectrum, US combat operations share a common linkage—the use of technology to gain an advantage in the battle arena. The potential of emerging technologies, such as precision and information technology, are an opportunity for the United States to exploit.

The US aerospace industrial base, so crucial in World War II, has consolidated into fewer producers and manufacturers. Only a handful of prime contractors still exist to take on major aerospace projects. Although evolving, this capacity remains essential to national security and must be an ongoing focus. Globalization is part of both the challenge and the solution. Through incentives and competition, the US must preserve this source of our technological strength. But there are many challenging factors: dwindling defense programs, an aging workforce and a failure to fully emphasize science and engineering in our schools. These are grave concerns. Without a strong base undergirding the Air Force, it cannot be modernized or sustained.

■ **Education.** The capabilities necessary to the aerospace industry are the product of an education infrastructure that has cultivated researchers, innovators, engineers, operators, and maintenance personnel. Initiatives like the National Defense Education

Act have been vital in producing thousands of highly skilled scientists and engineers for industry and the military. As we look to the future, the new threat environment will demand an even higher level of basic education and an increasing percentage of individuals with skills in aerospace disciplines. But the educational foundation in science, technology, engineering and mathematics must begin in elementary school and be sustained throughout the secondary, college and graduate levels.

Education is critical; the simple fact is the US is not generating enough engineers and scientists to meet aerospace industry and DOD requirements. The most recent 2008 study by the Congressional Research Service (CRS) reported that the US need for the highest quality human capital in science, mathematics, and engineering is not being met.

According to Engineering Trends, undergraduate enrollment in key areas like physics, math, and aerospace engineering has increased by over 20 percent in the last decade, but enrollment in graduate level programs has increased only by 8 percent as compared to a more than 30 percent increase in non-technical programs. However, more than 20 percent of aerospace engineering undergraduates and 40 percent of advanced science and engineering graduates are not US citizens and will not be able to obtain all the necessary security clearances for top secret defense work.

DOD estimates 13,000 personnel from its labs will be eligible to retire over the next several years. Replacements will need to be educated, recruited and retained to fill this coming void.

AFA believes that DOD and Congress must take steps to reverse these disturbing trends.

AFA has long recognized and emphasized that the nation will need more people with strong science and mathematics backgrounds to fuel the continued advancement of air, space and cyberspace power. In recent years, Congress has approved programs designed to bolster scholarships and fellowships in these areas, yet many remain unfunded.

AFA commends those efforts, and urges that the Administration and Congress fully fund this area.

5. Secure Space and Cyberspace

The nation must take advantage of the opportunity made available by Operational Responsive Space consistent with the capabilities approach to acquisition versus platform.

In addition to other space priorities, *AFA sup-*

ports developing space capabilities that provide more rapid, agile, undetectable, launch opportunities that provide persistent presence over the battlefield and integration with other joint assets.

Space and cyberspace components are interwoven into virtually all US military operations. The reliance on these elements extends to communications, weather updates, planning and mapping, navigation, command and control, and up-to-the-minute ISR. Space and cyberspace are fully integrated into modern airpower and the American way of warfare, and vital to the success of the warfighter.

The US remains dominant in space, providing an asymmetrical advantage to American forces on the battlefield and also enhancing the daily lives of American citizens, and indeed, people around the world. The need for a single manager of this domain is clear.

AFA urges Congress and the Department of Defense to return executive agency of space to the auspices of the Air Force.

■ **Satellite security.** The demand for space-based information is increasing, while many satellite systems are serving beyond their expected service life. Newer systems are in development or launch phases, but not at a sufficient rate.

The capability enhancement space adds to the Joint Force is not in doubt, but securing and protecting those assets is a growing concern. The demonstrated capability of near-peer rivals to strike at satellites and attack entire countries through cyberspace also demonstrates a growing ability to threaten other nations.

From uninterrupted space-based early warning capability, to delivering information from land, sea and air assets to coordinating a strike package; to real time natural disaster response and rescue; even to cell phone calls—space is a domain that must be secured, protected and exploited. According to a Congressional Budget Office report, space programs will have to receive major budget increases over a long period due to systems being used well beyond intended life cycles. Launch and space infrastructure is, on average, 45 years old. The Defense Satellite Communications System and Defense Meteorological Satellite Program are 26 and 43 years old, respectively. The Defense Support Program, whose satellites provide missile warning and surveillance, is aging, and some Global Positioning System satellites have lasted twice their design life. As a consequence, the Air Force will have to replace all of its legacy space systems over the next

15 years with newer and more capable technology.

Space operations are more important to national defense and daily life than ever before and AFA supports efforts and investment to modernize these systems.

■ **Cyber Security.** The Air Force's growing attention to cyberspace addresses a void in our national security capabilities. The nation is beginning to address this threat, and the Air Force is focusing on the planning and development that will be needed in future years. Creating an organization to focus on cyberspace allows the Air Force to develop professionals, assess threats, plan for eventualities, prevent disruptions and provide tools for commanders to enhance our defensive and offensive capacity. The Air Force's strategic view is well-suited to spearhead preparatory efforts to secure and control cyberspace.

AFA supports the steps the Air Force is taking to enhance cyberspace security and capabilities and urges the DOD and Congress to support changes to Title 10 for the services.

SCOPING THE FUTURE

Each of the services is approaching a time when they will reset and prepare for the next phase in a constantly changing threat environment. Services must provide forces to fight today's war while at the same time developing capabilities that will provide the nation's future security. Decisions are being made, or soon will be, that will irrevocably alter the US Air Force and greatly shape our capacity to deter, and if necessary, fight and win in the future.

Six decades ago, the nation reached such a decision point, and realized that the national defense was best served with a separate armed service dedicated to airpower. A half-century ago, the Air Force entered space, bringing further changes. Last year Air Force Cyber Command (Provisional) was created to counter the growing threat of cyber attack.

America's military capability, worldwide presence and ability to rapidly project power prevents chaotic regional power struggles and guarantees our economic interests in ways too many to enumerate. Without air, space and cyber dominance, this military superiority is at risk. The diminished effectiveness of an aging fleet threatens the long term viability of US dominance of the skies, and by extension, global stability. Air, space and cyber power have a direct and vital impact on our national security and our economic interests.

The dedicated people of the United States Air Force, properly equipped and trained, will be positioned to preserve this vital air dominance for many decades to come, complete with all the benefits of peace and trade that air, space and cyber power guarantees.

National defense planners at all levels must anticipate challenges 20 years from now and lay the technological, organizational, and doctrinal foundations to ensure future success. Potential adversaries continually develop technologies to compete with US assets. We can anticipate advanced weapon systems will be used to challenge selected elements of our air, space and cyberspace network and stress our global capabilities in the near future. China has demonstrated the capability to destroy satellites in Low Earth Orbit. At least two sovereign nations have already experienced a cyber attack by another. Many nations wield surface-to-air missiles that are capable of taking out legacy aircraft. Fifth generation fighters are being developed by near-peer potential competitors, and will be sold in the near future. New adversary air-to-air missiles that can range hundreds of miles are being developed.

These challenges will severely test national defenses. Superior intelligence, mobility, weaponry and strategy will be key to surviving and winning in modern warfare.

Failing to adequately invest in US airpower will weaken deterrence and increase the likelihood of conflict. Projecting US airpower into the future demands consistent, sustained commitment. It demands a realistic and unvarnished acknowledgment of concerns brought on by an aging fleet, reduced manpower and emerging global threats.

To remain technologically superior against increasing competition, the nation must pursue advanced capabilities and recognize that funding for research, development, test and evaluation should be increased. RDT&E is an investment in the future, and has historically produced the advanced weapons that allowed America to own the skies. Failing to invest in the development of the next generation of air and space systems is a recipe for disaster. New military systems or aircraft often take 20 years to fully develop and bring to production. Too often, the Air Force is forced to choose between upgrades and maintenance spending for legacy systems and acquisition of new technology. There is great promise in such developing technologies as airborne laser and many others.

We should not lose focus on the next generation

of military technology. If the US does not lead in these areas, others will. AFA believes the new Administration must take on this challenge.

The high cost of fuel has further tightened Air Force budgets, and there are national security implications in having US sources of fuel available to our military in case foreign sources are interrupted.

AFA supports the Air Force initiative to develop and test promising alternative fuels from liquid, gas or coal.

The readiness of the Air Force is a national security imperative that demands the nation's attention. The Air Force Association does not underestimate the

political difficulty of getting adequate funding. It will take will, vision, and leadership. We believe that the nation can and must commit to ensuring our nation's security for years to come.

There are critical times ahead for our nation. We must make the necessary investments to win the Global War on Terrorism and to counter the threats of the future. We must not allow excessive focus on near-term operational risk to mortgage the future capability of the joint force. Tomorrow's air, space and cyberspace dominance cannot and should not be taken for granted.

In keeping with our mission, the Air Force Association will EDUCATE the public about the critical role of aerospace power in the defense of our nation, ADVOCATE aerospace power and a strong national defense, and SUPPORT the United States Air Force, the Air Force family and aerospace education.

“We better be prepared to dominate the skies above the surface of the earth or be prepared to be buried beneath it.” — Gen. Carl A. Spaatz, first Chief of Staff of the US Air Force

AIR FORCE ASSOCIATION TOP ISSUES FOR 2009

The following policy recommendations are drawn from the Air Force Association's 2009 Statement of Policy, "Air Force Airpower: Year of Decision," adopted by the delegates to the AFA National Convention on Sept. 14, 2008, in Washington, D.C.

SUPPORT OUR NATION'S AIRMEN

- Tailor Air Force manning to be sufficient to support 10 air and space expeditionary forces, or AEFs.
- Get the CSAR-X aircraft in action and saving lives.
- End the practice of assigning Airmen to serve in place of ground forces, return them to their specialties, and focus them on meeting the growing demand for airpower.
- Compensate, equip, and man the Guard and Reserve in consonance with their increased contribution to the Global War on Terror.

RECAPITALIZE THE AGING FLEET

- Speed acquisition of F-35 fighters and fund a full force of 381 F-22 fighters to prevent a future fighter shortage.
- Do whatever is needed to end further delays in acquisition of much-needed new aerial tanker aircraft.
- Continue the focus on increasing both numbers and capability of UAV systems and enhancing Air Force and Army cooperation in this vital area.
- Allow the Air Force to manage and modernize its fleet and rid itself of many aging low-value, high-cost aircraft.

SECURE SPACE AND CYBERSPACE

- Modernize and fully fund vital Space and Cyberspace systems and ensure their security as they are essential to every operation and will only grow in importance.

STRENGTHEN THE FOUNDATION

- Invest in technical education to bolster a foundation the nation needs for defense.
- Expand national programs encouraging the study of science, technology, engineering, and mathematics.
- Recognize the importance of research and development to future national well-being.

INVEST IN AIR FORCE CAPABILITIES

- Support the Air Force need for an additional \$20 billion a year in funding for modern weapon systems.
- Immediately raise basic (non-war) defense spending to 4.5 percent of gross domestic product, and, over several years, raise the nation's defense commitment to 6 percent of GDP.

