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# FOREWORD

1997 marks our fiftieth year of service to the nation as an independent branch of the armed forces. We are proud of our men and women, past and present, who built our legacy and look forward with excitement to our boundless future as the world's most respected air and space force.

Today, Air Force people are globally engaged and demand is increasing for the unique capabilities our air and space forces provide to the nation. Therefore, we will continue to ensure our men and women have the training, the tools, and the quality of life they need to be effective members of the joint team.

We have a vision for the future Air Force, *Global Engagement*, which is grounded in the *National Security Strategy* and *National Military Strategy*, and is in concert with the Chairman of the Joint Chiefs of Staff's vision for the future, *Joint Vision 2010*. Our vision builds on our core values, defines our core competencies, and guides us as we develop and field the systems and exploit the technologies necessary to support them.

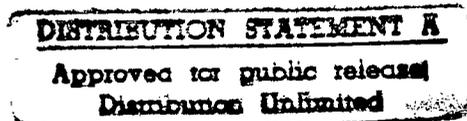
The Air Force is proud of its golden legacy of service over the past fifty years, and we stand ready to work as part of the joint team to assure our nation's security into the next century--we are building that future today.



GENERAL RONALD R. FOGLEMAN  
Chief of Staff of the Air Force

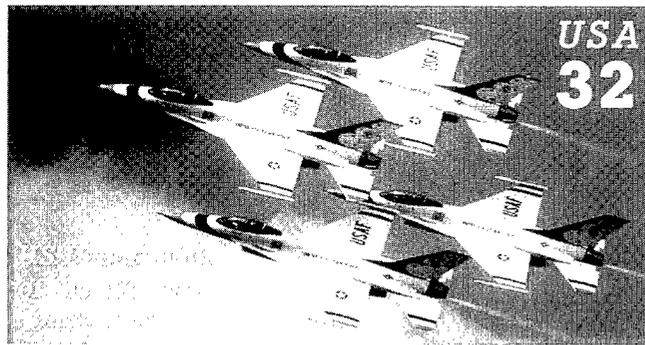


SHEILA E. WIDNALL,  
Secretary of the Air Force





*United States Air Force  
50th Anniversary*



# CONTENTS

<b>Introduction</b> .....	5
<b>Worldwide Operations</b>	
Current Operations .....	9
Long-Range Strike .....	9
Sustained Theater Operations .....	10
Global Mobility .....	11
Force Protection .....	11
Air Expeditionary Force .....	12
Space Launches and Operations .....	13
Non-Combatant Evacuation Operations .....	14
Domestic Assistance .....	15
Training Programs/Modeling and Simulation .....	16
Engagement .....	17
Operations and Personnel Tempo .....	18
<b>The Air Force and Joint Vision 2010</b>	
Joint Vision 2010 .....	21
Air Force Core Competencies .....	22
Air and Space Superiority .....	23
Information Superiority .....	27
Global Attack .....	31
Precision Engagement .....	33
Rapid Global Mobility .....	37
Agile Combat Support .....	39
Foundation for the Future Air Force .....	41
<b>Revolution in Business Practices</b>	
Acquisition Reform .....	42
Outsourcing and Privatization .....	43
Commercial Off-The-Shelf Technology .....	44
Financial Management .....	44
Small Business Management .....	45
<b>Air Force People</b>	
Core Values .....	47
Leadership Initiatives .....	48
Quality of Life .....	49
<b>Conclusion</b> .....	53
<b>Appendix A</b>	
Air Force Link Home Page and Associated Sites .....	55
<b>Appendix B</b>	
Air Force Background Papers .....	59
F-22 .....	60
Joint Strike Fighter .....	62
Bombers .....	64
Precision Weapons .....	66
Global Mobility .....	68
Information Superiority .....	70
Airborne Laser .....	72
Unmanned Aerial Vehicles .....	74
Space-Based Infrared System .....	76
Evolved Expendable Launch Vehicle .....	78
National Missile Defense (Minuteman Option) .....	80
Quality of Life .....	82
Readiness .....	84
Outsourcing and Privatization .....	86
Force Protection .....	88
Acquisition Reform .....	90

*“The capabilities provided by our air and space forces are integral to the high-tempo, information-intensive warfare outlined in JV 2010.”*



SHEILA E. WIDNALL  
Secretary of the Air Force



RONALD R. FOGLEMAN  
General, USAF  
Chief of Staff

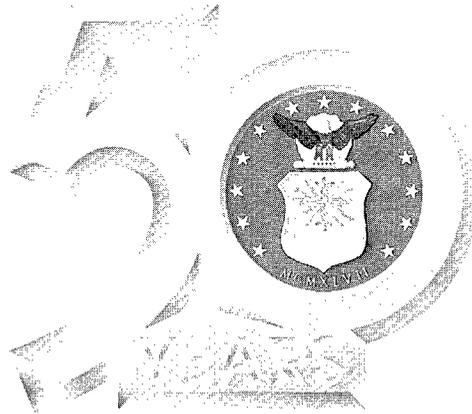
*“Leadership, combined with the selfless service of the dedicated and talented men and women of our Total Force, holds the key to our future. We will continue to foster leaders who function as joint warfighters, and who cultivate an environment of trust and teamwork throughout our Air Force.”*



ERIC W. BENKEN  
Chief Master Sergeant of  
the Air Force

*“As members of the finest Armed Forces in the world, we have a national and global obligation to be role models. We enjoy 100 percent credibility in the eyes of the world and we must never lose it.”*

# INTRODUCTION



On September 18, 1996, the Air Force entered its 50th Anniversary year, celebrating it with the theme “Golden Legacy--Boundless Future.”

Throughout this coming year, Air Force members past and present, along with American citizens, young and old, will celebrate our five decades of service to this nation.

As we celebrate our past, we remain focused on building an air and space force with the capabilities to meet the nation’s needs, now and in the future. Since the fall of the Berlin Wall, we have worked to reshape the Cold War Air Force from one primarily focused on a single adversary, to one increasingly based in the continental United States (CONUS), and able to rapidly deploy around the world and conduct operations across the spectrum of conflict. In 1990, we devised a map to guide us along that path: our strategic vision for the

start of the post-Cold War period, *Global Reach--Global Power*.

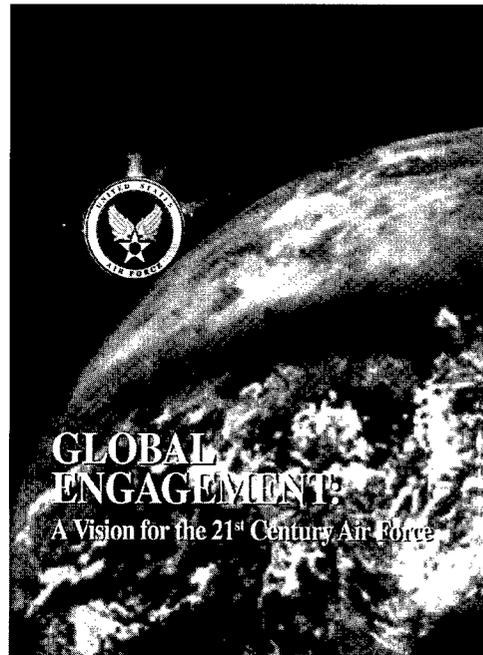
*Global Reach--Global Power* articulated the capabilities the Air Force provides for our national security and gave a first look at how



they would apply in the post-Cold War environment. For the past six years, this document has guided the Air Force draw-down, reorganization, and modernization and enabled the Air Force to preserve its readiness during a major reduction in force. Over the past few years, we have built upon the foundation put in place by *Global Reach-Global Power* and

accelerated our planning to build the Air Force for the twenty-first century.

In recognition of trends developing in the post-Cold War world, the Air Force embarked on an unprecedented 18-month long-range planning effort in 1995 to craft a vision to meet the challenges of an uncertain future. This vision comes to life in our strategic vision document--*Global Engagement: A Vision for the 21<sup>st</sup> Century Air Force*. This document flows from the *National Security Strategy*, and the *National Military Strategy* of the United States, and is in concert with the Chairman of the Joint Chiefs of Staff's vision for future military operations--*Joint Vision 2010 (JV 2010)*. It extends across the range of Air Force activities--operations, infrastructure, and personnel, and provides a comprehensive map for our future growth as defined by the expertise and experience from all elements of our force. Over the coming year, we will focus on converting this broad vision into an actionable plan, and implementing a series of initiatives directed by our civilian and military leadership.



*Global Engagement* is a blueprint for how the Twenty-first Century Air Force will complement the joint warfighting team. It builds on our core values--*Integrity First, Service Before Self, and Excellence in All We Do*, and is based on an understanding that each Service provides the nation with unique capabilities that stem from specialized core competencies.

For the Air Force these include:

**Air and Space Superiority**

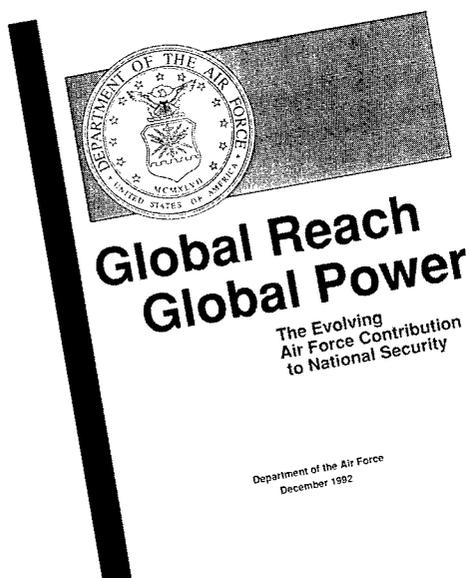
**Information Superiority**

**Global Attack**

**Precision Engagement**

**Rapid Global Mobility**

**Agile Combat Support**



Although core competencies may be shared by more than one Service, what distinguishes the Air Force from the other Services--and provides unique leverage for combatant commanders--is our responsiveness and global perspective made possible by the air and space mediums in which we operate. These characteristics provide the National Command Authorities with a wide variety of options to respond to regional crises.

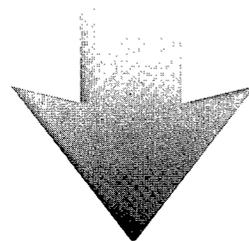
As always, people are at the heart of our military capabilities. As such, the Air Force of the twenty-first century will continue to place a high priority on recruiting and retaining high quality men and women and continue to provide them with the training and quality of life they need to fulfill their missions in this new era.



As we accomplish these missions and consider increasing future demands for air and space power, the Air Force must change the way it does business. Continuing pressure on resources will make increased efficiency and reduced infrastructure costs necessary for success. Our Service has long recognized the importance of responsible stewardship of taxpayers' dollars, and we will strive to achieve the highest standards of efficiency. We understand that the real penalty for inefficiency is not just wasted dollars, but unmet demand for military capabilities.

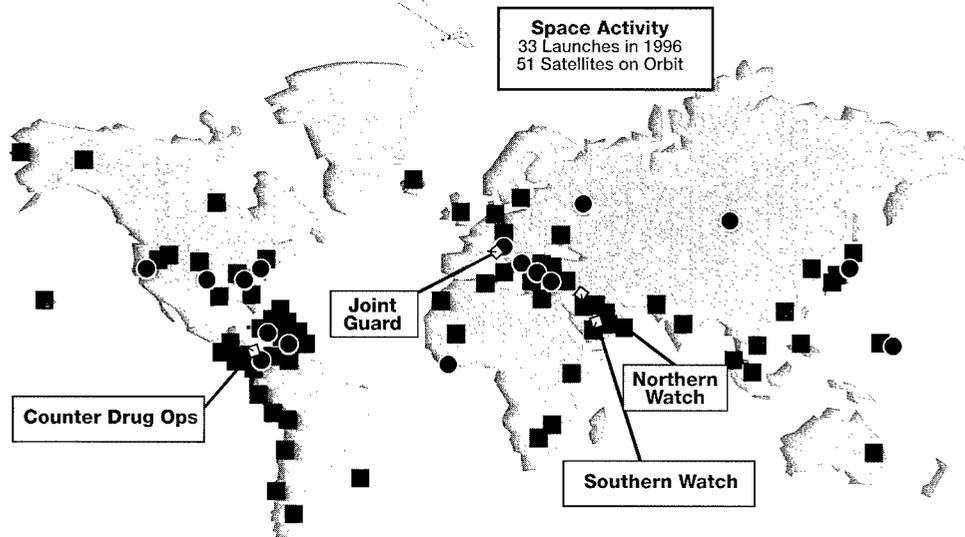


**Global Reach**  
**Global Power**  
**Global Engagement**



*Speed, Range,*  
*Freedom of maneuver...*  
*The "airman's perspective"*

# Air Force People--Globally Engaged



● FY96/97 Humanitarian Aid

- Bosnia - Relief Supplies
- Germany - Flood Relief
- Macedonia - UN Peacekeeping Force
- New York - Forest Fires
- N. Carolina - Forest Fires
- Haiti/Cuba - Migrant Relief and Processing
- Western U.S. - Forest Fires
- Panama - Cuban Migrant Relief
- Japan - Earthquake Relief
- Albania - Medical Supplies
- Oklahoma City - Disaster Relief
- Virgin Islands - Hurricane Relief
- Liberia - Non-combatant Evacuation
- Mongolia - Relief Supplies
- Russia - Medical Supplies
- Guam - Kurdish Refugee Support

**Bosnia-Herzegovina**  
**Operation JOINT GUARD**  
 (Dec 96 - Present)  
 Over 710 Air Control Sorties  
 3,222 Personnel Deployed

**South/Central America**  
**Counterdrug Operations**  
 (Dec 89 - Present)  
 Over 2,591 AWACS Sorties  
 452 Personnel Deployed

**Iraq**  
**Operations**  
**NORTHERN WATCH**  
**SOUTHERN WATCH**  
 (Apr 91 - Present)  
 Over 206,261 Sorties  
 8,216 Personnel Deployed

■ FY97 JCS Exercise locations with significant USAF participation

Aegean Sea	El Salvador	Morocco
Antigua	Ethiopia	Oman
Argentina	Germany	Pakistan
Australia	Greece	Panama
Bahamas	Grenada	Peru
Bahrain	Guatemala	Philippines
Baltic Sea	Honduras	Puerto Rico
Barbados	Hong Kong	Qatar
Black Sea	Iceland	Saudi Arabia
Bolivia	India	Singapore
Botswana	Jamaica	Thailand
Canada	Japan	Trinidad
Chile	Jordan	Turkey
Colombia	Kenya	UAE
Denmark	Korea	UK
Dominican Republic	Kuwait	USA
Ecuador	Malaysia	Venezuela
Egypt	Mali	Zimbabwe
	Mediterranean	



# WORLDWIDE OPERATIONS

## Current Operations

Over the past year, the unique capabilities offered by Air Force core competencies have often made the Air Force the instrument of choice in operations around the world. From global attack operations in Iraq to humanitarian response in the Caribbean, we have met the needs of combatant commanders and our nation. Our impact around the world has been spectacular--at times, it's even headline news. Much of the time however, our people perform their missions quietly, away from the glare of publicity--and it seems clear that this quiet, steady work will, in the long run, have as profound an effect on this world as our more visible feats. The global engagement we provide is gradually helping to transform the world and prevent future conflicts. Because much of what we do is away from the eyes of publicity, it is useful to briefly discuss the range of operations that we have conducted over the past year.

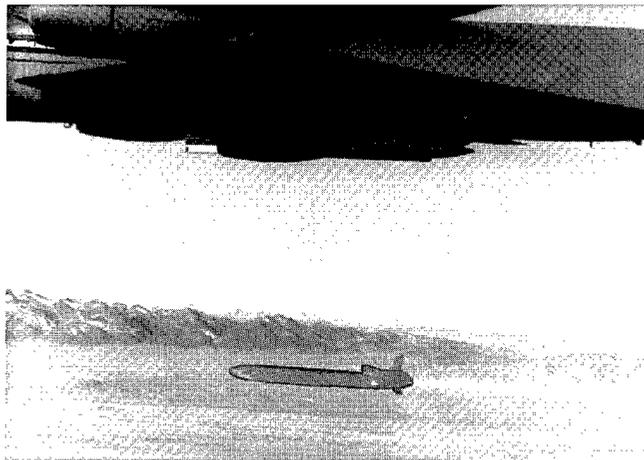
*"For two and a half years, NATO has conducted an operation called Deny Flight, which has prevented the warring parties in Bosnia from conducting aerial bombardments of cities. It didn't get much publicity. Most people don't understand what it did, but it saved thousands and thousands of lives because it prevented that war from degenerating into indiscriminate bombing of cities."*

*Dr. William J. Perry  
Former Secretary of Defense*

## Long-Range Strike

On September 3, 1996, the United States military demonstrated its ability to operate from

the CONUS to the far reaches of the globe during Operation DESERT STRIKE, a joint operation against Iraqi air defense facilities using both Air Force and Navy assets. In the first strike, B-52s from Barksdale AFB, Louisiana, staged out of Guam on a 34-hour mission and fired 13 Conventional Air-Launched



B-52 launching a Conventional Air-Launched Cruise Missile

Cruise Missiles (CALCMs) while the Navy fired an additional 14 Tomahawk Land Attack Missiles (TLAMs) from the USS Shiloh and the USS Laboon. During this mission, the B-52 and CALCM weapon systems demonstrated their capability for rapid en-route retargeting, providing the joint force with additional target coverage and strike flexibility that would have otherwise been unavailable.

## Sustained Theater Operations

Beyond global responsiveness, the Air Force offers a unique ability to sustain high-tempo air operations over extended periods of time. Throughout 1996 for example, we sustained the air occupation of Iraq and Bosnia with Operations SOUTHERN WATCH over southern Iraq, PROVIDE COMFORT over northern Iraq, and JOINT ENDEAVOR over Bosnia. In each operation, with superb support from the Air Force Reserve and Air National Guard, we worked hand-in-hand with our coalition partners and forces from our sister Services.



Air National Guard KC-135 refueling Navy F-14

The Air Force continued an important role in Bosnia by deploying and protecting NATO's implementation force. As of January 31, 1997, we have flown more than 5,000 sorties over Bosnia, providing the full range of theater air capabilities. At the peak of operations in 1996, there were over 4,100 Air Force people deployed to five nations supporting NATO-led contingency operations by providing airspace control; on-call close air support; command and control; intelligence, surveillance and



Weapons specialists load an AIM-9M air-to-air missile

reconnaissance; airlift and special operations. Although this in itself was no small task, as 1996 drew to a close, we had a total of approximately 80,000 Air Force men and women forward stationed and 13,000 deployed in support of operations around the world. Of these, over 6,000 were deployed in support of the coalition air operation over southern Iraq, Operation SOUTHERN WATCH.

Air Force sorties for SOUTHERN WATCH accounted for 68 percent of the total sorties at the end of January 1997--amounting to over 28,800 sorties in support of this coalition effort. Similarly, the Air Force executed the bulk of the missions over northern Iraq in Operation PROVIDE COMFORT, flying over 4,500 sorties in 1996--about 60 percent of the coalition total.

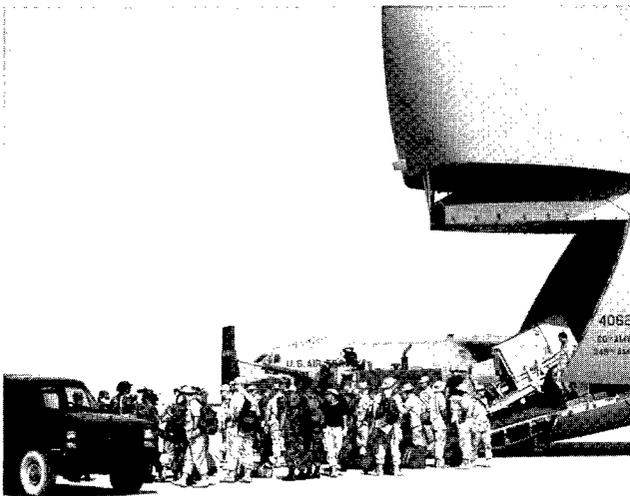


F-16C taxis for defense suppression mission

## Global Mobility

Our airlift and aerial refueling forces provide us with the capability to rapidly deploy, employ, and sustain our nation's armed forces in operations around the world.

Beginning in December 1995, U.S. and allied nations deployed peacekeeping forces to Bosnia in support of Operation JOINT ENDEAVOR. In just three months, Air Force mobility forces flew 3,000 missions; carried over 15,600 passengers; and delivered more than 30,100 short tons of cargo. While U.S. fighters patrolled the skies over northern Iraq enforcing the no-fly zone, Air Force airlift and air refueling aircraft transported troops and equipment in support of these ongoing operations.



Deploying troops board a C-5 transport

In June 1996, mobility aircraft demonstrated their flexibility by serving in their aeromedical role and flying medical personnel to Dhahran, Saudi Arabia to provide timely care, treatment and movement of injured personnel after the Khobar Towers bombing. Shortly thereafter, our mobility crews were called upon to fly Hurricane Bertha relief missions from the U.S. to St. Thomas, Virgin Islands in support of the Federal Emergency Management Agency.

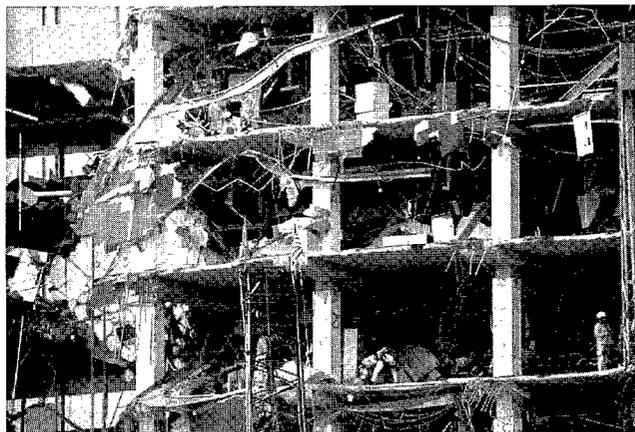


KC-135 refueling B-52H bomber

Later, in September 1996, our airlift and air refueling assets were vital to the success of DESERT STRIKE, enabling strike aircraft to reach targets in Iraq. On top of all this, our mobility crews and aircraft continuously supported critical Air Expeditionary Force operations in the Southwest Asia theater and sustained NATO operations in Bosnia--not just supporting Air Force movements and operations, but those of our sister Services, allies, and coalition partners as well.

## Force Protection

The June 1996 bombing of the Khobar Towers in Saudi Arabia accelerated ongoing Air Force efforts to protect its forces operating around the globe and gave the entire Department of Defense (DoD) new insights into the operating methods of world terrorist organizations. Responding to this tragedy, the Air Force, in



Khobar Towers bombing

conjunction with the United States Army, assisted in the repatriation of over 900 DoD military members, civilian personnel, and their families. At the same time, we relocated the majority of our SOUTHERN WATCH forces to Al Kharij Air Base and instituted an aggressive series of force protection measures throughout U.S. Central Command's area of responsibility.



Entry control point in Saudi Arabia

To help us combat this increased terrorist threat, the Air Force will stand up a field organization at Lackland AFB, Texas, called the 820th Air Force Security Forces Group. This organization will integrate force protection programs and provide trained and ready forces capable of deploying base force protection capabilities. The Group will also have a force protection battlelab focused on exploring and integrating technology, tactics, and training to increase our force protection readiness. We expect this organization to achieve Initial Operational Capability (IOC) in July, 1997.

We are also undertaking a variety of measures to provide force protection guidance to commanders in the field, and we are reviewing Air Force instructions and doctrine documents to ensure force protection guidance is added where appropriate. Recurring assessments of risk, mission, and environment are also being instituted, and we are developing a staffing plan to augment command staffs with properly

trained force protection personnel. The bottom line: the Air Force values its people and will protect them from all threats.

## The Air Expeditionary Force (AEF)

As America's military forces become more CONUS-based, we look to the AEF to provide a flexible, tailored, quick-response force to fill theater needs across the spectrum of conflict.

The Air Force exercised the AEF with deployments to Bahrain, Qatar, and Jordan in 1996. Each AEF flew their first combat sorties with less than 72 hours of notification to deploy and provided a balanced capability for air superiority, precision attack missions, and suppression of enemy air defenses. This rapid response



KC-135 refuels flight of F-16 fighters

capability is key to winning the air battle and ensuring the success of the Joint Task Force. The fourth AEF will arrive in Qatar in early 1997.

In the near-term, we are developing lethal and non-lethal AEFs for deployment to areas outside the Middle East and will use them during some of our upcoming exercises. For the long-term, we expect AEFs to mature into a significant component of our global capability. We will adapt our operational and logistics systems to more easily accommodate their widespread use, making them a force theater commanders can count on for a variety of operations. The key to successful AEF operations hinges on the synergistic effect of the



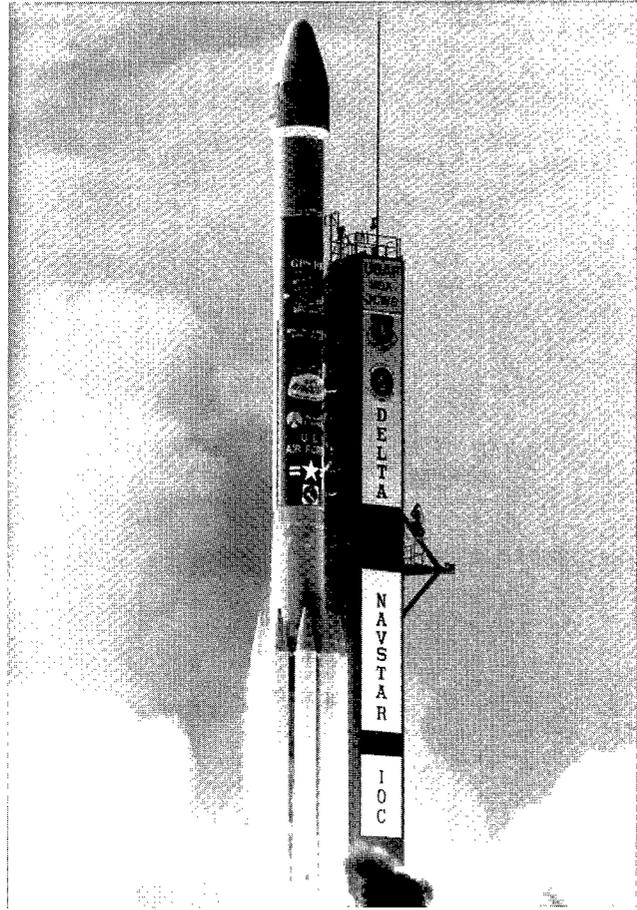
F-15E flies in support of AEF operations

global reach and global power characteristics of our Air Force.

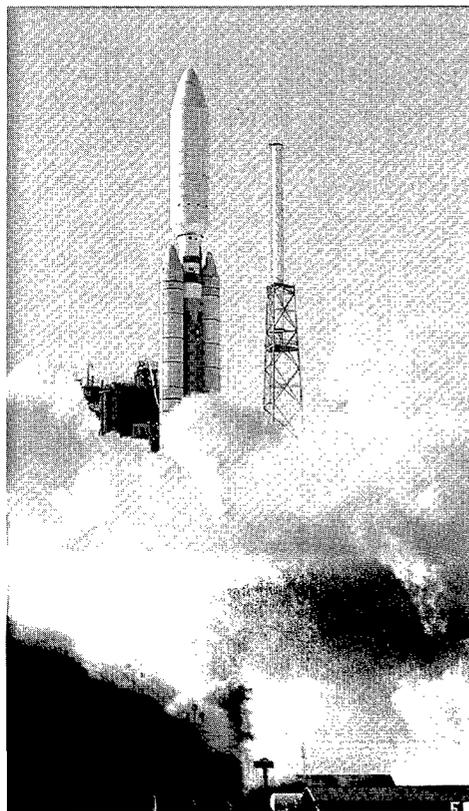
## Space Launches and Operations

Space is an essential element of U.S. military operations. A combination of military and commercial systems provide our forces with the command and control, communications, intelligence, surveillance, reconnaissance, weather and navigational capabilities necessary for success in all aspects of modern military operations.

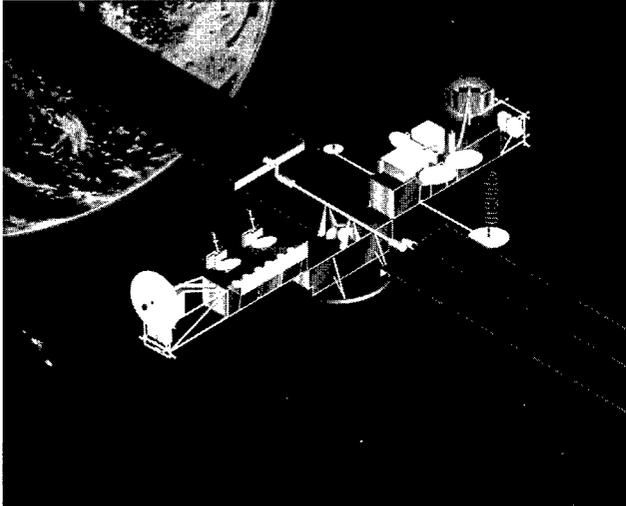
During 1996, our Service supported 33 successful space launches using Air Force launch, range, and support facilities. The Eastern Range, headquartered at Patrick AFB, Florida, supported 25 space launches while the Western Range, headquartered at Vandenberg AFB, California, supported another eight. Of particular note, we launched five Titan IV heavy-lift vehicles, all on the first attempt; all achieved successful orbital entry. Two of these launches were three weeks apart, demonstrating improved turn-around capability of the launch facility. The Delta II launch vehicle continued its string of successful launches with another 10 in 1996. This brings the total number of Delta launches from October 1977 to February 1997 to 107, with only two failures that destroyed the launch vehicle.



Delta II launch



Titan IV launch



MILSTAR Communications Satellite

The Air Force Satellite Control Network (AFSCN) controls over 95 satellites daily with greater than 400 individual contacts with satellites per day, totaling approximately 148,000 contacts per year. Aside from routine communications with our satellites, the AFSCN, along with Air Force Space Command, have kept our space assets flying while providing uninterrupted service to the user.

The Global Broadcast System recently demonstrated critically needed, increased global situational awareness capability during operations in Bosnia when direct satellite feeds were used to transmit live Unmanned Aerial Vehicle (UAV) images to theater commanders and supporting forces via the Joint Broadcast Service. Efforts are currently underway to provide a nearly identical capability, globally, using military satellites.

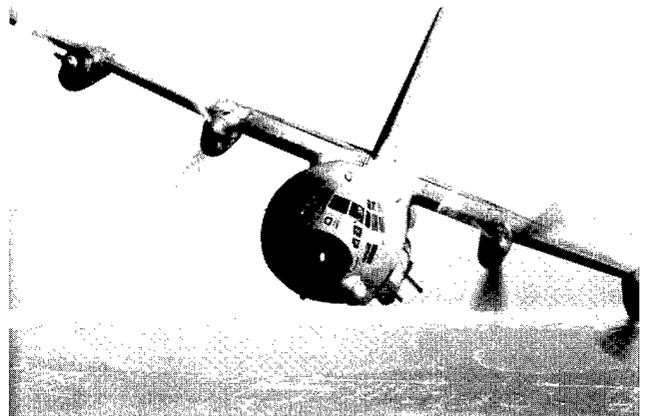
In the area of survivable military satellite communications, we increased our on-orbit capability by launching the second MILSTAR satellite. This satellite is providing commanders in the East Atlantic and European theaters with nuclear survivable, jam-resistant, communications connectivity between subordinate combat forces in the field, key military leaders, and national-level authorities residing in the United States.

We have also expanded our space support to our allies. The Air Force and the DoD began

providing missile early warning data to NATO and Japan, and we have extended this service to other nations as well.

## Non-combatant Evacuation Operations (NEO)

During the first week of April, 1996, as a result of intense street fighting during the ongoing civil war in Liberia, about 500 people sought refuge on American Embassy grounds and another 20,000 in a nearby American housing area. On 6 April, the President approved the U.S. Ambassador's request for security, resupply, and evacuation support. Air Force MH-53s led the evacuation effort, Operation ASSURED RESPONSE. Air Force KC-135 tankers and C-130 transports were put on alert in Europe to support 24-hour operations, while other mobility aircraft began to deliver critical medical supplies, food, water, fuel and communications gear.



AC-130 gunship

On 9 April, less than 72 hours after the decision to deploy U.S. forces, the first MH-53 landed in Monrovia to begin the operation. Those evacuated continued on our helicopters through Freetown, Sierra Leone, then on MC-130s to Dakar, Senegal, all under the cover of AC-130 gunships. Throughout the rest of the week, the evacuation continued, as well as airlift of critical supplies to sustain the effort. By 14 April, the evacuation was essentially complete, however, security and sustainment operations continued through 3 August. In this operation, Air Force Special Operations Forces safely evacuated over 2,400 civilians representing 68 countries.



Civilian evacuees deplane Air Force MH-53 helicopter during Operation ASSURED RESPONSE

*“What this operation demonstrates is that no other nation possesses the global reach that would allow them to mount such a joint operation in such remote corners of the world.”*

*General  
John M. Shalikashvili  
Chairman,  
Joint Chiefs of Staff*

## Domestic Assistance

The Total Force (active duty, Air National Guard, and Air Force Reserve) provides a key service assisting in disaster relief operations within the United States. For example, we responded with airlift support following Hurricane Fran and provided food, shelter, and clean-up assistance to west coast flood victims. When fires raged out of control across the western United States last summer, our Air National Guard and Air Force Reserve crews and aircraft flew over 400 sorties, dropping more than one million gallons of water and an additional 10 million pounds of fire retardant to help control the blazes.



Personnel from Beale AFB, California assist with flood cleanup



Air Force Reserve C-130 drops fire retardant on a forest fire

## Training Programs/Modeling and Simulation (M&S)

The pace and complexity of air warfare places special demands on our people--not just those who operate our air and space systems, but on those who plan, command, control, and support our forces as well. It is essential that we continue the sort of aggressive, realistic training that has been a distinguishing characteristic of the Air Force for decades. State-of-the-art modeling and simulation is leveraging exercises like never before. We use our exercises not just to train, but to develop operational concepts and tactics, adjust to new missions, and test new approaches. For example, this year we expect to structure some of our training exercises to build expertise in employment of the Air Expeditionary Force.

One of the more exciting war games we've run so far was *Strategic Force '96* conducted at Air University's Wargaming Center at Maxwell AFB, Alabama. During November 1996, this joint operational war game demonstrated the true value of air and space power for the first time by modeling air and space power capabilities more realistically. This breakthrough was accomplished, in part, by the capabilities of our newest wargaming technologies to enable near-real-time analysis of each move throughout the game. More importantly though, this war game set the stage for future war games to incorporate the real value of air and space power throughout the spectrum of future operations.

*Strategic Force '96* will serve as an integral component in the Air Force's continuing long-range planning process. Using *JV 2010* and *Global Engagement* as a baseline, *Strategic Force* allowed us to test some of our assumptions about the future in a joint environment, while also providing a "hands-on" opportunity to employ future weapon systems. Through cooperation with our sister Services and the unified commands, we were able to test



strategies and operational concepts in the 2010 time frame. Using advanced modeling and simulation, we employed the airborne laser, the F-22 air superiority fighter, as well as other advanced systems from all the Services. Ultimately, all Services benefit from this structured test of strategies and the refinement of operational concepts allowed by vastly improved modeling capabilities.

These same kinds of breakthroughs in modern technology are enabling us to move some of our training toward simulator systems. We are proceeding with care and with the understanding that there is no substitute for field training--but also with the understanding that advanced simulation offers enormous potential we can exploit. We are employing these systems not just for training, but to help with our planning and execution while building a true understanding of the capabilities and contributions of air and space forces to the joint team.

## Engagement

The ability of the Air Force to engage globally is vital to America's current National Security Strategy and is of growing importance at a time when the number of our forward-stationed forces is dwindling. We recognize that coalitions are a key strategic feature in today's world, and that global access and influence ultimately depend on the bonds of alliances and international cooperation.

Partnership for Peace (PfP) is one of the many initiatives the Air Force supports that underscore our commitment--strengthening and developing cooperative military relations through joint planning, training, and exercises. Thousands of airmen are engaged in military-to-military activities around the globe--from the Joint Contact Team Program in Central and Eastern Europe to Constructive Engagement with China. In 1996, Air Force units from across the Total Force participated in 11 PfP exercises with 28 nations.

Further illustrating our commitment to building strong international ties are the efforts of Air Force personnel engaged in political-military activities, such as Foreign Military Sales (FMS), cooperative research and development, International Military Education and Training (IMET) programs, and Euro-NATO Joint Jet Pilot Training (ENJJPT). Last year, nearly 4,000 students from 110 countries took part in Air Force training through our FMS and IMET programs. Over time, Air Force education and training have a significant impact on U.S. access and influence, promoting military-to-military relations and exposing international military and civilian officials to U.S. values and our democratic process.

At the close of 1996, our FMS picture showed total Air Force sales contracts valued at approximately \$105 billion. System sales account for 78 percent, and support for new and established systems accounts for another 21 percent. While training accounts for only 1 percent, or \$1 billion dollars, it is extremely

important to the overall success of the other sales--and growing more so as we come to rely on our ability to build capable coalition partners.

Today, the United States uses its military forces in a much broader range of operations than ever before. As a matter of fact, United States



International Military Education graduating class at Maxwell AFB, Alabama



Euro-NATO pilot training instructor with Italian student

forces are involved in more operations of greater duration than at any time in the past 20 years. Air Force assets and personnel have conducted Military Operations Other Than War in over 90 countries since 1989. The scope and scale of these operations demand that we continually balance the tempo at which our people and systems operate, with the overall readiness we must maintain for our nation's continued security.

# Operations and Personnel Tempo (OPTEMPO/PERSTEMPO)



Deploying troops board C-141 transport



Since the end of the Cold War, the Air Force has stepped up to an operational tempo four times that demanded prior to the fall of the Berlin Wall--while reducing force structure by about 40

percent across the board and with 32 percent fewer people. That increase in demand for Air Force capabilities has, of course, increased demands on our people, our units, and our weapon systems. Over and above our permanently forward-stationed forces (over 80,000 people on an "average" day over the past year) about 13,700 Air Force men and women were deployed on missions

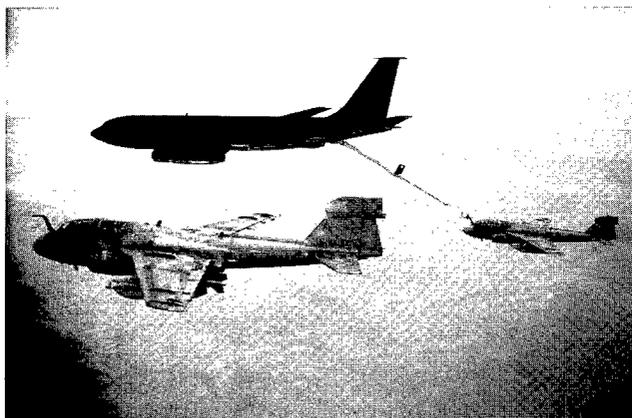
ranging from sustaining combat and humanitarian operations in Iraq, peace-keeping in Bosnia, and humanitarian aid in Africa and the Caribbean. In a very real sense, this is a direct result of our providing the precision and flexibility our nation needs across the diplomatic and political spectrum--Air Force capabilities are in demand around the world to achieve our national objectives and meet our nation's requirements.

We have taken a series of steps to share the burden of these taskings and posture the force to sustain this tempo. We established the goal of limiting the time our people spend deployed to no more than 120 days per year and are refining the system we use to track this data. We also structured a strategy to meet that goal: first, share the burden of these taskings across

the Air Force so that temporary duty (TDY) days are more equitable between major commands (MAJCOM); second, eliminate or find alternative capabilities where taskings allow; and third, adjust our forces where appropriate to meet the need using the Air National Guard (ANG) and Air Force Reserve (AFRES) when possible.

Both the Air Force and the Office of the Secretary of Defense (OSD) have made efforts to reduce taskings on our highest demand systems. In 1995, the Air Force instituted an annual Global Sourcing Conference to balance the deployment burden for all our systems throughout the MAJCOMs. To help manage the demand for our specialty systems such as AWACS, reconnaissance, special operations, and rescue, in July 1996, OSD implemented the Global Military Force Policy to prioritize the allocation of these assets for crises, contingencies and long-term Joint Task Force operations.

We have also been able to reduce the load on some units by relying on our sister Services or our Allies to fill some mission requirements, for example, Navy EA-6Bs and E-2Cs. In

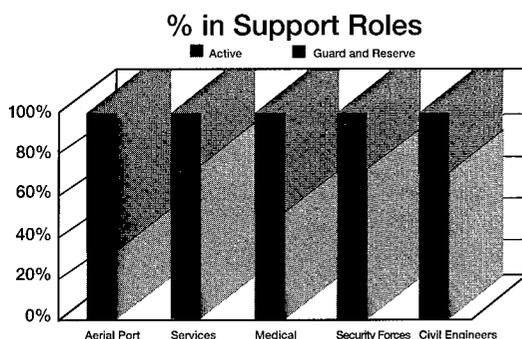
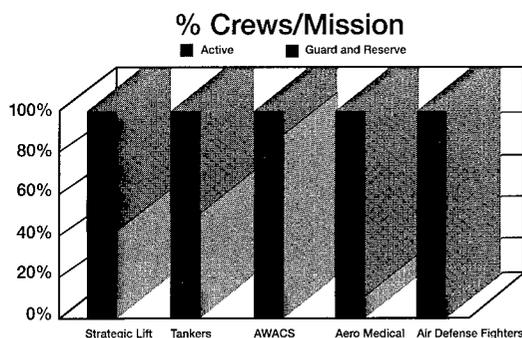


Air Force KC-135 refuels two Navy EA-6B aircraft

some cases, we have reduced taskings where the balance of operational requirements in theater, versus the long-term health of our force, demanded.

As we sought to share the wealth between active duty units, we have also counted more on the services of the ANG and the AFRES. Their units now support a greater share of

contingency taskings and have increased their participation in joint-sponsored exercises. Our combatant commanders long ago ceased to ask whether the Air Force units



Percentage of missions supported by Active Duty, Reserve, and Air National Guard personnel

deployed to their theaters are active duty, Guard, or Reserve. Warfighting commanders confidently, and rightly, expect that any unit from across our Total Force can provide the capabilities they need.

Finally, we have taken steps to strengthen some portions of our force which are facing particularly heavy demands. As an example, we established a reserve associate unit for our AWACS wing at Tinker AFB to reduce personnel tempo in that highly tasked system. We have also begun the procurement of two additional RC-135 RIVET JOINT aircraft along with some of the manning for the additional airframes to help lessen the worldwide TDY mission load on the current fleet of 14 airframes. Using AEFs offers the potential to help relieve the heavy PERSTEMPO load as well. Through the careful use of AEFs, we will be able to provide a rapid response capability anywhere in the world, while reducing the need for standing deployments.



AWACS and RIVET JOINT aircraft (pictured above) are two of the most highly tasked Air Force systems

This aggressive range of management actions has already begun to have a positive effect. In 1994, personnel operating more than 13 of our weapon systems exceeded the 120-day goal for deployed time; in 1996, that number was down to four. Our specialized systems and capabilities are those most stretched--our electronic combat aircraft; command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) systems; our Special Operations Forces; our Special Tactics Teams; and our tactical airlift control elements. We will continue to work this issue to enable us to provide these capabilities while maintaining reasonable PERSTEMPO into the future.

We also recognize the imperative to take care of the families of our deployed personnel. For example, the Family Support Center (FSC) Family Readiness Program aided our families

impacted by the Khobar Towers bombing and arranged for food and lodging for those families living in low-lying areas near Pope AFB, North Carolina--getting them to a safe shelter before Hurricane Fran hit.



Our 84 FSCs are doing an excellent job of supporting the families of our members. The FSC Career Focus Program provides information on career and employment opportunities as well as strategies for job searches for our families when they relocate. This helps ease the burden on our people and their families as they move from base to base during their careers. We remain committed to continuing this kind of support for those who serve our nation and for their families.

Of course, keeping our forces honed, easing the burden of deployments, and caring for Air Force families are essential to maintaining our overall operational readiness, ensuring we are always ready to step up to our role as the world's premier air and space power, and to serve in that capacity as part of our nation's joint team.



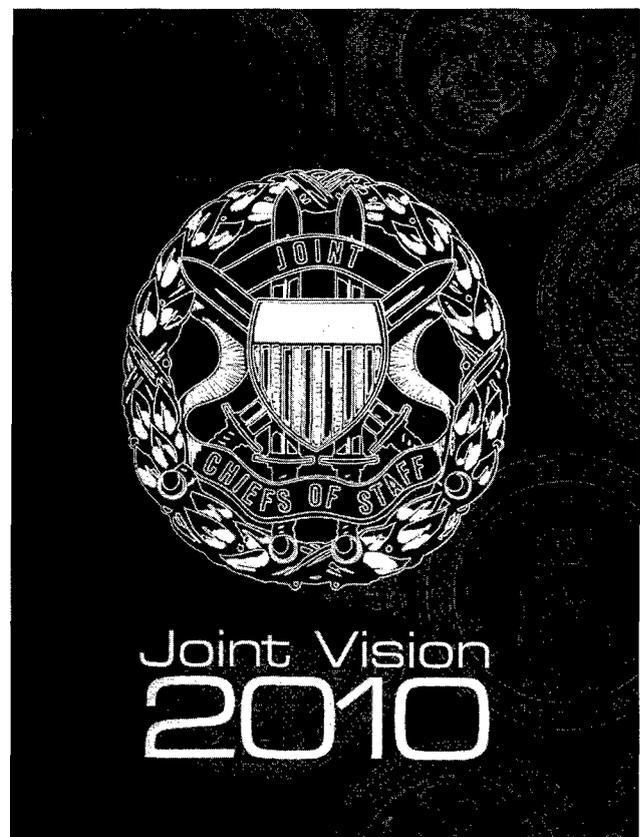
# THE AIR FORCE & JOINT VISION 2010

## Joint Vision 2010

Perhaps the most exciting movement in today's military is our progress toward a joint vision--a vision that will meld the Services' contributions in the decades to come in order to meet America's security needs. General Shalikashvili's *JV 2010* provides exactly that. It creates a broad framework for understanding joint warfare in the future, and for shaping Service programs and capabilities to fill our role within that framework. *JV 2010* defines four operational concepts--Precision Engagement, Dominant Maneuver, Focused Logistics, and Full Dimensional Protection. These combine to ensure American forces can secure Full Spectrum Dominance--the capability to dominate an opponent across the range of military operations. Furthermore, Full Spectrum Dominance requires Information Superiority, the capability to collect, process, analyze, and disseminate information while denying an adversary the ability to do the same.

*"The Air Force fully embraces the Joint Vision 2010 concept. Doing so will give us a better understanding of how and to what extent the Air Force is committed to integrating our capabilities into the joint environment and providing full spectrum dominance for the joint warfighter."*

*General Ronald R. Fogleman  
Chief of Staff of the Air Force*



The Air Force has long believed in the concept of operations articulated in *JV 2010*. Over the past fifty years, we have continued to optimize the use of air and space mediums which naturally support these operational concepts. Our core competencies are based on the unique characteristics of air and space power and are essential to the success of the goals outlined in *JV 2010*.

# Air Force Core Competencies

It is the Air Force's central responsibility to develop, organize, train, equip, sustain, and integrate the elements of air and space power to maximize the effectiveness of our unique core competencies and meet the needs of the Nation. As a result, we have formed a clear vision for the future so we can continue to provide the full range of air and space capabilities for our combatant commanders.

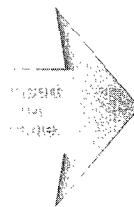
Each Service has certain core competencies which naturally flow from the medium in which it operates and enable it to execute its missions.

The Air Force's core competencies--*Air and Space Superiority; Information Superiority; Global Attack; Precision Engagement; Rapid Global Mobility; and Agile Combat Support*--stem from the unique characteristics associated with operations in the air and space mediums. It bears repeating that these core competencies are not proprietary. For example, each Service will need to build forces capable of providing information superiority for operations within its own medium.



## Air Force Core Competencies

- Air and Space Superiority
- Information Superiority
- Global Attack
- Precision Engagement
- Rapid Global Mobility
- Agile Combat Support



## Joint Vision 2010 Key Operational Concepts

- Dominant Maneuver
- Precision Engagement
- Full Dimensional Protection
- Focused Logistics

## Air and Space Superiority

**Establishing control over the entire vertical dimension**--the domain of air and space power--provides every member of the joint team the freedom to operate, freedom from attack, and freedom to attack. It allows friendly forces to take away enemy sanctuaries, strike enemy forces wherever they are located, and dictate to the enemy where they can and cannot move their forces. This level of control gives our military forces air dominance--the same kind of air dominance we enjoyed in DESERT STORM and that saved so many lives. As General Chuck Horner noted about air superiority after the Gulf War in 1991, "Everything is possible if you have it; little is possible if you lose it." Simply put, air and space superiority enables us to achieve the level of air dominance that is the key to winning wars with the fewest casualties.

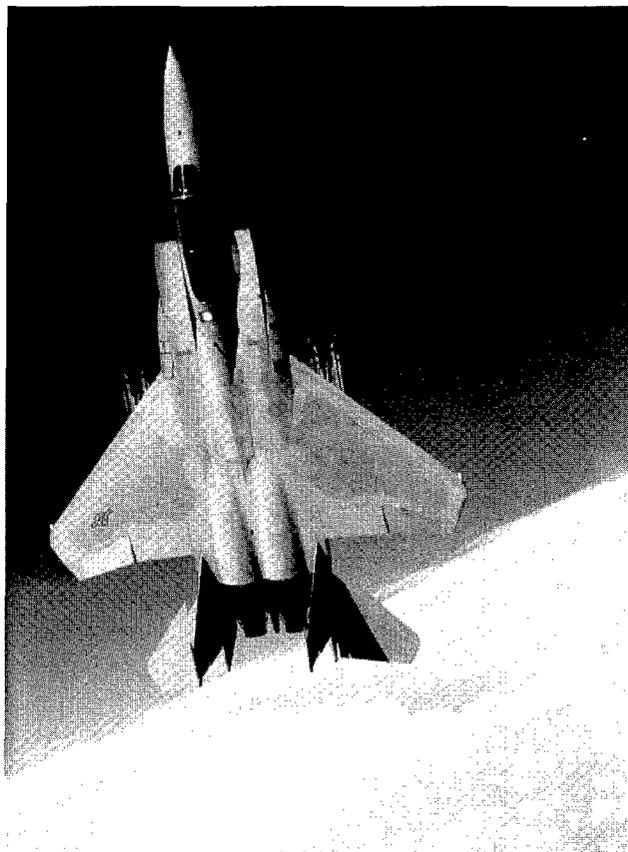
Air and space superiority is a fundamental requirement for all operational concepts in *JV 2010* and is a prerequisite to achieving Full Spectrum Dominance. It diminishes the risks to all friendly military forces and shapes the battlefield so that Dominant Maneuver can be used effectively by all members of the joint team to achieve war-winning advantages. This has always been the case. As Erwin Rommel noted in 1944, "Anyone who has to fight, even with the most modern weapons, against an enemy in complete command of the air, fights like a savage against modern European troops, under the same handicaps and with the same chances for success."

The *JV 2010* requirement for Full Dimensional Protection recognizes that our adversaries command capabilities across the entire spectrum of military operations that pose a deadly threat to our people. Here again, air and space superiority is a prerequisite to secure this portion of the *JV 2010* tenet.

The Air Force has executed its responsibility to control the air so effectively over the past decades that this superiority is often taken for granted as an American birthright. Unfortunately, this is not so. We must be prepared to win freedom of action in any arena--against any adversary. We have no intention of creating a fair fight.

*"...we want to be able to continue to dominate the airspace wherever we are."*

*William S. Cohen  
Secretary of Defense*



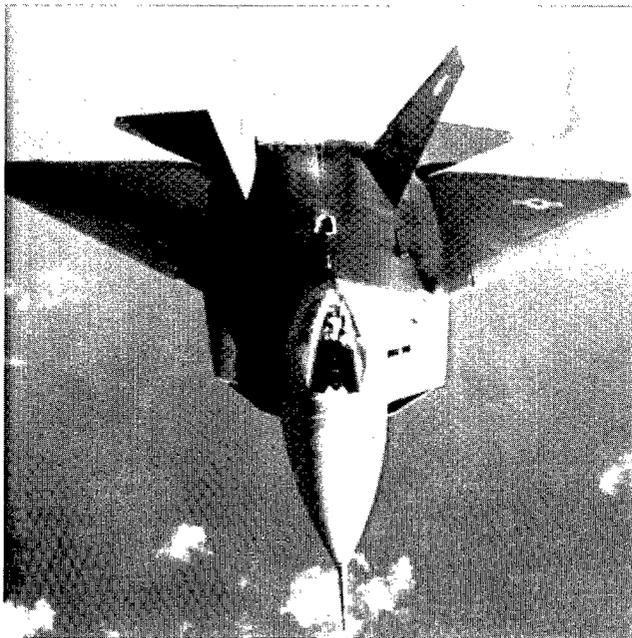
F-15C Air Superiority fighter

*"Air superiority plays a crucial role in sustaining USEUCOM's warfighting credibility and its ability to project influence and power, when and where required. Control of the air is vital as an essential element of the fighting force and when responding to crisis situations, providing the flexibility to restore order. The F-22 and Joint Strike Fighter are critical investments in our future warfighting and peacekeeping capability."*

*General George A. Joulwan, U.S. Army  
Commander-in-Chief, U.S. European Command*

We expect to dominate the air and space arena and deny our adversaries any sanctuary. We must do exactly that to permit the joint force to accomplish its mission.

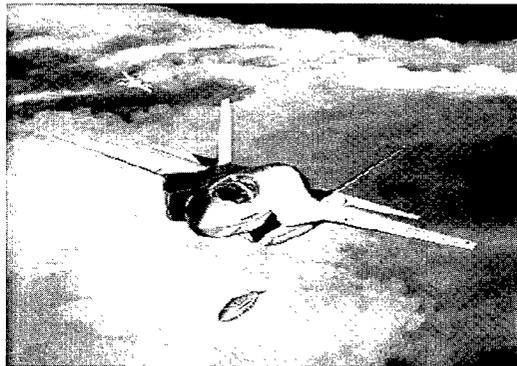
Our next generation of tactical fighters will ensure we achieve air dominance in all future conflicts. The key component in this effort is our new air superiority fighter, the F-22--successor to the F-15. This aircraft will bring a revolution-



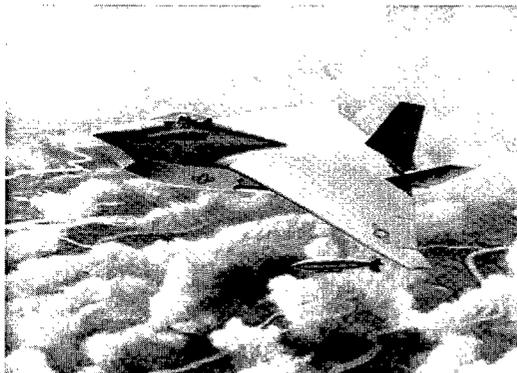
F-22 Air Superiority fighter

ary combination of stealth, supercruise, and integrated avionics to the fight. The F-22 provides an overwhelming advantage against sophisticated air- and land-based threats. Such threats will increasingly proliferate around the world in the years to come.

The F-22 remains on course for its first flight in the spring of 1997, and for introduction into service in 2004. The F-22, combined with the Joint Strike Fighter (JSF), which will be fielded about 2008, will replace the mix of F-15s, F-16s, and A-10s that has served the nation so well over the past decades. The JSF, like the F-22, is on track toward its initial operational capability. In November 1996, we down-selected to two contractors: Lockheed Martin and Boeing.



Lockheed Martin Joint Strike Fighter proposal



Boeing Joint Strike Fighter proposal

In addition to the risk of attacks by advanced enemy aircraft, deployed U.S. forces face a dangerous theater missile threat as well--a threat that has already taken American lives and is proliferating around the world. Attacking and destroying missiles while they are on the ground is the best option for defense. Additionally, we have found great promise in the prospect of destroying these weapons while they are in the boost phase; still vulnerable and predictable. We are developing the airborne laser, a truly revolutionary weapon, to meet that need.



Artist conception of Airborne Laser operations

The Air Force is pursuing the Airborne Laser (ABL) not only for its revolutionary combat potential, but also as part of an overall system of theater missile defense capabilities. The most effective way to combat missile threats is with a layered capability: offensive counter air and attack operations to find, fix, and destroy launchers and their support equipment as well as enemy command and control; boost-phase interception of missiles in flight; and mid-course and terminal interceptors. The layered systems will receive the best intelligence, surveillance, and reconnaissance possible and link with an effective theater-wide command and control system. The Air Force is working to extend this expertise to shape the architecture for counter-missile operations by supporting emerging technologies in Cruise Missile Defense and National Missile Defense.

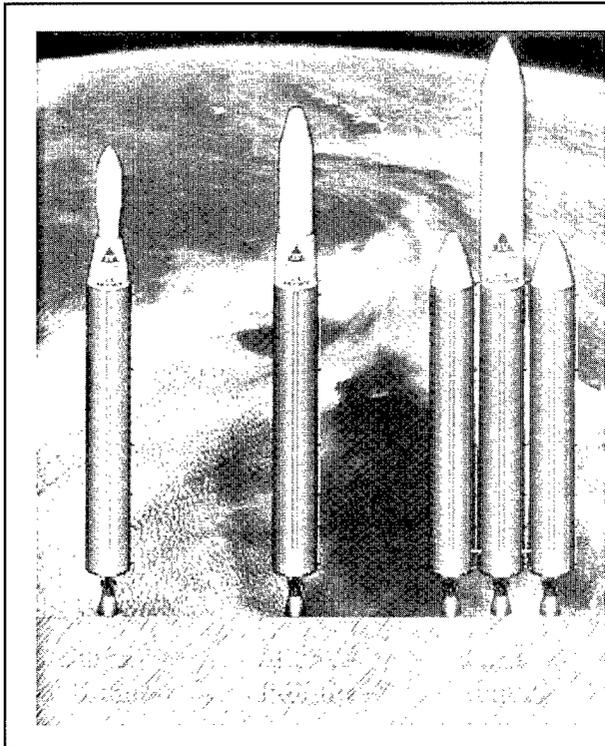
In 1996, the ABL program transitioned from a technology demonstrator into a key acquisition program, to counter the theater ballistic missile threat. We demonstrated the required laser power and chemical efficiency of an ABL laser module while making significant strides in maturing the tracking and beam control portions of the ABL. In November 1996, Boeing was selected as the contractor to bring this revolutionary system into service in the first years of the next century. With the ABL, the Air Force steps across a threshold and into a new era of directed-energy weapons. More significantly, we will provide our forces a boost-phase theater ballistic missile intercept capability--a

true weapon of deterrence. By attacking theater ballistic missiles early in the boost phase, the enemy faces the potential of having his own weapon fall back upon his homeland.

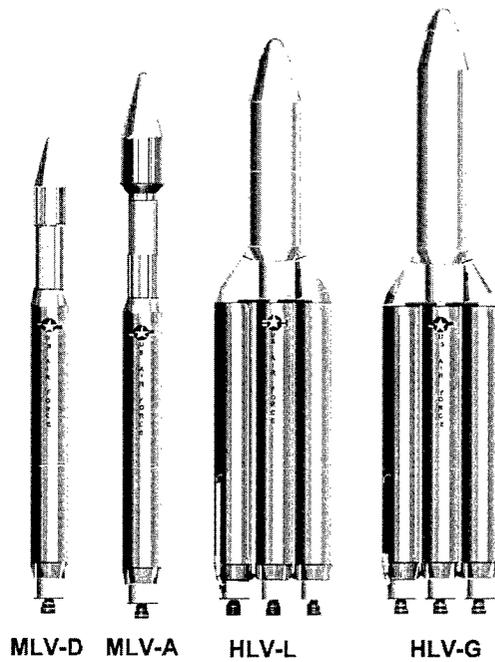
To ensure our domination of the furthest reaches of the vertical dimension, the Air Force is now executing a transition of enormous importance: the transition from an air force to an air and space force, on an evolutionary path toward a space and air force. Space is already inextricably linked to military operations on the land, sea and in the air, and the capabilities provided by Air Force space-based assets have become essential to the success of operations conducted by all elements of America's joint forces.

The Air Force of the twenty-first century must be able to protect U.S. and allied space systems and assure their availability to national leaders and U.S. warfighters. In addition, we must be able to deny any adversary the use of space systems or services when used for hostile purposes, while ensuring freedom of action for our space forces. Toward that end, we will invest in key research and development technology areas that will enable space control capabilities.

Spacelift is fundamental to our achieving air and space superiority in the future. The Air Force is currently taking the necessary steps to move beyond the current family of Intercontinental Ballistic Missile-based vehicles for our launch capabilities, and we expect to reduce



McDonnell Douglas EELV proposal

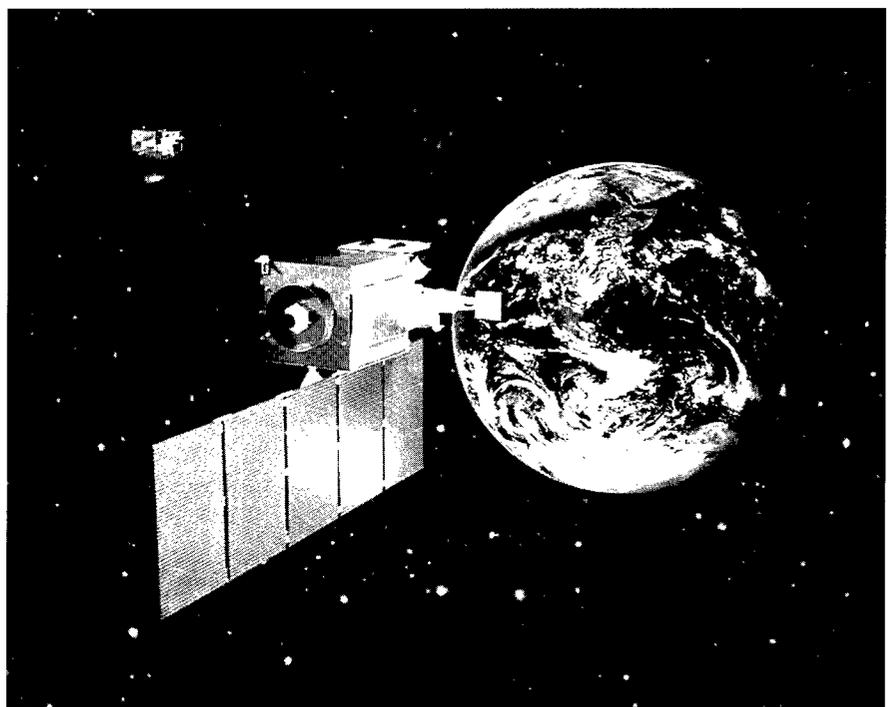


Lockheed Martin EELV proposal

launch costs by 25 to 50 percent as a result. In December 1996, the Air Force downselected the Evolved Expendable Launch Vehicle (EELV) program competitors from four to two, keeping the program on track for a 2001 first test launch for the medium launch system, and 2003 for the first heavy test launch. This program offers clear advantages not just for the Air Force, but for other national security users and for the commercial sector as well.

Another major continuing effort over the past year was the Space-Based Infrared System, or SBIRS. This system will replace the Defense Support Program early warning system and will provide more rapid detection and warning to theater forces of strategic launches, improved capability to detect and track theater ballistic missile launches, and a cueing capability for missile defense systems.

Together, these Air Force assets are part of our “system of systems” that enables us to dominate the air and space medium in such a way that the joint team will be able to achieve *JV 2010*’s overarching goal of Full Spectrum Dominance.



Space-Based Infrared System (SBIRS)

## Information Superiority

**The ability to collect, control, exploit and defend information while denying the adversary the same** is critical to ensuring successful military operations in the future. In no other area is the pace and extent of technological change as great as in the realm of information. Success on the battlefield demands we use and protect our own information as well as disrupt or eliminate the enemy's use of their information. While information superiority is not the Air Force's sole domain, it is, and will remain, an Air Force core competency. The strategic perspective and flexibility gained from operating in the air and space medium make airmen uniquely suited for information operations.

Information superiority is a keystone laid in the foundation of *JV 2010's* concept of Full Spectrum Dominance. Without it, operations grind to a halt, and success turns to failure. The absolute need for information superiority is a common thread through all military operations--this will remain as true in the future as it has for thousands of years. As Sun Tzu observed, "Know the enemy as you know yourself and in one hundred battles you will not be in peril." However, with the revolution in information technologies now in progress, the pace of operations has quickened to a point unimaginable only a few years ago--offering a huge advantage to the side ready to exploit these capabilities.

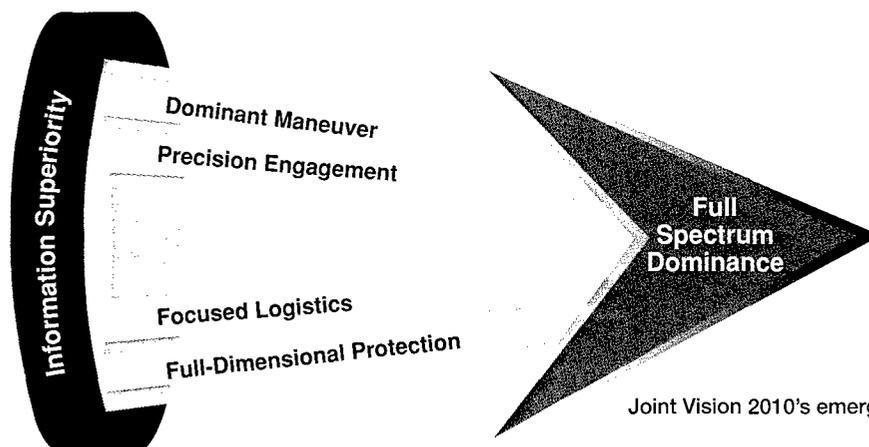
Providing Full Spectrum Dominance requires a truly interactive common battlespace picture. The Air Force is committed to providing an

*"The Air Force is rapidly constructing a capability for real-time data fusion between our sensors, shooters, and command centers."*

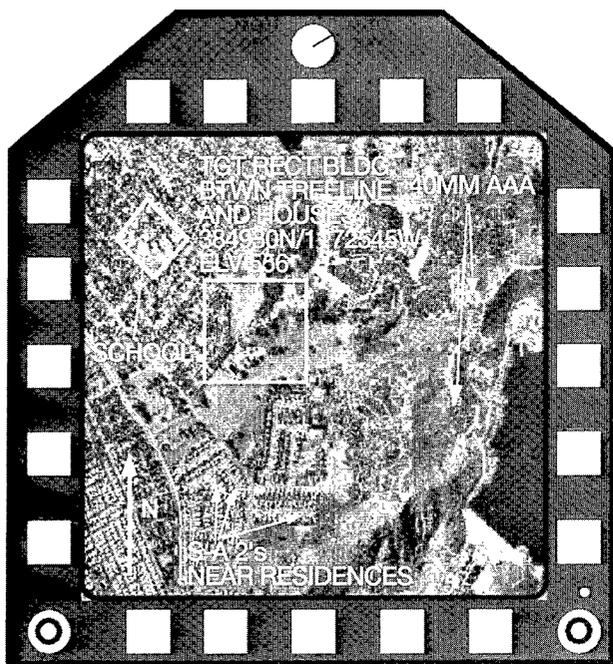
*Dr. Sheila E. Widnall  
Secretary of the Air Force*

integrated global and theater air, space, surface and subsurface picture of the battlespace to the twenty-first century Joint Force Commander. We will ensure our systems enable real-time control and execution of all air and space missions and are fully interoperable for seamless integrated battlespace management.

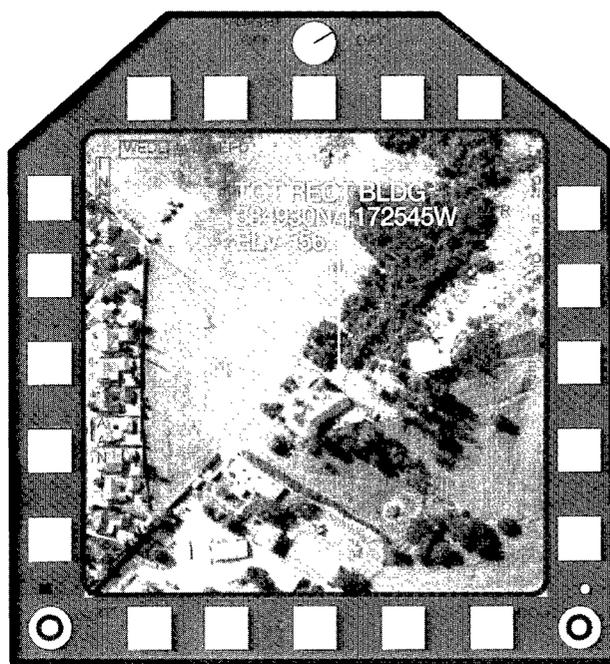
The Air Force's contribution to joint force integration will be accomplished with the Theater Battle Management Core Systems (TBMCS). As the designated C4I architecture for Air Operation Centers and combat flying units, TBMCS will provide: command and control and Air Tasking Order generation (including weather information) through the Contingency Theater Air Planning System; situational awareness and current intelligence data using the Combat Intelligence System; and a common wing-level communication network, the Wing Command and Control System. These three pillars of TBMCS will become part of an overall DoD common operating environment, and will enhance joint force operations well into the next century.



Joint Vision 2010's emerging operational concepts



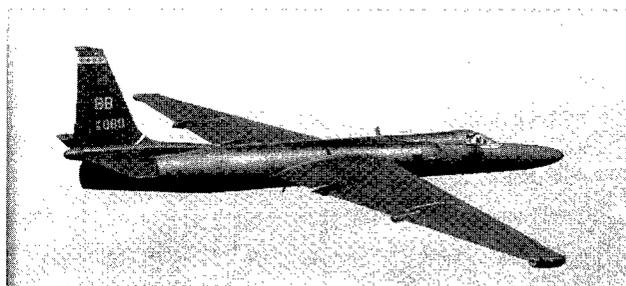
Rapid Targeting System cockpit displays



As the corporate knowledge of the Air Force continues to grow in the field of information dominance, we are beginning to exploit some of these new technologies in new ways. For decades the Air Force has pushed the state of the art in the information arena, with our air- and space-based platforms ranging from manned and unmanned aircraft, to overhead sensors, to the command and control capabilities that pull all this together. Today, the Air Force also plays a significant role in our nation's efforts to prevent the spread of weapons of mass destruction through the Air Force Technical Applications Center's operation of the U.S. National Data Center. This is the focal point for U.S. monitoring of the recently signed Comprehensive Test Ban Treaty and relies on the center's ability to process large volumes of data required by the treaty.

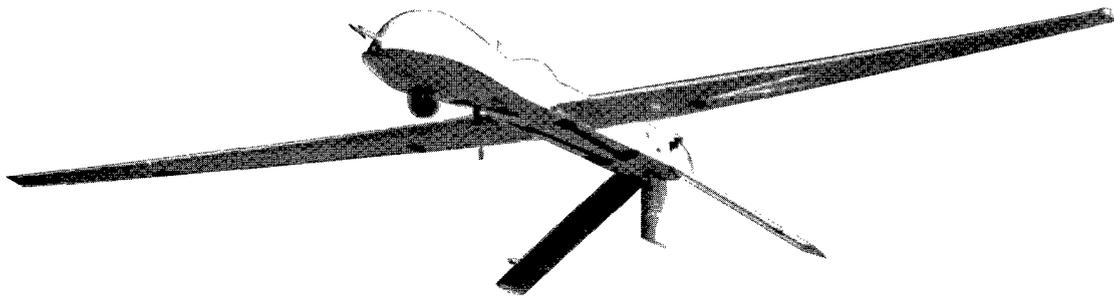
The Air Force has long fielded some of the heavyweights of the information war, systems such as the Airborne Warning and Control System (AWACS), U-2, Joint Surveillance Target Attack Radar System (Joint STARS), and RIVET JOINT. These aircraft are among those most in demand around the world today, as our Joint Force Commanders seek to gain the information superiority that they need to execute their missions. During this past year, the RC-135

RIVET JOINT fleet flew its 1000th mission supporting operations in Bosnia, while the U-2 continued to meet theater, national-level, and even United Nations requirements around the world.



U-2 reconnaissance aircraft

The Air Force is exploiting new capabilities to improve the flow of timely, useful information to the warfighter. As an example, we recently fielded the Rapid Targeting System, which builds on the capabilities of our Contingency Airborne Reconnaissance System and enables near real-time transmission of U-2 imagery to the cockpit of airborne fighters. In the not-too-distant future, we will standardize our network of linked systems, command and control and intelligence, surveillance, reconnaissance platforms--increasing our commanders situational awareness and avoiding any blindspots.



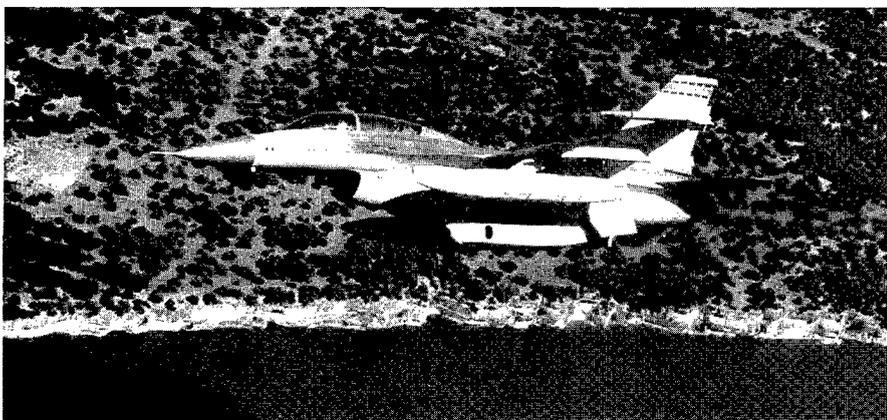
Predator Unmanned Aerial Vehicle

The Air Force crossed a historic threshold this past year, assuming operational control of the Predator Unmanned Aerial Vehicle (UAV). This system moved into operation directly from its advanced concept technology development phase, which generated problems with support and operational flexibility. Despite growing pains, Predator has been a workhorse over Bosnia and has provided a wealth of information to our joint forces. In 1995, we established our first UAV squadron, the 11th Reconnaissance Squadron, at the Nellis AFB complex in Nevada, to speed the maturation of our efforts in the employment of UAVs. We expect to exploit the technological promise of UAVs across the full range of combat missions, including communications relay and suppression of enemy air defenses.

Recognizing the critical need for responsive, daylight, under-the-weather imagery support to

target validation, new target identification, and battle damage assessment, especially in a high threat environment or adverse weather.

The Air Force is also committed to fully exploiting our space-based information superiority systems. SBIRS will provide more rapid detection and warning of strategic launches to theater forces, improved capability to detect and track theater missile launches, and a cueing capability for theater missile defenses. Eventually, we will move to a standard network of linked Information Superiority systems, air-, space-, and ground-based.



Virginia Air National Guard F-16 with reconnaissance pod

the combatant commander, the Air Force equipped ANG F-16s with reconnaissance pods. These aircraft flew over Bosnia and conducted 116 missions against 447 targets, helping to provide the essential capabilities of

Our relationship with the National Reconnaissance Office (NRO) is a key enabler to achieving this all-source link up. In addition to our space operations forces, the Air Force provides over 1,200 military and civilian personnel to the NRO. This past year, the NRO provided intelligence support through our range of operations--JOINT ENDEAVOR, DESERT STRIKE, disaster relief, and other humanitarian missions. In addition, the

NRO is a key player in *Project Strike II*, an exercise that demonstrates the operational utility of providing real-time information to the cockpits of a variety of aircraft including the F-15E, F-117, AWACS, and Joint STARS.

It has become readily apparent that success in the twenty-first century requires that we rely more and more on the ability to use and protect our information systems and technologies. The pace and volume of the flow of information enabled by modern technology provides advantages to the nation's military forces. But with these advantages come vulnerabilities as well. Information Warfare (IW) in particular will grow in importance in the twenty-first century. The Air Force must aggressively expand its efforts in defensive IW as it continues to develop its operational and tactical offensive IW capabilities. We are in the lead in developing IW policy, doctrine, and techniques. In 1993 for example, we created

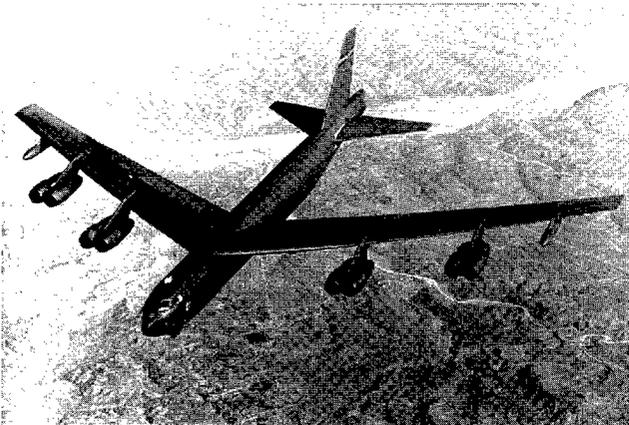
the Information Warfare Center to work IW issues across our Service.

The top IW priority is to defend our own increasingly information-intensive capabilities. On October 1, 1995, we stood up the Air Force's first information warfare squadron (IWS), the 609th IWS at Shaw AFB, South Carolina. The 609th IWS will help ensure we can protect our own information systems, both in garrison and when deployed, as we develop the ability to attack those of our adversaries. On the offensive side, the Air Force is emphasizing operational and tactical IW and continues, in conjunction with other federal agencies, to support strategic information operations.



## Global Attack

**The Air Force has the unique ability to project power rapidly, precisely, and globally**--to quickly find and attack or influence targets worldwide from air and space. This capability is essential to the *JV 2010* tenets of Dominant Maneuver and Precision Engagement. In fact, the ability to engage at various places around the globe in minimum time describes a flexible Dominant Maneuver force of global proportions. We demonstrated this in the B-52/CALCM strikes against Iraq in the summer of 1996. The ability to rapidly re-target weapons en-route provided the flexibility the Joint Force Commander needed to conduct that joint strike.



B-52H bomber

During the Cold War, the majority of the Air Force's Global Attack assets were dedicated towards the nation's highest priority, deterring nuclear war. Although nuclear weapons no longer play as central a role in America's national security strategy, we recognize the dangers posed by the efforts of rogue states and others to acquire them. As a result, we will sustain our efforts in the nuclear arena with two legs of the Triad--our long-range bombers and Intercontinental Ballistic Missiles (ICBMs). The Air Force will also sustain its commitment to support the nuclear requirements of the theater CINCs. We remain determined to maintain our record of excellence as the custodian of nuclear weapons, ensuring their safe and secure operation.

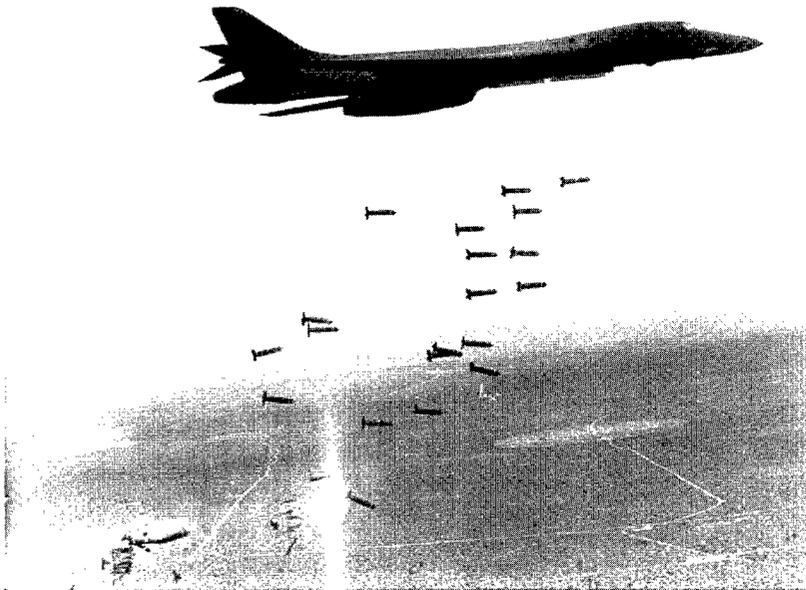
*"The primary aspect of Global Attack is the ability of the Air Force to find, fix, and attack targets anywhere on the globe using the synergy generated by air and space assets to operate at the strategic level of war."*

*General Ronald R. Fogleman  
Chief of Staff of the Air Force*



Minuteman III Intercontinental Ballistic Missile launch

Today, we have been able to improve the conventional response capability of our bomber force while continuing to maintain our nuclear capability. Our B-1 force now has the capability to drop cluster bomb munitions, and is under-



B-1 bomber deploys cluster bomb munitions

going further upgrades to improve combat capability. The B-2 has also shown steady progress toward assuming a conventional role with the Global Positioning System (GPS) Aided Targeting System/ GPS Aided Munition (GATS/GAM) giving it a much improved capability at low cost, relatively fast.

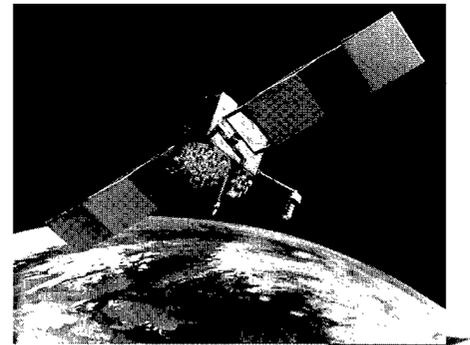
During a test mission in Nevada in October 1996, three B-2s de-

stroyed 16 targets with 16 bombs using this system--vividly demonstrating the ability for individual aircraft to engage and destroy multiple targets on a single pass. As a result of the resounding success of this mission, the B-2 achieved limited operational capability and is on track to achieve IOC in the spring of 1997.

As America reduces the number of military forces it permanently stations overseas, our power projection capabilities will be even more important to the Joint Force Commander and our national leaders. Even today, theater commanders increasingly rely on forces from outside their area of responsibility to respond to crises. We expect our ability to project power

globally will become an increasingly prominent requirement in the future. As a result, the United States Air Force is becoming more expeditionary to improve its rapid global engagement capability.

Over the past year, the Air Force has put together a template for this responsive, tailorable force--the AEF. Because it is designed to deploy rapidly when needed and provide immediate offensive and



B-2 bomber receives signals from GPS allowing the GATS/GAM system to achieve unparalleled accuracy

defensive capabilities in theater, the impact on the host nation is less than with permanently based forces and may eventually allow for fewer forward-stationed forces. In addition to its operational capabilities, the AEF has provided powerful opportunities for working with host nations and improving military-to-military relations--essential ingredients when laying the foundation for future coalitions. As discussed earlier, our forces demonstrated the power of the AEF in providing a rapid, tailored capability to fill theater requirements on three occasions over the past year. We will refine our ability to deploy both lethal and non-lethal forces as we employ it across a wider range of missions around the world.

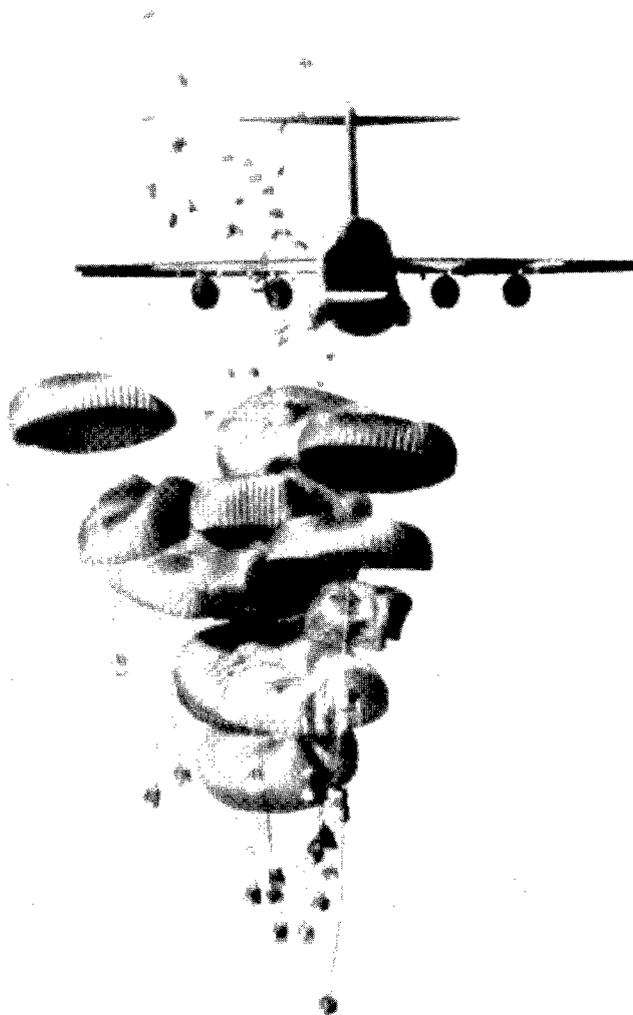
## Precision Engagement

***The ability to reliably and selectively apply the full range of precision capabilities to achieve the desired effect with minimal risk and collateral damage*** is the essence of this Air Force core competency. Grounded in the *JV 2010* definition, Precision Engagement is: "The capability to locate the objective or target, provide responsive command and control, generate the desired effect, assess our level of success, and retain the flexibility to reengage with precision when required." Past definitions of "precision," in the context of military operations, have focused on the accurate delivery of munitions--an integral aim of Air Force planning and procurement strategy for many years. But new demands placed on our military forces in the post-Cold War environment have broadened our understanding of precision. In General Shalikashvili's words, precision employment demands a "system of systems." It is much more than just the weapons.

The "system of systems" which supports the Air Force core competency of Precision Engagement must be just as capable in precisely airdropping humanitarian supplies as it is in delivering a bomb down the air vent of an enemy command bunker. Therefore, we are working hard to enhance the range of our precision engagement capabilities to meet future taskings. For example, the Air Force is moving toward a precision delivery system for our airlifters to provide the same accuracy in dropping supplies as we now have in dropping weapons. The ability to drop cargo from aircraft and steer it to within a few feet of the intended landing zone is on the horizon.

*"Because it saves lives of friends, foes and civilians, the Air Force core competency of precision engagement will remain a top priority in the 21st Century."*

*Dr. Sheila E. Widnall  
Secretary of the Air Force*



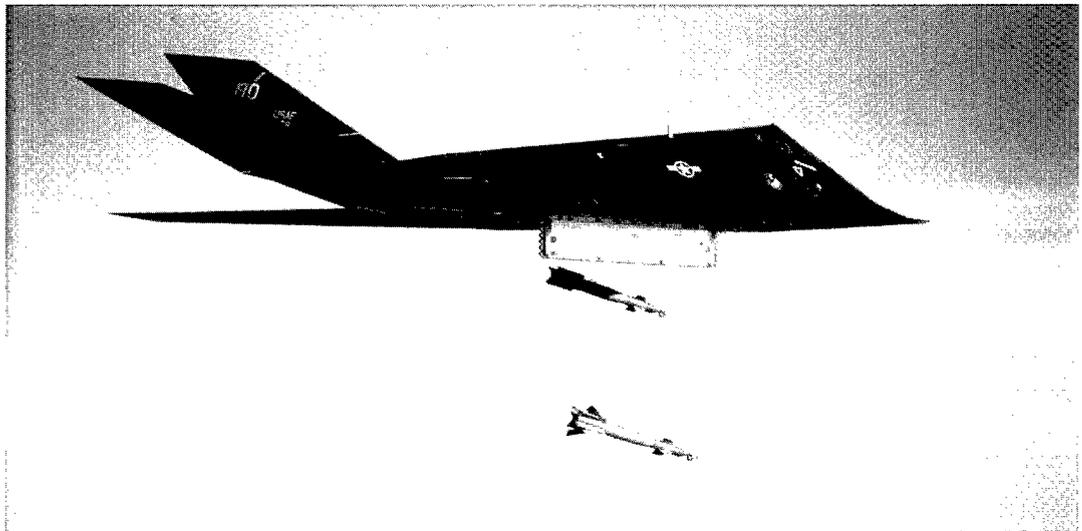
C-17 transport deploys humanitarian supplies

But the requirement for our operational commanders to employ air forces as a dominant maneuver force and strike the enemy in times and places of our choosing with precise and lethal force remains a critical capability. Our ability to conduct asymmetric warfare through air and space power demonstrated in Iraq, and most recently in Bosnia, preserves American lives and plays a key role in fulfilling America's strategic objectives.

Therefore, we are pressing on with our programs to extend our precision capabilities into the night, the all-weather realm, and with greater stand-off capabilities. We are well along in our efforts to develop an all-weather precision capability with the next generation



F-15E releasing precision-guided munitions



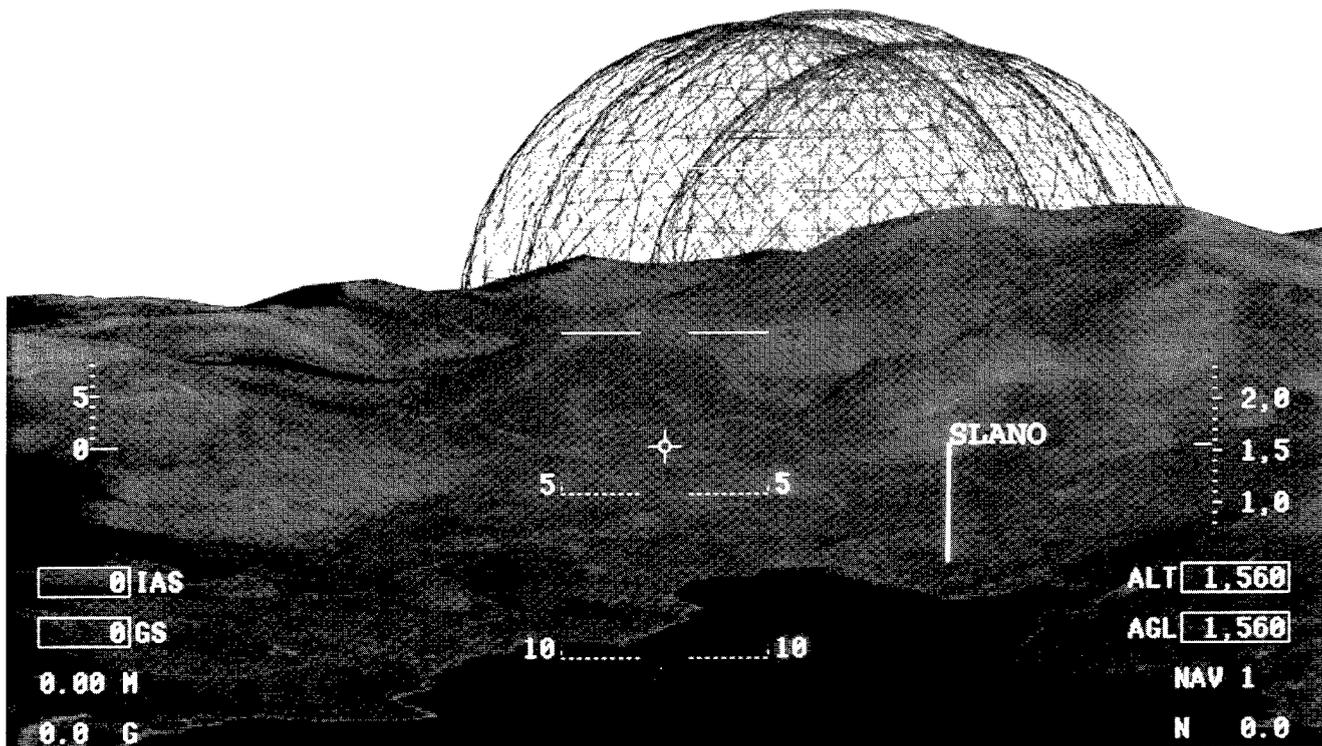
F-117 employing laser-guided munitions

of conventional weapons. For the most part, these are joint munitions programs which enable us to effectively leverage resources as budgets decline. These weapons, the Joint Direct Attack Munition (JDAM), Joint Air-to-Surface Stand-Off Missile (JASSM), and Joint Stand-Off Weapon (JSOW), will provide a complementary mix of capabilities and create a range of options for joint forces. We are upgrading our bomber force with these weapons to strengthen our ability to provide rapid and global responsiveness.

However, the public's growing intolerance for collateral damage in military operations makes effective employment of these weapons extremely challenging. An excellent example



Target being designated for laser-guided munitions



Power Scene Display used by aircrews for pre-mission training

of this is Operation DELIBERATE FORCE--the air campaign that brought about peace talks among the warring factions in Bosnia. Although this air operation was militarily robust, it was politically fragile. The first report of civilian casualties or collateral damage would have placed extreme pressure on the NATO coalition that authorized the strikes--tying the operation's success to the precise application of force. Despite the high technology of the aircraft and weapons involved, this operation would not have been possible without the effective integration of intelligence, command and control, weather, and training programs that led to our bombs impacting on the right spot.

Perhaps the most effective illustration of this type of integration was our aircrews' use of a revolutionary system known as Power Scene. This system translates imagery from various sources along with other data into detailed, real-life, computerized, three-dimensional images. Our crews used the Power Scene

system to practice their missions before they ever stepped to the jet--reconfirming the old adage, "the more you sweat in peace, the less you bleed in war."

At the Combined Air Operations Center in Vicenza, Italy, where we executed the very complex multinational air campaign, there was a real-time fusion of operations and intelligence, as well as real-time retasking capabilities for our intelligence assets. General Mike Ryan, who led the coalition's air operation over Bosnia, was able to watch real-time fused pictures of the air operation through our Joint Forces Air Component Commander (JFACC) Situational Awareness System (JSAS). The real-time interplay of our space-based and air-breathing reconnaissance systems could also be seen in the intelligence cell behind his command center. The cycle time to capture, analyze, and act on information had been reduced from weeks to seconds--a major reason for the effectiveness of the air operation in Bosnia. Due to the integration of

JSAS into the Global Command and Control System (GCCS), real-time information is immediately available to anyone with access to GCCS.

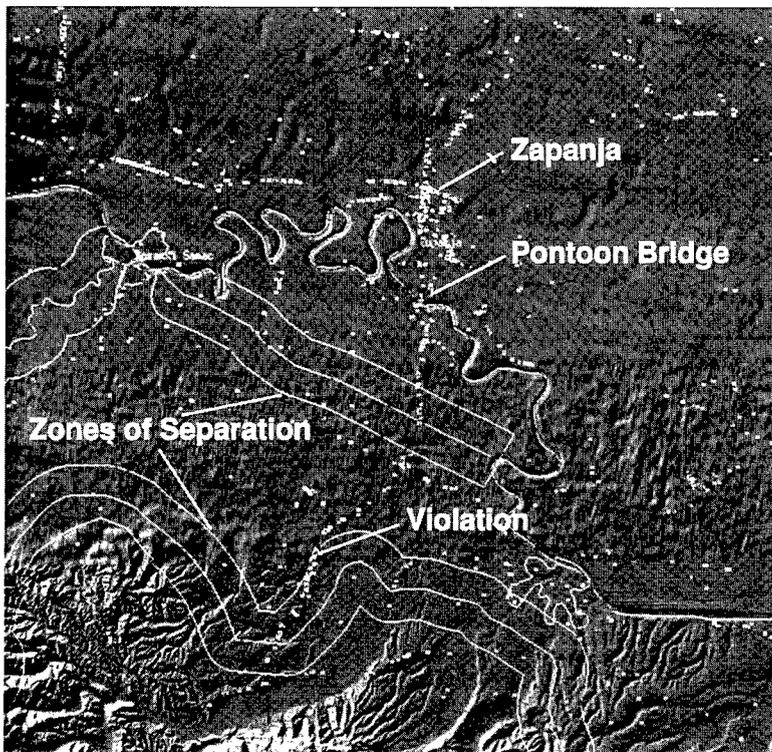
Air Force information systems are the assets that our operational commanders call on first, making them the cornerstone of our joint theater capability. These systems include the Rapid Targeting System which provides near-real-time information to the cockpit (sensor-to-shooter), and leading edge information platforms such as the AWACS, Joint STARS, U-2, RIVET JOINT, and Predator.

In fact, as the NATO force was first establishing a presence in the theater, Admiral Smith, the NATO commander, took to slapping pictures taken from the Joint STARS down in front of the factions when they met as if to say: "See, there isn't anything you can do without our knowing!" One could see this capability in action at the 1st Armored Division in Tuzla. Sitting in the Joint STARS control van were an Air Force and an Army NCO sitting side by side watching situations develop, ready to respond should the factions violate their commitments.

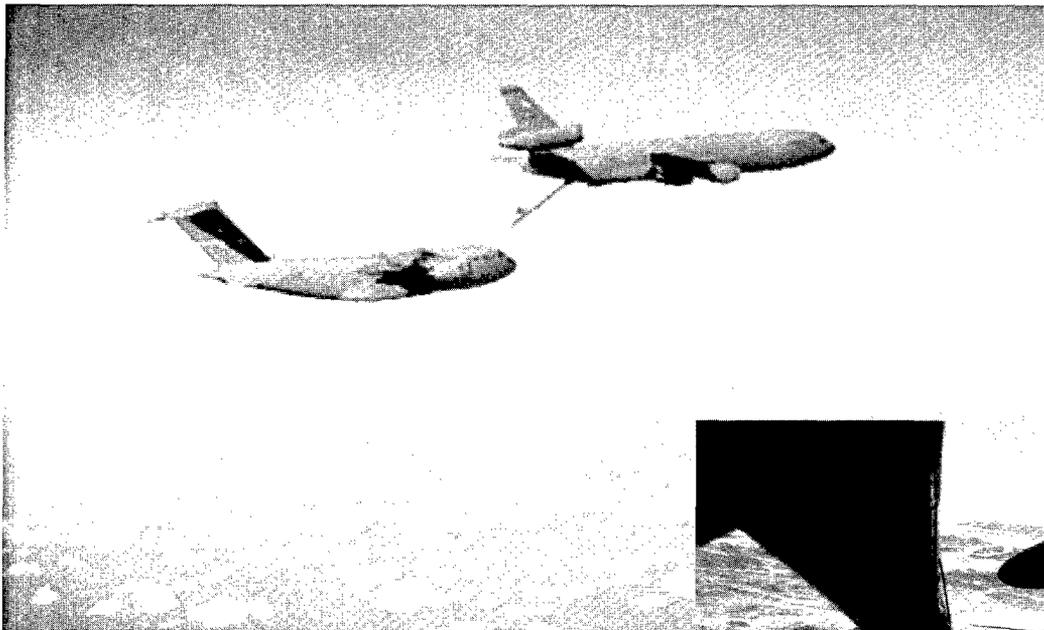
Precision Engagement yields operational and strategic effects that assure victory for our joint team in all theaters of operations. It will enable the Air Force to continue to deliver precision effects to meet the nation's future political and military objectives.



Joint STARS Synthetic Aperture Radar Display



Joint STARS Moving Target Indicator Display



KC-10 refuels C-17 transport

## Rapid Global Mobility

***The unique ability to rapidly and flexibly respond to the full spectrum of contingencies--from combat operations, to humanitarian relief, to peacekeeping, with the right force, at a decisive time and place,*** is a capability no other nation in the world has. Air mobility forces enable warfighting commanders to influence operations throughout the theater. Our airlift and tanker fleets can build an air bridge to move joint and allied forces for combat or peacekeeping operations or to airdrop or insert troops and equipment. Our tanker fleet enables support forces, such as C4ISR aircraft, to remain airborne longer and combat forces to strike deeper. Our airlifters sustain operations by providing a steady flow of equipment and supplies, as well as ensuring short-notice, critical needs are met and life saving emergency aeromedical evacuation is available.

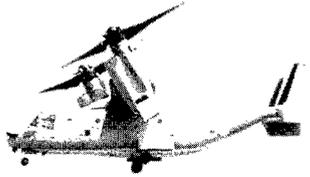
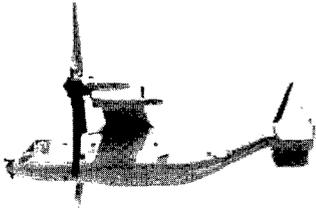
One group of "silent warriors" often employed in contingency operations is Air Force Special Operations Forces. These forces use rotary and fixed wing aircraft armed with technically superior avionics suites to provide the specialized mobility capabilities to move into and out of denied airspace. This small but potent air arm is capable of responding in all types of weather and threat scenarios to deliver special



KC-135 refuels AWACS

*"Airlifters and tankers give the national command authorities the ability to reach out and influence events around the world. This trend will continue as far into the future as we can imagine."*

*General Ronald R. Fogleman  
Chief of Staff of the Air Force*



CV-22 demonstrates vertical takeoff capability

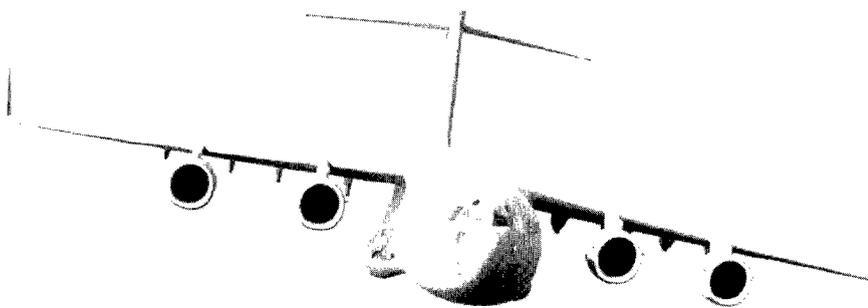
operations forces to hot spots anywhere in the world.

The CV-22 will provide these forces long-range combat search and rescue as well as deep battle airlift. The CV-22's speed, extended range and survivability will significantly increase the Joint Force Commander's ability to conduct operations in denied territory.

increase our capability to respond anywhere, anytime with decisive influence.

The C-17 will be the backbone of our airlift fleet far into the future, and 1996 proved to be a remarkable year for this aircraft. Its very existence in doubt a few years ago, it has successfully demonstrated its capability in deployments around the world. Perhaps its most dramatic exploit was the insertion of 15

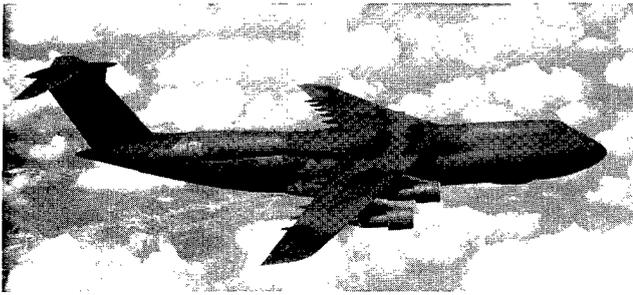
Bradley Fighting Vehicles and floating bridge sections into Tuzla in late December 1995 to bolster ground presence and enable the U.S. Army troop crossing at the Sava River in Bosnia.



C-17 delivers Army Bradley Fighting vehicle to Tuzla, Bosnia

Rapid Global Mobility will remain the future Joint Team's most reliable combat multiplier. It is a prerequisite for winning future conflicts and is a key requirement for the *JV 2010* tenet of Dominant Maneuver, assuring the timely arrival of forces or supplies needed to deter a conflict or allow our forces to engage the enemy. The speed, range, and flexibility that are unique to air and space forces, like our air mobility fleet, are essential ingredients for military success, and we continue to aggressively pursue systems and processes that

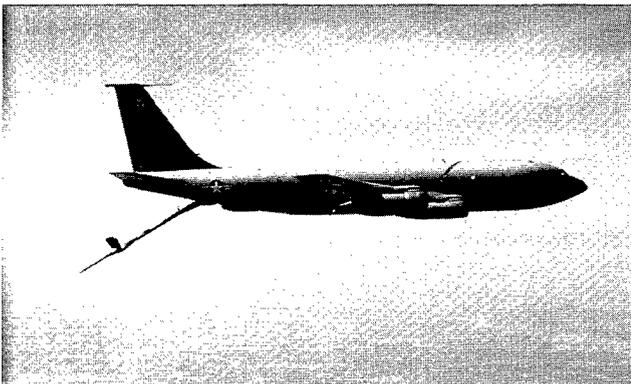




C-5 transport can carry oversized and outsized cargo

Recognizing its maturity, the Air Force signed a multi-year procurement contract that will ensure stable funding as we bring on this essential system.

While procuring our newest airlifter is important to the CINCs, maintaining our overall lift capability with improvements to the C-141 and C-5 fleets and reducing lift requirements, are just as critical. For example, drastically reducing the numbers of aircraft required to move and support our next generation systems, such as the F-22 and the Joint Strike Fighter, will greatly enhance our capability to successfully respond to any crisis around the globe,



KC-135 tanker is our core air refueling aircraft

while dramatically increasing the speed of our response. We are also ensuring our tanker fleet remains viable with improvements to the KC-135 fleet to improve aircraft performance while reducing maintenance time and operating costs.

## Agile Combat Support

**Improving transportation and information systems to allow time-definite resupply and total asset visibility, reducing the mobility footprint of deployable units to decrease the lift requirement, and streamlining the infrastructure providing parts and supplies to reduce cycle times** are all important aspects of Agile Combat Support. Together, they greatly improve the combat capability of all joint forces.

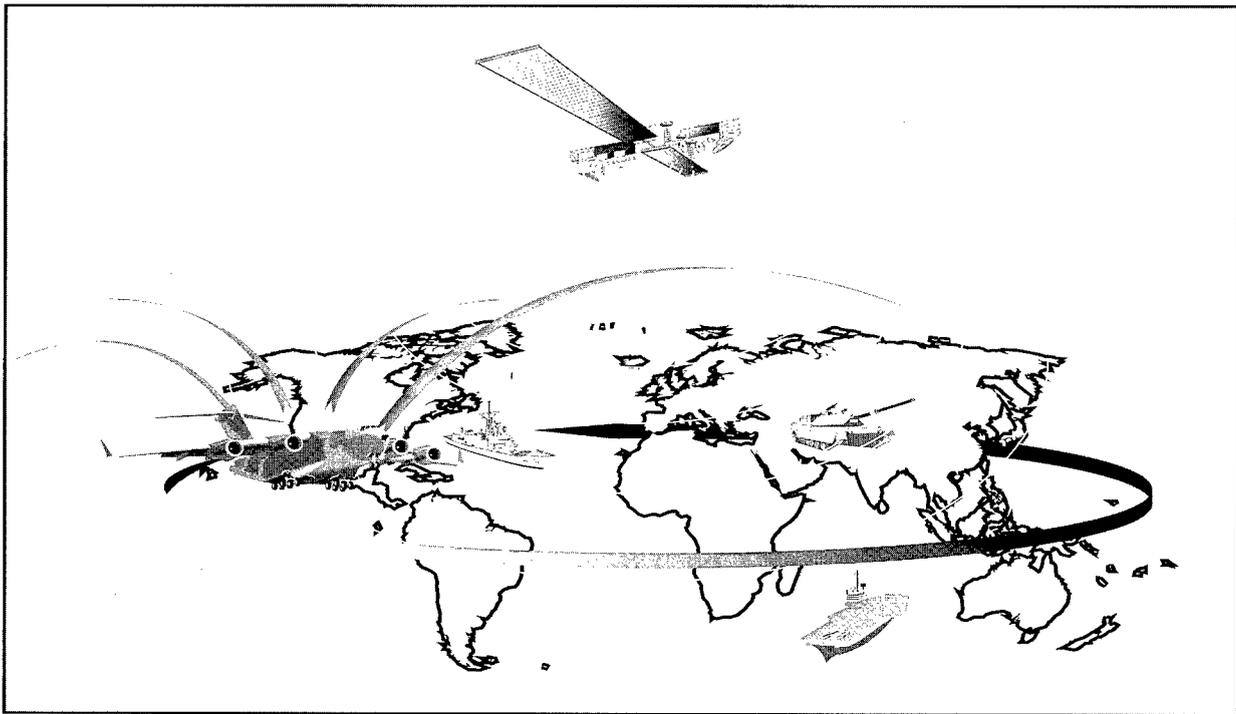
Our current and future rapid, responsive, and flexible forces require an agile support system for them to be effective. Improvements in information and

*"We move on time lines that simply will not work if we have to wait for support for our expeditionary forces."*

*General Ronald R. Fogleman  
Chief of Staff of the Air Force*

logistics technologies make this possible. Since 1994, the Air Force has been developing and refining practices supporting our core competency of Agile Combat Support and *JV 2010's* operational concept of Focused Logistics. With time-definite resupply, we reduce the mobility footprint of early arriving forces, which not only optimizes available lift and reduces cost, but makes it possible to reduce the size, and therefore the vulnerability, of our forces, contributing to another tenet of *JV 2010*, Full Dimensional Protection. Providing for force protection is not just a matter of air base operability and security; it also involves redesigning our power projection forces to reduce the size of the force protection needs.

Historically, the logistics system has "pushed" the nation's wartime support to forces in the field to compensate for imperfect resource information and planning systems, resulting in an expensive and wasteful stockpile of materiel in U.S. warehouses and forward locations. The Cold War model of globally pre-stocking huge quantities of materiel forward and then flowing equally massive quantities from home bases is untenable in today's austere environment--politically, economically, and operationally.



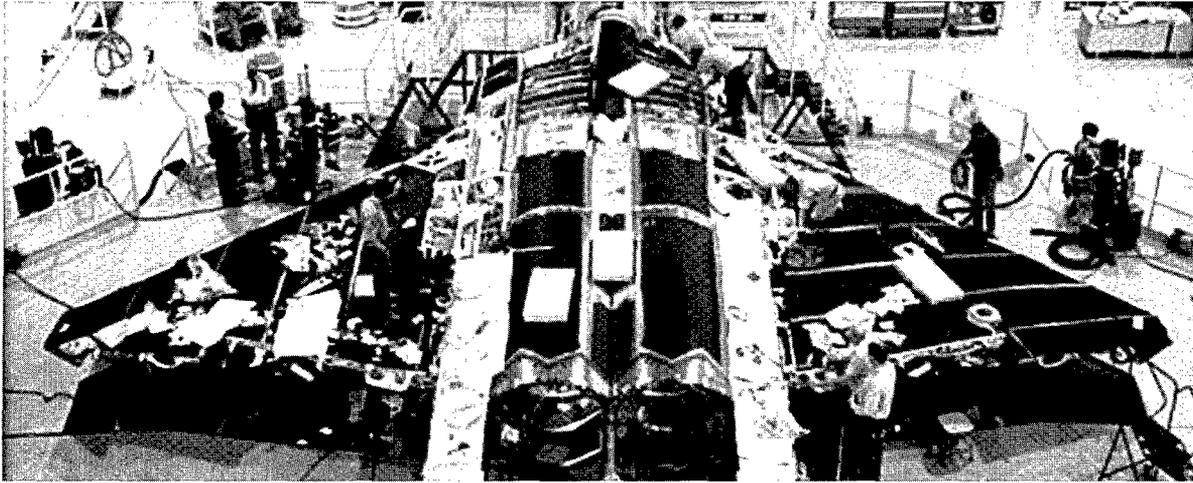
Agile Combat Support concept of operations

Our nation is moving away from deploying masses of materiel to support its forces. To compensate for this, the Air Force is now using high-velocity, high-reliability transportation and information systems to get the right parts to the right place at the right time. Through this approach, we increase our operational capability while reducing both our mobility footprint and our costs.

When combatant commanders require an item, integrated information systems “reachback” to U.S. locations and “pull” only the resources required. Depot processes--streamlined and incorporating state-of-the-art business practices--are able to release materiel in a much more timely fashion. Time-definite transportation completes the support cycle by rapidly delivering needed resources directly to the user in the field. Integrated information systems provide total asset visibility throughout this process, tracking resources throughout their delivery cycle with the capability to re-direct them as the situation dictates. We are extend-

ing the concept of “reachback” to include elements ranging from C4I, logistics, and personnel, thus exploiting information technology to reduce our footprint in the deployed location. Time-definite resupply will be an important part of improving this capability in the future. This, coupled with a combined logistical architecture of lighter, more reliable equipment designed for support from an agile information based logistics system, will yield the revolution in combat support envisioned in *JV 2010*'s tenet of Focused Logistics.

Focused Logistics and its forerunner, Lean Logistics, will provide the Joint Force Commander with an Air Force that is more mobile, responsive, efficient, and significantly more potent. It may never completely turn the logistician's art into a pure systems-based science, but the future of Air Force logistics will maximize both technology and resource management reinvention insights to achieve and provide unparalleled combat power to the joint warfighter.



F-22 being assembled at Lockheed Martin plant

## Foundation for the Future Air Force

Together, these core competencies outline our contract with the joint team--and with the American people. We are responsible to ensure that we can execute them under any circumstances, and against any adversary. In these times of declining budgets, it is essential that we construct a solid program that properly prioritizes across these requirements. We have built a time-phased modernization program to do so--filling our airlift requirements, our CINCs' greatest need, with the C-17 in the near-term; upgrading our bomber force to carry a wider range of conventional

weapons and "smart" munitions in the mid-term; and upgrading our theater forces with the acquisition of the F-22 and the JSF to ensure air dominance, in the long-term. Across this fifteen-year horizon, too, we will be bringing on the EELV and SBIRS, the systems necessary to ensure space and information superiority. This carefully balanced modernization program, coupled with responsible stewardship of individual programs, will build the right mix of capabilities into the force of tomorrow. We can afford to do no less.

### Modernization Strategy: Sustaining Core Competencies

Air and Space Superiority	⇒	F-22; ABL; EELV
Information Superiority	⇒	JSTARS; UAVs; SBIRS
Global Attack	⇒	Bomber upgrades
Precision Engagement	⇒	GPS; JDAM; JSOW; JASSM; JSF
Rapid Global Mobility	⇒	C-17; CV-22
Agile Combat Support	⇒	Lean Logistics; Total Asset Visibility

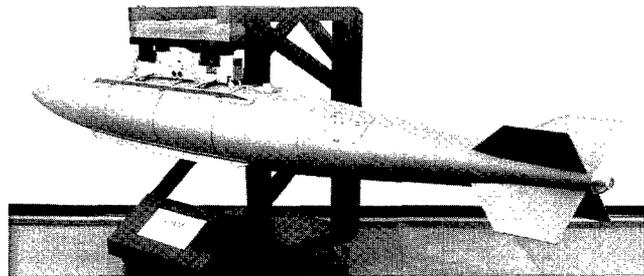
# Revolution in Business Practices

If the Air Force is to succeed in its modernization and Quality of Life initiatives, we must free up resources through a revolution in business practices. The Air Force cannot afford to continue traditional means of doing business in acquiring and supporting our forces. Therefore, we have instituted an aggressive series of reforms that extend across the range of our infrastructure and acquisition practices.

## Acquisition Reform

The Air Force is beginning to move beyond the Lightning Bolt initiatives that jump started our acquisition reform process. These initiatives have been highly successful and are generating the cultural change across the force that is essential for their long-term effect. The Air Force has already identified about \$17 billion in savings and cost avoidance through these measures, and we are expecting much more in savings to follow.

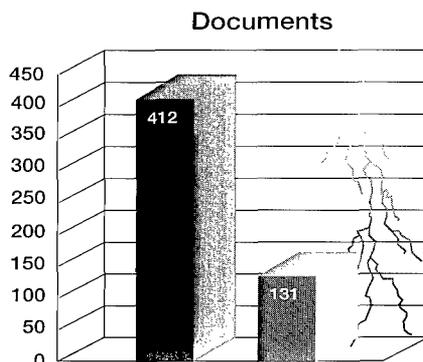
The JDAM program provides a vivid example of the benefits we are reaping from acquisition reform. We will acquire that system at \$14,000 per unit instead of our projected \$40,000; we will buy out the program in 10 years instead of the projected 15; and we will receive a warranty increase from five years to 20.



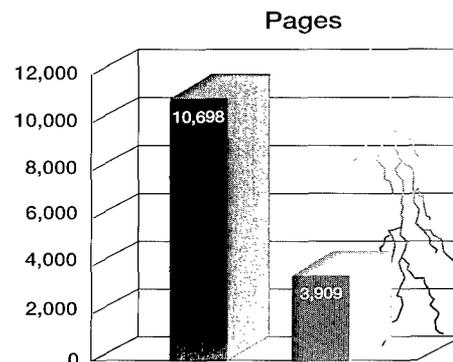
Joint Direct Attack Munition

Throughout 1997, we will focus on reform through the development and execution of a new strategic business management plan. Our goal is to provide a seamless transition from the highly successful Lightning Bolt initiatives to a culture of Continuous Process Improvement. This business plan will describe Chief Executive Officer level goals, objectives and measures and will establish the foundation to support our vision of Twenty-first Century Air Force acquisition--lean, agile buyers and sustainers of more affordable warfighting capability.

## Acquisition Policy Review



68% Reduction



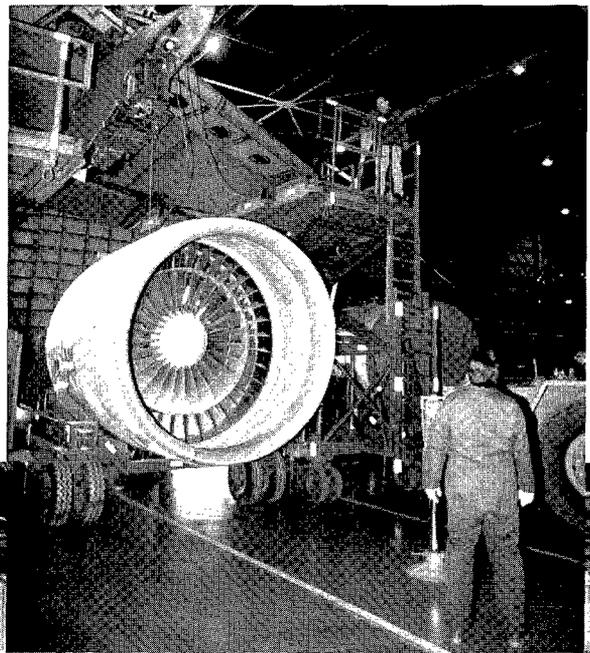
63% Reduction

# Outsourcing and Privatization

Outsourcing and privatization is an essential means of freeing resources to apply toward modernization and other priorities. More than that, these steps enable the Air Force to harness the expertise of the commercial sector for our needs and allow us to focus more consistently on our core responsibilities.

The Air Force has made considerable progress in this very complex arena. We successfully transitioned the depot work at Newark Air Force Station to private contractors. We are in the early stages of depot maintenance competition for a large portion of the Sacramento Air Logistics Center's workload and the C-5 business area at Kelly AFB, Texas. We have progressed toward completing a strategic plan covering the range of our outsourcing and privatization initiatives and expect to finish that in 1997, and we have identified those areas where we expect to find the most near-term payoffs: support functions, depot maintenance, and military family housing.

The key to our success in the support area is competition between the public and private sector. Our most notable example, and also our largest competition to date, is a recent cost comparison of aircraft maintenance at Altus AFB, Oklahoma. The competition, completed in only 16 months, was won by a streamlined in-house organization which reduced its manpower by 49 percent, resulting in a \$95 million savings over five years.



C-5 business area at Kelly AFB in San Antonio, Texas



VC-32A Special Air Mission aircraft (Air Force version of the Boeing 757)

## Commercial Off-The-Shelf (COTS) Technology

The distinction between military technology and commercial systems has become increasingly blurred over recent years. The line that once divided the commercial sector from the defense industry, too, has faded. As a result, it has become increasingly attractive to employ off-the-shelf commercial technologies in our systems. The Air Force is aggressively pursuing those technologies--and we are abolishing old prohibitions that limit our ability to take advantage of them.

One vivid example is what is now called the Global Broadcast System, which is currently used to provide an upgraded flow of data to our deployed forces. By using an existing commercial satellite constellation to provide an interim operational capability, we were able to field a high data rate capability quickly, without

spending an extraordinary amount for a unique military solution.

The Air Force has used this same approach to structure its acquisition of our next-generation long-range executive transport, the VC-32A. By using commercially available off-the-shelf technologies, in this case four Boeing 757 aircraft, we have saved almost \$40 million per aircraft and reduced acquisition time by about one-third.

## Financial Management

Ultimately, the success of all these measures relies on sound financial management practices and good business sense. The Air Force

financial management community has worked hard to improve business practices, quality of management accounting data, and financial reports required by the Chief Financial Officers (CFO) Act of 1990. These financial reports not only provide meaningful information to senior Air Force managers, but also assurances to the public that the Air Force is a good steward of its financial resources.

The Air Force has made fast moving progress in shaping reform and bringing about change. We have reduced problem disbursements by up to 90 percent since 1993 and antideficiency violations are down nearly 80 percent since 1994. Nearly 70 percent of the CFO audit recommendations have been corrected, and generally the remaining corrective actions represent the critical, long-range financial system improvements required for CFO Act compliance. Corrective actions required for existing financial and other systems are being prioritized and implemented. In instances where systems are being replaced, the Operational Requirements Document now stipulates that the new system be compliant with Federal Generally Accepted Accounting Principles.

The Air Force also developed an Automated Battlefield System (ABS) to improve our ability to accomplish those financial transactions that must be done during overseas operations. The ABS, which consists of a simple piece of software that works with ground-based communication equipment or a portable satellite transmission device, permits the user to access all financial information resident in stateside computers. The ABS avoided the need to procure costly new software for use during contingency operations.

## Small Business Management

Our Small Business Program continues to serve as the catalyst for economic vitality among the nation's small businesses. Despite the recent suspension by DoD of minority business set-asides, the Air Force once again surpassed the mandated goal of 5 percent awards to minority

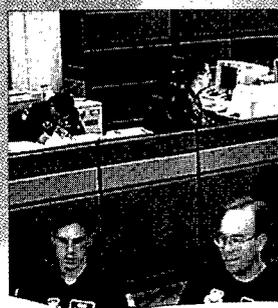
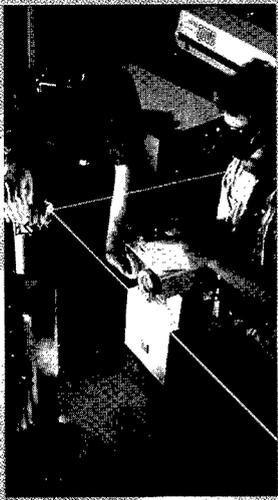


businesses by awarding more than \$1.65 billion to minority owned firms.

Our efforts in support of women-owned businesses are unparalleled. The Secretary of the Air Force serves as the DoD representative on the Interagency Committee on Women's Business Enterprise and introduced the Air Force's "rule of one" for women-owned businesses, pioneered mentor-protégé opportunities and was a significant contributor to the committee's report to the president entitled: "Expanding Business Opportunities for Women." Additionally, the Air Force participated in the first ever Women Owned Business Research Agenda held at the Kellogg School at Northwestern University, and subsequently chaired a round table on procurement opportunities for women at the Women Owned Business Summit 96.

In April 1996, the Air Force Small Business Office launched its own Internet home page to give small businesses maximum access to information. This electronic outreach forum provides the Air Force Marketing Information Package by Internet, including the Long-Range Acquisition Estimate; Selling to the Air Force; Diversification for Small Business; and the Mentor Protégé Handbook. Additionally, focus forums, useful marketing tools and links to many other important information resources are also available.

As we move toward increasing the use of outsourcing and privatization, we will continue to rely upon our strategic planning process to provide the framework for maintaining and improving small business participation in the future.



# Air Force People

When people think of the Air Force, they rightly think of high technology: of supersonic aircraft, satellites orbiting overhead, and computers and communications networks at the leading edge of technology. But it is not just our technology that makes us successful--it is our people. To provide a common frame of reference for understanding and employing air and space forces, we have decided to create a new Air and Space Basic Course for all newly commissioned officers and selected civilians which focuses on the history, doctrine, strategy and operational aspects of air and space power. This course will also provide them a shared understanding of the core values by which they live and work.

*"Quality people define our Air Force. Wherever we are called upon to serve or whatever we are called upon to do, it is the dedication and professionalism of our people that make us the premier air and space force that we are."*

*Chief Master Sergeant Eric W. Benken  
Chief Master Sergeant of the Air Force*

## Core Values

Our core values are essential to our very existence as an institution. These fundamental and timeless values--integrity first, service before self, and excellence in all we do--form the bedrock of our force. It is crucial that our members share a common understanding of these values, and live by them.

*"Core values make the military what it is; without them we cannot succeed."*

*Dr. Sheila E. Widnall  
Secretary of the Air Force*

**Integrity First** is the keystone of military service. Integrity is the moral touchstone that is the foundation for always doing the right thing for the right reason, even when no one is looking. Our military force operates on the basis of trust--we expect our people, throughout the ranks, to live up to the highest standards of integrity.

**Service Before Self** is at the heart of the military profession. It represents the absolute need to put our nation, our Service, our unit and our mission before ourselves. There can be no room for personal agendas at the expense of the institution or the nation.

Our push for **Excellence In All We Do** fuels our endless drive to improve ourselves and our capabilities. Mediocrity is not tolerated in our profession; the stakes are too high. The Air Force has learned never to relax or rest on past laurels, because we must be prepared to face tomorrow's challenges.

These values are for life, not just for working hours. We ensure our people understand and embrace them because they are essential to our effectiveness as a military force. Across the vast range of expertise necessary to operate and sustain the Air Force, these values provide a unifying element, bringing us together in the service of our nation.

# Leadership Initiatives

Leadership has always been an art and has always been at the heart of military effectiveness. Today, Air Force leaders at all levels are being challenged by new responsibilities as they operate in an increasingly complex environment. So, over the past two years we have fundamentally restructured our approaches to select, train, and support our leaders--and we will continue to refine these processes.



Secretary Widnall addresses troops in Riyadh, Saudi Arabia

In 1995, the Air Force conducted the first command screening board in order to identify eligible colonels and colonel-selects best suited to fill wing commander and group commander vacancies. This process ensures those officers most qualified to command are identified so that the future leadership of our Air Force is comprised of the best people.

An essential element in effective leadership is preparation for command. Once selected, all wing, group, and squadron commanders now receive formal resident training prior to assuming command. These courses emphasize command responsibility, accountability, and discipline. In addition to these fundamentals, the courses include case studies and time-sensitive topics for effective command in this very complex environment--with a focus on

issues ranging from equal opportunity and diversity, to violence in the workplace, to outsourcing and privatization.

The Air Force has long focused on bringing front-line technology into its weapons systems. We have now begun to apply that same logic to leadership development. Last March the Air Force hosted a conference for the Service Secretaries which focused on modeling and simulation. As the Service Secretaries toured the Air Force's Theater Battle Arena, the Joint Training and Simulation Center run by U.S. Atlantic Command and the Joint Staff's Joint Warfighting Center, they were all impressed by the potential at these facilities for training our leaders and battle staffs. There is almost no end to the utility and potential of these technologies, and we are pursuing them with vigor.

*"When you ask young men and women to go and die for their country, when you are put in a situation where you make decisions that employ those people, it's essential that they believe you are a person of honor and integrity who has their best interests at heart."*

*General Ronald R. Fogleman  
Chief of Staff of the Air Force*



## Quality of Life (QoL)

The Air Force traditionally works at the leading edge of technology, and it goes without saying that we rely on highly trained and disciplined people throughout the ranks as the foundation of our strength in sustaining that approach. The success of this strategy depends on our ability to recruit, train, and retain quality people--ultimately, to provide a reasonable quality of life for them and their families as they serve this nation.

Service members' quality of life, to a large extent, tends to influence the decision to stay in or leave the service. Retention across the force remains healthy, but we're beginning to see indications of a slight decline. Our response is to continue to emphasize quality of life issues as a top priority and smartly use targeted incentive programs such as Aviator Continuation Pay for officers and Selective Reenlistment Bonuses for enlisted personnel. We will continue to emphasize quality of life as a positive influence on retention, and therefore, a vital element in ensuring our readiness.

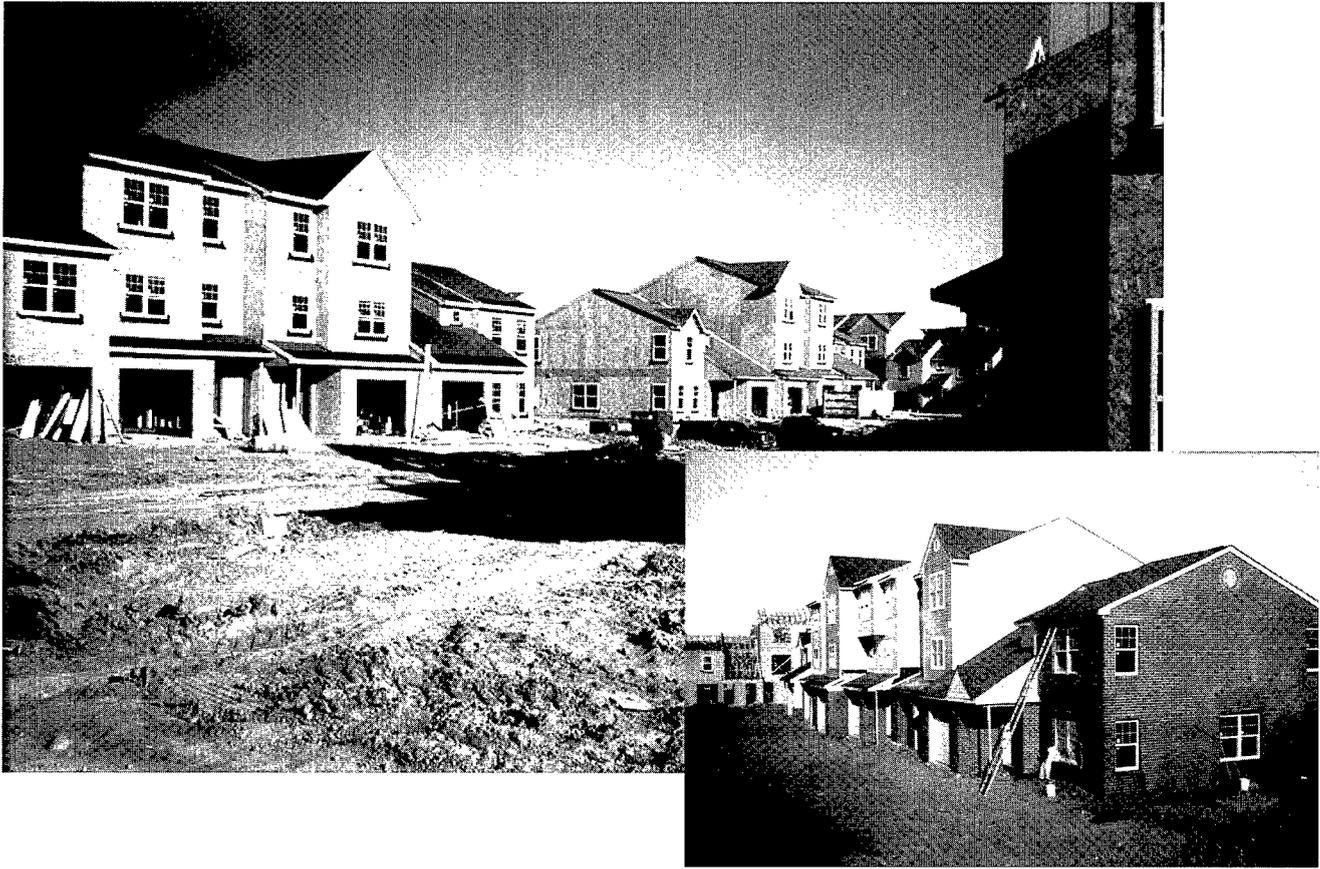
The Air Force Quality of Life strategy is to pursue a balanced approach supporting our 7 priorities:

- fair and equitable compensation;
- safe, affordable housing;
- quality health care;
- OPTEMPO/PERSTEMPO considerations (the demands our operational tempo places on our people);
- increased community programs;
- preservation of retirement systems and benefits; and
- continued support to educational programs.

Air Force QoL initiatives rank compensation and benefits as our first priority in ensuring the right quality of life for our people. Congress has already taken steps necessary to embed pay adjustments in our program, so that in future years there will be no surprises, and adjustments can be made within a planned framework. The 3 percent pay raise authorized in FY97 helped close the private sector pay gap, but clearly we have some distance yet to travel in this area.

The report by the Marsh Commission framed then-Secretary of Defense Perry's priorities, and with congressional support, the Air Force made gains in many of these areas. For example, the Air Force maintains its emphasis on upgrading housing throughout the force. Over 1996, the Air Force began a long-term effort to improve the quality of housing for unaccompanied enlisted members with initiatives ranging from new construction and assignment standards to renovation of old dormitories. We also began construction of our first-ever Dormitory Master Plan to establish a common yardstick for our installations and improve our management oversight in this crucial area. We expect to complete this effort by the summer of 1997.





Already these initiatives are bearing fruit. The Air Force began implementing the new DoD one-plus-one dormitory standard, with 28 such dormitories approved for construction in the FY96 Military Construction Program. We will follow these with another 20 projects in FY97. We also established an institutional goal of eliminating all gang latrines in dorms for permanently assigned personnel by the year 1999. All of these initiatives, and this considerable capital investment, represent our commitment to meet our single and unaccompanied members' highest priority concern in quality of life: privacy.

For Air Force families, we need to revitalize over 58,000 housing units. With the average age of our housing units now over 34 years, this is a major requirement as we seek to improve living conditions for our people. Privatization offers a real opportunity for improved quality with limited investment of Air Force resources. The Air Force's first project in this area will be at Lackland AFB, Texas, where we identified a deficit of 580 units and another 521 units which need major renovation or replacement to meet adequacy standards. To address this problem, the Air Force has funded a 420-unit project including construction of new units, demolition of existing substandard units, and ownership and operation of the new housing. We expect this innovative approach to provide a pattern for others to follow.



We also realize that medical care is a key concern for our people, so we will continue to emphasize the provision of quality health care for Air Force members and their families. In this regard, TRICARE is the best option to ensure this kind of care for dependents as we cut back on what can be provided by Service medical treatment facilities. We will also sustain our support for Medicare Subvention for military retirees over the age of 65 because it is the right thing to do.

Finally, the Air Force is continuing to focus attention and resources on providing our people the child care they need to enable them to perform their duties. High PERSTEMPO and the demands of changing society where more of our families have both parents employed have expanded the demand for child care. We need about 86,000 child care spaces to meet these demands and have begun to meet this challenge by adding an additional 325 trained personnel.



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# Question 1: Boundless Future

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# Conclusion

As we embark on our journey into the next 50 years and beyond, the Air Force is postured to build on our golden legacy and shape our boundless future. We have defined a strategic vision that will take us into the next millennium and continue our Service's transition from an air and space force to a space and air force.

The key to our future success rests on the Air Force's ability to continue to fully exploit the unique characteristics of the air and space mediums--the foundation upon which our core competencies rest. From our core competencies flow the capabilities that make us an integral and indispensable member of the joint team and are key to achieving the overarching goal articulated in *JV 2010--Full Spectrum Dominance*. Maintaining this level of expertise will require an ongoing commitment to innovation and aggressive integration and exploration of the most advanced and promising technologies.

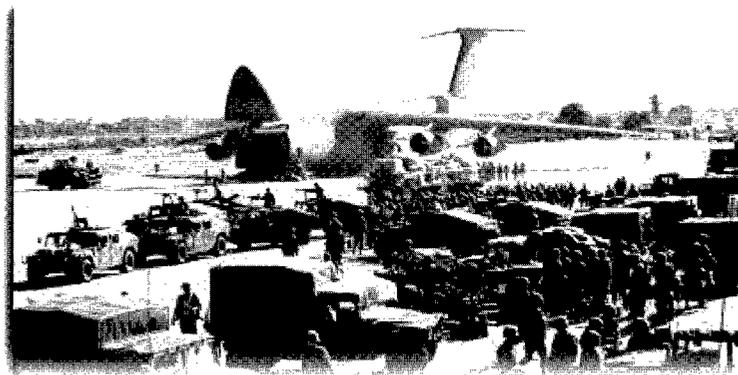
Smart business practices have put the Air Force out in front in the efficient management of precious resources needed to procure our systems, maintain the infrastructure that supports them, and ensure a reasonable quality of life for our people. Combined with our time-phased modernization program, our acquisition reform efforts have allowed us to put better, more reliable equipment into the hands of our people faster and cheaper than ever before.

Air Force people are engaged around the globe and are continuing to build the capabilities our nation will need from its air and space force in the future. The Air Force is proud of its golden legacy of service over the past 50 years, and its current role in support of our *National Security Strategy of Engagement and Enlargement*. We stand ready to work as part of the joint team to secure our country's security for the next 50 years and beyond.

*"Our ideas and doctrine must be as creative and flexible as the instrument itself."*

*Dr. Sheila E. Widnall,  
Secretary of the Air Force*

# Appendix A



## Air Force Link



Top Story

Featured Site

Spotlight



## Air Force Link <http://www.af.mil>

Learn more about the Air Force on the World Wide Web. Click on the **Top Story**, **Featured Site**, or **Spotlight** icons to see what is hot! Access additional information using the icons below.



Current issues impacting the Air Force from both television and radio  
Contains archived information since January 1995



Information important to our people; civilian, retiree, enlisted, and officer  
Pay, promotions, job listings, retiree resources



Profiles of Air Force leaders, facts on Air Force organizations and weapon  
systems, speeches, Air Force-related publications and special studies



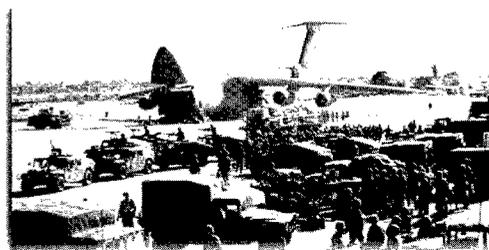
A link to all internal Air Force sites--MAJCOMs, bases, units, agencies



Aviation art, photographs and lithographs



Allows for "key word" searches of available Air Force information



## Air Force Link



Top Story



Featured Site



Spotlight



# Air Force Sites

*\* Partial listing of current Air Force SITES available as of 7 Feb 97*

- 50th Anniversary of the Air Force
- Air Combat Command (ACC)
- Air Force Communications Agency (AFCA)
- Air Force Contingency Supply Squadron (AFCSS)
- Air Education and Training Command (AETC)
- Air Force Materiel Command (AFMC)
- Air Force Reserve (AFRES)
- Air Force Space Command (AFSPC)
- Air Intelligence Agency (AIA)
- Air Mobility Command (AMC)
- Air National Guard Readiness Center (ANGRC)
- Air Weather Service (AWS)
- Alpena Combat Readiness Training Center (CRTCC), MI (ANG)
- Altus AFB, OK
- Andersen AFB, Guam
- Andrews AFB, MD
- Arnold AFB, TN
- Atlantic City ANG
- Aviano AB, Italy
- Barksdale AFB, LA
- Beale AFB, CA
- Bolling AFB, DC
- Brooks AFB, TX
- Cannon AFB, NM
- Cataloging and Standardization Center
- Chicago Air Guard, O'Hare, Chicago IL (ANG)
- Civil Engineer Support Agency (AFCESA)
- Columbus AFB, MS
- Connecticut (ANG)
- Coos Head ANG Station
- Davis-Monthan AFB, AZ
- Defense Link (DOD)
- Dover AFB, DE
- Dyess AFB, TX
- Edwards AFB, CA
- Eglin AFB, FL
- Eielson AFB, AK
- Einsiedlerhof AS, Germany
- Elmendorf AFB, AK
- Ellsworth AFB, SD
- Fairchild AFB, WA
- Falcon AFB, CO
- F.E. Warren AFB, WY
- Forbes Field (ANG), KS
- Ft. Leavenworth, KS
- Ft. McClellan, AL
- Francis Gabreski ANG Station, NY
- General Mitchell ANG Base, WI
- Goodfellow AFB, TX
- Greater Peoria Regional Airport, IL (ANG)
- Griffiss AFB, NY
- Hammond MAP, LA (ANG)
- Hancock Field, NY (ANG)
- Hanscom AFB, MA
- Harrisburg IAP, PA
- Headquarters Pacific Air Forces (PACAF)
- Headquarters United States Air Force
- Hector IAP, Fargo ND
- Hickam AFB, HI
- Hill AFB, UT
- Holloman AFB, NM
- Howard AFB, Panama
- Hurlburt Field, FL
- Incirlik AB, Turkey
- Iowa Air National Guard
- Kadena AB, Japan
- Keesler AFB, MS
- Kelly AFB, TX
- Kirtland AFB, NM
- Kulis ANG, Anchorage, AK
- Kunsan AB, Korea
- Lackland AFB, TX
- Lajes Field, Azores
- Langley AFB, VA
- Latham Headquarters, NY
- Little Rock AFB, AR

Logistics Management Agency (AFLMA)  
Laughlin AFB, TX  
Los Angeles AFB, CA  
Louisville IAP (ANG)  
Luke AFB, AZ  
MacDill AFB, FL  
Malmstrom AFB, MT  
Management Engineering Agency (AFMEA)  
Maxwell AFB, AL  
McClellan AFB, CA  
McConnell AFB, KS  
Medical Logistics Office (AFMLO)  
Medical Support Agency (AFMSA)  
McGuire AFB, NJ  
Minot AFB, ND  
Misawa AB, Japan  
Mountain Home AFB, ID  
Naval Post Graduate School (Air Force Personnel)  
Nellis AFB, NV  
Northeast Air Defense Sector, Rome, NY  
Office of Scientific Research (AFOSR)  
London, UK  
Offutt AFB, NE  
Onizuka AS, CA  
Osan AB, Korea  
Patrick AFB, FL  
Personnel Center (AFPC)  
Peterson AFB, CO  
Phoenix ANG, AZ  
Pope AFB, NC  
RAF Croughton  
RAF Lakenheath, UK  
RAF Mildenhall, UK  
RAF Molesworth, UK  
Ramstein AB, Germany  
Randolph AFB, TX

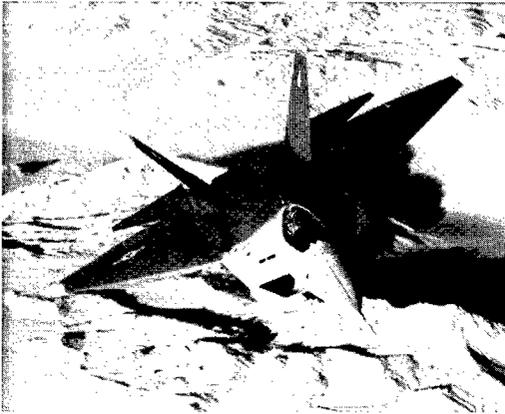
Recruiting Service  
Rickenbacker ANG  
Robins AFB, GA  
Rota NS, Spain  
Scott AFB, IL  
Secretary of the Air Force  
Sembach AB, Germany  
Services Agency (AFSVA)  
Seymour Johnson AFB, NC  
Shaw AFB, SC  
Sheppard AFB, TX  
South Portland ANG Base, ME  
Spangdahlem AB, Germany  
Special Operations Command (AFSOC)  
Stewart ANG Base, NY  
Taif Air Base, Saudi Arabia  
Taszar AB, Hungary  
Technical Applications Center (AFTAC)  
Thompson Field, Jackson, MS  
Tinker AFB, OK  
Toledo ANG, OH  
Travis AFB, CA  
Tyndall AFB, FL  
United States Air Force Academy (USAFA)  
Colorado Springs, CO  
United States Air Forces Europe (USAFE)  
Vance AFB, OK  
Vandenberg AFB, CA  
Warfield (ANG)  
Wheeler Army Air Field, HI (ANG)  
Whiteman AFB, MO  
Wright-Patterson AFB, OH  
USAF Museum  
Wyoming ANG  
Yokota AB, Japan

# Appendix B



## Air Force Background Papers

# F-22



***“DESERT STORM taught us something about air dominance. We had it, we liked it, and we’re going to keep it.”***

*William J. Perry,  
Former  
Secretary of Defense*

***“...we want to be able to continue to dominate the airspace wherever we are.”***

*William S. Cohen,  
Secretary of Defense*

## Key Messages

Air superiority is a key to success in modern warfare. It allows every member of the joint team freedom to operate, freedom from attack, and freedom to attack. It allows friendly forces to take away enemy sanctuaries, strike enemy forces wherever they are located, and dictate to the enemy where they can and cannot move their forces. The ultimate in air superiority is air dominance, the kind of air dominance that allowed the devastating application of air and ground combat power against Iraqi forces in *DESERT STORM* and saved so many lives.

The F-15C, our current air superiority fighter, will be unable to dominate the air in the next century. Today, it is at rough parity with current foreign aircraft and will be surpassed by at least three foreign aircraft that are either operational or in development: the French Rafale, the Eurofighter 2000, and the Russian Su-35. Proliferation of these modern fighters combined with highly capable surface-to-air missile (SAM) systems pose a formidable challenge to the F-15’s survivability. Advanced SAM systems, because of their relatively low cost, are a quick and easy

way for countries to modernize their air defense systems. The F-15 fleet is experiencing problems with avionics parts obsolescence, and the average age of the fleet will be more than 30 years when the last F-22 is delivered in 2013.

The F-22 program is developing the next-generation air superiority fighter for the Air Force to counter emerging worldwide threats. It is designed to penetrate enemy airspace and achieve a first-look, first-kill capability against multiple targets. The F-22 is characterized by a low-observable, highly maneuverable airframe; advanced integrated avionics; and aerodynamic performance allowing supersonic cruise without afterburner.

## Program Description and Key Points

**Stealth:** Greatly increases survivability and lethality by denying the enemy critical information required to successfully attack the F-22

**Supercruise:** Enhances weapons effectiveness; allows rapid transit through the battlespace; reduces the enemy’s time to counter attack

**Integrated Avionics:** Allows F-22 pilots unprecedented awareness of enemy forces through the fusion of on- and off-board information

The synergy of stealth, supercruise, and integrated avionics enables the F-22 to achieve:

### ***First Look, First Shot, First Kill***

The combination of these characteristics will make the F-22 the world’s premier air superiority fighter, and its design will also make it a formidable air-to-ground weapon system. Internal carriage of both air-to-air and air-to-ground weapons preserves F-22 stealth characteristics. For its

primary air-to-air role, the F-22 will carry six AIM-120 and two AIM-9 missiles. For its air-to-ground role, the F-22 can internally carry two 1,000 pound-class Joint Direct Attack Munitions (JDAM), two AIM-120C, and two AIM-9 missiles. With the Global Positioning System-guided JDAM, the F-22 will have a potent adverse weather capability to supplement the F-117 (and later the Joint Strike Fighter) for air-to-ground missions after achieving air dominance.

In addition, F-22 system reliability will enable higher mission availability and sortie rates, providing more combat power using fewer support personnel and less maintenance equipment. This translates directly to fewer airlift sorties required for deployment compared to current fighters.

### **Contribution to Air Force Core Competencies**

The F-22 is the keystone of our nation's *Air Superiority* force for the twenty-first century. Achieving air superiority allows all other theater forces to operate free from enemy air attacks, giving friendly forces air dominance--the key to winning wars with the fewest casualties. The F-22 also contributes to our core competency, *Precision Engagement*, enabling other combat and support forces to employ precision weapons or conduct precision information and airdrop operations, as well as independently penetrate deep into enemy airspace to deliver highly accurate 1000-pound JDAMs in adverse weather conditions.

A future key asset to our Air Expeditionary Force, the F-22 will improve this flexible, tailored, rapid-response force, filling theater commanders' needs across the spectrum of conflict whether conducting *Global Attack* missions or protecting peacekeeping forces. With its stealth and supercruise, the F-22 can safely penetrate and persist deep in enemy airspace to eliminate enemy command and control aircraft, gather information, or conduct precision strikes on key information-related targets, contributing to the joint effort to gain *Information Superiority*.

### **Discussion**

The F-22, like a number of other major acquisition programs, has taken advantage of a new reform initiative, the Joint Estimate Team (JET). The JET consists of government and industry experts independently chartered to estimate projected costs and make recommendations to reduce these costs while preserving warfighting capability. The F-22 JET was a proactive measure to mitigate potential cost growth during the transition from Engineering Manufacturing and Development (EMD) to production. The JET findings are 1) an additional \$1.45 billion in EMD budget is required to reduce risk prior to entering production; this requirement has been sourced by slowing the production ramp, and 2) the potential for cost growth in production has been contained within the current F-22 budget estimate through cost reduction initiatives formalized in a government/industry Memorandum of Agreement.

### **Program Status**

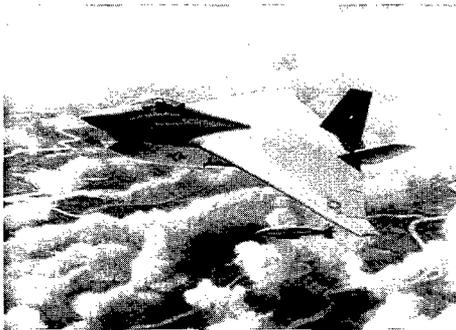
The F-22 program is midway through its EMD phase, with the first flight planned for May 29, 1997. We expect the first F-22 unit to be operational in early FY 2005. Between 1999 and 2013, 438 operational F-22s will be produced to fill a planned four combat wings.

# JSF

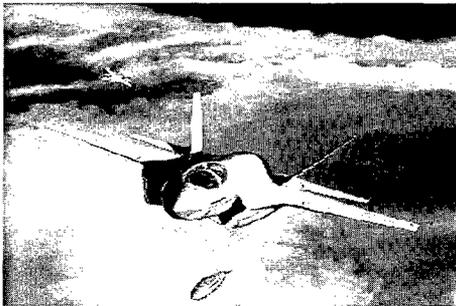
## Joint Strike Fighter

### Key Messages

Success on the twenty-first century battlefield rests on the ability of the joint force to quickly gain air superiority and precisely conduct strike operations while minimizing risk and collateral damage. While the F-22 is key to attaining air superiority in the future, the Joint Strike Fighter (JSF), will provide the 24-hour, adverse weather, precision engagement capability the joint force commander needs.



Boeing version



Lockheed Martin version

The JSF is a multi-role aircraft optimized for the air-to-ground role, designed to meet the needs of the Air Force, Navy, Marine Corps and our allies, with improved survivability, precision engagement capability and the mobility necessary for future joint operations. The JSF program benefits from many of the same technologies developed for the F-22 and will capitalize on commonality and modularity to maximize affordability. The JSF's bottom line: an effective, affordable balance of survivability, lethality, and supportability.

### Program Description and Key Points

The JSF program will demonstrate two competing weapon system concepts for a tri-service family of aircraft to meet these service needs:

**USAF**-Multi-role aircraft (primarily air-to-ground) to replace the F-16 and A-10 and to complement the F-22

**USN**-First-day-of-war survivable strike fighter aircraft to complement F/A-18E/F

**USMC**-Short Take-Off & Vertical Landing (STOVL) aircraft to replace AV-8B, F/A-18

**UK**-STOVL (supersonic) aircraft to replace the Sea Harrier

Key characteristics and capabilities of the JSF system include:

**Survivability:** radio frequency/infrared signature reduction and on-board countermeasures to survive in the future battlefield--leveraging off F-22 air superiority mission support

**Lethality:** integration of on- and off-board sensors to enhance delivery of current and future precision weapons

**Supportability:** reduced logistics footprint and increased sortie generation rate to provide more combat power earlier in theater

**Affordability:** focus on reducing cost of developing, procuring and owning JSF to provide adequate force structure

### Contribution to Air Force Core Competencies

The JSF will provide 24-hour, adverse weather *Precision Engagement* for the joint force on the future battlefield in 2010 and beyond. JSF's integrated avionics and stealth allow it to penetrate surface-to-air missile

defenses to destroy targets, when enabled by air dominance gained by the F-22. The JSF is designed to complement a force structure that includes other stealthy and non-stealthy fighters and bombers, as well as reconnaissance and surveillance assets, ensuring the best use of the joint force in the strike warfare environment. Additionally, the JSF's low unit cost will allow a larger force structure providing greater overall employment flexibility in both peace and war.

## **Discussion**

JSF requirements definition efforts are based on the principles of Cost as an Independent Variable: Early interaction of the warfighter and developer ensures cost / performance trades are made early, when they can most influence weapon system cost. The Joint Requirements Oversight Council has endorsed this approach.

The JSF's approved acquisition strategy provides for the introduction of an alternate engine during Lot 5 of the production phase, when benefits are expected to be substantial. OSD is currently considering several alternative implementation plans which would accelerate this baseline effort. A recommended position will be presented after OSD and Service review of the alternate engine program in spring 1997.

## **Program Status**

The focus of the program is producing effectiveness at an affordable price—the Air Force's unit flyaway cost objective is \$28 million (FY94\$). Congress fully funded JSF for FY97, with plus-ups for alternate engine efforts (Authorization, +\$13 million; Appropriation, +\$10 million). The Concept Demonstration Program (CDP) was successfully initiated on 16 Nov 96 with the selection of Boeing's and Lockheed Martin's "best value to the government" CDP proposals. First operational aircraft delivery is planned for FY08.

The JSF is a joint program with shared acquisition executive responsibilities. The Air Force and Navy each provide approximately equal shares of annual funding, while the United Kingdom is a collaborative partner, contributing \$200 million to the CDP. The JSF was designated a joint Major Defense Acquisition Program on 23 May 96 and entered the Program Definition and Risk Reduction (PDRR) phase on 15 Nov 96. The PDRR phase consists of three parallel efforts leading to Milestone II and an Engineering and Manufacturing Development (EMD) start in FY01:

*Concept Demonstration Program.* The two CDP contracts were competitively awarded to Boeing and Lockheed Martin for ground and flight demonstrations at a cost of \$2.2 billion for the 51-month effort, including an additional contract to Pratt & Whitney for the engine. Each CDP contractor will build concept demonstrator aircraft (designated X-32/35). Each contractor will demonstrate commonality and modularity, short take-off and vertical landing, hover and transition, and low-speed carrier approach handling qualities of their aircraft.

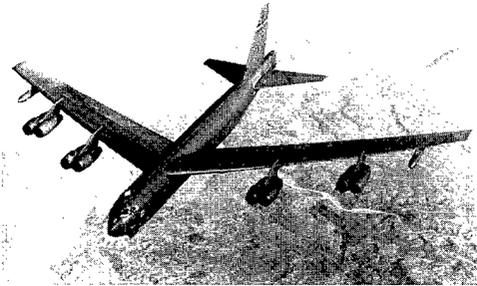
*Technology Maturation.* These efforts evolve key technologies to lower risk for EMD entry. Parallel technology maturation demonstrations are also an integral part of the PDRR objective of meeting warfighting needs at an affordable cost. Focus is on seven critical areas: avionics, flight systems, manufacturing and producibility, propulsion, structures and materials, supportability, and weapons. Demonstration plans are coordinated with the prime weapon system contractors and results are made available to all program industry participants.

*Requirements Definition.* This effort leads to Joint Operational Requirements Document completion in FY99; cost/performance trades are key to the process.

# Bombers

## Key Messages

With their global range, large payloads and immediate response capability, heavy bombers are at the core of our nation's warfighting strategy. Our bomber forces can employ while other forces deploy. Their ability to be the "first to the fight" allows bombers to destroy time-critical targets, attrit enemy forces rapidly, decisively halt advancing enemy forces, and prepare the battlefield for the counter attack. As America reduces the number of military forces permanently stationed overseas, our power projection capabilities will be even more important to the Joint Force Commander and our national leaders. Whether employing from CONUS as a stand-alone force or as a part of an Air Expeditionary Force, the bomber fleet projects power rapidly, precisely and globally, providing lethality with large payloads of direct-attack and stand-off weapons.



B-52



B-1



B-2

***"I believe the heavy bomber force, although small in number, is one of the most highly leveraged force options in America's arsenal."***

*Dr. Paul G. Kaminski  
Under Secretary of  
Defense for Acquisition  
and Technology*

Today, our bomber force provides a conventional deterrent option for the nation while continuing to maintain nuclear capability. Nuclear deterrence remains a bedrock requirement of national security, and the long-range bomber force provides a crucial leg of the nuclear Triad with our B-2 and B-52 fleets.

## Program Description and Key Points

**B-1:** Originally designed as a nuclear weapons delivery platform, the B-1 is undergoing the Conventional Mission Upgrade Program (CMUP) to transition to a conventional-only platform. Conventional weapons and defensive system upgrades improve the B-1's lethality and survivability, allowing it to respond on the first day of a conflict. Carrying 84 general purpose 500-pound bombs or 30 cluster bombs, the B-1 can help halt an enemy advance during the initial stages of a conflict while other forces deploy.

The B-1's conventional capability will continue to increase through the time-phased CMUP modernization effort. Likewise, advancements in B-1 weapons' carriage will significantly improve the platform's lethality and hold enemy targets at risk in high-, medium-, and low-threat environments. Programmed reliability and maintainability improvements, such as computer avionics and defensive system upgrades, will make the B-1 more affordable to operate.

**B-2:** The B-2's range and ability to penetrate defended airspace make a critical contribution to global power projection. The joint force commander can use the B-2 to strip away lethal enemy air defenses, command and control nodes, and essential weapons of mass destruction storage and production facilities.

Current B-2s incorporate the first generation avionics systems to include terrain following (TF) and Global Positioning System (GPS) navigation

capability. Block 30 deliveries will begin in late FY97 and will provide low observable combat capabilities. The B-2's final stealth configuration will dramatically reduce its vulnerability to threat systems. Additionally, on-board systems such as TF, communications, situational awareness, and advanced targeting allow its pilots to attack the target while avoiding enemy defenses. By mid-2000, all B-2s will be Block 30 configured, making the entire B-2 fleet "fully deployable."

**B-52:** The B-52 provides the National Command Authorities with the ability to respond to the full spectrum of conflict, nuclear and conventional, at global distances. As witnessed in several recent Persian Gulf confrontations, the B-52 is the nation's conventional workhorse, with the ability to deliver the AGM-86C Conventional Air Launch Cruise Missile (CALCM), as well as the precision, man-in-the-loop, AGM-142 Raptor. Likewise, the B-52 retains a formidable ability to carry large amounts of conventional gravity munitions, enabling commanders to rapidly add mass and depth to sustained operations. This platform was credited with delivering over 30 percent of the total DESERT STORM munitions tonnage, while comprising only 3 percent of the aircraft deployed. Further evidence of this aircraft's versatility is its ability to carry and dispense aerial sea mines and Harpoon anti-ship missiles.

### **Contribution to Air Force Core Competencies**

The Air Force has the unique ability to project power rapidly, precisely, and globally, a capability vital to our National Security Strategy. Bombers will continue to evolve as a desirable option for crisis response and power projection in meeting the needs of the nation and are a key component of our core competency, *Global Attack*. Bombers provide the range, payload, lethality, and speed to guarantee the Air Force can globally project power anywhere, anytime.

### **Program Status**

The Air Force will integrate advanced munitions into the B-1 fleet with the Joint Direct Attack Munition (JDAM) in FY99 and the Wind Corrected Munitions Dispenser (WCMD), Joint Stand-off Weapon (JSOW), Joint Air-to-Surface Stand-off Missile (JASSM) by FY02.

The Air Force is aggressively adding a formidable conventional mission capability to the B-2 allowing it to attack almost any target, anywhere, anytime. The fleet currently employs the Mk-84, 2000-pound unguided conventional munition, and Block 20 aircraft carry the GPS Aided Munition (GAM), an interim precision weapon capability fielded in July 1996 that uses the GPS Aided Targeting System (GATS). The 509th Bomb Wing from Whiteman AFB, Missouri executed a GAM operational demonstration on 8 Oct 96. Sixteen GAMs were released from three B-2s destroying 16 different targets (8ft x 8ft x 20ft steel boxes). The Block 30 B-2s will host JDAM (superseding GAM), three variants of Tactical Munitions Dispensers, Mk-62 Navy mines, 500-pound and 750-pound unguided bombs, new upgrades such as the GAM-113 hard target penetration munition, and JSOW. Planned post-Block 30 upgrades include JASSM.

The B-52 will gain greater lethality and survivability with precision gravity and stand-off armament systems, currently in development, the JDAM (FY98), WCMD (FY98), JSOW (FY00), and JASSM (FY01). Additionally, a CALCM Block 2 missile, in final testing, will have precision penetration capability to improve its lethality, and increase the B-52's ability to destroy hardened targets.

# Precision Weapons

**In 1944, it took 108 B-17s dropping over 600 bombs to destroy a point target. In Vietnam, similar targets required 175 bombs. Now a single precision-guided munition can do the job. This is how the F-117 destroyed 40 percent of all strategic targets while flying only 2 percent of the strike sorties during Operation DESERT STORM.**

## Key Messages

The next generation of precision weapons are powerful force multipliers and critical enablers of present and future weapon systems. Combined with upgrades in aircraft avionics, they provide the ability to accomplish multiple-kills-per-sortie versus the previous requirement for multiple-sorties-per-kill. They reduce risk to U.S. and allied forces and minimize collateral damage. These weapons also enable our aircraft to remove enemy sanctuaries, providing more employment options and flexibility to the Joint Force Commander. To meet future needs, the Air Force will address continued development of smart weapons for hard and deeply buried targets and weapons of mass destruction.

## Program Description and Key Points

The Air Force's precision-guided munition (PGM) investment strategy is based on meeting our nation's security needs in the post-Cold War environment. The type of weapons in our inventory has remained fundamentally unchanged since the end of the Vietnam War. DESERT STORM demonstrated our current weapons' effectiveness and also revealed their shortcomings. Next generation weapons must have improved accuracy, adverse-weather capability, increased stand-off, autonomous guidance, improved hardened target capability, and multiple-kills-per-pass/multiple-targets-per-release capabilities. Current Air Force inventory weapons address only a few of these.

Laser Guided Bombs (LGBs), GBU-15, AGM-65 Maverick, and the GBU-28 Penetrator provide limited hard target penetration, limited stand-off, and precision guidance (three-meters), but no adverse-weather capability. The AGM-88 High Speed Anti-Radiation Missile (HARM) and AGM-84 Harpoon anti-ship missile provide limited, long-range stand-off capability.

During the 1980s, the Air Force acquired "transitional" weapons, but they are carried on a limited number of platforms, thereby restricting employment flexibility. The AGM-130 and AGM-142 unitary warhead missiles provide precision and long-range stand-off capability from the F-15E and B-52, respectively. The Conventional Air Launched Cruise Missile (CALCM), employed on the B-52, offers stand-off outside theater defenses, with near-precision accuracy. The Global Positioning System (GPS) Aided Munition (GAM) provides an interim adverse-weather direct-attack capability for the Block 20 B-2. The final "transitional" weapon is the Sensor Fuzed Weapon (SFW), a multiple-kill-per-pass anti-armor/suppression-of-enemy-air-defenses (SEAD) submunition weapon developed to defeat armored columns. These weapons, which can be carried on a number of platforms, will remain effective well into the next decade.

Beginning in the mid-1980s, the Air Force and Navy began development of "next generation" weapons to fulfill the shortcomings of the earlier weapons. All of these are now well in development or in the initial stages of production. Deliveries will begin in FY97 with Joint Direct Attack Munition (JDAM). The JDAM is an Inertial Navigation System (INS)/GPS guidance

tail kit for general purpose and penetrator 2,000- and 1,000-pound warheads already in the inventory. The tail kit converts dumb bombs into accurate, adverse-weather capable weapons which can be individually targeted resulting in multiple-kills-per-pass. Wind Corrected Munitions Dispenser (WCMD) provides a similar capability for cluster munition dispensers, with INS guidance allowing high-altitude delivery out of range of anti-aircraft artillery. In addition, the follow-on to the SFW, which is presently under development, will increase the accuracy, enlarge the pattern, and offer greater kills-per-pass than the original SFW.

The Joint Stand-off Weapon (JSOW) is an adverse-weather, short-range, stand-off anti-armor/SEAD dispenser weapon. The long-range, precision, stand-off requirement is met by the Joint Air-to-Surface Stand-off Missile (JASSM), which will also have a limited hard target penetration capability.

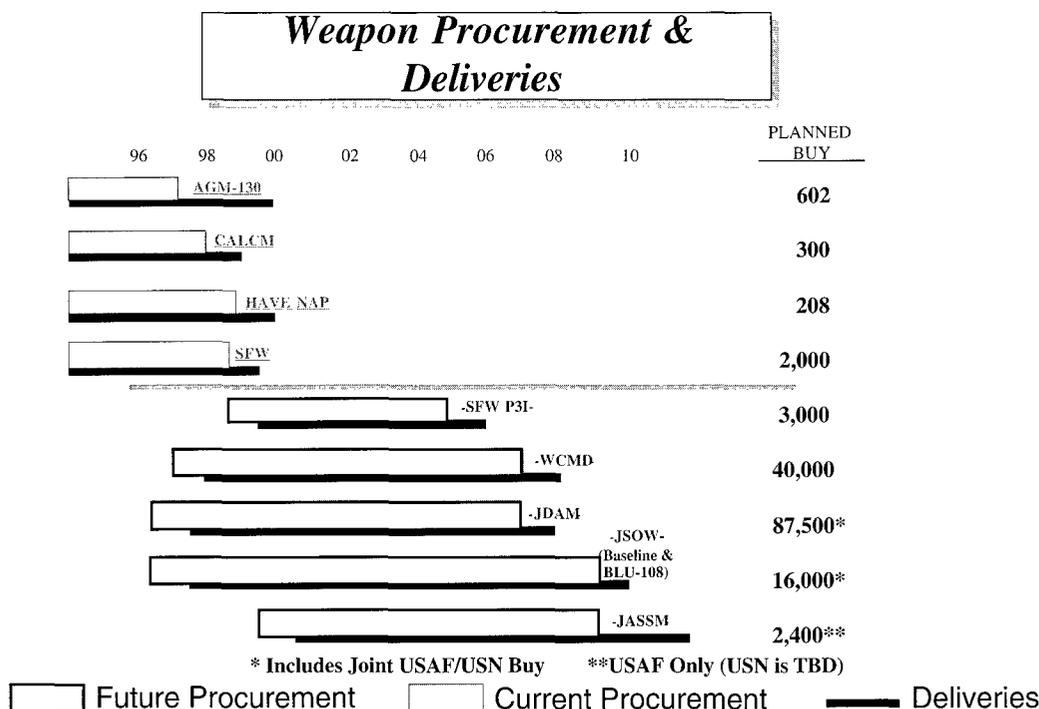
All these weapons are autonomously guided and offer a multiple-kills-per-pass capability for our combat aircraft, often requiring only one weapon required to kill one target. In addition, all these weapons are being integrated on virtually every Air Force combat aircraft, such as the B-1, B-2, B-52, F-16, F-15E, F-117 and F-22. Weapons development and production plans are closely coordinated with aircraft modifications to integrate these new weapons efficiently.

### Contribution to Air Force Core Competencies

The essence of *Precision Engagement* lies in the ability to apply selective force against specific targets and achieve discrete and discriminant effects. The next generation weapons meet this challenge. In addition, these weapons enable Air Force platforms to rapidly attack targets anywhere on the globe at any time enhancing the Air Force core competency of *Global Attack*.

### Program Status

Deliveries of current and future weapons are outlined below and are phased for timely integration on their associated platforms.



# Global Mobility



***“Because our forces will need to move quickly and lightly, we reaffirmed Rapid Global Mobility as a core competency that will remain critical into the first quarter of the 21st century... we can expect our mobility forces to be on call and in use every day--as far into the future as we can imagine.”***

General  
Ronald R. Fogleman,  
Chief of Staff, USAF

## Key Messages

Airlift and air refueling forces provide tremendous speed and flexibility in deploying, employing, and sustaining America’s military forces. Air mobility forces operate as part of a larger joint warfighting team, working closely with air, land, and naval forces to meet operational requirements for the unified commanders. Air mobility missions include the airlift and/or airdrop of troops, passengers, supplies, and equipment to locations around the globe, as well as air refueling for Air Force, sister Services, and allied aircraft. Air mobility forces also provide worldwide aeromedical evacuation of patients, participate in special operations, and support other national security requirements.

## Program Description and Key Points

The Mobility Requirements Study Bottom-Up Review Update and analysis of preposition cargo set the airlift requirement for a two major regional contingencies (MRC) scenario at 49.7 million ton miles per day (MTM/D). Fully mobilized, the Air Reserve Component and active duty contributes approximately 61 percent, while the Civil Reserve Air Fleet (CRAF) provides 39 percent. However, Air Mobility Command’s force structure is not only based on the requirements for a two-MRC scenario, but also on unique military requirements such as strategic brigade airdrop, lesser regional contingencies, and peace keeping/peace enforcement.

**C-17:** The C-17, our follow-on core airlifter, is the key to meeting the nation’s strategic mobility requirements for the twenty-first century. Possessing the full range of combat capabilities, the C-17 ushers in a new era in strategic and theater airlift. The C-17 is capable of operating in austere environments under a variety of threat conditions, with roll-on, roll-off capability. It can deliver troops, equipment, and supplies via airdrop or airland operations. The Defense Acquisition Board in November 1995 directed the Air Force to plan, program, and budget to procure a total of 120 C-17s at the maximum affordable rate. The Air Force obtained congressional approval for and signed a seven-year multi-year procurement contract on June 1, 1996 for the last 80 C-17s. This contract provides savings of nearly \$1 billion over current yearly contracts and maintains our airlift capability at the highest possible levels.

**C-5:** The C-5 Galaxy provides a significant portion of Air Mobility Command’s cargo capability and is a vital asset, capable of deploying personnel and cargo between CONUS and overseas locations. The C-5A entered service in 1969 with 50 additional C-5Bs entering service in the mid-1980s. The USAF will concentrate on increasing C-5 fleet effectiveness by implementing a capital investment plan focused on lowering costs of ownership and improving fleet reliability, maintainability, and availability.

**C-141:** Our current core airlifter, the C-141 is capable of delivering cargo and troops between theaters of operation. The C-141 fleet is nearing the end of its operational service life and is being retired. Over the past several years,

fleet structural integrity problems have restricted the C-141's capability. As it is being retired, the fleet will be managed carefully until its replacement, the C-17, is delivered. This includes selectively modifying a group of airplanes to maintain their operational capability and supportability until retirement in 2006.

**C-130:** The C-130 is our core theater airlift aircraft. Its primary mission is to rapidly transport and deliver personnel and cargo via airland or airdrop operations within the theater of operations. The C-130 can land and take off on short runways, and can operate on austere landing strips. Numerous versions of the C-130 perform a variety of other specialized missions, including special operations, airborne command and control, air refueling, reconnaissance, and electronic warfare.

Several major modification programs for the C-130 will ensure long-term fleet mission capabilities, including airlift defensive systems, new autopilot, electrical system upgrade, and navigation system improvements. Initial C-130 retirements are scheduled to begin just after the turn of the century when the fleet begins to reach the end of its service life. The Air Force has programmed a low rate C-130J acquisition profile with initial deliveries slated for training, tactics development, and special missions.

**KC-135** The KC-135 is our core tanker. It is capable of meeting a number of requirements including deploying, employing and redeploying U.S. and allied aircraft, and supporting the SIOP mission. Given the age of the basic aircraft, modernization of the avionics and communication equipment must keep pace with technology to keep this system a viable force multiplier well into the future. As a cockpit modernization effort, PACER CRAG (compass, radar and Global Positioning System) upgrades the entire KC-135 fleet with current technology to satisfy human factor and the most complex mission requirements. The KC-135 has a predicted service life of 70,000 hours and current annual flight hours reveal a notional service life well into the twenty-first century. However, these numbers do not include the effects of corrosion. Corrosion and economic service life studies are being conducted to examine potential retirement and replacement.

**KC-10:** The KC-10 is a swing role tanker/airlift aircraft that requires little maintenance and modifications compared to older military systems. Current modification programs include the installation of GPS and wing-mounted drogue refueling pods. Designed with a service life of 30,000 hours, projected structural service life of the KC-10 extends to 2043.

**CRAF:** An essential component of our airlift modernization plan is a continued reliance on civil aircraft. A critical part of our airlift force today, CRAF can provide up to one third of DoD's cargo capacity and 93 percent of strategic airlift passenger capability when fully mobilized. Mobilization can occur in three stages, each requiring SECDEF or Presidential approval. In exchange for receiving peacetime transportation business from the Department of Defense, civilian air carriers voluntarily commit aircraft to the wartime/contingency CRAF mission. The result is DoD has a substantial on-call airlift capacity at virtually no cost.

## **Contribution to Air Force Core Competencies**

*Rapid Global Mobility* is key to conducting military operations throughout the spectrum of conflict. Air mobility forces provide the most flexible and responsive means to rapidly project and sustain combat forces during peace and war. The fundamental operational objective is to quickly project combat, peacekeeping, and humanitarian assistance forces anywhere in the world and sustain those forces once deployed.

## Information Superiority



### Key Messages

Success on the twenty-first century battlefield will rely more and more on our ability to use and protect information. *Information Superiority is the ability to collect, control, exploit, and defend information while denying an adversary the ability to do the same.* The key to achieving and maintaining Information Superiority is a robust intelligence, surveillance and reconnaissance (ISR) capability that is transmitted to the warfighter and a thorough understanding of Information Operations (IO)--those actions taken to affect an adversary's information and information systems while defending one's own. Information Warfare (IW), defensive and offensive, is an integral component of IO.

### Program Description and Key Points

At the heart of Information Superiority is an air and space C4ISR architecture. Our contribution to this joint "system of systems" includes a variety of air- and space-based platforms, as well as the tools that support information processing.

The Air Force is acquiring two additional **RC-135 RIVET JOINT** (RJ) surveillance aircraft and has started re-engining the fleet. Like other Information Superiority platforms, the RJ is in great demand by theater Commanders in Chief (CINCs), resulting in an extremely high operations and personnel tempo. The addition of two aircraft will moderate this problem, while re-engining will extend airframe life. **U-2s** continue to provide critical information around the world in support of United Nations, national and theater requirements. The **Contingency Airborne Reconnaissance System** (CARS), the primary Air Force ground station for exploiting U-2-collected information, continues to provide support to joint forces in Bosnia and Southwest Asia. **Mobile Stretch** (MOBSTR), the U-2 downlink, processing and long-haul communication portion of CARS, has proven the concept of near-real-time intelligence support to deployed forces from CONUS. **Joint STARS** provides excellent wide-area surveillance and battle management capabilities for theater CINCs and has proven itself in two deployments supporting NATO requirements in Bosnia. The Joint STARS was approved for full rate production and will reach Initial Operational Capability (IOC) in 1997. The Air Force plans to operate three **Unmanned Aerial Vehicle** (UAV) systems to conduct ISR missions. Predator is a medium-altitude endurance UAV currently being tested under real-world conditions in Bosnia. Global Hawk and the low-observable DarkStar are high-altitude endurance UAVs under development.

**Space Based Infrared System** (SBIRS) consolidates DoD's non-imaging infrared systems into a single overarching architecture to fulfill national security needs in the areas of missile warning and defense, technical intelligence, and battlespace characterization. It will provide an effective transition from the Defense Support Program to meet a wide range of theater and national requirements. The Air Force has received one of two **Joint Service Imagery Processing Systems**, a world-wide deployable ground station designed to receive, process, exploit, and disseminate national-level imagery and imagery-derived products to the warfighter in near real time.

The **Theater Battle Management Core Systems (TBMCS)** and **Air Force Mission Support System** will provide primary support tools for theater commanders, creating seamless information flow to the warfighter. These programs will fully support implementation of DoD's **Global Command and Control System (GCCS)** as part of the Defense Information Infrastructure-Common Operating Environment. TBMCS will provide command and control and Air Tasking Order generation through the **Contingency Theater Air Planning System**, situational awareness and current intelligence data using the **Combat Intelligence System**, and a common communication network for use at Air Force wings, the **Wing Command and Control System**. **Joint Tactical Information Distribution System** provides the exchange of data between all netted systems, including fighter, surveillance, and air and ground command and control platforms, and enables joint warfighters to share a common picture of the entire tactical battlefield.

The top IW priority is to defend our own increasingly information-intensive capabilities. Already the leader in defense of garrison computer systems, the Air Force will move aggressively to defend its forward deployed assets. The Air Force is accelerating installation of the **Automated Security Incident Measurement System** which will provide a limited intrusion detection capability to 108 bases/locations by 2001. Additionally, the Air Force is funding Base Network Control Centers and Base Information Protection programs to allow bases to manage and protect computer networks from a central location. The Air Force also is working concepts for operational and tactical offensive IW and continuing to work with other federal agencies to support strategic information operations. With the establishment of the Air Force Information Warfare Center in 1993, the creation of the 609th Information Warfare Squadron in 1996, the recent consolidation of IO disciplines on the Air Staff, and the standup of an IW Battle Lab later this year, the Air Force is well prepared to develop offensive IO doctrine and policy for the Air Force in support of joint warfighting.

## **Contribution to Air Force Core Competencies**

The absolute need for *Information Superiority* is a common thread through all military operations. While *Information Superiority* is not the sole domain of the Air Force, it is, and will remain, an Air Force core competency. In fact, without *Information Superiority*, the Air Force can't successfully bring its other core competencies to bear.

## **Discussion**

In no other area is the pace and extent of technological change as great as in the realm of information. Information Operations and Information Warfare in particular will grow in importance during the next century. Providing the joint force Full Spectrum Dominance will require a truly interactive common battlespace picture, and the Air Force is committed to providing the integrated global and theater air, space, and surface picture of the battlespace to the twenty-first century Joint Force Commander.

## **Program Status**

Air Force ISR and IO programs are critical components for maintaining dominance on future battlefields. Continuing upgrades and improvements to the Air Force's ISR platforms and tools and the development of new concepts and capabilities will ensure the Air Force continues to provide U.S. military commanders and national decision makers Information Superiority—today and tomorrow.

# Airborne Laser



## Key Messages

The Airborne Laser (ABL) will play a vital role in the nation's theater missile defense (TMD) strategy. Under that strategy, the Department of Defense is developing a joint, layered defense architecture against theater ballistic missile (TBM) attack. The ABL will be the primary weapon used to attack TBMs during their boost phase, destroying them early in flight before their warheads have an opportunity to separate from the boost vehicle. Under this scheme, the warheads and destroyed missile components fall on enemy territory, making the aggressor's nation vulnerable to the effects of whatever warhead they employed. As such, the ABL will provide a strong deterrence against the use of weapons of mass destruction. ABL offers revolutionary warfighting capability, taking advantage of existing high energy laser and adaptive optics technology to field a flexible, robust, long-range, and affordable weapon system.

## Program Description and Key Points

The ABL is a rapid, self-deployable, long-range, airborne laser weapon ready for immediate employment upon arriving in theater. The program will integrate a multi-megawatt Chemical Oxygen Iodine Laser into a Boeing-747 aircraft to kill boosting TBMs at ranges in excess of several hundred kilometers. It will autonomously detect these threats with onboard infrared sensors, track them with highly accurate, low-power lasers, and fire its high-energy laser to destroy the missile. The high-energy laser beam control system, which uses adaptive optics and fast steering mirrors, will compensate for atmospheric effects and aircraft movement. The ABL will provide missile flight data to include estimated launch and impact points to other TMD architecture systems via an onboard communications suite. The ABL will have a salvo engagement capability, carrying enough chemical fuel to destroy 20 to 40 enemy missiles before refueling.

## Contribution to Air Force Core Competencies

The Airborne Laser is an essential component in the Air Force capability to gain and maintain *Air and Space Superiority*. It fills a critical portion of the layered TMD defense architecture by attacking boosting TBMs. ABL will support Air Force efforts to provide *Rapid Global Mobility* forces to the CINCs. From its base in the continental U.S., the large 747-400 airframe carries all ground support, laser fuel, and support personnel needed to provide a rapid theater ballistic missile defense for deploying troops. The ABL also complements our *Precision Engagement* capability through precise, long-range detection, tracking, and targeting of boosting TBMs, then destroying them using its high energy laser. Finally, ABL contributes to gaining and maintaining *Information Superiority* using its onboard sensors and information systems to provide relevant TBM information to other

components of the TMD architecture. ABL is being designed to integrate in the *Agile Combat Support* structure. ABL's logistics support concept will take full advantage of the extensive worldwide commercial support structure and maximize use of existing commercial and military hardware and software.

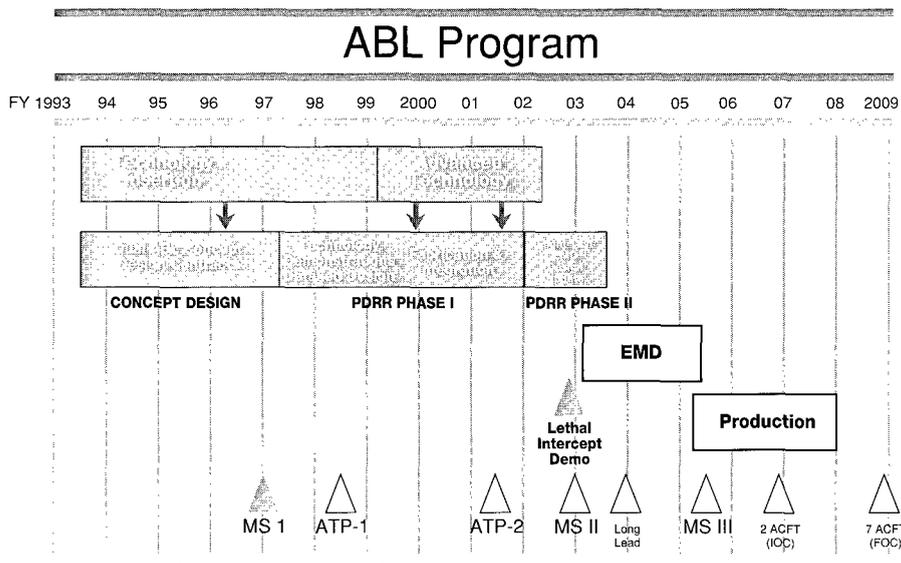
## Discussion

The ABL is a revolutionary weapon system that can dramatically alter future battles. Its unique counter air capabilities to destroy TBMs during the boost phase will ensure our nation's military forces, and those of our allies, will operate independent of theater ballistic missile attack. Complementing Joint Strike Fighter and F-22 efforts to destroy theater ballistic missiles and their support equipment on the ground before launch, the ABL will engage missiles that are not destroyed during attack operations.

Air Combat Command will operate ABL from a continental U.S. base and will rapidly deploy it around the globe to arrive in theater, combat ready. Seven aircraft are currently planned; five aircraft are required to support two high-altitude Combat Air Patrol (CAP) orbits. At any given time, two aircraft will be on CAP, two aircraft will be preparing to arrive on CAP, and one aircraft will be on ground alert. The remaining aircraft will be allocated for training and/or depot maintenance. The joint forces air component commander (JFACC) will locate ABL orbits based on the threat, rules of engagement, weather conditions, and intelligence information. Inflight refueling and rotation of aircraft will provide continuous 24-hour coverage of potential TBM launch sites. Normal station time is 12 hours, but ABL can maintain station for up to 22 hours.

## Program Status

The ABL program is an ACAT ID, Major Defense Acquisition Program in the Program Definition and Risk Reduction (PDRR) phase of its acquisition cycle. The Air Force awarded a \$1.1 billion, 74-month contract to Boeing in November 1996. The program is event driven and structured to progressively address major program risks before major funding commitments. The integrated program schedule illustrates the 11-year research and development effort followed by a short production run. The research and development costs total \$2.5 billion, and production costs are estimated to be \$3.7 billion in then-year dollars.



## UAVs

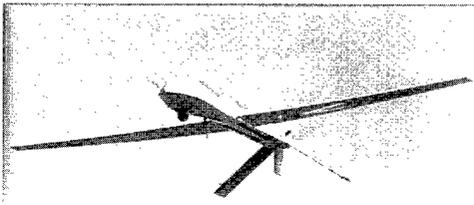
Unmanned  
Aerial Vehicles

### Key Messages

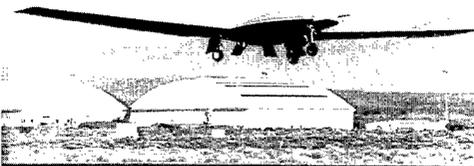
The Air Force uses a "system of systems" approach to ensure our nation's military forces receive the information necessary to conduct operations across the spectrum of conflict. The Unmanned Aerial Vehicle (UAV) is one platform supporting this need. In the near-term, UAVs will perform intelligence, surveillance, and reconnaissance (ISR) missions.

In the mid-term, the Air Force expects to exploit the technological promise of UAVs across the full range of missions, including areas such as communications relay and suppression-of-enemy-air-defense (SEAD) missions.

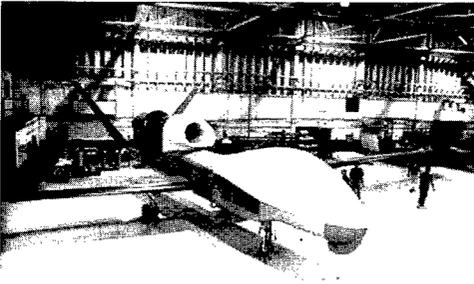
The migration of additional missions to UAVs will depend upon technology maturation, affordability, and the evolution to other forms of warfare. We are currently focusing on operating the Predator medium-range surveillance UAV.



Predator



DarkStar



Global Hawk

### Program Description and Key Points

Presently, the Air Force is working on three UAVs to perform ISR missions for the joint force, one currently operating and two under development.

The Predator (Tier II) is a medium-altitude endurance UAV designed to collect full-motion video and frame imagery with electro-optical, infrared, synthetic aperture radar (EO/IR/SAR) sensors all carried on board at the same time. The Predator is capable of flying for a maximum of 24 to 30 hours and can operate in a permissive threat environment. The ceiling is 25,000 feet, but Predator normally operates at 10,000 to 15,000 feet. Predator was the first Advanced Concept Technology Demonstration (ACTD) program to transition to an operational capability, having been used extensively in Europe supporting Bosnia operations. Predator is assigned to the 11th Reconnaissance Squadron at Indian Springs, Nevada.

The high-altitude endurance (HAE) UAVs, Global Hawk and DarkStar, are being developed by Advanced Research Projects Agency under a single ACTD. The ACTD also includes the development of a common ground station.

Global Hawk is designed to be a long endurance ISR platform. The ACTD will develop the air vehicle and EO/IR/SAR imagery sensors to be carried on the vehicle. Global Hawk will be capable of operating at 65,000 feet with a maximum flight time of 40 hours. Speed is planned to be 350 knots. The payload is planned to be 1,800 pounds internal, but the design will accept hard points to carry two 1,000-pound pods for future sensor use. First flight is scheduled for spring 97.

DarkStar is a stealth platform that is highly survivable and designed to fly ISR operations in a high-threat environment. DarkStar will carry either an

EO or a SAR sensor and will operate above 45,000 feet with a total endurance of approximately 12 hours. Its speed is planned to be greater than 250 knots. The first flight was 29 Mar 96. The second flight on 22 Apr 96 resulted in a crash, and as a result, the aircraft was modified to increase stability and is scheduled to fly again this summer.

### **Contribution to Air Force Core Competencies**

Achieving *Information Superiority* is key to winning future battles. UAVs are envisioned to be an integral part of the Intelligence, Surveillance and Reconnaissance system providing critical information to the warfighter. As UAV technologies advance, we will explore the possibility of using unmanned vehicles to support other Air Force core competencies.

### **Discussion**

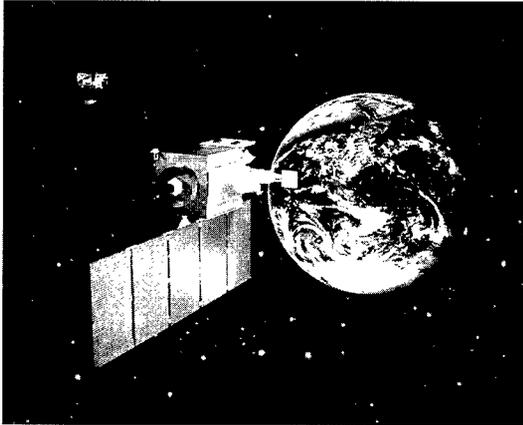
A key issue facing the Air Force in the near future is determining the most combat effective mix of manned and unmanned systems for the total force structure. Some missions likely will be performed better by one type of system or the other. We must be careful not to abandon manned systems until UAVs prove themselves. UAVs have several basic advantages over manned systems including long endurance and no risk to crews. Where these attributes are key, UAVs may be the platform of choice. The Air Force and the Joint Requirements Oversight Council's UAV Special Studies Group are examining follow-on payloads for all UAVs, including such sensors as signal intelligence, hyperspectral imagery, and foliage penetration.

### **Program Status**

The Predator ACTD ended 30 Jun 96. Predator Initial Operational Capability (IOC) is planned for 1 Oct 97 with Final Operational Capability (FOC) planned for the 2nd quarter FY99. The Global Hawk and DarkStar ACTD runs through 31 Dec 99. There is no planned IOC/FOC for these vehicles yet. The decision to pursue both the Global Hawk and DarkStar will be made as results of their ACTD are known.

# SBIRS

## Space-Based Infrared System



### Key Messages

The Space-Based Infrared System (SBIRS) combines national and DoD infrared detection systems into a single architecture, fulfilling the nation's missile warning and defense, technical intelligence, and battlespace characterization requirements. This newly emerging capability will greatly enhance the tools that national policy-makers and unified and theater commanders have at their disposal to provide Integrated Tactical Warning/Attack Assessment information to verify an adversary's technical ability, strength, disposition of forces, and even the intensity of combat operations.

SBIRS is a coordinated effort to provide a balance between requirements and affordability. It will provide an effective transition from the Defense Support Program (DSP) to an improved system that meets a wider range of theater and national support needs.

### Program Description and Key Points

SBIRS is a consolidated, cost-effective, flexible system that will meet United States infrared space surveillance needs through the next two to three decades. SBIRS is an integrated "system of systems" that includes multiple space constellations and an evolving ground element. The architecture includes satellites in Geosynchronous Earth Orbit (GEO) and Low Earth Orbit (LEO), sensors hosted on satellites in Highly Elliptical Orbit (HEO) and ground data processing and control assets. The "system of systems" approach integrated previously independent infrared sensor programs resident in the Air Force and intelligence space communities and eliminated duplicative efforts. SBIRS incorporates new technologies that enhance detection, improve reporting of intercontinental ballistic missile, sea-launched ballistic missile and theater ballistic missile launches, and provide critical mid-course tracking and discrimination data for national and theater missile defense.

### Contribution to Air Force Core Competencies

SBIRS is a part of our "system of systems" that enable the Air Force to achieve *Air and Space Superiority* and *Precision Engagement*, to dominate air and space. SBIRS provides key information--missile launch time, location, heading, and type--to cue interceptors and missile defense systems, enabling precision weapon employment against missile launch sites; technical intelligence regarding infrared events of interest; and an infrared focus on the theater providing situational awareness in other areas.

### Discussion

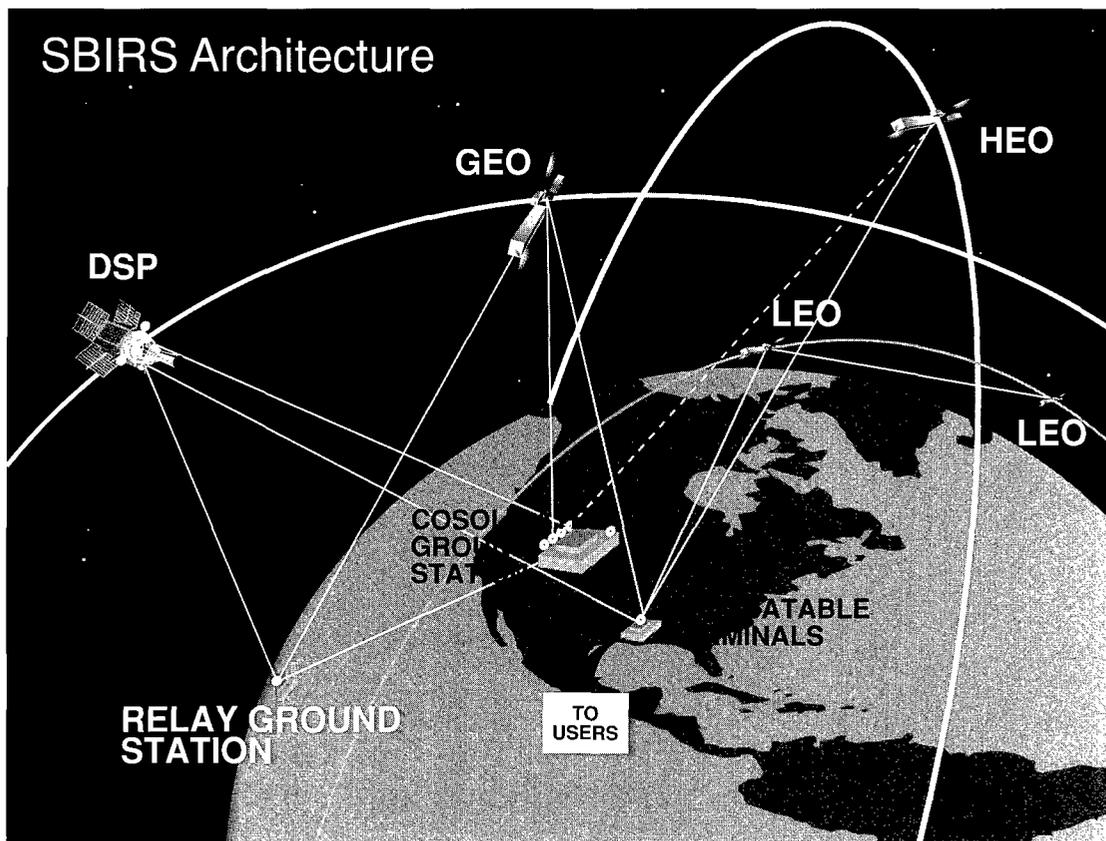
In the summer of 1994, an extensive study was conducted to define and validate the warfighting requirements for missile warning. The Joint Requirements Oversight Council validated the warfighting requirement and

established the Air Force as the DoD lead for the SBIRS program. SBIRS Low is the successor of the Brilliant Eyes program which Congress transferred to the Air Force from the Ballistic Missile Defense Organization in FY94 to better integrate the nation's infrared satellite programs.

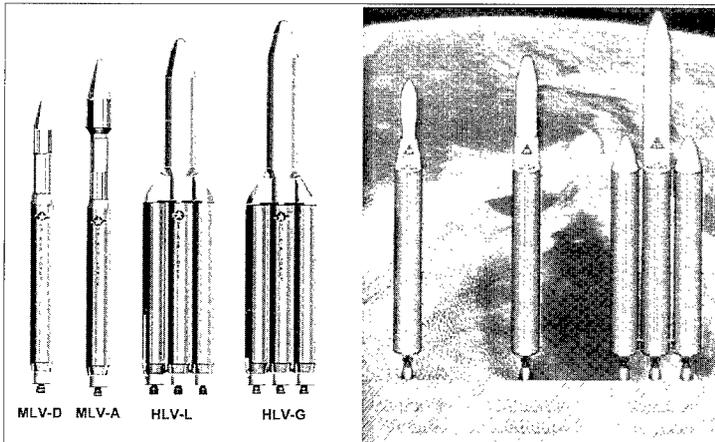
### Program Status

The SBIRS High Engineering and Manufacturing Development (EMD) contract was awarded in November 96 to Lockheed Martin. The launch of the first satellite of a five-satellite acquisition into a four-satellite constellation is in FY02, and the first of two HEO sensor deliveries is in FY01. The SBIRS Low component is in a technology demonstration phase supported by two parallel activities. A total of three demonstration satellites will be launched in FY99, and the first of up to 24 operational LEO satellites will be launched in FY04.

The ground segment will be delivered incrementally. The first increment consolidates DSP and Attack and Launch Early Reporting to theater mission functions at a single CONUS ground station and will become operational in FY99. This consolidation will provide enhanced mission processing with reduced operations and maintenance. A second increment will provide all ground segment functions necessary for GEO, HEO, residual DSP satellite operations and new mobile strategic processing capability. The third increment will incorporate the functions required for LEO satellite operations.



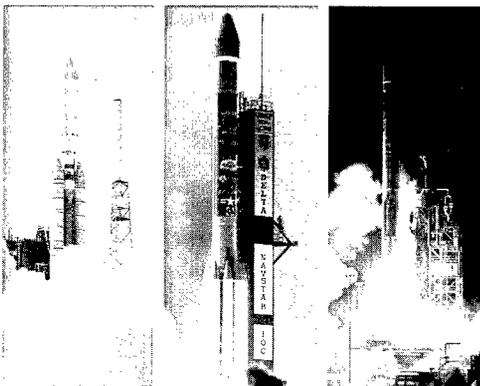
## EELV Space Launch Capability



### Key Messages

Our nation depends on routine, affordable, and reliable access to space. Current small, medium and heavy expendable space launch systems meet today's warfighter requirements. However, they are expensive and lack operating features critical to meeting future employment strategies. The

Air Force will continue to operate current medium and heavy lift systems (Titan, Delta, and Atlas) until we develop and field a more affordable and operable system. The Evolved Expendable Launch Vehicle (EELV) program will deliver a more affordable capability and will replace the medium and heavy lift systems currently in service with a single modular system that will consolidate manufacturing, operations, and force structure. Additionally, we will continue to modernize the range and launch infrastructure supporting all launch vehicles.



Titan IV

Delta II

Atlas IIA

### Program Description and Key Points

The Air Force, as the DoD's executive agent for space launch, is charged with executing space launch acquisition programs and space launch operations to achieve the department's objectives and meet user-validated program requirements. Currently, the Delta II launches Global Positioning System satellites, the Atlas IIA launches the Defense Satellite Communications System, and Titan IV, the Air Force's heavy lift vehicle, launches satellites such as the Defense Support Program, MILSTAR, and various national user satellites. EELV will offer efficiencies and rate benefits to reduce the overall cost of space access for all these systems.

### Contribution to Air Force Core Competencies

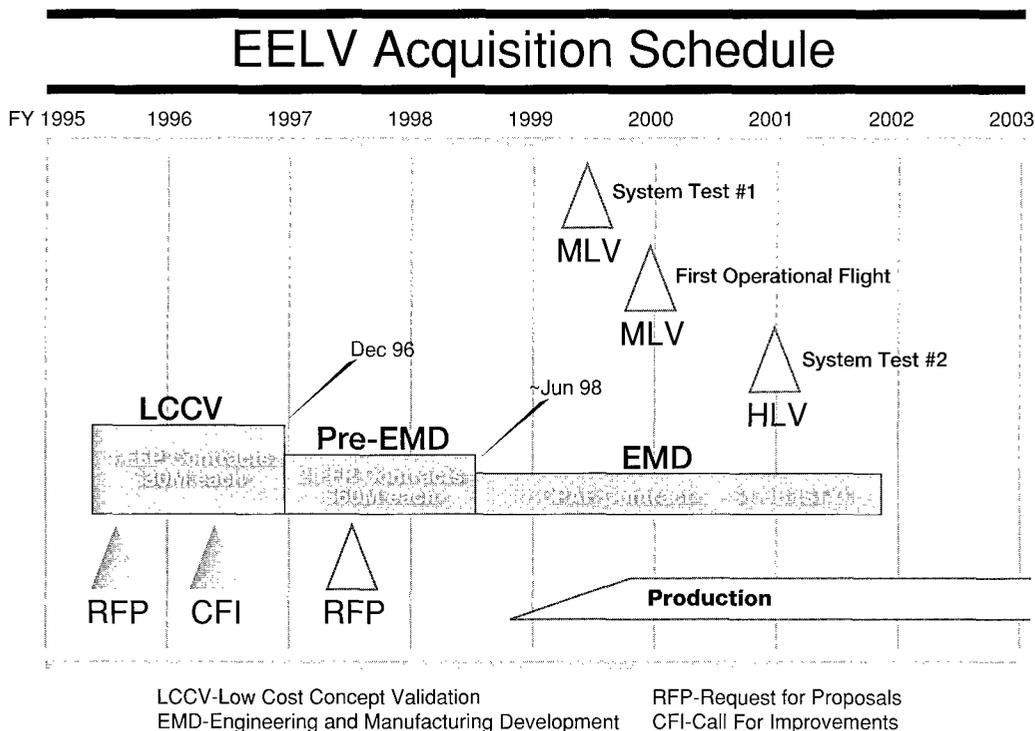
Success on the battlefield is highly dependent on attaining *Air and Space Superiority* and on our ability to exploit information. A robust space launch capability provides access to space for the entire joint team to use information provided or enabled by space platforms. These platforms give the warfighter and the National Command Authorities essential navigation, communications, intelligence, and missile warning information to influence or impact a crisis or contingency. Reliable, affordable access to space allows all the services to better perform their core competencies. It is fundamental to achieving *Air and Space Superiority* and *Information Superiority* in the future.

## Discussion

In 1993, Congress directed the DoD to develop, in consultation with the Director of the Office of Science and Technology Policy, a plan that “establishes and clearly defines priorities, goals, and milestones regarding modernization of space launch capabilities for the Department of Defense or, if appropriate, for the government as a whole.” Following the resulting 1994 report on DoD launch system modernization options, the Air Force embarked on the EELV program. The underlying principles of the EELV program are to develop an expendable launch system evolved from current systems, or components thereof, to satisfy current medium and heavy space-lift requirements within a limited \$2 billion development budget. Using this approach, the U.S. can increase production efficiencies to reduce costs to meet medium and heavy-lift launch requirements and obtain a flexible and affordable launch system. EELV will make space access significantly more affordable. Program development costs should be recovered by 2007 through EELV’s 25 to 50 percent reduction in launch costs over existing systems. EELV is expected to save \$5 to \$10 billion through the year 2020.

## Program Status

Four contractors began EELV concept development activities in August 1995. Two contractors, McDonnell Douglas and Lockheed Martin, were selected in December 1996 to carry on the Pre-Engineering Manufacturing Development (EMD) phase of the acquisition cycle. In FY98, one contractor will be selected for the EMD and production contracts. The chart below depicts the major milestones of the EELV program.



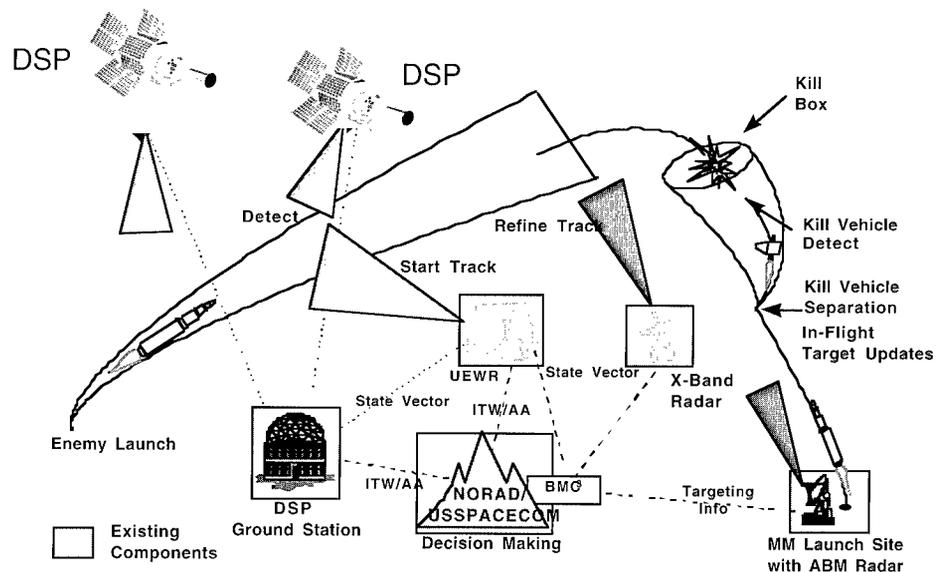
# NMD National Missile Defense (Minuteman Option)

## Key Messages

The Air Force Minuteman (MM) option can provide the nation a near- to mid-term national missile defense (NMD) capability that complies with the Department of Defense's "3+3" program for ballistic missile defense against rogue nation threats while maximizing return on investment. This option leverages existing systems and infrastructure to provide a single site national missile defense capability providing coverage for all 50 states. The MM option reduces program risk and offers a low deployment and development cost (\$2.4 billion, Air Force cost estimate), arms control treaty-compliant path that achieves operational status within four years and allows growth to defend against more sophisticated threats.

## Program Description and Key Points

The Minuteman-based interceptor architecture maximizes the use of several systems now in the field: the Minuteman booster and its infrastructure; strategic sensors; and existing Battle Management, Command, Control and Communications (BMC<sup>3</sup>) infrastructure. Defense Support Program (DSP) satellites would detect threat launches and provide initial threat characterization. The DSP data would be used to cue upgraded early warning radars (UEWR), which in turn generate track information. Integrated threat warning and attack assessment (ITW/AA) information will be consolidated at the Cheyenne Mountain Complex BMC<sup>3</sup> node in Colorado. Interceptor targeting information will then be forwarded to the interceptor site for launch and guidance. In addition, ground-based, X-band dish antenna radars would provide fine tracking and discrimination to assist in identifying re-entry vehicles from other objects.



After detection and early warning of a hostile launch, the Minuteman-based interceptor would launch, acquire its target, and guide itself into the path of the oncoming warhead to destroy the target using kinetic energy. An anti-ballistic missile (ABM) radar based on existing technology will be integrated into the system architecture at the interceptor site to provide updated guidance instructions to the kill vehicle.

The interceptor missile will comprise all three stages of a Minuteman booster, structural frame of the post-boost vehicle, the missile guidance system, an advanced solid axial stage (a solid propellant kick motor), a kinetic kill vehicle (KKV), associated guidance and control software, and auxiliary equipment. A key advantage of Minuteman is its compatibility with a variety of NMD KKV's. This advantage stems from the fact that the Minuteman booster already has its own guidance system. This capability contrasts with competing designs which use "dumb" boosters that rely on guidance from the kill vehicle.

### **Contribution to Air Force Core Competencies**

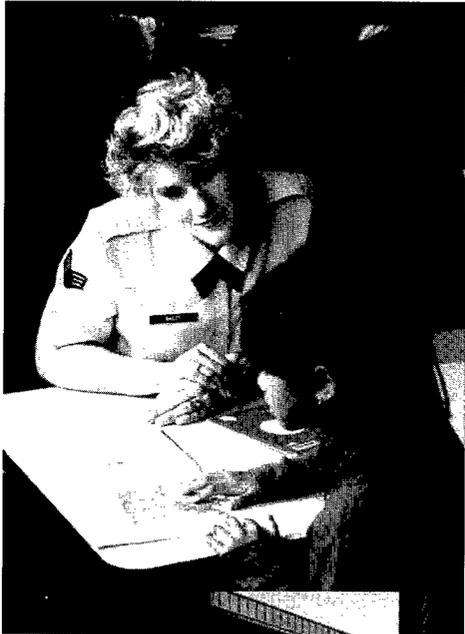
The ability to defeat enemy reentry vehicles targeted on U.S. territory protects American lives and property, ensures the U.S. is never subject to blackmail or coercion by outlaw regimes, and contributes to the Air Force Core Competency of *Air and Space Superiority*.

### **Program Status**

Under the Department of Defense "3+3" NMD deployment readiness program, the Air Force offers an option which takes maximum advantage of established, operational capabilities to create a near-term, low-cost, flexible and stability-enhancing NMD system. In an era of declining resources, decision-makers should select the best value for every dollar expended on U.S. defense. The Air Force Minuteman NMD option capitalizes on existing technology, proven reliability, and over 35 years of operational experience to provide the nation a near-term NMD capability. The Air Force has conducted three successful operational evaluations of key NMD system elements and plans to conduct six more tests during 1997-98.

The FY97 Appropriations Conference Report directed funds transfer of \$23 million to allow the Department of Defense to fully explore the Air Force NMD concept. The funds will be used to develop a national test launch infrastructure on Kodiak Island, Alaska.

# Quality of Life



## Key Messages

Investments in quality of life programs enhance readiness by positively influencing efforts to recruit and retain top quality people for the Air Force's highly technical air and space missions. The Air Force places a total force focus on its quality of life programs to satisfy the diverse needs of its members and families--active, Reserve, and Guard--as well as those of our civilian employees. Quality of life programs receive considerable emphasis in the Air Force's corporate culture, ranking with modernization and readiness as a top priority.

## Program Description and Key Points

The Air Force quality of life strategy emphasizes programs designed to improve the living and working conditions of our members and families. This strategy is functionally integrated, providing continuity and balance to our "People First" priorities. The initiatives supporting these priorities are developed from field survey results, major command (MAJCOM) inputs, and corporate guidance with a goal of complementing Department of Defense quality of life themes.

## Contribution to Air Force Core Competencies

Quality of life pursuits are designed to provide the "foundation of strength" for Air Force core competencies by attracting and retaining quality people essential to such military capabilities. As stated in the Air Force vision paper, *Global Engagement*, "Air Force men and women carry out the core competencies of Air and Space Superiority, Global Attack, Rapid Global Mobility, Precision Engagement, Information Superiority, and Agile Combat Support." This requirement for high quality people is addressed through the use of quality of life initiatives that satisfy basic needs, such as housing and medical care, allowing members to focus on the missions associated with our competencies.

## Discussion

Building on previous successes, we established the Air Force quality of life office and Air Staff quality of life Integrated Process Team, conducted field surveys, and encouraged MAJCOMs to keep our quality of life strategy focused and relevant. To make the most of limited resources, the Air Force supports the DoD quality of life theme of developing low-cost, high-payoff initiatives. The Air Force has committed significant resources to sustaining progress in quality of life programs, including the full funding of tuition assistance and authorizing additional manpower for family support and fitness centers. On the whole, the Air Force is investing an average of \$1.35 billion per year in the FY98 POM on people programs.

## Program Status

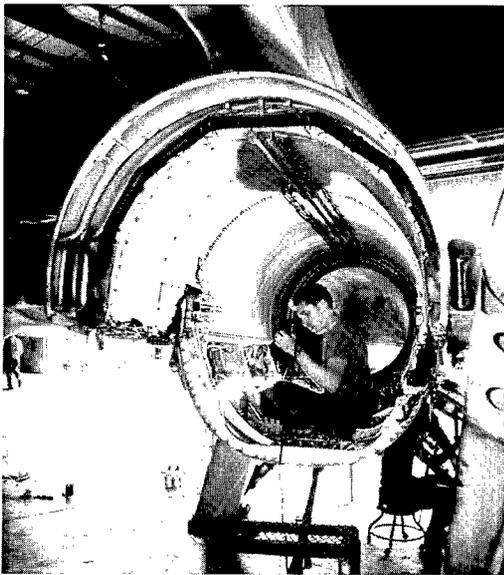
Our quality of life strategy for the FY98 budget cycle will continue to emphasize seven priorities. The specific initiatives associated with each are developed by a cross-functional integrated process team and published annually as the Quality of Life Strategy:

- (1) *Compensation and benefits*--Our goal is to provide compensation that keeps pace with the private sector and inflation along with a strong benefits program to complement compensation's basic objective of attracting, retaining, and motivating a volunteer force.
- (2) *Safe, adequate, and affordable housing*--Comfortable homes and safe neighborhoods, both on and off base, are the goals of our initiatives in this area. Through a combination of military construction, privatization initiatives, and adequate housing allowance increases, we are working to reduce our family housing and dormitory improvement projects backlog and to limit the amount of out-of-pocket housing expenses associated with living off base.
- (3) *Quality health care*--As the number of military treatment facilities declines and health care costs increase, TRICARE is helping us meet the objective of providing our military members and families continued medical coverage. All 12 TRICARE regions will be on line by the end of CY97. We will continue to establish health and wellness centers at our major installations to provide a central resource for personal health and fitness management and preventive medicine, the ultimate goal being enhanced readiness.
- (4) *Balanced OPTEMPO/PERSTEMPO*--As we move from a forward-based force to a contingency force based in the continental U.S., we will continue to support programs to help our members and their families make the corresponding cultural transition. Our goal remains to limit the number of days individuals are away from their home bases to no more than 120 within a 12-month period. Global tasking management, Air Reserve Component participation, and family readiness programs are all intended to help mitigate the impact of escalating contingency demands on our units and families.
- (5) *Support for Community Programs*--We seek to enhance our community support structure to meet the needs of our single members and those with families facing relocation and deployments. Much of the total force thrust of our quality of life strategy is focused in this area and includes fitness centers, child care, youth programs, and family support centers.
- (6) *Preserving Military Retirement Systems and Benefits*--In the face of ongoing budgetary reviews, the stability of our current retirement systems and the preservation of the purchasing power of retired pay is crucial to future retention efforts. A solid benefits package, like continuing medical coverage and cost-of-living adjustments (COLA), compensates for the extraordinary demands we place on our people over the course of their careers. Our goal is to prevent any erosion in the value of military retirement and to support continuing health care access to retirees.
- (7) *Educational Opportunities*--We are committed to sustaining full tuition-assistance funding and exploiting distance learning technologies as the best avenues for providing the Air Force productive personnel and our members opportunities for personal growth. Expanding Montgomery GI Bill eligibility to members currently lacking such educational benefits would enhance this agenda.

## Readiness

### Key Messages

The United States Air Force is the most ready and capable air and space force in the world today. We are also a very busy force--globally engaged in support of the nation. The Air Force maintains a highly capable and ready force prepared to meet the rapid response required to counter direct threats and support theater commanders' needs. Because of the speed and range of air assets, Air Force units are often the first forces required in a peacetime crisis or a contingency.



### Program Description and Key Points

Air Force readiness is comprised of several elements, including personnel, equipment, training, logistics, professional development and financial resources. A shortfall in any one of these elements will degrade readiness, so keeping a balance in today's dynamic political, fiscal, and operating environments is a real challenge.

### Contribution to Air Force Core Competencies

Readiness is the cornerstone of Air Force core competencies and the concept of global engagement. We can not bring a single competency to bear without ready, capable people and weapon systems and efficient, flexible infrastructures to support them. We must attend to the needs of our people and continue to improve our equipment and capabilities.

### Discussion

Post-Cold War geopolitical dynamics mandated a transition from forward-based forces to forces based increasingly in the continental U.S. As a result, the Air Force is becoming more expeditionary. Current Air Force readiness levels allow us to deploy forces rapidly anywhere in the world to gather essential intelligence, discourage potential enemies, halt invasions, or provide humanitarian aid.

Since 1986, the Air Force has downsized by nearly 40 percent while contingency operations have increased dramatically. In addition to more than 80,000 Air Force members permanently stationed overseas during 1988-89, we averaged 3,500 personnel deployed; for 1996, we averaged 13,700. Maintaining combat capability with today's operations tempo (OPTEMPO) is a concern for Air Force leaders, and we are constantly exploring avenues to mitigate the impact on our people. We are especially concerned with our forces in Low Density/High Demand (LD/HD) specialties whose average temporary duty (TDY) days were as high as 160 to 190 just two years ago. These units, such as the Airborne Warning and Control System (AWACS) and the RC-135RJ (RIVET JOINT), are normally few in number (LD) yet are called upon to support almost all contingency operations (HD).

We have reduced the number of weapon systems where the average crew member exceeded the 120-day personnel tempo (PERSTEMPO) goal from 13 in 1994 to four in 1996 through aggressive management initiatives. The Secretary of Defense's Global Military Force Policy (GMFP) establishes deployment thresholds for LD/HD units, and the Air Force resources units through a philosophy of global sourcing, spreading contingency operations taskings across the entire force, instead of stressing the forces in one geographic area. In addition, we maximize the benefits of the Total Force concept: Air Force Reserve and Air National Guard forces are supporting a greater share of contingency taskings and Joint Chiefs of Staff-sponsored exercises, reducing the PERSTEMPO of the active forces. In 1996, the Guard and Reserve contribution was close to DESERT SHIELD levels. There are significant availability constraints for peacetime operations, but we feel our current active/reserve component mix is nearly optimal to effectively achieve our national objectives.

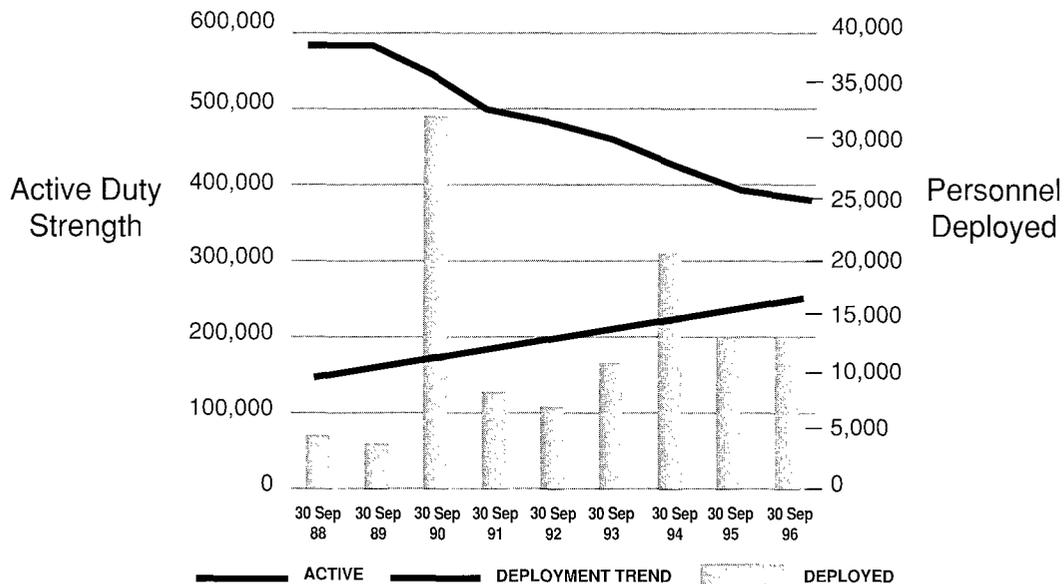
### Program Status

**Current Readiness:** Overall, 92 percent of Air Force units are at the highest readiness levels. Our reserve component units maintain readiness levels comparable to the active units.

**Global Sourcing:** In January 1995, Air Combat Command hosted the first annual Combat Air Forces scheduling conference. As a result, Pacific Air Forces fighter units increased their support to the European and Central Commands in FY95 and FY96, effectively reducing OPTEMPO for stressed forces in other regions.

**Global Military Force Policy (GMFP):** Implemented in July 1996, GMFP is a Secretary of Defense initiative designed to manage the allocation of low-density, high-demand assets for crises, contingencies, and long-term joint task force operations. This policy balances the theater commanders' immediate needs for LD/HD assets in ongoing operations with long-term training and weapon system sustainment needs. Currently, the Air Force has 14 weapon systems managed under the GMFP program.

### Active Strength vs Deployments



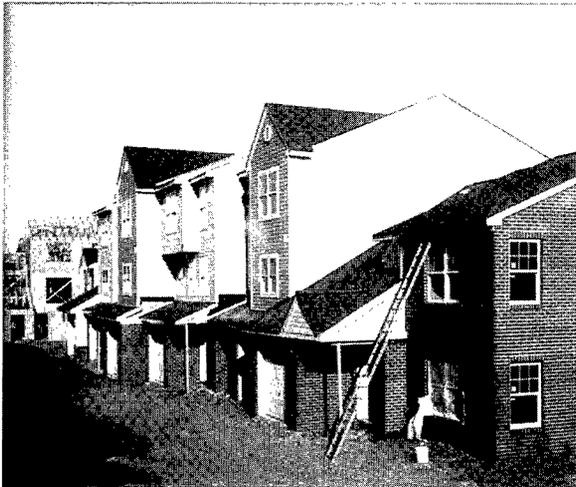
## Outsourcing and Privatization

### Key Messages

The Air Force is vigorously pursuing outsourcing and privatization programs to save resources for investment in vital modernization and quality of life programs. These initiatives have the added benefit of improving the performance, quality, and efficiency of Air Force functions and are key to our future success.

### Program Description and Key Points

Outsourcing entails competing a function currently performed in-house with an outside provider. When that competition shows outsourcing to be more efficient and effective, the Air Force contracts with a commercial provider. In recent years, the Air Force has outsourced base-level activities



such as training range management, building and grounds maintenance, precision measurement equipment calibration, and aircraft maintenance. For example, the outsourcing of aircraft maintenance at Columbus AFB, Mississippi, Altus AFB, Oklahoma, Holloman AFB, New Mexico, and Laughlin AFB and Reese AFB, Texas, has already yielded significant savings. Additionally, we are examining the outsourcing of base operating support at Tyndall AFB, Florida, Wright Patterson AFB, Ohio, Hickam AFB, Hawaii, and Columbus AFB, Mississippi as well as the outsourcing of base supply activities at Edwards AFB, California. Together, these initiatives could potentially yield tremendous savings.

In the case of privatization, the Air Force divests itself of a function and transfers it to the private sector to perform. This was accomplished at our facility in Newark, Ohio where the Air Force assigned specialized functions of the Aerospace Guidance and Metrology Center to Rockwell International and Wylie Labs.

### Contribution to Air Force Core Competencies

The savings gained through successful outsourcing and privatization initiatives benefits each of the core competencies by making additional funds available for priority programs.

### Discussion

The FY98-03 President's Budget includes dramatic savings that reflect our strategic goals for outsourcing and privatization initiatives. These savings have been applied to specific modernization programs. The Air Force's current savings of \$1.255 billion across the FYDP is accompanied with program milestones, guidelines, and policies to aid commanders in

the field work outsourcing and privatization efforts. To make these tasks more efficient, we are developing decision tools that aid in evaluating options and streamline contracting.

## **Program Status**

The Air Force initiated an outsourcing "Jump Start" program in November 1996 to evaluate potential candidates for competition. Only inherently governmental, militarily essential, and legislatively protected activities are exempt as candidates for evaluation. The data from this study will be used to develop a long-term outsourcing strategy.

In the area of privatization, we are focusing on three main areas. The first is the feasibility of fully privatizing military base housing. A test is currently underway at Lackland AFB, Texas to evaluate the potential savings from such an approach. In this case, the contractor would construct and maintain ownership of the housing units and Air Force members would lease them.

The second area being looked at is the potential savings from divesting ourselves of on-base utilities plants and turning to private companies for our utilities needs. This approach is currently prohibited by existing statutes and would require legislative relief to be implemented.

The final area involves increased privatization of the air logistics centers at Sacramento, California and San Antonio, Texas. Privatization at these depots is expected to garner huge savings over the FYDP. Current initiatives underway will bring the public-to-private ratio at these facilities to 72 percent and 28 percent respectively. However, full implementation of our planned initiatives would increase the percentage of privatization above the 40 percent cap mandated in current law and therefore require legislative relief.

To date, the Air Force's experience with outsourcing and privatization has been a positive one and our Service remains committed to implementing these cost saving initiatives whenever possible.

## Force Protection

### Key Messages

The June 1996 bombing of the Khobar Towers in Saudi Arabia accelerated on-going Air Force efforts to protect its forces operating around the globe and gave the entire Department of Defense new insights into the operating methods of terrorist organizations. To help combat the increased terrorist threat, the Air Force is building a robust force protection program designed to safeguard military personnel, civilian employees, family members, facilities, and equipment.



### Program Description and Key Points

The program's objective is to plan and integrate antiterrorism, physical security, and personal protective measures in all locations and situations. Key components of this program include the Air Staff Force Protection Division within the newly reorganized Directorate of Security Forces, the Air Force Security Forces Center, the 820th Security Forces Group (SFG), the Force Protection Battle Lab, and the Air Force Office of Special Investigations' (AFOSI) Antiterrorism Specialty Teams.

### Contributions to Air Force Core Competencies

Force protection cuts across all Air Force core competencies and enables air and space power to contribute to the objectives of the joint force commander. Key specialties forming the core of the force protection team include security police, civil engineering (including explosive ordinance disposal), communications, intelligence, logistics, transportation, medical, and AFOSI personnel. The synergism of these experts will protect the Air Force's ability to operate freely throughout the spectrum of military operations.

Providing for force protection is not just a matter of air base operability and security. It also involves the redesign of our combat and support forces to reduce the size of the force protection problem. As a result, our efforts in this area benefit from Air Force efforts to improve the responsiveness, deployability, and sustainability of our forces, an integral part of the Air Force core competency of *Agile Combat Support*.

### Discussion

The Air Staff Force Protection Division stood up on January 1, 1997. This cross-functional staff is manned by experts from security forces, intelligence, and the AFOSI and is supported by other organizations. The division is charged with providing resource advocacy, policy, and guidance on the full range of force protection issues.

The 820th SFG will stand up on March 17, 1997. It will be a multi-functional unit trained, organized, and equipped to achieve deployed force

protection missions ranging in scope from military operations other than war to major regional conflicts. The 820th SFG will be manned by security police, intelligence, AFOSI, civil engineering (including explosive ordinance disposal), transportation, logistics, communications, and medical specialists. This robust headquarters element will provide the framework to establish and conduct effective force protection procedures around the world. Designed for rapid movement, this unit, coupled with its security forces flights and heavy weapons elements, will be capable of deploying within 24 hours of notification.

Once members of the 820th SFG arrive at a forward location, they will conduct an immediate assessment of force protection requirements to ensure Air Force resources and personnel have a secure environment in which to conduct operations. This environment may include operations "outside the wire"--beyond the defined boundaries of the base. This secure environment represents a tactical area of responsibility that will be based on the key factors of unit mission, posited enemy characteristics, time, troops, and terrain. The 820th SFG, with limited organic command, control, communications, computer and intelligence capability, will report to the installation commander and provide installation force protection plans. The concept of employment calls for rotational forces to relieve the group within 120 days of initial deployment.

The AFOSI Antiterrorism Specialty Teams (AST) will stand up in April 1997. The AST will provide rapid, global, complementing support to the 820th SFG and the deployed area commander by conducting specialized counterintelligence, antiterrorism, and force protection operations. Specific efforts include collection of threat information from local and host country security agencies as well as U.S. security and intelligence agencies, vulnerability assessments, surveillance and countersurveillance activities, investigative support of terrorist incidents, and high-risk protective service operations. The AST will maintain support until sustaining AFOSI and security forces personnel are deployed or the action is terminated, whichever occurs first.

The Force Protection Battle Lab will stand up in April 1997. The battle lab institutionalizes the Air Force's commitment to address force protection issues on a continuing basis. This lab will focus on refining a wide variety of force protection concepts, principles, and doctrine. Through studies and analysis, participation with other battle labs, interaction with Air Staff and major command policy makers, and utilization of state-of-the-art simulations, the battle lab will work through force protection concepts, providing expertise in evaluating proposed changes to doctrine.

## **Program Status**

The 820th Security Forces Group, Force Protection Battle Lab, and Antiterrorism Specialty Team will achieve initial operational capability in July 1997 with full operational capability scheduled for October 1997.

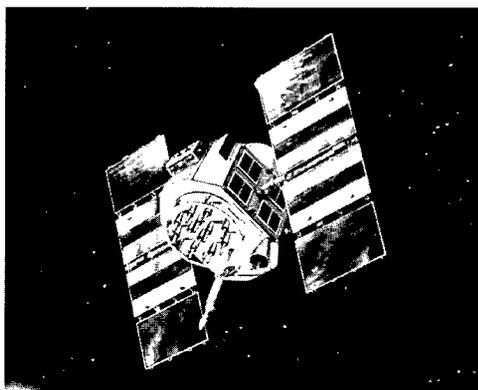
## Acquisition Reform

### Key Messages

The Air Force is moving to a leaner, more agile acquisition and sustainment system to support our *Global Engagement* vision. Jump starting this change via "Lightning Bolt" initiatives was the important first step. The initiatives have led to lower cost weapon systems and smaller acquisition staffs. Throughout 1997, we will focus on reform development and execution of a new strategic business management plan. Our goal is to provide a seamless transition from the highly successful Lightning Bolt initiatives to a culture of continuous process improvement. This business plan will describe chief executive officer goals, objectives and measures and will establish the foundation to support our vision of Twenty-first Century Air Force acquisition--*lean, agile buyers and sustainers of more affordable warfighting capability.*

### Discussion

Having created the necessary momentum via the Lightning Bolt initiatives, we are moving away from reform to continuous process improvement, based on future documented large-scale, corporate-level goals and objectives. Our new business strategy will be based on:



Global Positioning Satellite

Reducing the government and industry cost of doing business

Reducing the number, complexity, and labor intensive-ness of our processes

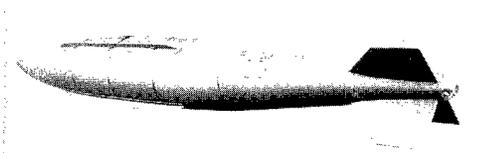
Reducing the cycle times required to do business

Making life cycle cost management *the norm* and applying Cost as An Independent Variable across the life cycle

Making this culture change a goal shared by operators, logisticians, testers, and industry

### Acquisition Reform Status

Acquisition reform efforts are already producing results based on building trust, strengthening teamwork, and publicly rewarding industry efforts. Our acquisition reform success stories are many:



Joint Direct Attack Munition

**C-17:** Delivered last 17 aircraft early. Reduced military specifications and standards from 346 to 9. Projected program reduction: \$5.4 billion (\$3.4 billion savings, \$2 billion avoidance)

**Joint Direct Attack Munitions (JDAM):** Increased warranty from five to 20 years. Decreased delivery time by six years. Reduced average unit cost by 52 percent; overall \$2.9 billion reduction (\$78 million savings, \$2.9 billion avoidance)

Joint Air-to-Surface Stand-off Missile (JASSM): Reduced source selection process by basing 50 percent of the evaluation on company's past performance alone

MILSTAR: Significant savings due to contract streamlining and decreased government oversight (\$253 million), and cost performance trades to optimize warfighter support and minimize infrastructure costs (\$328 million)

GPS Block IIF: Contract consolidation and best commercial practices led to a projected reduction in program office manpower of 38 percent and reduced cycle time over two years. Projected program reduction: \$1 billion (\$181 million savings, \$821 million avoidance)

Wind Corrected Munitions Dispenser (WCMD): Reduced the average unit production price from \$25,000 to \$9,000--a 64 percent reduction--resulting in an \$850 million savings for the program buy of 40,000 units

On these and other programs, aggregate cost reductions totaled about \$17 billion (\$5.6 billion in savings from previously budgeted funds and \$11.8 billion in cost avoidance).