AirForce Handbook

107th Congress ★ Second Session

Department of the Air Force
Washington, DC

The United States Air Force is unquestionably the premier air and space force in the world and we remain true to our vision by providing *Global Vigilance, Reach, and Power* across the spectrum of military and humanitarian operations for America and our allies. Over the past year, the Air Force has had numerous opportunities to implement and validate significant changes in the conduct and strategies of war, exploit the rapid advancement of innovative technologies, and deliver global reconnaissance and strike for America's national security. In the future we will continue to prepare for emerging threats as well as push the transformational envelope.

Our transformation efforts allow us to respond to the unpredictable nature of our ever-changing world. We are pressing forward to develop and refine our operational and organizational process and strategies. We are also committed to leveraging technology to integrate our air and space capabilities in order to increase the asymmetric advantages for our nation. As Air Force transformation continues to set the standard, we will support our people, revitalize our military industrial base, and seek efficiency at every turn.

As a resource for the Members of the 107th Congress, this handbook features a convenient almanac format while outlining a selection of some of your Air Force's major priorities. We hope you find it useful and we stand ready to discuss our vision for the future, and our strategy for achieving that vision.

John P. Jumper
General, USAF, Chief of Staff

Dr. James G. Roche
Secretary of the Air Force

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America's Air Force: Global Vigilance, Reach and Power

Introduction

If Americans had not fully understood the idea of "asymmetry" before September 11th, they received a horrific education on that day. In a lesson reminiscent of one 60 years earlier, air assets were employed in a malicious fashion on an unsuspecting people. This time, however, the attacks resonated a particular evil, for civil airlines were used to wreak destruction and death upon civilians.

The World Trade Center, the Pentagon and a field in Pennsylvania were the battlefields of asymmetric warfare. A terrorist group exploited the United States' asymmetrical vulnerabilities, far in excess of their relative size and the physical results of the attacks. Within minutes of these attacks, the United States, through Operations NOBLE EAGLE and ENDURING FREEDOM, was providing education on an asymmetry of its own making—the object lesson of joint and combined warfare visited on the perpetrators of the September 11 strikes. The Air Force is fully prepared to execute the missions required—with our air, space and special forces assets—to carry this global war on terrorism to its conclusion, ending as President Bush declared, "at a time and place of our choosing."

The world's premier Air Force begins 2002 under new leadership. The Secretary and Chief of Staff bring unique and complementary experiences to bear upon the dynamic promise of American air and space power in the 21st Century. The Air Force is in the business of global reconnaissance and strike, including the full application of unparalleled mobility forces. Our efforts are fuelled by a vision of Global Vigilance, Reach, and Power to help the Nation assure our allies and friends, while dissuading, deterring or decisively defeating any adversary. The specific concept of "core competencies"[1] well known among successful organizations has been adapted by Air Force leaders to characterize the capabilities that are central to our mission: air and space superiority, information superiority, global attack, precision engagement, rapid global mobility, and agile combat support.

The Air Force, and the Nation, entered 2001 aware of the challenges and opportunities of a new administration. The Department of Defense was to undergo significant evaluation, with the expectation of dramatic changes to follow. President Bush brought an eminently qualified team to Defense and National Security, and the Air Force welcomed the injection of energy and attention the Nation's defense was to receive. Long a force for innovation, airmen continued their leadership throughout the months of military reinvention. Capabilities-based planning was emerging as the Quadrennial Defense Review (QDR) focal point, and the Air Force strove to maximize the assessment of new technologies, revolutionary

concepts of operation and visionary organizational changes. However, amidst this important task, terror struck the United States. The Air Force, and the Nation, exited 2001 at war.

This new adversary, and those of the future, will pose a formidable challenge to American interests at home and abroad. They will attempt to intimidate, deter or defeat our nation through a variety of means, to exploit our asymmetrical vulnerabilities and avoid confronting U.S. military power directly. These strategies will include the use or threatened use of weapons of mass destruction, and the use of terrorism on U.S. soil. They will also attempt to counter the tremendous asymmetric advantages of U.S. air and space power.

To meet these challenges, Air Force strategy calls for a capabilities-based approach to defense planning. This enables the Service to answer a broad range of challenges posed by potential adversaries, while also developing the capabilities it needs for the future. This capabilities-based planning must remain tied to ongoing Air Force transformation that continues to develop new technologies, concepts of employment and organizational adaptations.

The Road Ahead

The transformation of the military now runs parallel to the transformation of our Nation. Just as the military is exploring new capabilities and concepts of operation (CONOPs) to engage threats, America as a whole is experiencing new appreciation for the cost of freedom. The Air Force, the Department of Defense and the American people are up to the challenge. Though a shock, the events of September 11th did not fundamentally alter the course for a transformed military; rather, they served as an affirmation of our current direction. Turning away from decades of restrictive force-to-threat planning, the Air Force along with the Defense Department is on course to define desired effects, and then secure capabilities which allow us to reach that end. Additionally, the QDR and the Defense Planning Guidance (DPG) address organizational changes, which add to the effectiveness of new military methods. This describes the heart of Air Force transformation. Assessing existing and potential adversaries' capabilities against our own, we are developing Task Forces for a variety of mission requirements, from strategic response to homeland security. For example, Global Strike Task Force, which describes how we will operate in an anti-access scenario, is the next step in our journey to fully achieve our mission while also opening doors to adaptive and innovative operational plans, and relevant organizational structure.

In order to draw the greatest effectiveness from these capabilities, the Air Force will exploit America's technical dominance to elevate our

asymmetric advantage over any adversary. This involves harnessing the attributes of stealth, precision, standoff, space, and information technology. The success of our capabilities-based CONOPS depends upon reducing the find, fix, track, target, engage, and assess (F2T2EA) cycle and achieving persistent ISR capabilities. Key to this is the horizontal integration of manned, unmanned, and space assets. By facilitating digital conversations at the machine-level we will provide the Joint Force Commander with the decision-quality information required to ensure success—the "sum of the wisdom" resulting in a cursor over the target. With determined exploration and exploitation of space capabilities—culture, principles, personnel and assets—we will widen our asymmetric advantages and set the bar beyond reach of any adversary. Such transformation will guarantee America's Global Vigilance, Reach, and Power—establishing powerful national mechanisms to assure, dissuade, defeat or deter.

These are the building blocks to true transformation—technologically elevated capabilities, focused CONOPs and embedded structural changes. The Air Force remains at the forefront of each of these transformational elements. We ensure the freedom to operate around the globe and in the sky and space above, under any circumstances, and for whatever mission the Nation requires. This is asymmetry—exploitation of capabilities no other force in the world possesses—and it is fundamental to redefining jointly fought warfare on America's terms. Maintaining this advantage is critical, and a constant challenge. In the year ahead, we will meet this test by solidifying the roots of our success: Readiness, Transformation, and the resource that makes these possible—our People.

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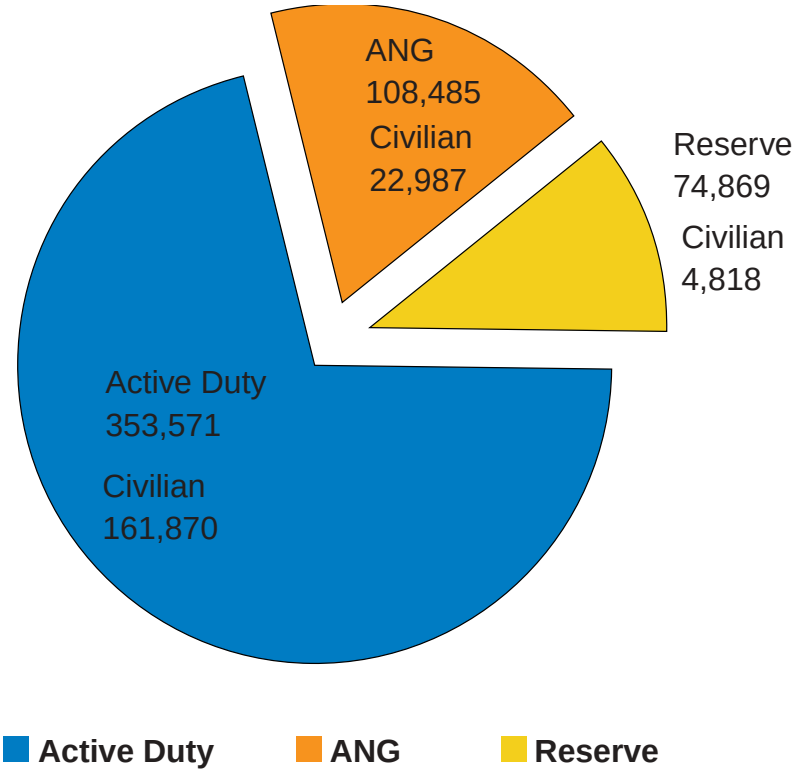
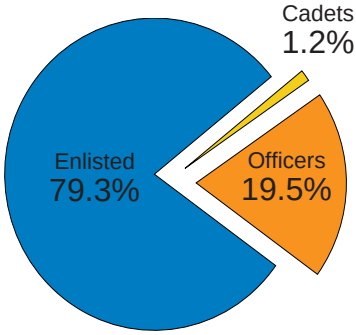
US Air Force Demographics



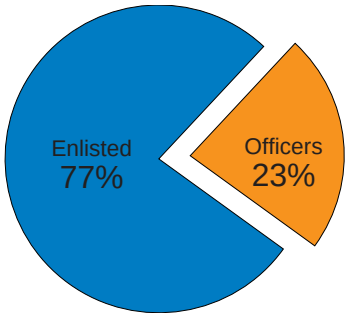
Total Force: 726,600

Military
Officer/Enlisted Breakout

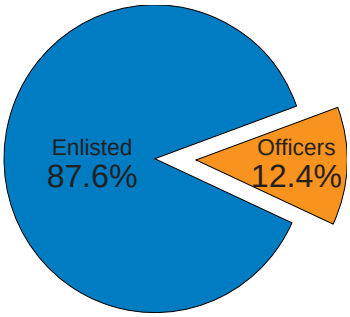
Active Duty



Reserve

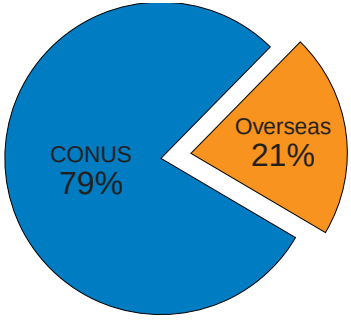


Guard

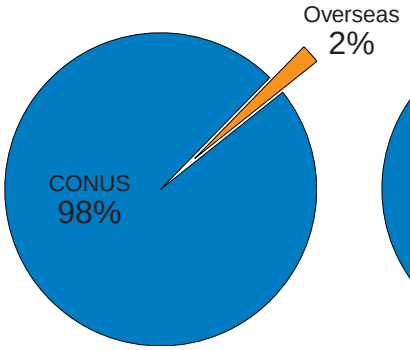


Military Assignment

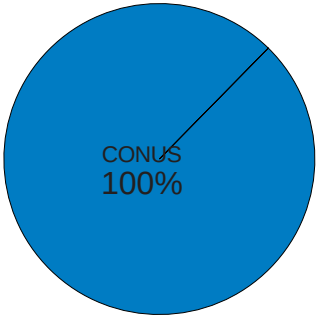
Active Duty



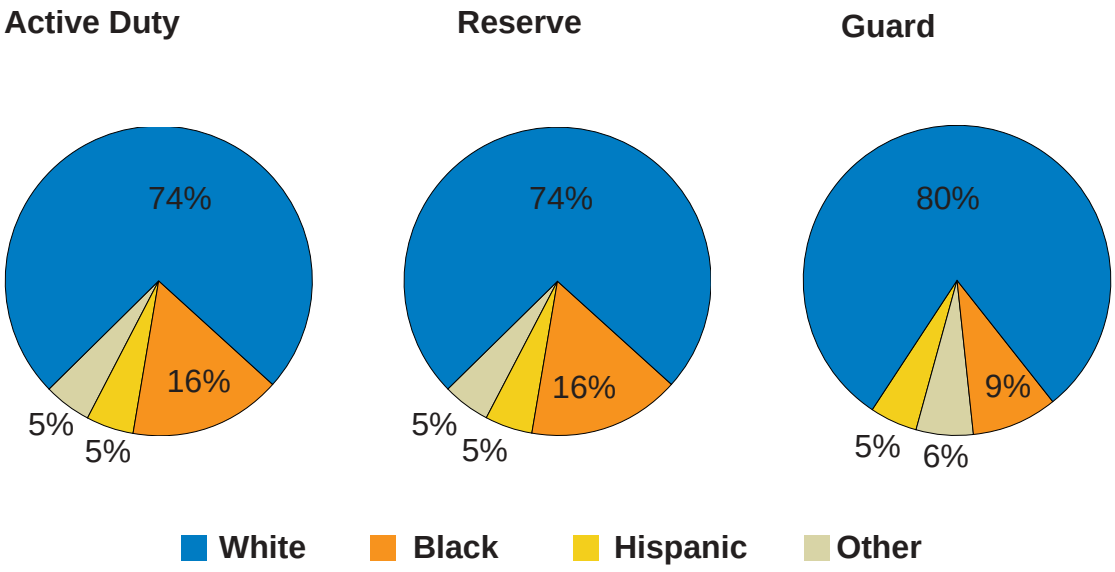
Reserve



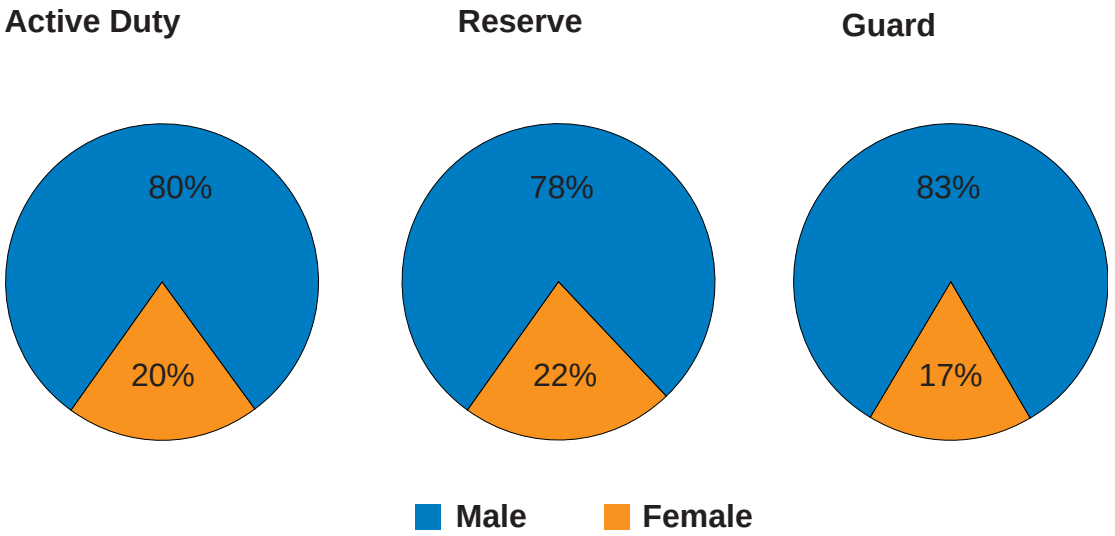
Guard



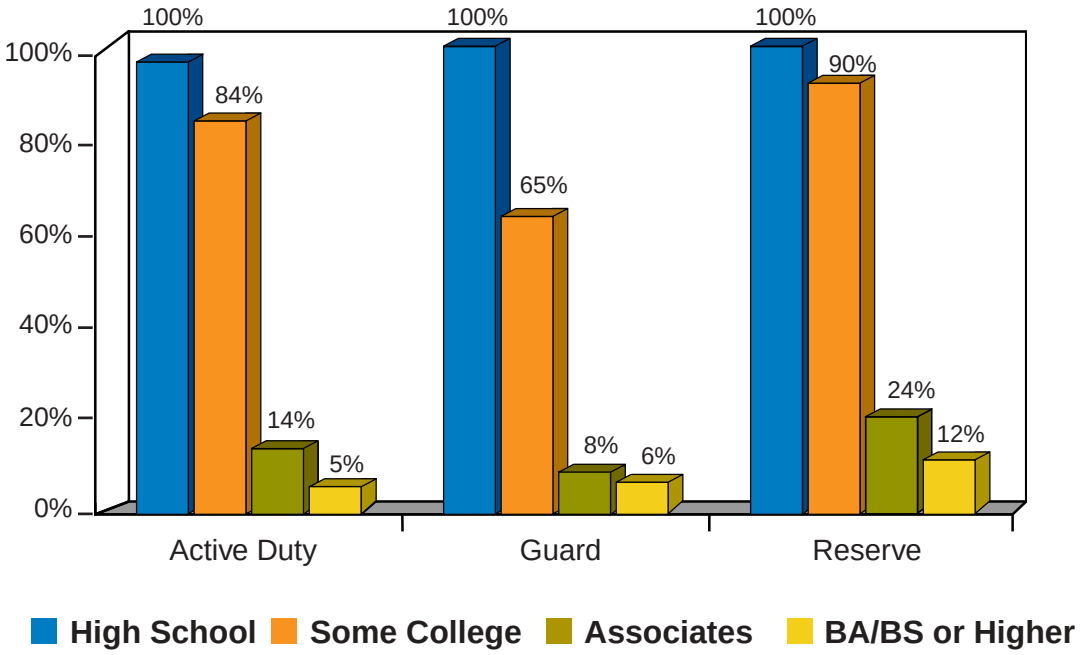
Military Race/Ethnicity



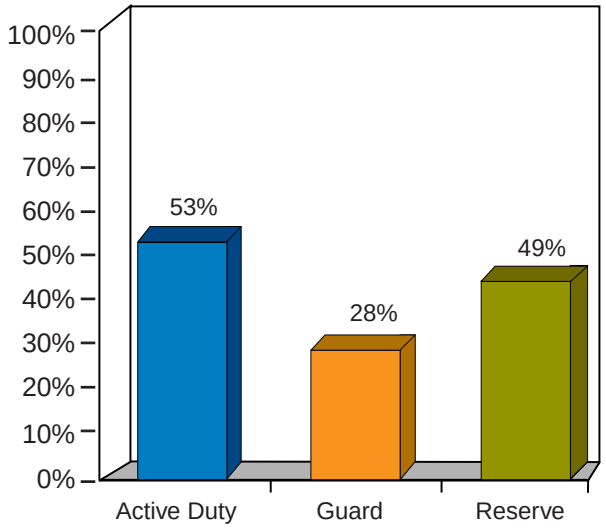
Military Gender



Education Level - Enlisted



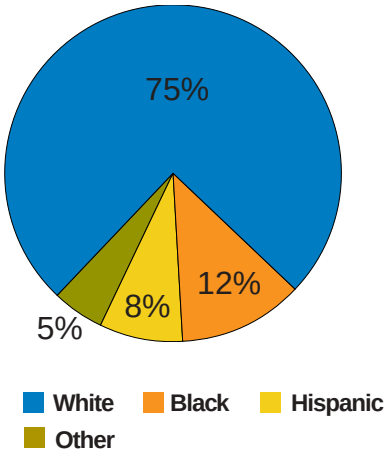
Advanced Degree - Officers



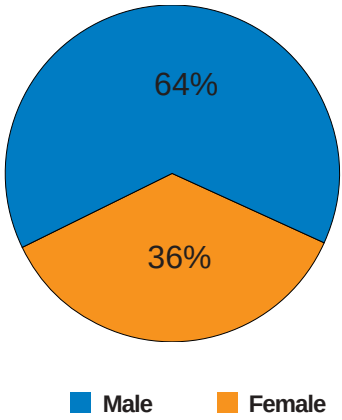
Civilian

Total Civilians = 161,870

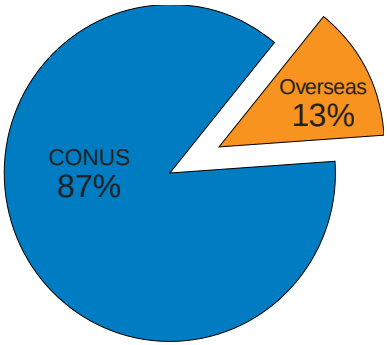
Race/Ethnic Characteristics



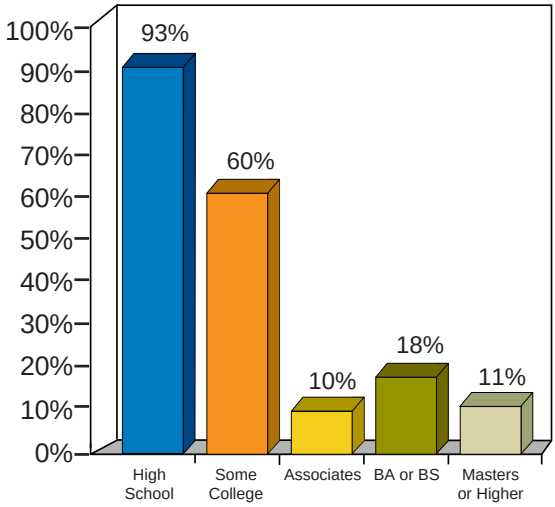
Gender



Civilian Assignment



Civilian Education Level



Selected Key Air Force Priorities

PEOPLE

Recruiting

Background

- The Air Force has only missed its goal once (FY99) in the past twenty-two years
- World events, shortfalls in retention, and end-strength plus-ups have increased goal
  - FY98-31,300; FY99-33,800; FY00-34,000; FY01-34,600; FY02-37,283
- Challenge continues to get the right people, with the right skills, at the right time
  - AF has not lowered its standards to meet recruiting requirements
- Accessions needed to replace normal retirements/separations and help meet AF end strength

Discussion

- Since missing goal in FY99, the Air Force has implemented several new initiatives:
  - Increased Recruiting Services Advertising budget from $17.2M in FY98 to $89.6M in FY02, the majority of which is used for paid TV ads
  - Increased recruiter authorizations from 1,209 in FY99 to 1,650 in FY02
    - Implemented new selection process virtually ensuring 100% manning
  - Expanded Prior Service / Sister Service Program
    - In FY99, we accessed 605; in FY01: 1,155
    - Continue to utilize and expand enlistment program bonuses for critical skills
- Expanding Air Force Junior ROTC Program
  - Creates Air Force awareness at an earlier level
- Greatest recruiting competition is a college offering numerous financial incentives
- General public with less military experience make recruiting a challenge

Main Points

- Recruiting Service is well on its way to ensuring it meets Air Force accession needs
- Efforts underway to continuously expand the target market and offer an attractive option for today's youth

Retention

Background

- The Air Force is directed to meet certain personnel end strength requirements on an annual basis in order to successfully carry out its mission as directed by Congress
- Numerous intangible and tangible factors are critical to meeting retention goals
  - Intangible Factors: Leadership, job satisfaction, self-worth
  - Tangible Factors: Pay and benefits, retirement program, TEMPO, assignment system, medical and dental care, housing

Discussion

- FY02 NDAA addressed retention by granting pay raises for military members from 5-10%
- Significantly expanded Selective Reenlistment Bonuses (SRBs) for last several years to ensure problematic career fields are given appropriate monetary incentives to reenlist
- Air Force will have a pilot shortage through 2015. At the end of FY01, the Air Force had 1,239 fewer pilots than needed. Cockpits are manned at 100%; however, numerous headquarters staff pilot positions (manned at 51%) are vacant or filled by other personnel. Navigators backfill some of these vacant pilot positions where possible enabling us to increase the manning of pilot staff positions from 51% up to 76%
- To address the pilot shortage, the Air Force has taken a number of steps. We increased the pilot training Active Duty Service Commitment (ADSC) to 10 years (8 years prior to 1 Oct 99). We increased pilot production to a steady state of 1,100 new pilots per year. Finally, we continue to offer aviation continuation pay bonuses to pilots who have completed their initial pilot training ADSC. The amount of the bonus (up to $25,000 per year—the maximum amount currently allowable under the law) is helping to "hold the line" on pilot retention

Main Points

- Retention is key to readiness and force sustainment
- For the first time in 3 years, the Air Force exceeded its first term enlisted retention goal but hasn't made second term and career enlisted goals for the last 4 years
- Retention declined in a number of critical technical officer specialties
- Rated retention continues to be a serious concern for the Air Force, especially with regard to rated shortfalls in the pilot and Air Battle Manager (ABM) career fields

Quality of Life

Background

- Our most critical readiness component is our people—people are the practitioners of joint warfighting and the creators of transformation.

Discussion

- The Air Force's eight QoL readiness drivers:
  - Necessary manpower; the war on terrorism impacts an already stressed force—we're wearing out our people and systems updated wartime planning factors and real-world ops validated
  - Improved workplace environment; fully fund facility sustainment and increase funding for restoration and modernization of our facilities
  - Pursue fair and competitive compensation and benefits; pay raises, special and incentive pays, travel and transportation allowances and reduced out-of-pocket housing costs
  - Balanced TEMPO; implemented Expeditionary Aerospace Force to balance impacts and provide greater predictability and stability. Requires greater use of Air Reserve Component
  - Provide access to quality health care; emphasis on prevention programs, affordability, and readiness with TRICARE as the backbone. Currently developing TRICARE next generation contracts (T-Nex) to further improve TRICARE for beneficiaries, DoD, and contractors
  - Provide access to safe, affordable and adequate housing; through sustained investment levels, privatization (when feasible), and market-based housing allowances
  - Enhanced community and family programs; child development, youth programs, fitness centers, lodging, libraries, skills development, clubs, golf courses, bowling centers and family support centers all offer activities and services that contribute to readiness and s upport. Air Force continues to encourage use of AF CROSSROADS as an excellent tool to promote community and family programs: —www.afcrossroads.com
  - Expand educational opportunities; preserve tuition assistance and Community College of the Air Force as well as expanding Montgomery GI Bill eligibility. Continue to seek funding for Civilian Tuition Assistance

Main Points

- Quality of Life ranks with transformation and readiness investments
- Investing in Quality of Life pays off in recruiting and retaining quality people

Civilian Force Shaping

Background

- Downsizing of the DoD civilian workforce, coupled with limited hiring, left an aging workforce that is more costly to maintain with serious skill and experience level imbalances
  - Approximately 42% of civilian workforce will be retirement eligible within next 5 yrs
- To meet the challenges of the 21st century, the Air Force developed a civilian workforce shaping strategy encompassing the full spectrum of workforce management.

Discussion

- While some initiatives can be worked internally within DoD, others require legislation before implementation can occur. Propose following legislation for the FY03 NDAA:
  - Broadbanding Authority: Simplifies classification by combining current grade structure into a few broad bands comprised of one or two grades. It links pay to performance, improves recruitment with wider range of in-hire pay rates, and reduces paperwork.
  - Streamlined Hiring: Critical Need and Expedited Hiring System—geographically targeted recruitment and direct appointments into the competitive service without competition.
  - VERA/VSIP: Extends the current VERA/VSIP authority until 30 Sep 06—provides the flexibility to selectively incentivize separations and retirements for succession planning.
  - Student Loan Repayment: Increase the student loan repayment amount to $10,000 per year—reflects jump in college tuition expenses and improves recruitment of college.
  - Last Move Home: Extends authority beyond the SES to other employees as an incentive to relocate with guaranteed last move home upon retirement. This incentivizes critical skill employees to relocate to meet Air Force mission requirements.

Main Points

- We can no longer rely on outdated personnel and management systems to produce the workforce needed to do the job in the 21st Century.
- We must transform, utilize modern business techniques and explore creative means to access, develop, and retain a multi-talented and skilled workforce: rewarding performance, on the spot hiring, force shaping flexibilities, and recruiting incentives.

Developing Air and Space Leaders

Background

- Charter: Review current developmental policies / procedures against institutional needs / values, recommend changes necessary to deliberately develop 21st century air and space leaders.
- Objective: Identify competency-based, deliberate development strategy for Total Force
  - Model must meet 2 requirements: 1) functional manager requirements to foster Air Force member growth / development in their principal mission areas; 2) institutional requirements to prepare Air Force members for duties as senior leaders.

Discussion

- Chartered in March '00 with a 2-year sundown clause; CSAF established DAL Support Office / DAL Advisory Board (DALAB), transition effective Oct 01
- DALAB established to provide independent insight / corporate perspective; comprised primarily of MAJCOM CVs / senior functional leaders; responsible for vetting DAL issues / making recommendations to SecAF / CSAF
- The DAL initiative is the strategy through which Air Force development programs will be measured / implemented well into the next century
- Leadership Issues: Identifying Transformational Leader competencies / preferred Airman leadership / followership behaviors to better fulfill command / leadership responsibilities
- Broadening Issues: A deliberate process; knowledge / experience beyond an officer's initial specialty that promotes a fuller understanding of the development, employment and support of air and space power, increasing the officer's utility to serve
- Budget Issues: Currently drafting proposed '04 and beyond POM initiatives / costs
- Implementation: 5-7 year transition; thorough review of potential second-order affects

Main Points

- DAL initiative will provide a competency-based development process balancing the depth of expertise in one's mission area with the breadth required to produce more diversified leaders
- Success depends upon cultivating institutional interest in DAL, promoting an understanding of the competencies required of leaders, and funding associated developmental initiatives

Family and Employer Support

Background

- The Air National Guard and Air Force Reserve conduct a unique balancing act between their military duty, civilian employer, and family
- Improving the support to our civilian employers and families is critical in order to maintain our number of men and women in the Guard and Reserve

Discussion

- A number of initiatives have been started or implemented within the last year and include:
  - ANG created a website at Wing level that provides a step by step process to provide child care alternatives specific to each base—also pursuing child care subsidy pilot program
  - Employer database project has been up and running since September 2001
    - All Guard and Reserve members with a civilian employer are asked to input data
  - ARC Airline Symposium—address issues common to Reserve and industry's pilots
  - ANG full-time contracted family readiness program at each Wing and Combat Readiness Training Center (CRTC)
    - Funding added in FY02 Supplemental Appropriations—no sustained funding in FYDP
    - Properly resourced, the ANG family readiness program will significantly enhance mission capabilities by reducing pressures on ANG personnel and their families
  - The AEF provides predictability and stability for civilian employers and families—dedicated rotator flight gets our men and women to and from AEF locations on time

Main Points

- The ARC is addressing the most critical and known family and employer support needs. Each military member needs to have a level of confidence that their military duty will cause no negative impact on his or her civilian employment or family obligations.
- Civilian employer database is capturing employer data that can be used to strengthen employer support to the Guard and Reserve. Employer support is part of ANG Strategic Plan.
- The Guard and Reserve support congressional recognition of the invaluable contribution of employers and families of Guardsman and Reservists in support of National Defense

Health Care

Background

- This year focused on implementation of FY 01 NDAA legislation for DoD military health care programs, including Medicare-eligibles (age 65 and over):
  - TRICARE for Life - TRICARE eligibility for Medicare-eligible military retirees/family members (affecting 1.5M people); TRICARE as second payer to Medicare; began 1 Oct 01
  - TRICARE Senior Pharmacy - On 1 Apr 01 all Medicare-eligible beneficiaries became eligible to receive their pharmaceuticals from the National Mail Order Pharmacy (NMOP) and retail pharmacies in addition to their MTF pharmacy benefit – successfully implemented
  - TRICARE Plus – began 1 Oct 01; MTF primary care enrollment with Prime-like access
  - TRICARE Standard Retiree annual Catastrophic Cap reduced to $3,000 (like Prime) from $7,500 (implemented 15 Dec 01)
  - TRICARE Senior Prime (TSP) - demonstration ended 31 Dec 01; all TSP offered TRICARE Plus
  - TRICARE travel reimbursement for TRICARE Prime beneficiaries who are referred over 100 miles; implementation pending Joint Federal Travel Regulation revision (expected completion in FY02)
  - TRICARE Prime Remote - expands to active duty family members; tentatively due Apr 02; will eliminate TRICARE deductibles, cost-shares, and co-pays for active duty family members; Active Duty Family Members can be reimbursed for co-pays, cost- shares, and deductibles that they have paid since 30 Oct 00 until the Apr 02 date of implementation (interim waived charges benefit)
  - TRICARE Business reforms – (1) eliminate requirement for TRICARE primary care provider to seek authorization before making a referral to a specialist, (2) increase reimbursement rates in localities where recruitment of TRICARE providers is difficult (per Aug 01 Code of Federal Regulations), (3) set goal of increasing claims submitted by electronic means by 50% (FY 03)

Discussion

- The recent implementation of DoD healthcare initiatives such as TRICARE for Life provided the missing link to the Air Force Medical Service's population-based health care strategy; now the Air Force truly has the foundation to provide whole care to its beneficiaries; these new programs will undoubtedly enhance the quality of life for the Air Force's older retiree population; TRICARE Plus will also strengthen the AFMS's medical readiness posture by expanding the patient case mix for our providers
- The AFMS continues to make great strides in its population health initiatives and customer satisfaction; central to the AFMS's population health plan is its Primary Care Optimization program, which improves clinical business processes

through maximizing medical support staff skills and duties and through robust information management that supports effective decision-making; the Primary Care Manager by name program provides much-needed continuity of care, and ultimately better patient management by providers; as a result of the expanded benefit and AFMS initiatives, customer satisfaction continues to rise (90 percent of Air Force's enrolled beneficiaries indicate they would enroll or re-enroll in TRICARE Prime if given the option)

Main Points

- This year focused on implementation of FY01 NDAA legislation, which included programs such as TRICARE for Life, assuring TRICARE eligibility for Medicare-eligible military retirees and family members (affecting 1.5M)
- The AFMS continues to make great strides in its population health initiatives and customer satisfaction through initiatives such as the Primary Care Manager by name program and Primary Care Optimization to enhance clinical business processes

READINESS

Total Force

Background

- Restoring readiness will require years of substantial and sustained recapitalization in people, equipment, and infrastructure while maintaining control of OPSTEMPO
- These areas were already deemed as concerns that must be addressed even prior to the terrorist attack events that occurred on 11 Sep 01. Since that dreadful day, these concerns are growing and the OPSTEMPO has exceeded pre-terrorist attack levels.

Discussion

- The efforts to manage OPSTEMPO in 1999, 2000, and 2001 through the EAF was working to halt the decline of readiness
- Since September 11th the Air Force has greatly increased its commitments around the world
- Many low density/high demand aircraft are at or above surge levels
- Real world deployments and alerts limit continuation and special capabilities training, thereby reducing proficiency and ultimately readiness for the future
- Higher CINC demand for forces has led to partial mobilization, authorized by the President, to sustain capability levels
- Sustaining overseas operations puts a strain on navigation and targeting pods for fighter aircraft, spare engines, and precision munitions
- Aircraft average age is now past 22.5 years and forecast to reach 30 years by 2020
- Depot maintenance must work harder as unforeseen issues like corrosion and fatigue slow down output. Result is more time and money per aircraft.
- Operating costs have risen due to declining reliability and parts obsolescence
- Age issues now affecting F-16, F-15, and B-1 as well as KC-135, T-38, and C-5
- Keeping high personnel experience levels are getting harder as skill imbalances grow. Critical 5-level aircraft manning dropped to 76% in 2001. These 5-level maintainers are the primary home station instructors for the next generation, as well as the experience pool needed for real world deployments.
- A key measure of readiness is the aircraft Mission Capable (MC) rate. From a high of 83.4% in 1991, rates appear to have bottomed out in 2000 at 72.9%. 2001 showed the first upturn at 73.3% and the first months of 2002 are in the upper 70s. This is a result of spares funding at 100% since 1999 and programmed to continue through 2007.

Main Points

- Readiness has declined considerably since 1996, but has been stable for last 2 years
- AF is committed to improving readiness through increased recruiting efforts, spare parts funding, and the EAF construct
- Guard and Reserve components are essential to balance Active force OPSTEMPO as additional efforts in the Global War On Terrorism are undertaken

Recapitalization

Background

- Original Recapitalization effort during Summer and Fall 2000 highlighted these issues:
  - Constrained top-lines and near-term readiness demands forced under-funding of modernization and infrastructure, thus placing mid- and long-term readiness at major risk
  - Stressed need to buy 170 aircraft per year (120 small, 50 large) until 2017 to fix readiness and recapitalize the force, then buy 150 per year (110 small, 40 large) to retain status quo
  - Additional funding is required for physical plant (includes military construction, real property maintenance, support vehicles, support equipment & bare basing, and comm) recruiting and retention programs (to increase end-strength to 370,000 by FY07), Defense Health Program (DHP) costs, plus start-up for over-65 TRICARE for retirees
- DoD procurement requirement validated by multiple independent studies:
  - CBO estimate to maintain today's force is $90B with AF share of $35B annually
  - CSIS estimate to replace QDR force is $121B with AF share of $51B annually
  - CSIS estimate to modernize the force is $163B with AF share of $69B annually
  - On 27 Sep 00, CSAF testified before the HASC and SASC that the Air Force required an additional $20 to 30B per year in order to fix readiness and recapitalize the force

Discussion

- Events of 11 September 02 have altered the landscape of defense spending
  - Dramatic increase in FY03 Budget funded near-term readiness costs identified in recap study; however, this is only a down payment on recapitalization
  - High purchase quantities of the 1980s coupled with *very low* purchase quantities of the 1990s means large numbers of aircraft are getting old at the same time
  - Average age of AF aircraft is now past 22.5 years and rising, in spite of new fiscal guidance—our fleet is vulnerable to a host of aging aircraft problems, including technical surprise
  - If the AF continues to fly at our current rate, as dictated by homeland defense needs and Operation Enduring Freedom, our aircraft will age more quickly than planned

Main Points

- Recapitalization plan must create a sustainable force structure and support transformation
- Aircraft recapitalization cannot be fixed in the near-term—To fix force structure and reverse aging trends, AF must receive increased funding streams well beyond the FYDP

C3I Architecture

Background

- The Clinger Cohen Act (CCA) 1996 and OMB Circular A-130 require Federal agencies to provide an enterprise architecture; DoD has mandated use of the Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) Architecture Framework
- The Global Information Grid (GIG) provides the infrastructure architecture for DoD and the target end state of Air Force architecture efforts will be synchronized with this architecture
- Future Air Force IT expenditures will be based upon evaluating architecture views developed for AF MAJCOMS, agencies, and program offices; architectures will guide the corporate Air Force in its decisions by stressing commonality and interoperability
- The value of an architecture is measured by the degree to which the architecture:
  - Supports mission need statements (MNS) or operational requirements document (ORD), and how it enables cost-effectiveness comparisons between strategies
  - Helps organizations to ascertain whether proposed solutions are compliant with AF policy governing migration and technical implementation
  - Helps a Command in Chief (CINC) or Joint Task Force (JTF) Commander determine how well capabilities and systems integrate into a given Area of Responsibility
  - Can be interrelated with the architecture views of other components of Joint and Coalition operations

Discussion

- AF-CIO has established the AF Enterprise Architecture Integration Council for purposes of satisfying the task within CCA 1996 and producing the AF Information Technology Enterprise Architecture (EA)
- AF/SC (Deputy AF-CIO) has defined infostructure as a subset of the EA and initiated a process and manages a council structure to provide guidance and oversight of IT standard platforms, profiles, and products, as well as technical standards for the Air Force
- The AF/SC's Infostructure Architecture Council incorporates a process encompassing the following three phases
  - Select: assess and prioritize current and proposed IT initiatives and create an optimal portfolio of IT initiatives
  - Control: initiative owners periodically assess the progress of the projects against projected cost, scheduled milestones, and expected mission benefits
  - Evaluate: provides a mechanism for constantly improving the organization's IT investment process

Main Points

- AF is required to produce an enterprise architecture that interrelates with GIG Architecture
- AF-CIO has responsibility for the AF Information Technology Enterprise Architecture (EA)
- AF/SC has Infostructure Architecture responsibilities across the Air Force

Strategy for Managing Aging Aircraft

Background

- Aging aircraft issues are a growing concern to MAJCOMs and senior AF leadership. The average age of our fleet is over 22 years old with some aircraft over 40 years old; expected service life being extended as new mods are added. Average age projected to rise to 30 years by 2020.
  - Unanticipated aging problems, e.g., corrosion, structural failures, old wiring, etc., further exacerbate inability to predict aging problems and hence, program appropriate Operations & Supply (O&S) costs across FYDP. No valid decision making model available to help senior leaders decide on "buy" versus "service life extension" decisions.
  - The KC-135 for example has had their average PDM flow days increase from less than 100 days in 1991 to over 340 in 2001. Unanticipated corrosion and structural problems have been the primary culprits (e.g., main landing gear trunions, engine struts, wing skin problems, etc.). (Note: Depot has developed significant gains in efficiency and increased its labor force to reduce this time to between 240 and 300 days during FY01.)
  - The F-15 C/D fleet has experienced an 83% increase in cost per flying hour (constant FY 00 dollars) and a decrease of 4% percent Mission Capable Rate from FY 95 to FY 01
- CJCS recently testified to Congress that, while the Bush Administration is proposing to boost the Defense Departments procurement spending from $61.1B in FY02 to $68.7B in FY03, the Air Force needs $100B - $110B a year (FY01 dollars) for several years to replace aging systems and maintain the military's capability

Discussion

- AFMC created an Aging Aircraft Systems Program Office to be central POC for all A/A issues
  - Actively working on cross system initiatives to leverage individual program efforts
  - Working both process and technology improvements to deal with our aging fleets
  - Responsible for all aging aircraft issues in the Air Force and are working with other services, DOD and industry
- AF/ILMY is working with Enterprise Data Warehouse and several contractors to develop a recapitalizaton model to enhance buy vice extend life decisions
- We need to recapitalize our fleets. Currently buying far too few aircraft to control average age.
  - CBO says we need 144 new aircraft per year to maintain steady state - AF/XP says 165 per year for 20 years to achieve "desired fleet average age" - then 145 per year to maintain
- Weapons Systems managers must address aging problems through well thought out and engineered SLEPs and upgrades. This requires sustaining engineering funding, which is under funded.
- We need to develop predictive modeling capabilities that will allow us to better predict impending problems from structural fatigue, corrosion, etc. The model should be "trigger based" where it can predict problems early enough for us to do something about them.

Main Points

- Our fleets are getting older and are more difficult and more expensive to maintain
  - Short-term, we must find new innovative ways to maintain our aging aircraft
  - Long-term, we must recapitalize our aging fleets to maintain a viable force for the future

Homeland Security

Background

- Prior to September 11, 2001, the United States relied on two oceans and two friendly nations to define and protect our homeland. Our Air Force strengths continue to be superior combat power and global mobility– Global Strike and Global Reach.
- New adversaries avoid our strengths and capitalize on our vulnerabilities
  - They exploit our economy, freedom and desire for an open society
  - They are supported by rogue nations and non-state actors; few resources and not deterrable
- Air Force will integrate the sensors, command and control and combat arms to synthesize a dramatic effect for prevention, protection and response to these enemy capabilities

Discussion

- The Homeland Security Task Force (HLSTF) will leverage AF capabilities
- Build on existing inter-service and inter-agency capabilities and strengths
- HLSTF will identify/neutralize threats prior to execution by an adversary through continuous Intelligence, Reconnaissance and Surveillance focused on predictive battle space awareness
- HLSTF will employ the capabilities of the Global Strike and Global Reach task forces
- Proper mixture of Active, Reserve and Guard assets will achieve right results
- HLSTF will protect by securing our resources and infrastructure, monitoring adversaries, build on existing capabilities and protect our Nation against air and space threats
- HLSTF will respond by retaliation against the source of aggression and provide domestic assistance through lead federal agencies – timely essential civil services immediately

Main Points

- Air Force Homeland Security Directorate developing a Total Force concept of operations
- New CINC requirements will provide way ahead and integrate forces into the mission
- All AF capabilities will be leveraged to prevent, protect and respond to the enemy

OPSTEMPO

Background

- The Air Force has an enormous impact on peacekeeping and combat missions around the world. From the Korean Peninsula to Kabul, across every continent and over all bodies of water, the Air Force Active Duty, Guard and Reserve forces are executing global reconnaissance, strike and mobility missions.
- As the go-to force for immediate response to any worldwide threat, high TEMPO rates logically follow. Several years of sustained high TEMPO contributed to the steady decline in overall readiness.
- The Air Force is a retention force relying on the ability to recruit and retain technically and mechanically gifted individuals to operate and maintain our air and space systems. Burdensome TEMPO is cited as major factor negatively effecting retention and recruiting.

Discussion

- The Expeditionary Aerospace Force (EAF) construct provides a capable, tailored force to the CINCs while offering greater integration of Reserve Component forces. The EAF provides a structured, more predictable approach to scheduling which offers more stability for Air Force personnel.
- Air Reserve Component (ARC) participation in all aspects of operations is essential in reducing active duty TEMPO. Also, Global Military Force Policy (GMFP) helps manage TEMPO of low density / high demand (LD/HD) assets.
- Numerous other actions have been taken to reduce and balance TEMPO. The CSAF established a desired maximum accumulation of 120 TDY days per year per individual as a goal. Also, we have eliminated Quality Air Force Assessments, reduced Operational Readiness Inspections and reduced exercises. Likewise, Congress provided legislative relief requiring stringent management of deployments and authorized special pay for High Deployment Days personnel.

Main Points

- CINC demand for forces remains the biggest factor effecting TEMPO rates
- The EAF provides a capable, tailored force for CINCs requirements while putting predictability and stability into the lives of our Airmen
- ARC contribution is essential in reducing Active Duty TEMPO
- Commanders at all levels carefully manage personnel deployments / TEMPO

Training

Background

- No substitute for highly skilled, trained people—directly tied to readiness and transformation
  - Train rigorously in peace to win wars decisively, train in war to maintain our lethal edge
  - Training prepares people for the transformation process—increases performance in joint, interagency and multinational operations
  - "Gaining skills" and""job experience" are the second most compelling reasons for joining the AF (from among 18 factors)—Basic Military Training Survey Report
  - 2000 CSAF QOL Survey identified training as a strong "satisfier." 96% of officers and 94% of enlisted said, "Personnel have necessary training"; 82% of officers and 86% of enlisted said, "Personnel have enough time to receive necessary training."

Discussion

- Advanced Distributed Learning (ADL is any training provided without the presence of an instructor) delivers effective training to the Total Force—adds training agility and flexibility
- A "training multiplier", ADL provides anytime, anywhere training using various delivery methods including CD-ROM, paper-based and web-based
- Resource Learning Centers located at 82 bases—5 deployed to contingency locations
- 13 training courses converted; 90 courses identified for conversion, pending funding
  - As more training goes "on line", stressed infrastructures at technical training wings will be better postured for future in-resident training surges
- Force management demands technology capable of capturing, tracking and managing essential information for assessing skills, assigning training actions including delivery of training and measuring effectiveness
- Training impacts recruiting and retention
  - Expectation of valuable skill training makes people want to join

Main Points

- Flexible, agile training enables rapid response to dynamic missions
- ADL provides the right training at the right time to the right people
- Quality training tied to recruiting and retention

Spacelift Range System

Background

- The Spacelift Range System consists of Eastern Range at Patrick AFB, FL and the Western Range at Vandenberg AFB, CA and their associated downrange sites
- The Spacelift Range System provides tracking, telemetry, communications, and command destuct/control for the military services, civil federal agencies and commercial users

Discussion

- The Spacelift Range System is comprised of two unique Air Force Launch and Test Ranges:
  - The Eastern Range managed by the 45th Space Wing at Patrick AFB, FL supports equatorial space launches for DoD, civil and commercial entities, ballistic launches, and manned space flight for the National Aeronautics and Space Administration
  - The Western Range, managed by the 30th Space Wing at Vandenberg AFB, CA supports polar space launches for DoD, civil, and commercial users, ballistic launches, and aeronautical testing in the West Coast Offshore Operating Area.
- The Spacelift Range System is undergoing a substantial modernization effort, replacing 1960s technology using manpower intensive equipment and expensive wide-bandwidth communications systems, with state-of-the-art systems. This three phase process consists of:
  - Range Automation and Standardization Program I. Completed in 2000. Modernized communications, radar and telemetry systems at the Eastern Range.
  - Range Automation and Standardization Program II. In work. Modernizes range safety, flight operations and analysis, communications, tracking, digital telemetry, range operations, planning and scheduling, and meteorological systems at both ranges.
  - Space Launch Range Systems Contract. In work. Provides system integration and engineering functions at both ranges and consolidates range sustainment functions.

Main Points

- Spacelift Range System is a national asset required for the United States to maintain assured access to space
- Spacelift Range System is undergoing an essential modernization program to maintain range viability, increase range flexibility, and reduce O&M costs

Expeditionary Medical Support

Background

- The Air Force Medical Service (AFMS) responds effectively when the nation calls through state-of-the-art equipping and training facilities such as Expeditionary Medical Support (EMEDS), which is a lightweight modular system that allows the AFMS to tailor its response to each situation, adding bed sets as needed
- Three types of EMEDS:
  - EMEDS Basic – provides primary care, preventive services, critical care, and general orthopedic surgery to a population at risk of 500 to 2,000; includes Small Portable Expeditonary Aeromedical Rapid Response (SPEARR) team plus 15 additional health care personnel
  - SPEARR team includes the following subcomponent teams:
    - Prevention and Aerospace Medicine Team - provides preventive services for diseases and non-battle injuries, health threat risk assessments, health hazard surveillance, control and mitigation effects, primary and emergency care, and flight medicine; includes one aerospace medicine physician and one public health officer
    - Expeditionary Critical Care Team - provides ground care for up to 10 critically ill patients for up to a 7-day period; includes one physician, one nurse, and one respiratory therapist
    - Mobile Field Surgical Team – provides life-saving trauma care within one hour of injury; provides care for up to 20 patients within 48 hours; performs up to 10 life or limb saving/ stabilization procedures; includes one anesthesiologist and one operating room technician
  - EMEDS +10 – provides sustained surgical operations, expanded ancillary support, one ambulance, and increased aerospace medicine support to a population at risk of 2,000-3,000; includes EMEDS basic plus 31 additional health care personnel
  - EMEDS+25 – provides expanded inpatient capablities, second OR table with surgical staff to a population at risk of 3,000-5,000; includes EMEDS+10 plus 29 additional personnel

Discussion

- In June, we were asked to take our EMEDS to Houston to assist the flood-ravaged hospital system there; our EMEDS treated over 1,000 patients, and our contribution was recognized by the mayor of Houston, the governor of Texas and the director of the Federal Emergency Management Agency (FEMA)
- In September, at the request from our Chief and Secretary, we deployed four EMEDS teams to McGuire Air Force Base, N.J., to support local authorities in New York City in response to 911
- Our strategy envisions placing EMEDS with public and private sector partners throughout the country to offer a regional quick response capability

Main Points

- The AFMS responds effectively when the nation calls through the use of Expeditionary Medical Support (EMEDS), which is a lightweight modular system that allows the AFMS to tailor its response to each situation, adding bed sets as needed
- EMEDS was activated in both the Houston flood disaster in June and the New York attacks in September
- Future strategy envisions placing EMEDS with public and private sector partners throughout the country to offer a regional quick response capability

Deployment Health Surveillance

Background

- Deployment Health Surveillance (DHS) - following the Gulf War and concerns from service members that unexplained illnesses were occurring among Gulf War Veterans, increased emphasis was placed on DHS
- Presidential Review Directive 5 mandated that the health of all troops be protected during deployments and that all Services implement a deployment health surveillance program; ASD(HA) provided guidance for implementing a deployment health surveillance program; this program was first tested in November 1998 during Operation Phoenix Scorpion

Discussion

- The philosophy of the Air Force Medical Service (AFMS) is to conduct comprehensive, longitudinal medical assessments throughout the career of every airman. Within the service member's "life cycle", each airman is treated as a"human weapon system", with "preventive maintenance" performed regularly; a Preventive Health Assessment (PHA) is conducted annually, and periodically a Health Enrollment Assessment Review (HEAR)
- Predeployment medical assessments are performed on every airman deploying for 30 days or more to overseas locations without a fixed medical facility; Serum samples are extrapolated from HIV samples drawn prior to deployment and forwarded to the serum repository; there are currently over 27 million samples in storage
- Post deployment medical assessments are conducted in theatre prior to redeployment; abnormal findings are evaluated in theater and referred to the airman's home station
- The Air Force participates in the Defense Medical Surveillance System (DMSS) and the Deployment Health Center, two examples of joint deployment health initiatives

Main Points

- Deployment Health Surveillance (DHS) was created to protect the health of all troops during deployments; program was first tested in 1998
- AFMS conducts Preventive Health Assessments (PHAs) annually.

Strategic Airlift

Background

- C-5s and C-17s are the only aircraft in the AF inventory capable of strategic airlift of oversized cargo. The aircraft carry fully equipped, combat-ready military units to any point in the world on short notice, then provide field support necessary to help sustain fighting forces. C-5s possess unmatched cargo carrying capacity, while C-17s possess the capability and flexibility to operate in austere fields enabling direct delivery of troops and cargo.
- Mobility Requirements Study 2005 (MRS-05) assessed strategic lift requirements, including airlift
  - JCS, Service Chiefs and CINCs determined a 54.5 million ton miles per day requirement
- DoD is addressing the airlift requirement with three acquisition programs: C-17 Acquisition, the C-5 Avionics Modernization Program (AMP) and the C-5 Reliability Enhancement and Re-engining Program (RERP)

Discussion

- The Mobility Requirement Study 2005 was released by the Secretary of Defense Jan 01
  - This study, which was initiated in October 1998, was conducted as a joint effort among the Joint Staff, the Office of the Secretary of Defense, the Services and the Commanders in Chief (CINCs) of the Unified Commands
- The DoD has three programs in place that will eliminate the mobility airlift shortfall
  - C-17 Acquisition will procure 180 C-17s. The Air Force is exploring procuring additional aircraft
  - C-5 AMP and RERP will increase mission capable rates above 75%—increasing availability
- The complementary capabilities of C-5 and C-17 are cornerstones of Rapid Global Mobility
  - The C-5 provides unmatched airlift capacity
  - The C-17 provides capability, operational utility, and flexibility

Main Points

- MRS-05 confirmed the existence of the mobility shortfall
- C-17 acquisition and C-5 modernization will eliminate the mobility airlift shortfall
- The complementary capabilities of the C-17 and C-5 are needed for Rapid Global Mobility

TRANSFORMATION

Acquisition Transformation

Background

- While technology cycle times have accelerated, Air Force acquisition cycle times have steadily increased
- Air Force has strong record of individual success in acquisition reform, but individual successes will never equal true reform. Broad-based, systemic changes are needed
- SECAF and CSAF have made transformation of the entire acquisition process — from requirements through deployment and sustainment a top priority

Discussion

- Nov 2001, SAF/AQ announced six new "Lightning Bolts" initiatives aimed at fundamental transformation:
  - Focus on Results, Not process - "Clean sheet of paper" approach to acquisition for everything the AF controls. Draft regulation is 20 pages vs. current 250.
  - Spirals: Success in Increments - Must synchronize requirements, acquisition, testing, support, and resource systems so that we execute a "spiral - learn - spiral" strategy
  - Roadblock Busters - Create the Acquisition Center of Excellence (ACE). Empower those who can prevent process from overwhelming progress — create small cadres of acquisition innovators at each product/logistic center.
  - Breeding Innovators - Create and sustain a "birthplace" for future acquisition innovators - train for the long term. Hold center commanders accountable for cultural change
  - PEO/Services - Create a PEO/Services.
  - Services now half of all contract dollars.
  - Execution and direction are inconsistent.
  - The Knowledge Pipeline - Create venues for "push/pull" of ideas from government and industry
- Stretch goal set of 4:1 reduction in acquisition cycle time
- Collaborative spiral development (Lightning Bolt #2) seen as highest potential for cutting cycle times and bringing funding and schedule stability to programs
  - Break acquisition process into manageable pieces
  - Brings all parties together constantly to work problems
  - Requires flexibility because future spirals are defined as "use and learn" process in early spirals provides warfighter with real-life experience
- 13 Pathfinder programs are working to develop new, collaborative processes

Main Points

- Transformation is No. 1 goal of acquisition leadership
- Acquisition transformation is underway and in parallel with transformation of requirements and testing processes
- Collaborative spiral development is key to reducing cycle times and getting new capability to the warfighter sooner

Quadrennial Defense Review

Background

- The Air Force articulated several themes in the 2001 Quadrennial Defense Review:
  - Air and space power is America's asymmetric advantage
  - Air and space power enables change in legacy warfighting concepts
  - Air and space capability has defined the RMA: the Air Force is transforming accordingly
  - Capability to defeat anti-access strategies is critical
  - Leverage the synergy between air and space
  - Recapitalization requires greater resources

Discussion

- The QDR 2001 Report defined six operational goals for transformation:
  - Protect critical bases of operation (U.S. homeland, forces abroad, allies, and friends) and defeat NBC weapons and means of delivery
  - Project and sustain U.S. forces in distant anti-access or area-denial environments, and defeat anti-access threats
  - Assure information systems in the face of attack and conduct effective and discriminate offensive information operations
  - Provide persistent surveillance, tracking and rapid engagement with high-volume precision strike against critical mobile and fixed targets at various ranges, and in all weather and terrain
  - Enhance the capability and survivability of space systems and supporting infrastructure
  - Leverage information technology and innovative concepts to develop an interoperable, joint C4ISR architecture and capability that include a tailorable joint operational picture.
- The QDR 2001 Report outlined key areas that are consistent with Air Force goals and objectives to include:
  - Defining transformation as: "Innovative concepts of operation, new capabilities and modern organizational configurations"
  - Shifting towards capabilities-based planning and effects-based operations
  - Emphasizing a force-sizing construct capable of defeating aggressors in overlapping timeframes in any two critical areas (i.e. two rapid halts)
  - Establishing an appropriate balance between current readiness/recapitalization and transformation requirements

Main Points

- The QDR reflects a positive outcome for the Nation, the Air Force, and Air and Space Power
- The QDR calls for increasing space, stealth, precision, and rapid global strike capabilities

Joint Strike Fighter (JSF)

Background

- JSF is a multi-national cooperative development program that will develop and field an affordable, highly common family of next generation multi-role strike aircraft
  - 3002 JSFs will meet the requirements for the USAF (1763), USN (450), USMC (609), United Kingdom (150) and other selected allies
- With its combination of stealth, large internal payload and multi-spectral avionics, the JSF will bring the Air Force a persistent force capable of precision engagement and global attack

Discussion

- Originated from the Joint Advanced Strike Technology (JAST) Program in early 1990s
  - Evolved from the 1993 Bottom Up Review which acknowledged the Services needed to affordably replace their aging strike aircraft (F-16s, A-10s, F-18 A/Bs, and AV-8s)
  - Completed Concept Definition Phase (CDP) in FY01 and entered System Development and Demonstration (SDD) at Milestone B in Oct 01 with Lockheed Martin as the primary airframe contractor and Pratt & Whitney as the engine contractor
  - Acquisition strategy focused on affordability and controlling requirements "creep"
    - War fighter inputs included from the start of CDP
  - Cost as an Independent Variable (CAIV) is a key element of JSF development
    - Cost goals have driven performance trades to maintain the aggressive cost goal of $28M (FY94$) for the USAF Conventional Take-off and Landing (CTOL) aircraft
- The JSF will provide the Air Force with the persistent force for the threat of the future
  - Optimized for all weather, precision air-to-ground employment to include direct attack on the most lethal SAMs
  - Combined with the F-22 will provide the USAF with a Day 1 capable force able to attack and destroy the most formidable threat for the foreseeable future

Main Points

- The JSF program is on schedule with an Air Force IOC of 2011
- The JSF strategy is to build an affordable platform that meets the Warfighters needs
- JSF will complement the F-22 and provide the USAF with its multi-role aircraft of the future

Task Force CONOPS

Background

- CORONA Fall 01: CSAF directed Task Force CONOPS development, associated CONOPS requirements, and a restructured Panel process prior to FY04 POM–all with the intent to:
  - Lay the foundation for the next step in our transformation to a capabilities-focused Expeditionary Air and Space Force
  - Make warfighting effects, and the capabilities we need to achieve them, the drivers for everything we do
  - Support the "Bureaucracy to the Battlefield" concept to get resources to warfighters
  - Guide our planning, programming, requirements, and acquisition reform

Discussion

- CSAF approved the following Task Forces CONOPS and provided them to the MAJCOMs:
  - Global Strike TF: Counters adversary anti-access systems to allow follow-on operations
  - Global Response TF: Provides rapid engagement of fleeting targets throughout the globe
  - Homeland Security TF: Prevents, protects against, and responds to homeland threats
  - Space / C2ISR TF: Provides decision information across horizontally integrated networks
  - HUMRO / NEO TF: Provides rapid assistance to natural or man-made disasters
  - Nuclear Response TF: Deters / dissuades adversary nuclear attacks; defeats if necessary
  - Air & Space Expeditionary TF: Provides tailored air and space force packages to meet the full spectrum of contingencies. Complete by Mar 02
- Way ahead:
  - TF CONOPS incorporated into the Air Force Capabilities Investment Strategy (AFCIS) and the Annual Planning and Programming Guidance (APPG)
  - CSAF-directed GSTF Capabilities Review and Risk Assessment (CRRA) is the proto type capabilities-to-programs process. Other TF CONOPS to follow.

Main Points

- TF CONOPS will provide warfighters the resources they need to fulfill national military objectives and will lay the foundation for the next step in our continuing transformation to a capabilities-focused Expeditionary Air and Space Force

Global Strike Task Force

Background

- Potential adversaries have become increasingly reluctant to oppose the US military force-on-force, and are seeking new asymmetric ways to counter American strengths
- US military operations have traditionally relied on deploying superior power close to an adversary in a time consuming build-up phase before beginning operations
- Potential adversaries are acquiring advanced anti-access systems that threaten to discourage US intervention, disrupt coalitions, or prevent forces from operating from desired locations

Discussion

- The Global Strike Task Force (GSTF) employs joint power-projection capabilities to counter adversary anti-access systems and create the conditions required to gain and maintain access for follow-on joint forces
- Prior to conflict, the GSTF will employ persistent, all-weather Intelligence, Surveillance and Reconnaissance (ISR) elements to monitor adversary actions, identify, locate and track targets and threats, and develop and update plans for countering adversary anti-access strategies and capabilities
- In the initial hours of a developing conflict, the GSTF will employ a relatively small number of low-observable and stand-off systems, supported by focused electronic and information attack, to "kick down the door" into denied battlespace by rapidly degrading, and then defeating selected enemy anti-access capabilities and associated systems. GSTF will have a capability to strike high-value targets (CBRN, C4I) in the opening hours.
- By defeating or suppressing adversary anti-access capabilities, GSTF will allow joint force commanders to employ persistent forces to defeat the enemy or his objectives

Main Points

- GSTF employs joint power-projection forces to counter adversary anti-access systems and create the conditions required to gain and maintain access for follow-on joint force
- GSTF is a transformational concept, providing key capabilities in support of the national strategy of assuring allies, deterring and dissuading potential adversaries from challenging US forces, and if required, defeating our nation's enemies

Space Commission

Background

- The Commission to Assess United States National Security Space Management and Organization (herein Space Commission) released its report on 11 Jan 01
- SecDef released his final direction on 18 Oct 01, with specific actions required in 30/60/90/120 days
- USecAF/DNRO confirmed 8 Dec 01 — OSD "reset clock" on directives with USecAF confirmation

Discussion

- The Space Commission recommended (and SecDef directed) dramatic organizational changes for the DoD, including:
  - The Air Force be designated Executive Agent for Space
  - The USecAF be assigned as the Air Force Acquisition Executive for Space
  - Milestone Decision Authority be delegated for DoD Space to the Air Force
  - Establishment of a "virtual" Space Major Force Program
  - Transfer of the National Security Space Architect from OSD to the USecAF
  - Realignment of Space and Missiles System Center (SMC) from AFMC to AFSPC
  - Establish process for AFSPC/CC to:
    - Oversee, prioritize, and direct space S&T research
    - Manage space career field
  - Align AF-NRO Best Practices
- The Air Force fully supports Space Commission and is on track to meet all suspenses

Main Points

- Space Commission recognized that fundamental management and organization changes were necessary for improving National Security Space
- The AF has been given an extraordinary opportunity to lead space and is stepping out with implementation of Executive Agency for Space
- The Air Force sees the Space Commission as a mandate for change — we are committed to "getting space right" for the joint warfighter

Long-Term Depot Maintenance Strategy

Background

- SECAF signed waiver to Title 10, Section 2466 in FY 00 and FY 01. (Section 2466 limits to 50% the amount of funds made available to depot maintenance that may be contracted out)
- Congress requested AF to provide a Long-Term Depot Maintenance Strategy. AF promised Congress a long-term depot plan to focus on future of the organic depots in FY00, FY01 and FY02.

Discussion

- SAF/IE/HQ USAF/IL and HQ AFMC/CC developing the long-term depot plan
  - Due to Congress 31 Jan 2002 - directed in FY 02 NDAA (H Rpt 107-333, Section 341)
    - Initial progress report delivered to Congress 24 Jan 02
  - Strategy still in work within the Air Force and Department of Defense
  - Strategy will:
    - Retain three organic depots required to execute AF mission
    - Re-capitalize organic depots is needed - capital investment in plant, equipment and personnel
    - Revitalize workforce training and recruitment
    - Re-engineer and improve processes
    - Develop strong partnership with industry - a key element Timeline for completion of Depot Maintenance Long-Term Plan
  - Develop/coordinate strategy Feb –July Investment streams for strategy will be in the FY04 budget submission

Main Points

- Strategy to make appropriate investments in capital/personnel/facilities for 3 depots
- Long Term Depot Strategy will be part of the FY04 budget submission

Small Diameter Bomb

Background

- The SDB is a 250-pound class weapon that quadruples loadout and increases kills per sortie through use of a common carriage that carries at least 4 and up to 12 weapons per 1760-compatible platform weapons station
- The SDB is being developed in two phases — Phase I will utilize Global Positioning System (GPS)/Inertial Navigation System (INS) guidance against fixed targets; Phase II will develop technology to provide precision attack against moving and relocatable targets
- The SDB will provide tactically significant standoff range, potential for reduced collateral damage, and improved accuracy over legacy munitions
- SDB is the critical element to the Global Strike Task Force (GSTF) operational concept of employing F-22 and B-2s with multiple miniature munitions to destroy critical targets within the first 1-3 days of a conflict
- SDB has been selected as a USAF Pathfinder program to reduce acquisition cycle time

Discussion

- Program awarded two Component Advanced Development (CAD) contracts in Sep 01
  - Boeing and Lockheed Martin competing in two-year CAD phase
  - Downselect to one will occur in Oct 03
  - Phase I Low Rate Initial Production (LRIP) will start FY05; Phase II FY08
  - Phase I threshold is the F-15E; Phase II thresholds are the F-15E and B-1
- FY03 PB funds continue development of the SDB weapon system
  - A spiral development approach is envisioned to field a Phase I capability in FY06 and Phase II capability in FY09 and expand these capabilities as technology matures

Main Points

- The SDB will provide fighter and bomber aircraft with an air-to-surface, tactically significant standoff capability from outside of point defenses against fixed and mobile/relocatable targets
- FY03 PB funds continue development of the SDB weapon system

Space Based Infrared Systems (SBIRS)

Background

- SBIRS consists of the current Defense Support Program (DSP), a SBIRS High component with geosynchronous earth orbit (GEO) satellites and hosted sensors placed in highly elliptical orbit (HEO), a SBIRS Low component with low earth orbit (LEO) satellites, and an evolving ground segment
  - Lockheed Martin is the prime contractor for SBIRS High
- The AF identified substantial cost growth and technical difficulties with fielding the system - an 18 to 24 month slip to satellite launches and $2B+ cost increase through 2010

Discussion

- Secretary of the Air Force notified Congress on 31 Dec 01 of a Nunn-McCurdy program acquisition unit cost (PAUC) breach
  - Program certification to Congress NLT 3 May 02 or program funds obligations must stop
  - AF is restructuring SBIRS High to make it executable
- Defense Acquisition Executive (DAE) pursuing parallel alternatives for certification decision
- At 26 Apr 2002 certification review, DAE will make decision whether to certify SBIRS High program
- The AF chartered an Independent Review Team (IRT) to examine the program deficiencies, how they occurred, and what corrective actions need to be taken
- The findings of the IRT are the basis for the corrective actions taken by the Air Force
  - Program was too immature to enter System Design & Development (SDD)
  - System requirements decomposition and flowdown not well understood as program continued to evolve
  - Significant breakdown in execution management

Main Points

- SBIRS High baseline is breached
- The AF is committed to satisfying the user's requirements
- The AF will either fix the SBIRS High program or develop a viable alternative

Persistent Integrated ISR

Background

- Persistent ISR is needed to ensure success in modern warfare. It is a cornerstone for transformation. It is absolutely necessary for information and decision superiority.
- Persistent ISR is achieved by integrating the operations of multiple air/space/ground platforms and their associated combat analysis/C2/exploitation elements. Improved, long loiter systems like Predator and Global Hawk have added huge dimensions in persistence and accuracy.

Discussion

- Persistent integrated ISR involves focused and networked ISR assets with full-spectrum, all-source battlespace visibility to support and conduct operations
  - Persistent ISR leverages capabilities of available ISR assets (i.e., loiter time, access, data fidelity) to provide decision makers the best-available ISR picture to develop targets, complete Predictive Battlespace Awareness (PBA), and execute kill chain in our timeline
- Persistent ISR coverage is available in limited areas where we have ongoing operations or areas we consider of high national security priority
- War on global terrorism highlighted the shortage of ISR assets
- To meet requirements, USAF is accelerating development, upgrades and fielding of assets
- Includes beyond line-of-sight data links and upgraded sensors for U-2; improved detection of added target signals for Rivet Joint; increased production rate and development of multi-role Predator; programming for increased production rate and development of multi-INT capable Global Hawk; integration of multi-INT processing capabilities within DCGS; improved air-to-air and air-to-ground networking

Main Points

- Persistent integrated ISR enables commanders to conduct predictive operations and prosecute the right targets at the right time
- Currently, ISR assets are limited and can provide persistent coverage only of selected areas
- To meet demands of the war on global terrorism, USAF is accelerating development, fielding, and integration of ISR assets

Airborne Laser (ABL)

Background

- ABL is designed to shoot down ballistic missiles while they are boosting, at ranges in the hundreds of kilometers
  - Integrates a megawatt-class, high-energy Chemical Oxygen-Iodine Laser and sophisticated beam control equipment on a 747-400
- Program entered Program Definition and Risk Reduction (PDRR) phase (now called Block 2004) in Nov 96
  - PDRR contract is cost plus award fee with an FY02 budget of $476M
- ABL transferred to the Missile Defense Agency (MDA) from the Air Force in FY02

Discussion

- FY03 PB reflects ABL's transition to a capability-based acquisition strategy as a Ballistic Missile Defense System (BMDS) element
- BMDS and its elements (ABL) will be configured in two-year block capabilities
  - Block 2004 culminates in a lethality demonstration against a boosting ballistic missile
    - Provides one ABL for integration and testing in the BMDS testbed
    - Provides a contingency capability, if directed, that offers rudimentary protection of the US
  - Block 2006 adds improved ground support capabilities
  - Block 2008 provides for development of incrementally improved ABL consistent with BMDS needs
    - Includes maturation to a second ABL testbed, which includes new technologies, enhanced lethality, and additional operational suitability, maintainability, and sustainability
- MDA conducting extensive Schedule Risk Assessment for ABL that meets its management strategy for all BMDS elements
  - Developing lower risk, higher confidence (90%) schedule for Block 2004 lethal demonstration
  - Reduces concurrency, provides increased schedule durations for technically challenging tests, and extends manufacturing duration for unique high-energy laser and optical components

Main Points

- ABL is an element of the BMDS and a MDA program — ABL will return to the Air Force for procurement, operation, and sustainment
- ABL development has transitioned to a capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition using two-year capability blocks

Space-Based Radar

Background

- FY01 Authorizations Conference tasked SecDef to provide a SBR Roadmap addressing SBR operational requirements, force mix issues, and necessary technology requirements
  - In response to SecDef tasking, the National Security Space Architect brought together key stakeholders to assess technology, requirements, demo options, and acquisition strategy for a SBR program in response to the Authorization Conference request

Discussion

- Current SBR program represents a focused risk reduction approach to fielding an operational SBR as recommended in the SBR report to Congress (signed by DepSecDef on 22 Feb 02)
  - SBR program is working towards an Initial Launch Capability (ILC) of FY10
- SBR FY02 funding appropriated by Congress is $25 million. Specific FY02 plans are:
  - Aggressively pursuing SBR technologies and developing requirements; Mission Need Statement completing JROC coordination; Ground Moving Target Indication (GMTI) Analysis of Alternatives is underway; Integrated AF and NRO technology risk reduction
- Key FY03 activities (PB $91 million) include requirements development & technology risk reduction. A joint team including the AF, NRO, and other services are working SBR requirements development and an Analysis of Alternatives, technology maturation and risk reduction for the radar antenna and payload, processing hardware and algorithms, and data exploitation tools. Additional funding provided by the Defense Emergency Response Fund (DERF), AKA Cost of War Fund, was directed towards accelerating SBR deployment from FY13 to FY10.

Main Points

- SBR offers a key transformational capability for future joint expeditionary warfare
- Multi-theater, deep-look, wide-area surveillance that's not limited by terrain masking
- Day/Night, all weather detection and tracking capability
- No over-flight restrictions of political sensitivities
- Contributes to a complimentary mix of air and space ISR capabilities that multiply the warfighter's abilities to detect and defeat mobile, time-critical targets

Unmanned Aerial Vehicles (UAV)

Background

- Both the RQ-1 Predator and RQ-4 Global Hawk unmanned aerial vehicles (UAV) were developed as Advanced Concept Technology Demonstrations for intelligence, surveillance and reconnaissance (ISR) missions. Predator B is a larger, higher altitude version of Predator; six aircraft were funded in the Defense Emergency Relief Fund and by an FY02 Congressional add.
  - Predator operates at altitudes up to 25,000 feet and provides full motion electro-optical/ infra-red (EO/IR) video (streaming video) and synthetic aperture radar (SAR). It has approximately 24 hours of endurance for long-dwell battlefield persistence.
  - Global Hawk operates at altitudes up to 65,000 feet and provides still EO/IR and SAR imagery. It has approximately 35 hours of endurance for long-dwell operations.
  - Predator B is entering testing with two prototype aircraft; performance data has not been validated

Discussion

- Predator is evolving to a multi-role aircraft. All Predators are being outfitted with laser designators for guiding precision munitions and the capability to carry Hellfire missiles. Predator is currently deployed supporting Operations Enduring Freedom and Southern Watch.
- The Air Force hopes to use Predator B as a pathfinder for agile acquisition. We are currently attempting to define spirals of acquisition to evolve Predator B from a company-funded prototype to an aircraft capable of armed reconnaissance.
- Global Hawk is also an agile acquisition pathfinder and will be kept as a pristine ISR-only platform. Pre-production assets are currently supporting Operation Enduring Freedom.
  - The FY03PB accelerates Global Hawk development and production consistent with DoD's transformation objectives to provide a capability to the warfighter sooner
  - Congressionally directed Defense Acquisition Review scheduled for March 02

Main Points

- Predator has evolved to a multi-mission capability in response to CINC demands
- Global Hawk development has been accelerated to meet warfighter requirements and address ISR shortfalls

Unmanned Combat Air Vehicles (UCAV)

Background

- The X-45 UCAV is in the second of a three-phase joint Defense Advanced Research Projects Agency (DARPA) and Air Force System Demonstration Program (SDP)
- The SDP is intended to demonstrate the technological feasibility, military utility, and operational value of a UCAV system to effectively and affordably prosecute missions in the 2010+ high threat environment
- The Air Force chose the demanding suppression of enemy air defenses (SEAD) and strike missions to focus the X-45 program and understand the potential for unmanned vehicles
- The FY01 National Defense Authorization Act established the goal that "by 2010, one-third of the aircraft in the operational deep strike force aircraft fleet are unmanned." Per the Congressional language, this equates to roughly 30 operational UCAVs by 2010.

Discussion

- Program remains on track to demonstrate the feasibility, utility, and value of UCAV
  - Excellent results on 34 demonstrations completed to date
  - First flight of X-45A planned for Spring 2002
  - Starting design of the next iteration X-45B system, which will fly in late FY04
- FY03 PB funds a maximum acceleration path X-45 UCAV program to complete the SDP in FY06 and to field 14 Block 10 systems by FY08 for early warfighter assessment
- An effects-based spiral development approach is envisioned to rapidly field an initial Block 10 pre-emptive SEAD/strike capability and expand that capability as technology matures
  - Draft Mission Need Statement expected Spring 2002
  - Acquisition planning in progress for initial Block 10 investment starting in FY04

Main Points

- X-45 UCAV has the potential to provide revolutionary SEAD and strike capability against high risk, high priority targets
- FY03 PB funds the maximum acceleration UCAV program and provides a path to meet the Congressional goal of 30 operational UCAVs by 2010

Air Force Science and Technology (S&T)

Background

- The S&T Program develops and demonstrates affordable innovative technologies to provide superior warfighting capabilities for the 21st century. These technologies:
  - Meet near- and far-term military needs in acquisition and sustainment
  - Support a changing defense posture and affordable technical modernization
  - Prevent technology surprise from potential adversaries
- The S&T Program consists of:
  - Basic Research: primarily university and in-house laboratory-based—identifies, develops, and transitions militarily-relevant knowledge, principles, and products
  - Applied Research: in-house laboratory, university, and industry-based—determines technical feasibility in a laboratory environment of advanced, militarily important technologies
  - Advanced Technology Development: mainly industry-based—develops and demonstrates advanced technologies in an industrial and/or near-operational military environment
- The S&T Program:
  - Is managed corporately—covers core AF mission areas—linked to AF Strategic Plan
  - Is customer-focused on quality and relevance to meet warfighter needs
  - Seeks operational/technical expert input to maintain balance
  - Promotes rapid transition through contracts/grants with industry and universities
  - Coordinates with Services/Defense Agencies through Defense Reliance

Discussion

- In recognition of strong, continuing Congressional support for a robustly funded AF S&T Program, the AF has strived to ensure S&T is funded at a level that addresses future technology needs
  - The FY03 S&T budget lays the foundation for the AF transformation to an Expeditionary Air Force (EAF) that can react rapidly, with decisive force, to worldwide contingencies
  - Significant FY03 technology investment includes: multi-disciplinary basic research; turbine engines; microsatellites; space weather forecasting; small munitions; directed energy weapons; Agile Laser Eye Protection; aging aircraft; Targets Under Trees; Distributed Mission Training; Unmanned Combat Air Vehicles; missile countermeasures for large aircraft; hypersonics; information technology for global reach; and panoramic night vision devices
- In response to the FY01 National Defense Authorization Report, the AF conducted a review of the S&T Program—AF identified eight short-term objectives and six long-term challenges focused on warfighting capability needs
  - The General Accounting Office review was been positive and the Comptroller General report to Congress was completed in February 2002

Main Points

- AF S&T is funded at a level that addresses future technology needs and lays the foundation for the AF vision of transforming into an EAF
- In response to Congressional S&T Planning language, AF identified short-term objectives and high-risk, high-payoff long-term challenges to provide a warfighting capability focus for the AF S&T Program
- AF S&T discovers, develops, and integrates affordable, innovative warfighting technologies that multiply the combat effectiveness of our aerospace forces
- U.S. industry and academia execute the majority of S&T funds, while AF performs selected in-house research

One Air Force....One Network

Background

- Information and information technology underpins every aspect of USAF operations to enable Global Vigilance, Reach, & Power for America
- Vast growth during the 1990s led to strategic management challenges
  - Difficult to standardize incompatible software, hardware, and data
  - Increasing resources were required to sustain systems
  - Fragmented approach to funding
  - Non-standard training
  - Security posture met, but threats continued to grow
- One Air Force…One Network transforms how the warfighter employs information superiority and decision dominance to gain full Expeditionary Aerospace Force power

Discussion

- One Air Force…One Network brings secure, standardized global combat power; situational awareness; and information to aerospace warriors anytime, anywhere
- Provides decision quality information to execute today's mission and to plan for tomorrow by providing everything on the net
- Builds the Air Force IT Enterprise as part of the Global Information Grid (GIG)
  - Manages costs through aggressive partnership with industry and sister services
  - Implements the Combat Information Transport System, a high-speed network that moves and protects information inside the base boundaries
  - Provides robust satellite network and expeditionary information technology to ensure warfighters have access to uniform levels of service
  - Improves spectrum management and protection to ensure our ability to transmit information through space and to/from aircraft in flight
  - Increases security and reduces the burden of administering the system by consolidating electronic mail and application servers
- Air Force Portal provides a standard web-based interface for all formerly non-standard combat support applications—uniform application look and feel
- Information Assurance and Computer Network Defense ensures we have complete access to our information and our adversaries are unable to affect our systems

Challenges

- Recruiting and Retaining Quality People
- Staying ahead of the threat—must think like a "bad guy"
- Affording the Need—funding the near- and medium-term demands

Main Points

- Global Vigilance, Reach & Power depend on information and information technology
- One Air Force…One Network ensures the information is available whenever and wherever it is needed, in the right format to facilitate timely decision-making
- Resourcing capabilities and recruiting/retaining quality people are key to staying ahead of the threat

Information Dominance

Background

- Most efficient and effective means to employ air and space power is through fully integrated air, space, and information operations and achieved through optimized synergy of terrestrial, atmospheric, space, and cyber systems
- Full and seamless integration is essential as reachback and distributed operations expand
- Air and space forces must quickly deliver and sustain assets and effects in order to dominate the battlespace - many will be delivered through cyberspace

Discussion

- Information dissemination management (IDM)
  - IDM is critical to achieving Information Superiority by providing the right information to the right place at the right time in the right format in accordance with commanders' policies while optimizing the use of information infostructure resources to dominate the battlespace
  - IDM capabilities will allow aerospace forces to make better decisions, to execute at a pace faster than an opponent can react, and to achieve decisive effects
  - IDM includes ability to gain and exploit information on the adversary's battlespace as well as understanding our own information capabilities and vulnerabilities

Challenges

- Information Integration - large number of specialized warfighting architectures make information integration supporting overall command and control more difficult
- Too Much Information - issue is not too little, but too much information
- Information Assurance - to ensure timely and accurate exchange of information, both the information and the infostructure the information rides on must be protected
- Training - air and space force of today and the future requires highly technical professionals, with low turnover, high state of readiness, sense of pride, and acceptable quality of life

Main Points

- Air and Space forces must have the capability to dominate the flow of information
- Timely, relevant, and accurate information is a fundamental requirement of the military decision-making process
- Must defend the ability to move information on the battlefield and transport information unhampered by interference, intentional or incidental
  - Must continue to leverage information technology to create and sustain a robust infostructure—the price of entry for info-centric operations

Predictive Battlespace Awareness

Background

- Predictive Battlespace Awareness (PBA) is a culminating methodology comprising intelligence forecast, well planned and executed ISR operations, and all other blue force actions
- Creates conditions for a commander to produce desired effects, seize and maintain the initiative and influence adversary's actions

Discussion

- Iterative and integrated process comprised of Targets Systems Analysis (TSA), Intelligence Preparation of the Battlespace (IPB), ISR Strategy and Planning, and ISR Employment to maximize ISR capabilities in all environments and across the entire spectrum of operations
- TSA determines what effects can likely be achieved against target systems and their associated activities from both kinetic and non-kinetic weapons
- IPB is a rigorous analytical process for defining the battlespace environment, describing the battlespace's effects, evaluating the adversary, and determining potential adversary courses of actions. Results guide the commander's decisions on how, when and where to engage the enemy to achieve objectives and desired effects.
- ISR Strategy and Planning is the process of optimally sourcing ISR requirements with available assets to support the Joint Force Commander's operational objectives'
- ISR Employment is the execution phase involving a continuous process of directing, controlling, monitoring, and assessing ISR operations
- Requirements for PBA include a common operational picture, a forecasted picture, and integration of systems and processes
- PBA predicts events in battlespace—allows us to see where the next war is; where the next battle is; where the target is—and prepare for operations accordingly

Main Points

- PBA is a comprehensive, iterative and integrated process for Intelligence, Surveillance and Reconnaissance operations
- Enables predictive operations by creating conditions for a commander to produce desired effects, seize and maintain the initiative and influence adversary's actions

Horizontal Integration of Manned, Unmanned and Space Platforms

Background

- The Air Force's approach to achieve transformational change is to leverage America's asymmetric advantage in information technology to support the warfighter. The quickest way to achieve this is to integrate systems and capabilities present in today's force, while leaving avenues open for the future.

Discussion

- The Secretary and the Chief of Staff of the Air Force directed HQ USAF to develop a new Deputy Chief of Staff (DCS) organization to improve the integration of manned, unmanned, and space systems for command and control, communications and computers, and intelligence, surveillance, and reconnaissance (C4ISR). This new DCS for Warfighting Integration (AF/XI) will close the seams in the find, fix, track, target, engage, and assess (F2T2EA) process, the "kill chain", by integrating manned, unmanned, and space systems. A seamless C4ISR domain aimed at providing the right information, at the right time, to make the right decision is required to achieve the transformation the AF seeks.
- Prior reviews of Air Staff organization reinforced the notion that the AF should establish a DCS explicitly charged with achieving an integrated C4ISR vision that is critical to achieving global battlespace dominance. Consequently, AF leadership:
  - Established the DCS for Warfighting Integration (AF/XI) to horizontally integrate C4ISR into a coherent domain to achieve battlespace dominance
  - Charged AF/XI to measure the effects of changes in C4ISR domain in terms of closing seams in the find, fix, track, target, engage and assess (F2T2EA) process
  - Provided authority and resource control to allow AF/XI to prioritize C4ISR requirements
- The SECAF also elevated the Chief Information Officer (CIO) to Deputy Secretary level
  - Combination of new DCS and elevatedrole of the CIO puts in place a HAF team that is explicitly focused on providing a C4ISR domain that serves all aspects of the AF enterprise
  - In summary, the Air Force can best contribute to national security by exploiting the synergies among C4ISR capabilities. Through this new DCS, the Air Force will consolidate its ability to support the warfighter by integrating C2, C4, and ISR systems and acquisition practices.

Main Points

- AF goal is to use air and space power to apply right effects to achieve battlespace dominance
- Key to achieving right effects is providing warfighter the right information at the right time to make the right decision. Seamless, integrated C4ISR by horizontally integrating manned, unmanned, and space platforms, is a critical enabler for making that decision.
- Standup of AF/XI helps AF sustain role as a leader in Information Dominance for the DOD

Multi-Sensor Command and Control Constellation

Background

- The Multi-Sensor Command and Control Constellation (MC2C) will integrate capabilities of air, ground, and space assets to allow the seamless exchange and processing of intelligence information. This fused information will trigger quick and decisive action against high priority targets.

Discussion

- Initial MC2C capability objectives will be achieved through several key enablers, such as:
  - Multi-Platform Wideband Data Dissemination is an advanced wide-band common data link concept to support future multiple communications requirements in a net worked environment
  - Defense Information Infrastructure-Common Operating Environment provides a common set of data and integrated display capability to maximize battlespace visualization
  - Multi-Sensor Command and Control Aircraft (MC2A), Global Hawk, and Predator are the airborne enablers of the MC2C that will integrate current, programmed and emerging technologies onto modern airframes to replace legacy systems
  - Space-based systems provide advantages for access to denied areas while supplementing existing theater assets to greatly extend coverage area and expand the battlespace picture.
    - Network Centric Collaborative Targeting is a key technology enabler for automated sensor cooperation to improve the responsiveness and effectiveness of ISR sensors

Main Points

- Constellation approach is a critical enabler for Global Strike Task Force
- Standardized system interfaces permit greater interoperability among services and coalitions
- Integrated Multi-Sensor and Multi-Mission capabilities are force multipliers
- Exploits commonality of airframes for next generation airborne C2ISR and tanker assets
- Fused information shortens decision cycle to successfully prosecute time sensitive targets

Smart Tankers

Background

- CSAF-directed AF transformation effort to increase the utilization/effectiveness of tankers that are "always there" — contribute to building Predictive Battlespace Awareness
  - Enhance theater situational awareness and communications capabilities; minimize impact on the tanker mission—"smart tanker" capabilities augment theater C2ISR architecture
  - Focus on remotely operated passive RF and comm relay; no on-board consoles/ operators
  - Investigate a "palletized" communications gateway allowing roll-on/off capability of communications range extension and/or translators
- Air Force is pursuing two Smart Tanker initiatives:
  - Roll-on/off Beyond Line of Sight Enhancement (ROBE) — a near-term capability to be fielded on approximately 40 KC-135 Stratotankers
  - Multi-Mission Payload (MMP) — a more robust capability to be fielded on the next generation of tanker aircraft

Discussion

- "Smart Tankers" will extend the Multi-Sensor Command and Control constellation while performing their primary air refueling mission; they are not a stand-alone C2ISR platforms
- KC-135 ROBE is a near-term solution that performs a single, critically needed mission well
- ROBE includes a Link-16 radio, SATCOM radio, and laptop computer interface
- ROBE will disseminate joint Link 16 messages (TADIL J) beyond the current line-of-sight-restriction associated with the Link 16 radio (~300 NM)
- Global Strike Task Force (GSTF) enabler providing command and control to aircraft enroute to a theater; force multiplier for CSAR and other joint operations
- Future Air Refueling Aircraft with MMP will be an advanced air refueling aircraft with adjunct capabilities to provide cooperative sensing and act as a communications gateway
- MMP will feature remotely tunable, multi-function transceivers providing comm relay and cooperative direction finding, and comm translators able to receive, reformat, route, and relay similar and dissimilar voice/data links (e.g. SINCGARS to HAVE QUICK)
- C2ISR functionality onboard will contribute to shortening the find, fix, track, target, engage, assess (F2T2EA) time-critical targeting (TCT) kill-chain
- MMP will integrate with dedicated joint manned/unmanned C2ISR aircraft and space assets
- The FY 02 Appropriations Act requires additional Congressional authority/appropriation to modify any commercial 767 tankers leased as part of the Multi-year Aircraft Lease Pilot Program to carry the envisioned MMP

Main Points

- "Smart Tankers" are part of the Air Force Transformation effort—initiatives will enable the Air Force to use existing and programmed air refueling tankers in a new and innovative ways
- New capabilities will be joint force multipliers contributing to Predictive Battlespace Awareness across the full-spectrum of operations in the evolving 21st century security environment

Transformation MILSATCOM

Background

- DoD relies heavily on satellite communications systems to provide reachback capability, leading to requirements not currently met with the stove-piped MILSATCOM constellation
- Laser communications links have been demonstrated to provide a leap-ahead capability to the warfighter as we transition from the lab to the battlefield.
  - Laser communications links can satisfy throughput requirements orders of magnitude greater than are currently possible with radio frequency (RF) technology
- DoD is exploring bringing laser communications to the battlefield in the Transformational Communications Study (TCS), and in the Transformational Wideband MILSATCOM program element

Discussion

- On 28 Dec 01 Deputy Secretary Defense Wolfowitz directed the Air Force to initiate an Advanced Wideband System (AWS) in FY03
  - The program will incorporate interoperable laser communications
  - It will meet the needs of defense and intelligence communities for wideband tactical, protected tactical (replacement for Advanced Extremely High Frequency (EHF) satellite), broadcast, and relay communications
  - The first launch will be in FY09
- In addition, DEPSECDEF directed initiation of an EHF satellite for national and strategic users requiring nuclear-protected communications in the mid-latitude and polar regions
  - This system, National Strategic SATCOM System (NSSS) will be launched in FY09
- The TCS, which will examine technical feasibility of these programs, will conclude in Jun 02
  - It will develop requirements, concepts of operations, architectures, cost, and acquisition strategy to support a fast paced acquisition program beginning in FY03

Main Points

- Lasers hold potential to eliminate communications as a constraint to warfighter
- Transformational Communications Study will create foundation for aggressive acquisition program

Global Positioning System (GPS)

Background

- GPS provides very accurate position, velocity and time data to an unlimited number of airborne, ground and sea users in a wide variety of missions
  - Lockheed Martin - GPS Block IIR/IIR-M
  - Boeing - GPS Block IIF and Operational Control System (OCS)
- Modernization will upgrade GPS to reduce vulnerabilities to jamming and responds to national policy encouraging civil use of GPS without degrading military utility
  - Upgrades to the satellite and ground control segment to add civil signals and new military signals transmitted at higher power
  - Upgrades to military user equipment to minimize the impact of adversarial jamming and protect friendly use of GPS as a key part of our Navigation Warfare capabilities

Discussion

- FY02 Congressional mark deleted Advance Procurement for last IIR-Ms in FY02
  - When added to sustainment requirement, may preclude modernization of remaining two IIR satellites in FY03
- Long Lead approval for IIF-1 signed 26 Feb 02
- FY02 Congressional mark deleted Advance Procurement for IIF SV2-3
  - Delays satellite availability by 6 months, putting constellation sustainment at risk
- Air Force is investigating options for reducing vulnerabilities associated with Block II signals
  - One option is accelerating development of GPS III to ensure an early FY09 launch

Main Points

- The AF is committed to GPS constellation sustainment
- Modernization is on track to provide new military and civil capabilities starting in 2003
- GPS III provides transformational capabilities: accuracy, integrity, availability & A/J

The Expeditionary Aerospace Force (EAF)

Background

- The EAF was developed to transform the USAF from a Cold War Force focused on containment to a 21st Century force focused on global engagement to meet CINC needs
- The challenge: 1/3 fewer people, 2/3 fewer overseas bases, 4 times more deployments
- The impact: Uneven TEMPO, limited predictability/stability; downward trends in retention, and readiness indicators
- The solution: Transformation of the USAF to the EAF construct—structurally, culturally, and operationally

Discussion

- EAF is a smarter, more innovative use of all USAF resources
  - Provides the tools to manage the force better, determine its stresses, and when, where and how to focus contingency OPTEMPO relief
  - Distributes the deployment workload across the Total Force (Active Duty, Air National Guard and Air Force Reserve) and assigns expeditionary combat support (ECS) deployments to modular/scaleable Unit Type Codes (UTCs) vice individual augmentation
  - Provides a lighter, leaner, more lethal, and more expeditionary combat air and space force
  - Takes care of our most important resource—OUR PEOPLE
  - Provides Air Force units, people, their families and Air Reserve Component employers greater stability and predictability by operating on an established and equitable 15-month deployment lifecycle. EAF increases retention = increases experience = increases readiness.
- Expeditionary Air and Space Force (essentially, the entire USAF) consists of four components:
  - Air Expeditionary Forces – 10 AEFs represent the core of our deployable combat power and forward presence capability. The 10 AEFs are scheduled on a 15-month cycle with a 90-day deployment vulnerability window. Each AEF has roughly equivalent capabilities, composed of 90 fighter/bomber aircraft, dedicated intratheater lift, refueling assets, and C2ISR assets. Two additional Aerospace Expeditionary Wings (AEWs) are on call at any given time, with critical capabilities not spread across the AEFs (such as B-2 / F-117).
  - AEF Prime - Operational capabilities not organically assigned to AEFs—from command, control and intelligence… to space capabilities… to the umbrella of deterrence
  - EAF Mobility - Airlifters and tankers—organized into 2 lead mobility wings—providing the ability to deploy/sustain expeditionary forces across the spectrum of operations
  - EAF Foundation - Support capabilities not organically assigned to AEFs—

acquisition to logistics, health care to education and training—that underpin expeditionary operations

- The EAF construct supports CINC steady state contingency requirements and forward presence with two AEFs and one on-call AEW. When demand increases, the EAF will surge as necessary to support tasking. Once an Major Theater War level of effort is required, the rotational AEF cycle dissolves and the entire EAF is committed to fulfill needed wartime requirements.

Main Points

- The EAF is a construct that defines the 21st Century United States Air Force. The EAF is organized, trained, equipped, and sustained for expeditionary aerospace operations across the spectrum of military operations. Aerospace Expeditionary Forces (AEFs) are part of the EAF.
- AEFs are not numbered, stand-alone units with command structures, such as a MEFs or DIVs
- AEFs are force management tools that provide "buckets" of capability to the CINCs, but combat units still deploy to the fight as Squadrons and UTCs

Spectrum Protection

Background

- Spectrum is a precious and limited national resource—there is no way to create more
  - Demand for additional spectrum greater than ever before in history
- Access to spectrum is essential to warfighting capabilities (and commercial enterprises)
  - Assured spectrum access enables military applications in the Global Information Grid
- Explosion of wireless technology generates enormous "global appetite" for spectrum (one billion world mobile subscribers projected globally by 2005)
  - Impact: Civil assault on "prime spectrum real estate" (below 6 GHz) favorable to operations of military weapons systems due to technical and propagation characteristics

Discussion

- DoD owns no spectrum—by permission nationally; borrowed internationally; competed globally—and sharing is technically difficult
- National laws govern spectrum access domestically—National Telecommunications and Information Administration (NTIA) licenses federal access; FCC licenses civil access
  - There is no final adjudication authority—consensus necessary; allocations inflexible
  - Federal agencies pay spectrum license "service" fees annually to NTIA (AF: $1.6M)
- NDAA 1999 and 2000 provided some protection to federal spectrum users
  - Compensation for relocation costs; consensus on alternate bands
- Spectrum sales generate lots of revenue globally with NO government investment
  - Impact: DoD lost access to over 400 MHz of spectrum in high value bands since 1992
- Internationally, individual nations control spectrum access—stresses—"harmonization"
  - US is one voice among many at the International Telecommunications Union
- Hottest Spectrum Issues:
  - Ultra Wideband—DUAL military/civil technology; challenge—implement with no operational impacts
  - Fixed Wireless Access—Uses same frequencies as DoD radars; Canada wants it
  - IMT2000/3G—Industry wants critical federal/military spectrum for next generation of global personal communications devices
  - World Radio Conferences—global spectrum policies must not hinder US military ops

Challenges

- Need a National Spectrum Policy—Current national spectrum system of "checks and balances" fragments sound business processes – must promote a balance between US national security and global economic goals

- Develop sound spectrum strategies/ tactics/processes—warfighter needs greater bandwidth to improve weapons systems performance, tighten sensor-to-shooter loop in the—"kill chain," and accommodate coalition combat operations
- Partner with national elements from developer to customer—integrate business processes

Main Points

- Spectrum is a national/limited resource with huge global demand; competition will increase
- National policy, processes, technology, and structure must assure DoD spectrum access——anything less threatens national security

Nuclear Posture Review Follow-On Actions

Background

- Nuclear Posture Review (NPR) completed Dec 01
- President announced reduction to 1700-2200 warheads over next decade
- Replaces Triad with New Triad: nuclear and non-nuclear strike capabilities, active and passive defenses and responsive infrastructure

Discussion

- Investment in operating force sustainment and infrastructure recapitalization is needed
  - Reduction in deployed warheads means an increase in the relative deterrent value of each remaining weapon
  - Intercontinental ballistic missiles and bombers are critical to the New Triad
- Effective force requires robust capability in command, control and communications
- Under New Triad:
  - Maintain ability to adjust or reverse reductions to credibly dissuade adversaries and assure allies
  - Integrate nuclear and non-nuclear forces into strategic options
  - Allows development of options for broader range of contingencies
  - Requires increased collaboration with regional combatant commanders
  - Allows integration of military capabilities for full-spectrum dominance.
- Need flexibility and adaptive planning for strategic forces
- More modern computing and streamlined processes needed
- Awaiting implementer from OSD to execute NPR force structure changes

Main Points

- Continued commitment to strategic systems sustainment and life extension programs
- Increased investment in infrastructure across full range of strategic capabilities
- Commitment to improving command, control and communications capabilities
- Flexibility and adaptive planning for strategic forces

KEY AIR FORCE PROGRAMS/ SPACE

Advanced EHF

Acquisition Status

- **Program Status:** System Development and Demonstration (SDD)
  - MS B ADM: 10 Oct 01
  - SDD Contract: 16 Nov 01
- **Satellites on Orbit:** 0
  - First Launch June 06
- **Satellites in Development:** 3
- **Contractors:**
  - **Sys Def:** National Team (LM, TRW, Boeing)
  - **SDD:** Contractor Team (LM & TRW)
- **Future Upgrades:** N/A
- **Purchase Requirements:** 3

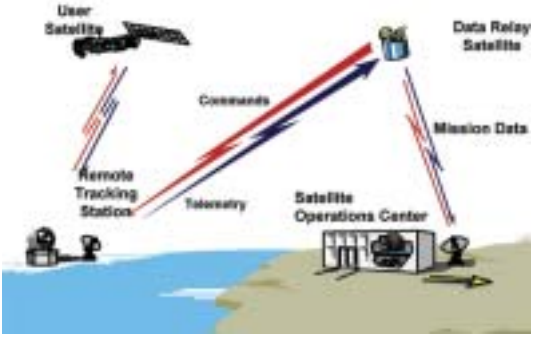
Capabilities/Profile

- **Key Performance Parameters**
  - **Anti-Jam Protection:** Support users exposed to fixed, transportable and mobile jammers
  - **Nuclear Protection:** Provide assured comm for critical networks supporting critical functions
  - **Access and Control:** Provide users ability to plan, control and reconfigure apportioned resources
  - **Interoperability:** Operate with Milstar through transition to AEHF system; Support joint warfighter comm among EHF terminals
  - **Coverage:** 24 hrs between 65 degrees north & south
  - **Capacity:** Threshold: 500 Mbps combined Major Theater War scenario & 350 Mbps strategic scenario. Objective: 1.2 Gbps

Functions/Performance Parameters

- **Mission Statement:** Replenishes capability currently provided by the Milstar system with additional capability
  - Provides more capacity than Milstar
  - Will be cheaper to acquire than Milstar
  - Will launch on EELV (vice expensive Titan)
- **Mission Parameters:**
  - Low Probability of Intercept (LPI)
  - Low Probability of Detect (LPD)
  - Data Rate increases to 8 Mbps

Air Force Satellite Control Network



Acquisition Status

- **Program Status:** Operational/development
- **Unit Assignment:** AF Space Command
- **Current Inventory:**
  - 8 Remote Tracking Stations (22 Antennas)
  - 2 Operations Control Centers
  - Central C2
- **Projected Inventory:**
  - 8 Remote Tracking Stations (22 Antennas)
  - One Operations Control Centers
  - Distributed C2
- **Contractors:**
  - Lockheed Martin: CA and CO
  - Honeywell Technical Services, CO
- **Current Upgrades:**
  - Remote Tracking Station antenna replacements to reduce O&M
  - Comm improvements to migrate to DoD standard DISN ATM network
- **Future Upgrades:** Automation, increased capacity, and improved reliability through modernization

Capabilities/Profile

- **Global system of control centers, remote tracking stations and communication links**
  - 2 Control Centers (CONUS)
  - 8 Remote Tracking Station locations (worldwide)
- **Operate DoD, National, Civil, and Allied satellites**
  - Launch and Early Orbit determination
  - Telemetry, Tracking, and Commanding
  - Anomaly resolution
  - Mission data dissemination
  - Data processing

Functions/Performance Parameters

- **Mission Statement:** AFSCN mission is to fly operational USAF, National, Allied and R&D satellites
  - Command and control ops, relay mission data and comm
  - Provides launch & early orbit tracking operations support for all major US launches
  - Resolve operating emergencies with highpower uplink
- **Performance Parameters:**
  - Over 100 satellites supported
  - Over 100,000 contacts per year
  - 100% support of all major US (DoD and NASA) launches

Combat Survivor Evader Locator (CSEL)

Acquisition Status

• **Program Status:** EMD — completing Block 1 development and testing
• **Production:** Full Rate begins in FY03
• **Current CSEL radio inventory:** 0
• **Projected Inventory:** 17,000 radios for the Air Force; 52,000 total for all sevices
• **Contractors:** Boeing (Prime), Thales Communications, Interstate Electronics Corp.
• **Future Upgrades:** 2-way secure data links to rescue forces, M-Code GPS, and commercial satellite communication
• **Purchase Requirements:** Radios, four UHF Base Stations, and Joint Search and Rescue Center workstations

Capabilities/Profile

• **Precision military GPS positioning/ navigation**
  • Jam-resistant operations
• **Over-the-horizon 2-way secure data transmission**
• **Line-of-sight voice to rescue forces**
• **Over-the-horizon (OTH) Low Probability of Intercept/Low Probability of Detection:** 1-way secure transmission
• **Global** coverage
• **Time from transmit to Joint Search & Rescue Center (JSRC) receive:** $\leq$ 5 min
• **Battery lifetime:** 4-day threshold / 21-day objective requirement
• **Radio dimensions:**
  • 3 3/4 Inches (Width)
  • 8 Inches (Length)
  • 1 1/2 Inches (Depth)
• **Weight:** 32.0 ounces

Functions/Performance Parameters

• **Mission Statement:** An Air Force-led joint program to provide enhanced Combat Search and Rescue (CSAR) communication and location capabilities by replacing antiquated PRC-90/-112 survivor radios with a new over-the-horizon end-to-end system
• **Performance Parameters:** Performance features include a new hand held radio which incorporates:
  • 2-way, secure over-the-horizon data messaging
  • Line-of-sight voice interoperability
  • GPS positioning in Navigation Warfare (NAVWAR) environment
  • Position embedded in OTH data communications
  • Evader authentication/status available prior to committing rescue mission
  • Low probability of intercept/detection data communications
  • Polar area OTH data communications via the international SARSAT satellite constellation

Counterspace Systems

Acquisition Status

- **Program Status:**
  - Counter Communications demonstrator delivered in FY 2001. Acquisition program new start in FY 2002. IOC projected in 2003
  - Counter Surveillance/Reconnaissance system acquisition new start scheduled for 4th quarter, FY 2002
  - Rapid Attack Identification and Reporting System completing AoA in FY 2002 and projecting system acquisition new start in FY 2003
- **Projected Inventory:** TBD
- **Contractors:** TBD

DCS - Defensive Counterspace
OCS - Offensive Counterspace

Capabilities/Profile

- Air Force's primary source for acquisition, architecture development, and procurement of current and emerging offensive and defensive counterspace capabilities. Provides system development of counterspace capabilities in response to warfighter requirements
  - Current Offensive Counterspace Projects:
    - Counter communications
    - Counter surveillance/reconnaissance
  - Current Defensive Counterspace Project
    - Rapid Attack Identification and Reporting System

Functions/Performance Parameters

- **Mission Statement:** Develop technology, perform engineering and manufacturing development, integrate and procure both offensive and defensive counterspace systems in support of the Space Control mission
- **Performance Parameters:**
  - Current emphasis in Offensive Counterspace is on terrestrial-based, small, transportable systems which deny the enemy the use of satellite communications and surveillance/reconnaissance systems. Systems that produce reversible effects are currently being developed as the first priority.
  - Defensive Counterspace emphasis is on providing responsive space system attack warning, threat identification and characterization, and rapid mission impact assessment

Defense Meteorological Satellite Program (DMSP)

Capabilities/Profile

KPPs	Threshold/ Baseline	Actual
Satellite Mean Mission Duration	30 mos	45 mos
Primary Sensor Global Resolution	1.5 km	1.5 km
Theater Resolution	0.3 km	0.3km

• **Schedule:** All APB Milestones have been met

Acquisition Status

• **Program Status:** Operational Sustainment

• **Requiring Services:** All

• **Production:** FY83-FY99

• **Current Inventory:** 5

• **Projected Inventory:** 5

• **Contractors:**
  • Lockheed Martin (Spacecraft)
  • Aerojet, Northrop Grumman, Hughes (Instruments)

• **Future Modification:** Solid State Data Recorders

• **Purchase Requirements:** None

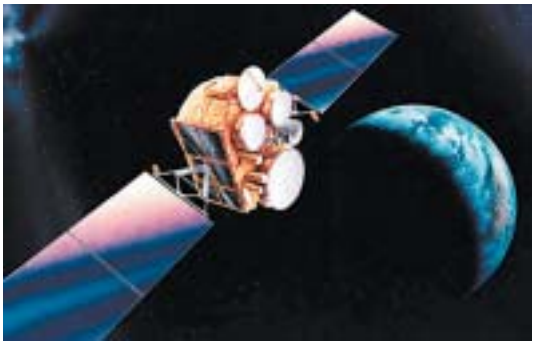
** The DMSP program will cease operations late next decade at the end of the final DMSP satellite's life. Thereafter, DoD's requirements will be fulfilled by the joint DoD/DOC/NASA NPOESS program.*

Functions/Performance Parameters

• **Mission Statement:** The mission of DMSP is to provide an enduring and survivable capability, through all levels of conflict, to collect and disseminate global visible and infrared cloud data and other specialized meteorological, oceanographic, and space environment data required to support worldwide DoD operations and high-priority national programs

• **Performance Parameters:** DMSP utilizes instruments that sense surface and atmospheric radiation in the visible, infrared, and microwave bands. In addition, DMSP flies instruments that measure space environmental parameters. Critical regional data is broadcast directly to user terminals in theater to support tactical missions. Global data is downloaded to processing centers to support both tactical and strategic missions.

Defense Satellite Communications System (DSCS)



Acquisition Status

- **Program Status:** Production, Fielding/ Deployment & Operational Support
- **Satellites on Orbit:** 5 primary, 5 residual
- **Satellites in Development:** 2
- **Contractors:** Lockheed Martin (Missile and Space), Sunnyvale, CA
- **Future Upgrades:**
  - Wideband Gapfiller Satellites
  - Advanced Wideband System

Capabilities/Profile

Key Performance Parameters	
Requirement	**Actual**
30 Channels on 5 primary satellites	30 Channels on 5 primary satellites

Functions/Performance Parameters

- **Mission Statement:**
  - Provides worldwide, responsive wideband and anti-jam satellite communications supporting strategic and tactical C3I requirements
- **Mission Parameters:**
  - Backbone of the MILSATCOM system providing secure and high data rate SHF
  - Users include National Command Authority, Defense Information System Network, Diplomatic Telecommunications Service, White House, Air Force Satellite Control Network, and Service ground mobile forces

Defense Support Program

Capabilities/Profile

• **Satellites:** Classified number of geosynchronous earth orbit satellites

• **Range:** N/A

• **Dimensions:** N/A

• **Weight:** N/A

• **Magazine:** N/A

• **Lifetime:** N/A

Acquisition Status

• **Program Status:** Operational

• **Unit Assignment:** USSPACECOM

• **Current Inventory:** On-orbit inventory plus 3 in storage awaiting launch

• **Projected Inventory:** 2 awaiting launch

• **Contractors:**

  • TRW

  • Northrop Grumman

• **Current Upgrades:**

  • Under Space Based Infrared System (SBIRS) program Increment 1, all DSP mission processing is being consolidated at a single CONUS location; IOC declared 18 Dec 01, allowing the closure of overseas bases following a transition period

• **Future Upgrades:** Transition to SBIRS space constellation begins in FY06

Functions/Performance Parameters

• **Mission Statement:** The Defense Support Program is a space based infrared satellite system providing global coverage and warning of ballistic missile launches, nuclear detonations, and other events

• **Performance Parameters:** DSP provides:

  • Near-real time detection and reporting of missile launches against US and/or Allied forces, interests, and assets worldwide

  • Near-real time detection and reporting of endoatmospheric (0-50km), exoatmospheric (50-300km), and deep space (>300km) nuclear detonations worldwide

Evolved Expendable Launch Vehicle (EELV)

Acquisition Status

• **Program Status:** Milestone II approved Oct 98

- Two $500M Other Transaction Agreements (OTA) for Development to Boeing and Lockheed Martin
- Two Firm Fixed Price contracts for Initial Launch Services (ILS) FY02-06 for 26 launches
  - Boeing - 19 launches for $1.5B
  - Lockheed Martin - 7 launches for $506M

• Program is on schedule, cost and performance

- Both systems completed final dev't reviews
- First commercial Atlas V launch May 02
- First commercial Delta IV launch Jul 02
- First Government Delta IV (DSCS) 4th Qtr FY02
- First heavy launch on Delta IV (DSP-23) FY03

Capabilities/Profile

	Threshold	Objective
• Standardization		
• Launch Pad	Single Pad	Single Pad
• Payload interface	Std by Class	Std for all
• Mass to Orbit		
• Semi-Sync	2,500-4,725	+15%
• GTO	6,100-8,500	+15%
• Polar-LEO	41,000	+5%
• GEO	13,500	+5%
• Reliability	98%	>98%

Both EELV variants meet or exceed ORD requirements

Boeing
Delta IV

Lockheed Martin
Atlas V

Functions/Performance Parameters

• Mission: Partner with industry to develop a national launch capability that satisfies medium and heavy lift requirements for DoD, National, and civil user

- Replaces current Delta, Atlas, and Titan space launch vehicles (FY02-20)
- Expected savings of more than 30% exceeds 25% ORD goal
- Equates to $5-10B savings through 2020
- Purchasing firm fixed priced commercial launch services (CLS), not hardware
- Competition for life of program
- Enhances U.S. industrial base, poises two competitive launch vehicle families to capture increased domestic and international commercial market share

Global Broadcast System (GBS)

Capabilities/Profile

• GBS Phase 2 Key Performance Parameters

Requirement	Threshold	Objective
Coverage	65S - 65N	5S - 65N
Spot Beams (per Sat.)	2 500NM; 1 2000NM	2 500NM; 1 2000NM
Simultaneous Uplinks	1 PIP; 1 TIP	1 PIP; 3 TIP
Security	unclas - TS/SCI	unclas - TS/SCI
Terminal Ops	F/T GRT; SRT & SSRT	F/T GRT; SRT & SSRT

Definitions
F/T GRT - Ground Receive Terminal
SRT - Ship Receive Terminal
SSRT - Submersible Ship Receive Terminal
PIP - Primary Injection Point
TIP - Theatre Injection Point

Acquisition Status

• **Program Status:**
  • GBS Phase 2 MS II, Nov 97
  • Program re-baselined in Jun 00 to establish:
    • Spiral development
    • 3 incremental IOCs (vice single IOC)
  • IOC 1 expected 2QFY02

• **Payloads on Orbit:** 3 GBS Phase 2 payloads on UFO satellites

• **Contractors**: Raytheon

• **Future Upgrades:**
  • Equivalent Phase 2 capability being designed into Wideband Gapfiller System
  • Advanced Wideband System to address next generation requirements

• **Purchase Requirements (Phase 2):**
  • 3 primary injection facilities
  • 96 receive terminals (initial buy)
  • Services purchase receive terminals (additional)

Functions/Performance Parameters

• **Mission Statement:**
  • **GBS Phase 2:** Provide efficient high data rate broadcast capability between many distributed information sources and warfighters using small, inexpensive terminals

• **Mission/Performance Parameters:**

GBS Phase 2 satellite provide:
  • 96 Mbps capacity (max)
  • 4 channels (max of 24 Mbps each)
  • 2 spot beams and 1 wide area beam

Global Positioning System (GPS)

Acquisition Status

- **Program Status:** Operational
  - Next IIR Launch - Mar 02
  - First IIF Launch - CY 05
- **Unit Assignment:** 2SOPS, Shriever AFB, CO
- **Production:** Ongoing
- **Current Inventory:** 28 operational satellites; 24 required
- **Contractors:**
  - Block II/IIA - Boeing
  - Block IIR/IIR-M - LMMS
  - Block IIF - Boeing
  - Block III - LMMS & Boeing (competing)
- **Future Upgrades:** Control and Space Segment Modernization, New Military and Civil Signals, User equipment upgrades, Navigation Warfare (Navwar), Block III addressing system-wide architectural concepts

Capabilities/Profile

- 24 Satellite constellation
- 6 Orbital Planes
- Altitude: ~10,898 miles
- 12 Hour Orbit
- 3 Segments:
  - Space
  - Control
  - User
- Secondary Mission
  - Nuclear Detonation (NUDET) Detection System (NDS)

Functions/Performance Parameters

- **Mission Statement:** Provides highly accurate time and three dimensional position and velocity information to an unlimited number of users anywere on or above the surface of the earth, in any weather
- **Performance Parameters:**
  - Constellation Sustainment: 24 satellites
- **Accuracy***
  - Standard Positioning Service (SPS): 10-50 meters
  - Precise Positioning Service (PPS): 16 meters or better
  - Timing: ±25 nanoseconds

** User accuracy is dependent on receiver type and number of satellites acquired*

Integrated Tactical Warning/Attack Assessment (ITW/AA)

Capabilities/Profile

- **Radar:** 6 phased array radars
- **Command Centers:** 2 fixed, 2 mobile
- **Range:** Worldwide
- **Dimensions:** Varies by site

Acquisition Status

- **Program Status:** Sustainment
- **Units of Assignment:** USSPACECOM, USSTRATCOM, NORAD
  - NORAD Cheyenne Mountain Complex (NCMC), ICBM Radars (BMEWS), SLBM Radars (PAVE PAWS), Mobile Consolidated Command Centers (MCCCs), Alternate Missile Warning Center (AMWC), SPACEAF AOC
- **Current Inventory:** 3 BMEWS, 2 PAVE PAWS, 1 Perimeter Acquisition Radar Characterization System (PARCS)
- **Contractors:** Kaman Sciences, Lockheed Martin
- **Planned Upgrades:** NORAD/ USSPACECOM Warfighting Support System (N/UWSS)

Functions/Performance Parameters

- **Mission Statement:** The Integrated Tactical Warning/Attack Assessment (ITW/AA) system integrates and correlates missile launch, space object orbit, and air surveillance information to assess the nature of an enemy attack and issue warnings to the President of the United States, the Prime Minister of Canada, and warfighting CINCs
- **Performance Parameters:**
  - Cheyenne Mountain Complex (CMC) is the C^4 heart of the ITW/AA system
  - Cheyenne Mountain Upgrade declared fully operational on 29 Oct 98
  - MCCCs provide C2 continuity to CINCs in event of primary facility incapacitation

Medium Launch Vehicles

Acquisition Status

- **Program Status:** Production
- **Production:** Last launch scheduled for FY06
- **Inventory:**
  - 14 Delta II missions remain through FY06
  - 1 Atlas IIAS, 1 Atlas III missions remain through FY03 (both NRO)
- **Contractors:**
  - Atlas II/III: Lockheed Martin, Denver, CO
  - Delta II: Boeing - Huntington Beach, CA
- **Future Upgrades:** None planned
- **Purchase Requirements:** All vehicles under production, launch operations remain

Capabilities/Profile

- **Lift capability:**
  - Atlas II/IIA/IIAS — capable of lifting between 4,900 - 8,150 lbs to geosynchronous transfer orbit
  - Delta II —capable of lifting over 4,010 lbs to geosynchronous transfer orbit
- **Launch Sites:**
  - Atlas II—Launch Complex 36 A/B Cape Canaveral, FL, Space Launch Complex 3E Vandenberg AFB, CA
  - Delta II—Launch Complex 17 A/B, Cape Canaveral, FL

Key Performance Parameters

- **Mission Statement:**
  - The Atlas space launch vehicles provide launch capability for National Reconnaissance Office payloads
  - The Delta II launch vehicle provides a medium space lift capability to support the Global Positioning System constellation
- **Performance (DoD launches only)**:
  - Delta II: 41/42 = 98%
  - Atlas II: 12/12 = 100%

MILSATCOM Terminals

DSCS

Spitfire

GMT

GBS Receive Suite

SMART-T

Capabilities/Profile

- Satellite communications terminals for:
  - UHF Demand Assigned Multiple Access (DAMA) air & ground
    - Airborne Integrated Terminal
    - Multi-Band Multi-Mission Radio
    - Spitfire
  - Global Broadcast Service (GBS) receive suites
  - Ground Multiband Terminal (GMT)
  - Defense Satellite Comm System (DSCS)
  - Family of Advanced Beyond line-of-sight Terminals (FAB-T)
  - Army developed Secure Mobile Anti-jam Reliable Tactical Terminal (SMART-T)

Acquisition Status

- **Program Status:** Development, procurement, upgrade and sustainment efforts
  - Produce & field UHF DAMA air & ground
  - Produce & field GMT development
  - Procure & field SMART-T
- **Emerging Development**
  - Air Force Terminal Architecture
  - FAB-T
  - Laser Communications Terminal
  - Advanced Wideband Sys (AWS) Terminal
- **Current Inventory:** Includes ground, fixed, transportable and airborne
  - Narrowband/UHF- 1900+
  - Wideband/SHF- 38
  - Protected/EHF- 158
- **Contractors**: Multiple Primes
  - Raytheon: MA, FL, IN
  - Harris: FL
  - ITT: IN
  - ViaSat: CA

Functions/Performance Parameters

- **Mission Statement:** Develop, procure, deploy, and sustain multiband SATCOM terminals utilized by Air Expeditionary Forces (AEF), SIOP, CINCs, and other users to communicate over current and emerging military and commercial satellite systems

- **Performance Parameters:** Communications connectivity in the following frequency bands:
  - Narrowband/UHF- Secure, mobile, DAMA
  - Wideband/SHF- Secure, long-haul, tactical and strategic
  - Protected/EHF- Secure, nuclear hardened, Anti-Jam /Anti-Scintillation, Low Probability of Intercept, tactical and strategic

Milstar

Acquisition Status

- **Program Status:** Engineering & Manufacturing Development
- **Satellites on Orbit:** 2 Block I (LDR), 1 Block II (LDR/MDR)
- **Satellites in Development:** 2 Block II
- **Contractors:**
  - Lockheed Martin, Missiles & Space (Prime)
  - Boeing, TRW (Major Subs)
- **Future Upgrades:** Advanced EHF Satellites will replenish Milstar satellites with first launch in FY06
- **Purchase Requirements:** N/A

Capabilities/Profile

- **Key Performance Parameters**
  - **Capacity:**
  - **LDR:** 75 to 2400 BPS; Uplink freq. EHF at 2 GHz bandwidth; Downlink freq. SHF at 1GHz bandwidth
  - **MDR:** 4.8 to 1544 kBPS; Uplink freq. EHF at 2 GHz bandwidth; Downlink freq. SHF at 1GHz bandwidth
- **Protection:**
  - Low Probability of Intercept/Detection (LPI/D)
  - Anti-Jam (AJ)
  - Anti-Scintillation (AS)

Functions/Performance Parameters

- **Mission Statement:**
  - Provides National Command Authorities and CINCs with assured, worldwide C2 for tactical and strategic forces
  - Program will specifically:
    - Maintain operations support for satellites 1, 2 & 4
    - Complete development and launch 5&6 in FY 02 & 03 satellites
    - Complete upgrade of mission control facilities to support medium data rate operations
- **Mission Parameters:** Low Probability of Intercept/Detection (LPI/D), Anti-Jam (AJ), and Anti-Scintillation (AS) protected communications at low and medium data rates (LDR and MDR)

National Polar-orbiting Operational Environmental Satellite System (NPOESS)

Capabilities/Profile

KPPs	Baseline	Actual
Vertical Profile Moisture/Temp	5km mapping accuracy	TBD
Imagery	1.0km res	TBD
Sea Surface Temp	1.0km res	TBD
Sea Surface Winds	20km res	TBD
Soil Moisture	1.0km res	TBD
Schedule		
MS I	Mar 97	Mar 97
MS B/Production	Aug 02	TBD

Acquisition Status

- **Program Status:** Program Def & Risk Red
- **Requiring Services:** All - NPOESS consolidates separate defense and civil polar-orbiting meterological satellite systems into a single national system
- **Production:** FY02-FY15
- **Current Inventory:** None
- **Projected Inventory:** Six total
- **Contractors:**
  - TRW, Hughes, Lockheed Martin (Prime)
  - Hughes, Ball Aerospace, ITT, and Saab Ericsson (Instruments)
- **Future Upgrades:** TBD

Functions/Performance Parameters

- **Mission Statement:** The NPOESS Program is required to provide, for a period of at least 10 years, a remote sensing capability to acquire, receive at ground terminals, and disseminate to processing centers, global and regional environmental imagery and specialized meteorological, oceanographic, climatic, land surface, space environmental and other data supporting DoD peacetime and wartime missions, as well as civil mission requirements
- **Performance Parameters:** NPOESS will utilize instruments that sense surface and atmospheric radiation in the visible, infrared, and microwave bands. In addition, NPOESS will fly a suite of instruments that measure space environmental parameters. In all, NPOESS will measure 55 distinct environmental parameters such as soil moisture, cloud levels, sea ice, ionospheric scintillation, and more.

Polar MILSATCOM

Acquisition Status

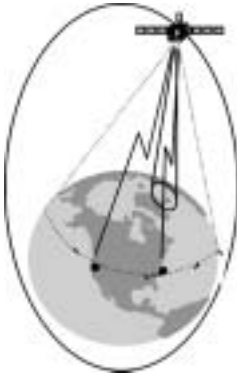
• **Program Status:** EMD phase. Design, test, and launch of next generation packages.

• **Satellites on Orbit:** 1

• **Satellites in Development:** 2

• **Contractors:** Classified

• **Future Upgrades:** Next generation capability to be subset of new National Strategic SATCOM System (NSSS) — study directed by OSD in Jan 02.



Capabilities/Profile

• **Coverage:** North polar region. 24 hours/ day required (takes two satellites).

• **Compatibility:** Milstar compatible Low Data Rate (LDR) service. (Milstar terminals require software modification for doppler). Supports 11 specific threshold networks.

• **Integration:** EHF packages on three classified host satellites. Polar 1 added to earlier generation host, launched Nov 97. Polars 2 and 3 being integrated into design of new generation host available in FY03 and FY04, respectively.

  • Polar 2 scheduled for FY04 availability, Polar 3 for FY 06 availability.

Functions/Performance Parameters

• **Mission Statement:**

  • Provides secure, survivable, communications connectivity supporting peacetime, contingency, and wartime operations in the north polar region

  • Supports Independent Submarine Operations & Maritime Task Force Operations, Special Operations Forces, and Inteligence Collection/Dissemination Activities

• **Mission Parameters:** Same as Milstar LDR connectivity: 75-2400 bps data rates with Low Probability of Intercept/Detection (LPI/D), Anti-Jam (AJ), and Anti-Scintillation (AS) protection

Rocket Systems Launch Program (RSLP)

Capabilities/Profile

- **Store Deactivated ICBM Motors:**
  - $3 Billion ($CY99) in Launch Assets
- **Perform Aging Surveillance on stored motors**
- **Provide Cost Reimbursable Launch Services for DoD Flight Tests:**
  - Provide Payload Integration Services
  - Refurbish and Transport Motors/Boosters
  - Conduct Launch

Acquisition Status

- **Inventory:** Over 1,250 stored motors
- **Contractors:**
  - **Orbital/Suborbital (Long-range):**
    - Orbital Sciences (Phoenix, AZ)
  - **Sounding Rocket:**
    - Coleman Research (Orlando, FL)
    - Orbital Sciences (Phoenix, AZ)
    - Space Vector (Chatsworth, CA)
  - **Advisory & Assistance:**
  - TRW (Albuquerque, NM)

Functions/Performance Parameters

- Single DOD agency providing launch vehicle support for the three services on a cost reimbursable basis
- Over 550 launches since 1962
- Does $50 Million ($CY99) in Reimbursable Launch Business Per Year - Represents about $40 Million in Launch Cost-Avoidance for Our Customers

Space Based Infrared System High (SBIRS High)

Acquisition Status

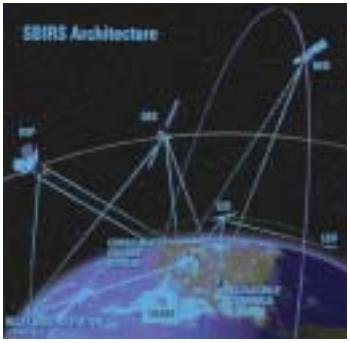
• **Program Status:** SBIRS High is in Engineering, Manufacturing, and Development phase.

• **Projected Inventory:**

  • SBIRS High consists of 4 Geosynchronus Earth Orbit (GEO) Satellites and 2 Sensors in Highly Elliptical Orbit (HEO)

• **Contractors:**

  • Lockheed Martin



Capabilities/Profile

• **Mission Areas:**

  • Missile Warning- North America & Theater
  • Ballistic Missile Defense
  • Battlespace Characterization
  • Technical Intelligence

• **Key Performance Parameters:**

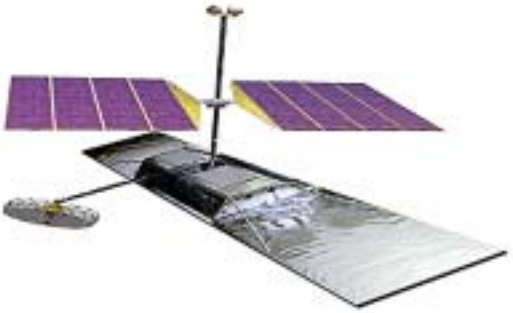
  • Coverage
  • Minimum Threat
  • Report Time
  • Probability of Warning
  • Data Availability
  • Initial Post Boost State Vector
  • Initial Post Boot Report
  • Interoperability

Functions/Performance Parameters

• **Mission Statement:** SBIRS consolidates the national and DoD's infrared detection systems into a single overarching architecture that fulfills the nation's security needs in the areas of missile warning, missile defense, technical intelligence, and battlespace characterization

• **Performance Parameters:** SBIRS will provide enhanced capabilities necessary to combat evolving theater and balllistic missile threats. SBIRS is an integral part of the AF and DoD strategic visions for the nation's security and will provide flexible, affordable, and reliable capailities across the entire range of military applications.

Space Based Radar



Capabilities/Profile

• **Payload:** Satellites equipped with Electronically Scanned Array (ESA) to provide:

  • Ground Moving Target Indication (GMTI)
  • Synthetic Aperture Radar (SAR) Imagery
  • Digital Terrain Elevation Data (DTED)

• **Tasking, Collection Processing, Exploitation, Dissemination:** Direct downlink, designed for theater-based tasking & data processing compliant with communications links and imagery processing standards

• **Launch:** Evolved Expendable Launch Vehicle

Acquisition Status

• **Program Status:** Concept and Technology Development

  • MNS AFROC approved: Oct 01
  • MNS JROC approval: Feb 02
  • Joint USAF/USA GMTI Capstone Requirements Document: May 02

• **SAE & PEO:** SAF/US & SMC

• **Initial Launch Capability:** FY 2010

• **Contractors:** Electronically Scanned Array (ESA) payload work being conducted by:

  • Northrop Grumman
  • Raytheon

• **Schedule**: KDP-A Review in Spring 02

Functions/Performance Parameters

• **Mission Statement:** Space Based Radar will provide rapid Battlespace Dominance and Operational Decision Superiority through:

  • Day/night, near continuous surveillance with Ground Moving Target Indication (GMTI) and Synthetic Aperture Radar imaging from space
  • Deep-look, wide area surveillance of denied areas allowing for responsive, precision targeting for the warfighter

• **Performance Parameters:** Exact surveillance capabilities and numbers of spacecraft are subject to technical tradespace considerations. These considerations will be evaluated as part of the ongoing Analysis of Alternatives effort.

Space Lift Range System (SLRS)

Acquisition Status

- **Program Status:** EMD and procurement
- **Production:** Ongoing
- **Current Inventory:** Eastern and Western Ranges
- **Projected Inventory:** Same
- **Contractors:** Lockheed Martin, ITT
- **Future Upgrades:** GPS Metric Tracking; Fiber-Optic Networks; SATCOM

Capabilities/Profile

- Spacelift Range System (SLRS) comprised of:
  - Western Range at Vandenberg AFB, CA
  - Eastern Range at Patrick AFB, FL
- Current SLRS assets are based on 1950s/1960s technology
  - Inefficient
  - Costly
  - Manpower intensive architecture
- SLRS modernization is a long-term, multi-phased modernization of SLRS
  - Improves capacity and reliability
  - Reduces operating costs

Functions/Performance Parameters

- **Mission Statement:** Provide responsive, reliable, and cost effective launch scheduling, communications, tracking, flight analysis, and emergency termination for DoD, civil, and commercial space launches, ballistic missile tests, and guided weapons and aeronautical tests

- **Performance Parameters:**
  - Launch Coverage: ER:34-112^{O}; WR:153-281^{O}
  - Vehicles supported per launch - 1 expendable launch vehicle, 1 ICBM, or 4 SLBMs
  - Risk to public: Risk to public - 30 casualties/1 million/launch
  - Simultaneous flight termination capability: 1 expendable launch vehicle or 2 test missiles

Space Surveillance Network (SSN)

Acquisition Status

- **Program Status:** Operational
- **Unit Assignment:** USSPACECOM
- **Current Inventory:** 9 dedicated sensors (1 space-based), 9 collateral sensors
- **Projected Inventory:** 10 dedicated and 9 collateral sensors with the addition of HAVE STARE Radar for Deep Space tracking
- **Contractors:**
  - Raytheon (Sudbury, MA)
  - TRW (Colorado Springs, CO)
- **Current Upgrades:**
  - Completion of HAVE STARE Radar in Norway for Deep Space Tracking (2002)
  - GEODSS Charge Coupled Device (CCD) camera and Telescope and Dome Controllers (TDC) replacement (2003)
- **Future Upgrades:** In FY02, work will begin on a Space Based Space Surveillance (SBSS) constellation of satellites and other initiatives which will improve the timeliness and fidelity of Space Situational Awareness information

Capabilities/Profile

- **Ground Sensors (dedicated):**
  - 4 Optical
  - 2 Radar
  - 2 Passive RF
- **Ground Sensors (other):** 9 collateral and 13 contributing radars and optical sensors
- **Satellites (dedicated):** 1 Space-Based Visible instrument (BMDO ACTD, now operational)
- **Range:** Near Earth object tracking to 3000 nm, Deep Space tracking to 22,000 nm from ground-based sensors
- **Dimensions:** Varies by sensor/site

Functions/Performance Parameters

- **Mission Statement:** Maintain space situational awareness by the detection, tracking, identification, characterization and monitoring of all man-made objects in Earth orbit. The SSN operates a worldwide network of dedicated, collateral, and contributing electro-optical, passive radio frequency and radar sensor systems integrated with required C2, data processing and analysis functions.
- **Performance Parameters:** Provides awareness of all space events and activities such as:
  - Satelite attack warning
  - New foreign launch information
  - Notification of satellilte overflilght
  - Space treaty monitoring
  - Scietific and technical intelligence on foreign space systems
- Supports DoD, NRO and NASA space operations
  - The space object catalog contains over 8300 objects (as of Jan 02). Approximately 80% are Near Earth objects, 20% in Deep Space. Much of this data is shared with the United Nations, NASA, our Allies, and foreign launch agencies.

Space Test Program (STP)

Acquisition Status

• **FY01 Joint Mission with NASA:** Kodiak Star, first orbital launch out of Kodiak, AL

• **Coriolis mission on Titan II in FY03:** Risk reduction effort of NPOESS environmental sensor

• **Communication/Navigation Outage Forecasting System mission on Pegasus in FY04:** Forecast ionospheric scintillations that degrade communication, navigation and surveillance systems

• **STP-EELV mission with first EELV:** Secondary Adapter Payload (ESPA) in FY06

Capabilities/Profile

• Conducts space mission for DoD space research community: Approx $50M RDT&E program

• Flight test new space system technologies

• Improve operational capabilities by characterizing environment, sensor physics

• Perform risk reduction through direct flight test of prototype components

• Develop and test advanced launch vehicle technologies and capabilities

Functions/Performance Parameters

• Conducts mission design, procures launches and spacecraft. Conducts on-orbit operations

• R&D Experiments selected annually via the DoD Space Experiments Review Board (SERB)

• 20% of payloads fly as secondary payloads

• 50% fly on the Shuttle

• 30% fly on dedicated freeflying satellites

Titan Space Launch Vehicles Program

Capabilities/Profile

- **Lift capability:**
  - Titan IVB capable of lifting 12,700 lbs to geosynchronous orbit; 47,800 lbs to polar low earth orbit
  - Titan II capable of lifting over 4,200 lbs to polar low earth orbit
- **Launch Sites:**
  - Titan IVB - Launch Complex 40 Cape Canaveral, FL, Space Launch Complex 4E Vandenberg AFB
  - Titan II - Space Launch Complex 4W, Vandenberg AFB, CA

Acquisition Status

- **Program Status:** Production and Launch
- **Production:** Factory Line began shutdown in FY99
- **Inventory:**
  - Titan IV - 6 launch vehicles remain
  - Titan II - 3 launch vehicles remain
  - Inertial Upper Stage - remains (for DSP-22)
- **Contractors:**
  - Titan IV/II; Lockheed Martin, Denver, CO
  - IUS: Boeing, Huntington Beach, CA
- **Future Upgrades:** None planned
- **Purchase Requirements:** All vehicles under production, launch services remain through FY03

Functions/Performance Parameters

- **Mission Statement:**
  - Titan IV provides heavy lift capability to deliver the Nation's highest priority satellites into orbit from Cape Canaveral AS, FL, and Vandenberg AFB, CA. Remaining payloads include Defense Support Program, Milstar, and National Reconnaissance Office.
  - Titan II provides medium lift capability from Vandenberg AFB using 14 refurbished Titan II ICBMs. Remaining payloads include Defense Meteorological Support Program, National Oceanic and Atmospheric Administration, and Space Test Program
- Performance**:**
  - Titan IVA/B: 30/33* = 91%
  - Titan II: 10/10 = 100%

* Does not include 4th failure due to IUS malfunction

Wideband Gapfiller System (WGS)

Acquisition Status

- **Program Status:**
  - Satellite 1 launch in Jan 04
  - Satellite 2 launch in Nov 04
  - Satellite 3 launch in May 05
- **Satellites on Orbit:** 0
- **Satellites in Development:** 3
- **Contractors**: Boeing
  - Contract Awarded Jan 01
  - Sole Source, FAR Part 12
  - Development & Production
- **Future Upgrades:** Advanced Wideband System
- **Purchase Requirements:** 3 Satellites

Capabilities/Profile

WGS Key Performance Parameters

- **Coverge:** 24 hours between 65 degrees N & S
- **Capacity:**
  - Threshold: 1.2 Gbps
  - Objective: 3.6 Gbps
- **Access & Control:** Control from Launch and Early Orbit operations through disposal
- **Interoperability:** Interoperable w/legacy terminals

Functions/Performance Parameters

- **Mission Statement:** High data rate satellite broadcast system meant to bridge communication gap between current systems - DSCS and GBS - and the Advanced Wideband System
- **Mission/Performance Parameters:**

Wideband communications X and Ka Band frequencies

  - 2 way X & Ka
  - Ka broadcast

KEY AIR FORCE PROGRAMS/ AIRCRAFT

AC-130H SPECTRE

Capabilities/Profile

- **Service Ceiling:** 25,000 Feet
- **Combat Range:** Unlimited (air refuelable)
- **Crew Complement:** 14 -- five officers (pilot, co-pilot, navigator, fire control officer, electronic warfare officer); nine enlisted (flight engineer, loadmaster,low-light TV operator, infrared detection set operator, five aerial gunners)
- **Dimensions:**
  - 132 Feet (Wing Span)
  - 99 Feet (Length)
  - 38 Feet (Height)

Acquisition Status

- **Program Status:** Sustainment
- **Current Inventory:** 8
- **Unit Assignment:** Hurlburt FIeld, FL
- **Contractors:**
  - Boeing
  - Integrated Weapon System Support (IWSS)
- **Future Upgrades:** Direct Infared Counter Measure (DIRCM); C-130 Avionics Modernization Program (AMP)

Functions/Performance Parameters

- **Mission Statement:** The AC-130H Spectre gunship's primary missions are close air support, air interdiction and armed reconnaissance. Other missions include perimeter and point defense, escort, landing, drop and extraction zone support, forward air control, limited command and control, and combat search and rescue.
- **Performance Parameters:**
  - Power Plant: Four Allison T-56-A-15 turboprop engines
  - Thrust: 4,910 shaft horsepower each engine
  - Speed: 289 miles per hour (464 kilometers per hour) at sea level

AC-130U Spooky

Acquisition Status

• **Program Status:** Sustainment

• **Current Inventory:** 13

• **Unit Assignment:** Hurlburt FIeld, FL

• **Contractors:** Boeing, Integrated Weapon System Support (IWSS)

• **Future Upgrades:** Direct Infared Counter Measure (DIRCM); C-130 AMP

Capabilities/Profile

• **Service Ceiling:** 25,000 Feet

• **Combat Range:** Unlimited (air refuelable)

• **Crew Complement:** 13 -- Two pilots, navigator, fire control officer, electronic warfare officer, flight engineer, loadmaster, low-light TV operator, five aerial gunners

• **Dimensions:**
  • 132 Feet (Wing Span)
  • 99 Feet (Length)
  • 38 Feet (Height)

• **Weight:** 155,000 Pounds (Gross Weight)

Functions/Performance Parameters

• **Mission Statement:** The AC-130U Spooky gunship's primary missions are close air support, air interdiction and armed reconnaissance. Other missions include perimeter and point defense, escort, landing, drop and extraction zone support, forward air control, limited command and control, and combat search and rescue.

• **Performance Parameters:**
  • Power Plant: Four Allison T-56-A-15 turboprop engines
  • Thrust: 4,910 shaft horsepower each engine
  • Speed: 289 miles per hour (464 kilometers per hour) at sea level

Airborne Laser (ABL)

Capabilities/Profile

- **Service Ceiling:** 45,000 Feet
- **Combat Range:**
  - Max laser range against BMs--hundreds of km
  - A/C: unlimited with air refueling
- **Armament:** Megawatt class high energy laser
- **Dimensions:**
  - 211 Feet, 5 Inches (Wing Span)
  - 228 Feet, 9 Inches (Length)
  - 63 Feet, 8 Inches (Height)
- **Weight**: 800,000 Pounds (Gross Take Off Weight)

Acquisition Status

- **Program Status:** Program Definition and Risk Reduction
- **Unit Assignment:** TBD
- **Production:** FY06-FY11
- **Current Inventory:** None
- **Projected Inventory:** Seven total
- **Contractors**:
  - Boeing (Airframe & BMC4I)
  - Lockheed Martin (Optics)
  - TRW (Laser)
- **Development:** Program transferred to the Missile Defense Agency in FY02 for development and will return to the Air Force
- **Future Upgrades:** TBD
- **Purchase Requirements:** Seven a/c total (includes PDRR & EMD a/c refurbished to production configuration)

Functions/Performance Parameters

- **Mission Statement:** Air Combat Command directed energy weapon with primary counter air (CA) task of killing ballistic missiles (BMs) in boost (i.e. earliest) phase of flight. Also possesses inherent capability for other CA roles, such as protection of high value airborne assets from enemy air and missile threats, and surveillance and reconnaissance data collection. On board sensors detect boosting missile, high energy laser destroys the targets, BMC4I systems pass launch & impact data to point defense Missile Defense systems and battle space commanders.
- **Performance Parameters:** Flight operations above clouds (~40,000 ft), detects BMs at long ranges (hundreds of km), and kills them within seconds. Megawatt class Chemical Oxygen-Iodine Laser (COIL) with full laser fuel load can kill 20-40 BMs.

A/OA-10 Thunderbolt II

Acquisition Status

• **Program Status:** Sustainment

• **Unit Assignments:** Active: Pope AFB, NC; Nellis AFB, NV; Osan AB, ROK Davis-Monthan AFB, AZ; Eielson AFB, AK; Eglin AFB, FL; Spangdahlem AB, GE; Guard/ Reserve: Barnes MA; Bradley CT; Willow Grove PA; Martin State MD; New Orleans LA; Battle Creek MI; Boise ID; Whiteman AFB, MO

• **Production:** Production line closed in 1984

• **Current Inventory:** 366

• **Projected Inventory:** 366

• **Contractors:**
  • Fairchild Republic (Airframe)
  • General Electric (Propulsion)
  • Lockheed Martin (Sustainment)

• **Future Upgrades:** Integrated Flight and Fire Control Computer, J-Series/Smart Weapons, Digital Stores Management System, Situational Awareness Data Link, Targeting Pod

Capabilities/Profile

• **Service Ceiling:** 37,000 Feet

• **Combat Range:** ~400 NM; 5 hours duration

• **Armament:** 500lb & 2,000lb General Purpose/Cluster/Laser-Guided Bombs, Maverick/Sidewinder Missiles, 2.75" Rockets, 30mm Armor-Piercing/High-Explosive Incendiary Rounds

• **Dimensions:**
  • 57.4 Feet (Wing Span)
  • 53.4 Feet (Length)
  • 14.8 Feet (Height)

• **Weight:** Over 50,000 Pounds fully loaded

Functions/Performance Parameters

• **Mission Statement:** The USAF primary Close Air Support (CAS) platform. Secondary roles include: Air Interdiction, Forward Air Control (Airborne), and Combat Search and Rescue. Designed specifically for battlefield support of engaged ground forces. The speed, range, loiter time and physical toughness of the airframe provide an outstanding asset to protect friendly forces and devastate enemy forces. The 30mm Gatling gun was produced specifically to destroy armored vehicles and hardened support equipment. The pilot is protected by a "titanium bathtub" manufactured to withstand repeated punishment while the airframe and powerplant incorporate redundant systems designed to ensure airworthiness if engaged by enemy anti-aircraft guns or missiles.

• **Performance Parameters:**
  • Top Speed: 450 KCAS/0.75 Mach

A/T-38A/B/C Talon

Capabilities/Profile

- **Service Ceiling:** Above 55,000 Feet
- **Range:** 870 Nautical Miles (1,000 Miles)
- **Armament:** AT-38B has provisions for external armament
- **Dimensions:**
  - 25 Feet, 3 Inches (Wing Span)
  - 46 Feet, 4.5 Inches (Length)
  - 12 Feet, 10.5 Inches (Height)
- **Max Takeoff Weight:** 12,500 Pounds (Gross Weight)

Acquisition Status

- **Program Status:** Sustainment
- **Unit Assignment:** Randolph, Sheppard, Vance, Columbus, and Laughlin AFBs
- **Production:** 1961–1972
- **Current Inventory:** 509
- **Projected Inventory:** 509
- **Contractors:**
  - Northrop (Airframe)
  - General Electric (Engines)
- **Future Upgrades:**
  - Pacer Classic, the structural life extension program, is integrating 10 modifications, including major structural renewal, into one process
  - Avionics Upgrade Program
  - Propulsion Modernization Program (PMP)

Functions/Performance Parameters

- **Mission Statement:** Used primarily by Air Education and Training Command as an advanced aircraft for undergraduate pilot training and pilot instructor training. Air Combat Command, Air Mobility Command, and the National Aeronautics and Space Administration also use the T-38 in various roles.
- **Performance Parameters:**
  - Twin-engine, high-altitude, supersonic jet
  - Top Speed: 812 mph (Mach 1.08 at sea level)
  - Thrust: 2,900 pounds with afterburners

B-1 Lancer

Acquisition Status

• **Program Status:** Sustainment, Conventional Modifications

• **Unit Assignment:** Dyess AFB, TX; Ellsworth AFB, SD; Mt Home AFB, ID; McConnell AFB, KS; Robins AFB, GA; (Transitioning out of Mt Home, McConnell, and Robins AFBs in FY02)

• **Production:** Production complete in 1988

• **Current Inventory:** 92

• **Projected Inventory:** 60

• **Contractors:**
  • Boeing North American (Airframe)
  • General Electric (Propulsion)

• **Future Upgrades:** Avionics Computers, WCMD, JSOW, JASSM, Defensive System Upgrade, Radar, Situational Awareness, Datalink

Capabilities/Profile

• **Service Ceiling:** Over 30,000 Feet

• **Combat Range:** Intercontinental

• **Armament:** Mk-82 & Mk84, Mk-62 & Mk 65 mines, CBU-87/89/97, JDAM

• **Dimensions:**
  • 137 Feet (Wing Span, wings forward)
  • 78 Feet (Wing Span, wings aft)
  • 147 Feet (Length)
  • 34 Feet (Height)

• **Weight:** 477,000 Pounds (Max Weight)

Functions/Performance Parameters

• **Mission Statement:** Long-range, high speed, large payload Global Attack capability. The B-1 provides flexibility of being employed from outside or from within the theater of operations. Force packaging with other strike assets is made possible by the B-1's high speed capability. Conducts all-weather, deep strike and night air-to-surface attack.

• **Performance Parameters:**
  • Top Speed: 1.2 Mach (.95 Mach low altitude)
  • Payload:
    • 84 general purpose bombs/ naval mines
    • 30 cluster bombs (CBU-87/89/97),
    • 24 JDAM (GBU-31)

B-2 Spirit

Capabilities/Profile

- **Service Ceiling:** 50,000 Feet
- **Combat Range:** Unlimited with air refueling
- **Armament:** JDAM, GBU-37/B, Mk 82, Mk 62, Mk 84, M-117, CBU 87/89/97, B-83, B-61/7, B-61/11
- **Dimensions:**
  - 172 Feet (Wing Span)
  - 69 Feet (Length)
  - 17 Feet (Height)
- **Weight:** 336,500 Pounds (Gross Weight)

Acquisition Status

- **Program Status:** Post-production Support
- **Unit Assignment:** Whiteman AFB, MO
- **Production:** Production Line Closed
- **Current Inventory:** 21 Block 30
- **Contractors:**
  - Northrop B-2 Division (Prime)
  - General Electric (Propulsion)
  - Hughes, Boeing (Major Subsystems)
- **Future Upgrades:** Smart Bomb Rack, Low Observable materials, UHF SatCom, Link - 16, EGBU-28, RADAR, Small Diameter Bomb, EHF SatCom, Shelters, JASSM

Functions/Performance Parameters

- **Mission Statement:** Multi-role bomber able to deliver both nuclear and conventional munitions with the added benefits of stealth capability. Ready to attack the enemy's warmaking potential, especially those critical targets which, if not destroyed in the first hours of conflict, would allow unacceptable damage to be inflicted on the friendly side. It is the Air Force's only all-weather hard/deeply buried conventional strike capability.
- **Performance Parameters:** High subsonic, 50,000 feet, 40,000 lbs payload, conventional or nuclear

B-52H Stratofortress

Acquisition Status

- **Program Status:** Sustainment
- **Unit Assignments:**
  - Barksdale AFB, LA (Active & Reserve)
  - Minot AFB, ND
- **Production:** Production Line closed in 1962
- **Current Inventory:** 94
- **Projected Inventory:** 76
- **Contractors:**
  - Boeing (Airframe)
  - Pratt & Whitney (Propulsion)
- **Future Upgrades:** JSOW, JASSM, Avionics Midlife Improvement (Replaces INS, Computer and DTUC), Situational Awareness Defensive Improvement (SADI replaces ALE 20 low/mid band receiver), Electronic Counter Measures Improvement (ECMI upgrades ALQ172 mid/high band jammer), Airborne Wideband Terminal (EHF radio), CALCM Inflight Beyond Line of Sight Rapid Retasker (CIBR2), and Internal 1760 Weapons Capability, and Link 16.

Capabilities/Profile

- **Service Ceiling:** 50,000 Feet
- **Combat Range:** Unlimited with air refueling
- **Armament:** Mk 82/84, M117, CBU 87/89, Mk-56/62/63/65 see mines, CALCM, Harpoon, Have Nap, JDAM, WCMD, ALCM, ACM, B-83, B-61
- **Dimensions:**
  - 185 Feet (Wing Span)
  - 159 Feet (Length)
  - 40 Feet (Height)
- **Weight:** Over 488,000 Pounds fully loaded

Functions/Performance Parameters

- **Mission Statement:** Workhorse of the conventional bomber fleet possessing intercontinental range and a large, diverse weapons payload. Supports both nuclear and conventional taskings. Only aircraft capable of employing the long range ALCM and CALCM, the Harpoon anti-ship missile, and the Have Nap precision guided missile. Can attack time-sensitive targets during the critical initial phase of a conflict. Using standoff and precision weapons, reduces effectiveness of enemy air defenses and command and control system and eliminates power generation capability. During the build-up and halt phase, deploys forward to add mass and depth in sustained air campaign operations.
- **Performance Parameters:**
  - Top Speed: 390 K/0.84 Mach
  - Weapons Payload: 40,000 lbs.

C-5A/B/C Galaxy

Capabilities/Profile

- **Service Ceiling:** 45,000 Feet
- **Range:** 6,300 NM (unrefueled ferry range); unlimited with in-flight refueling
- **Cruising Speed:** 0.74—0.77 Mach
- **Armament:** None
- **Dimensions:**
  - 222 Feet (Wing Span)
  - 247 Feet (Length)
  - 65 Feet (Height)
- **Cargo Compartment:** 121 x 19 x 13.5 feet
- **Maximum Gross Weight:** 840,000 Pounds

Acquisition Status

- **Program Status:** Sustainment
- **Unit Assignment:** Altus AFB, OK; Dover AFB, DE; Kelly ARB, TX; Stewart IAP, NY; Travis AFB, CA; Westover ARB, MA
- **Production:** Completed in 1988
- **Current Inventory:** 126
- **Projected Inventory:** 126
- **Contractors:**
  - Lockheed Martin (Airframe)
  - General Electric (Propulsion)
- **Future Major Upgrades:** GPS, Avionics, Nav/Safety, GATM, and RERP

Functions/Performance Parameters

- **Mission Statement:** Strategic delivery of outsized and oversized cargo and passengers via airland operations. Strategic special operations platform.
- **Performance Parameters:** (based on 3,200 nm leg)
  - Cruise Speed: 420 knots
  - Cargo Weight: 178,000 pounds (291K max)
  - Passenger Capacity: 73 persons
  - The C-5 can carry maximum cargo while simultaneously carry maximum passengers.

C-9A/C

Acquisition Status

- **Program Status:** Sustainment
- **Unit Assignment:** C-9A: Ramstein AB, GE; Yokota AB, JP; Scott AFB, IL; C-9C: Andrews AFB, MD
- **Production:** Completed
- **Current Inventory:** 23
- **Projected Inventory:** 23
- **Contractors:**
  - Douglas (Airframe)
  - Pratt & Whitney (Propulsion)
  - Douglas (Major Subsystem)
- **Current Major Upgrades:** Mission Communication/Data System

Capabilities/Profile

- **Service Ceiling:** 35,000 Feet
- **Range:** >1,739 NM
- **Armament:** None
- **Dimensions:**
  - 93 Feet (Wing Span)
  - 119 Feet (Length)
  - 27 Feet (Height)
- **Maximum Gross Weight:** 108,000 Pounds

Functions/Performance Parameters

- **Mission Statement:** The C-9A provides regularly scheduled and emergency no-notice air travel for hospital patients and medical evacuees. The C-9C provides safe, comfortable, and reliable air travel for: U.S. President, Vice President, First Lady, SECDEF, SECSTATE, other cabinet members, Congressional Delegations and Foreign Dignitaries.
- **Performance Parameters:**
  - Top speed: 565 mph (Mach 0.86)
  - Load: 40 litter patients or four litters and 40 ambulatory patients or other combinations

C-12C/D/F/J

Capabilities/Profile

• **Service Ceiling:** 31,000 Feet (J-model = 25,000 Feet)

• **Range:** 1,700 NM (J-model = 1,500 NM)

• **Armament:** None

• **Dimensions:**
  • 55 Feet (Wing Span)
  • 44 Feet (Length) (J-model = 58 Feet)
  • 15 Feet (Height)

• **Max Gross Weight:** 12,500 Pounds (J-model = 16,600 Pounds)

Acquisition Status

• **Program Status:** Sustainment

• **Unit Assignment:** Osan AB, Korea; Elmendorf AFB, AK; Edwards AFB, CA; Holloman AFB, NM; Andrews AFB, MD; Embassy Sites worldwide

• **Current Inventory:** 26

• **Projected Inventory:** 26

• **Contractors:**
  • Raytheon Aircraft (Airframe)
  • Pratt & Whitney (Propulsion)
  • Raytheon Aerospace (Contractor Logistics Spt)

• **Current Major Upgrades:** Global Air Traffic Management/Navigation Safety

Functions/Performance Parameters

• **Mission Statement:** Provide cargo and passenger airlift over short ranges for Operations Support Airlift and Embassy Support missions. Also used to support test operations at Edwards and Holloman AFBs.

• **Performance Parameters:** Top speed: 300 to 340 mph depending on model. Load: 8 passengers (19 for the J-model).

C-17 Globemaster III

Acquisition Status

• **Program Status:** Acquisition Phase III, Production, Fielding, & Deployment

• **Unit Assignment:** Charleston AFB; Altus AFB; McChord AFB; Thompson Field, MS (~ Jul 04); McGuire AFB (~Dec 04)

• **Production:** Last delivery July 2008

• **Current Inventory:** 80

• **Projected Inventory:** 180

• **Contractors:**
  • Boeing Aircraft (Airframe)
  • Pratt & Whitney (Engines)

• **Future Upgrades:** Global Air Traffic Management (GATM)/Nav Safety; Engine Upgrades; Operational & Reliability Improvements

• **Purchase Requirements:** 15 in 02/12 in 03/10 in 04/11in 05/12 in 06/14 in 07/ 9 in 08

Capabilities/Profile

• **Service Ceiling:** 45,000 Feet (at cruising speed)

• **Range:** Global with in-flight refueling

• **Cruising Speed:** 0.74 - 0.77 MACH

• **Armament:** N/A

• **Dimensions:**
  • 169.8 Feet (Wing Span)
  • 174 Feet (Length)
  • 55.1 Feet (Height)

• **Cargo Compartment:** 88 x 18 x 12.3 Feet

• **Maximum Gross Weight:** 585,000 Pounds

Functions/Performance Parameters

• **Mission Statement:** Wide-body aircraft capable of airlifting outsized and oversized payloads over intercontinental ranges, with or without in-flight refueling. Provides rapid direct delivery of forces by airland or airdrop into austere tactical environments. Capable of performing both intertheater and intratheater airlift missions.

• **Performance Parameters:** (based on 3,200nm leg)
  • Speed: 421 knots
  • Payload: 130,000 pounds
  • Passenger capacity: 102 persons

C-20A/B/H

Capabilities/Profile

- **Service Ceiling:** 45,000 Feet
- **Range:** 4,175 Nautical Miles
- **Armament:** None
- **Dimensions:**
  - 78 Feet (Wing Span)
  - 83 Feet (Length)
  - 25 Feet (Height)
- **Weight:** 69,700 Pounds (Max Gross Wt)
- **Speed:** 576 mph (Mach 0.80)

Acquisition Status

- **Program Status:** Sustainment
- **Unit Assignment:** Andrews AFB, MD; Ramstein AB, GE
- **Production:** Complete (1989)
- **Current Inventory:** 10
- **Projected Inventory:** 10
- **Contractors:**
  - Gulfstream Aerospace (Airframe)
  - Rolls Royce (Propulsion)
  - DynCorp (Flightline)
- **Future Upgrades:** Mission Communications

Functions/Performance Parameters

- **Mission Statement:** Provides transportation for the vice president, cabinet and congressional members, and other high-ranking U.S. and foreign officials
- **Performance Parameters:** The C-20A/B and C-20H airframe is identical to that of the Gulfstream 3/4, respectively, but has different interior furnishings and electronic equipment. The aircraft is divided into three sections. The forward area consists of the cockpit and communications center (the C-20H also includes a lavatory in this section). The center section is designed as an airborne VIP area, with conference tables, telephone connectivity, swivel chairs, and a convertible sofa-bunk. The rear section of the cabin contains single and double reclining passenger seats, tables, telephone connectivity, galley, a lavatory and closets.

C-21A

Acquisition Status

• **Program Status:** Sustainment

• **Unit Assignment:** Langley AFB, VA; Andrews AFB, MD; Wright-Patterson AFB, OH; Scott AFB, IL; Offutt AFB, NE; Peterson AFB, CO; Randolph AFB, TX; Maxwell AFB, AL; Keesler AFB, MS; Ramstein AB, GE; Stuttgart AB, GE; Yokota AB, JP

• **Production:** Completed

• **Current Inventory:** 77

• **Projected Inventory:** 77

• **Contractors:**
  • Learjet (Airframe)
  • Allied Signal (Propulsion)
  • Raytheon (Major Subsystem)

• **Current Major Upgrades:** Terrain Collision Avoidance System (TCAS) and Terrain Awareness and Warning System (TAWS)

Capabilities/Profile

• **Service Ceiling:** 51,000 Feet

• **Range:** 2,005 NM

• **Armament:** None

• **Dimensions:**
  • 39 Feet (Wing Span)
  • 48 Feet (Length)
  • 12 Feet (Height)

• **Maximum Gross Weight:** 18,300 Pounds

Functions/Performance Parameters

• **Mission Statement:** Provide cargo and passenger airlift over short ranges, into short field. Can also be configured to transport litters during medical evacuations.

• **Performance Parameters:**
  • Top speed: 530 mph (Mach 0.81)
  • Load: 8 passengers and 42 cubic feet of cargo

C-26B

Capabilities/Profile

- **Service Ceiling:** 25,000 Feet
- **Combat Range:** 1200 Nautical Miles
- **Armament:** None
- **Dimensions:**
  - 57.0 Feet (Wing Span)
  - 59.35 Feet (Length)
  - 16.66 Feet (Height)
- **Weight:**
  - 16,500 Pounds (Gross Weight)
- **Speed:** 250 kts

Acquisition Status

- **Program Status:** Sustainment
- **Unit Assignment:** Alabama, Arizona, California, Florida, Mississippi, New Mexico, New York, Texas, Washington, Wisconson. Future Formal Training Unit in West Virginia using one of eleven aircraft for training (Jun 02).
- **Current Inventory:** 11
- **Projected Inventory:** 11
- **Contractors:**
  - Fairchild (Airframe)
  - Garrett/Allied Signal (Propulsion)
- **Future Upgrades:** Video Downlink
- **Purchase Requirements:** Awaiting ROM from market study being conducted by GTRI in FY 02

Functions/Performance Parameters

- **Mission Statement:** The counterdrug C-26 assists local law enforcement agents in detection of illegal drug activities to include (but not limited to): marijuana growth; location of clandestine air strips; drop zones; border crossing points; maritime areas; locations of roads, trails or assembly areas that may be supporting illicit drug activities, etc. This system is capable of providing counterdrug support both day and night.
- **Performance Parameters:** The aircraft is equipped with two framing cameras mounted vertically and obliquely with wet film and digital imagery capability, an infra-red camera, and a video camera with spotter scope. Onboard situational awareness equipment displays current position, altitude, and speed to aid in target acquisition, tracking and photographing.

C-32A

Acquisition Status

- **Program Status:** Sustainment
- **Unit Assignment:** 89AW, Andrews AFB, MD
- **Production:** Commercial Aircraft
- **Current Inventory:** 4
- **Projected Inventory:** 4
- **Contractors:**
  - Boeing (Airframe)
  - Pratt & Whitney (Engines)
  - DynCorp (Flightline)
- **Future Upgrades:** Global Air Traffic Management

Capabilities/Profile

- **Service Ceiling:** 41,000 Feet
- **Range:** 5000 NM
- **Armament:** None
- **Dimensions:**
  - 125 Feet (Wing Span)
  - 155 Feet (Length)
  - 44.5 Feet (Height)
- **Weight:**
  - 255,000 lbs (Max Gross Weight)
- **Speed:** 530 mph (Mach 0.8)
- **Payload:** 45 passengers and 16 crew

Functions/Performance Parameters

- **Mission Statement:** Provides transportation for the Vice President, Cabinet, congressional delegations, and other senior U.S. officials
- **Performance Parameters:**
  - Replaced C-137B/C
  - The C-32A is a commercial Boeing 757-200 with interior furnishings and electronic equipment to accommodate senior Government officials. The cabin area is equipped with a communications center, two galleys, a crew rest facility, DV compartment with sleeping accommodations, and first and business class seating with work tables.

C-37A

Capabilities/Profile

- **Service Ceiling:** 51,000 Feet
- **Range:** 5300 NM
- **Armament:** None
- **Dimensions:**
  - 93.5 Feet (Wing Span)
  - 96.5 Feet (Length)
  - 26 Feet (Height)
- **Weight:** 90,500 lbs (Max Gross Weight)
- **Speed:** 530 mph (Mach 0.8)
- **Payload:** 12 passengers and 5 crew

Acquisition Status

- **Program Status:** Production, Fielding, and Deployment
- **Unit Assignment:** Andrews AFB, MD; MacDill AFB, FL; Hickam AFB, HI (Jun 02; Chievres, BE
- **Production:** Commercial Aircraft
- **Current Inventory:** 6
- **Projected Inventory:** 9
- **Contractors:**
  - Gulfstream (Airframe)
  - BMW/Rolls Royce (Engines)
- **Future Upgrades:** Communication Systems
- **Purchase Requirements:** Current inventory comprised of four purchased aircraft and two leased aircraft. An additional three aircraft will be leased for a total inventory of nine aircraft.

Functions/Performance Parameters

- **Mission Statement:** Provides transportation for the Vice President, Cabinet and congressional members, and other senior U.S. officials
- **Performance Parameters:**
  - Replaced retired C-137
  - The C-37A is a commercial Gulfstream V with interior furnishings and electronic equipment to accommodate senior Government officials. The cabin area is equipped with a communications center, galley, DV compartment, and first and business class seating with work tables.

C-40B

Acquisition Status

- **Program Status:** Procurement
- **Unit Assignment:**
  - 89AW, Andrews AFB, MD
  - 15ABW, Hickam AFB, HI
  - ANG, Andrews AFB, MD
- **Production:** Commercial aircraft
- **Current Inventory:** None
- **Projected Inventory:** 3, delivery Jun 02, Aug 02, Aug 03
- **Contractors:**
  - Boeing (Airframe)
  - CFM International (Engines)
  - DynCorp (Flightline)
- **Future Upgrades:** None
- **Purchase Requirements:** Anticipate additional C-40s to replace C-9Cs and ANG C-22Bs.

Capabilities/Profile

- **Service Ceiling:** 41,000 Feet
- **Combat Range:** 5,000 Nautical Miles
- **Armament:** None
- **Dimensions:**
  - 112 Feet (Wing Span)
  - 110 Feet (Length)
  - 41 Feet (Height)
- **Weight:** 171,500 Pounds (Max Gross Weight)
- **Cruise Speed:** 530 mph (Mach 0.8)
- **Payload:** 26 passengers and 11 crew

Functions/Performance Parameters

- **Mission Statement:** Provides transportation for the combatant Commanders in Chief and other senior Government officials.
- **Performance Parameters:**
  - Replaces CINC support C-135s and ANG C-22B
  - The C-40B is a commercial Boeing 737-700ER (extended range) Operational Support Airlift aircraft with interior furnishings and electronic equipment to accommodate CINCs and other senior Government officials. The cabin area is equipped with a communications center, galley, crew rest area, DV compartment with sleeping accommodations, and business class seating with work tables.

C-130E/H Hercules

Capabilities/Profile

- **Service Ceiling:** 33,000 Feet
- **Range:** 3,000 Nautical Miles
- **Armament:** None
- **Dimensions:**
  - 132 Feet (Wing Span)
  - 97 Feet (Length)
  - 39 Feet (Height)
- **Maximum Gross Weight:** 155,000 Pounds

Acquisition Status

- **Program Status:** Sustainment
- **Active Duty Unit Assignment:** Little Rock AFB, AR; Pope AFB, NC; Dyess AFB, TX; Elmendorf AFB, AK; Yokota AB, JP; Ramstein AB, GE
- **Production:** C-130E/H Closed, C-130J Open
- **Current Inventory:** 519
- **Projected Inventory:** 519
- **Contractors**:
  - Airframe, Lockheed
  - Propulsion, Allison
- **Future Upgrades:** Electrical System Upgrade, Airlift Defensive Systems, Enhanced Traffic Collision and Avoidance System, C-130X Avionics Modernization Program

Functions/Performance Parameters

- **Mission Statement:** The C-130E/H provides rapid transportation of personnel or cargo for delivery day or night by parachute or landing. Adverse Weather Aerial Delivery System equipped aircraft have the additional capability of performing airdrops without external assistance in inclement weather. It can also be used for Aeromedical Evacuation of injured troops.
- **Performance Parameters:** The C-130 can takeoff and land on short, unimproved runways normally found during austere operations. Top speed is 374 knots.
  - Maximum payload of 45,000 lbs of cargo or 92 ground troops, or 64 paratroops

C-130J

Capabilities/Profile

- **Service Ceiling:** 30,560 Feet
- **Range:** 3,600 Nautical Miles, Global with in-flight refueling (EC-130J)
- **Armament:** N/A
- **Dimensions:** C-130J/C130J-30
  - 132.6/132.6 Feet (Wing Span)
  - 97.8/112.8 Feet (Length)
  - 38.8/38.8 Feet (Height)
- **Weight:** 175,000 Pounds (Gross Weight)

Acquisition Status

- **Program Status:** Phase III, Production, Fielding, & Deployment
- **Unit Assignment:** Keesler AFB, MS; Baltimore, MD; Harrisburg, PA; Quonset, RI
- **Current Inventory:** 25 accepted; 12 C-130Js, 6 WC-130Js, 4 EC-130Js, 3 C-130J-30s), 7 aircraft to deliver in CY02: 2 C-130J-30s, 4 WC-130Js, 1 EC-130J, 5 C-130J-30s in FY02 PB – deliver CY04
- **Projected Inventory:** 168
- **Contractors:**
  - Lockheed Martin (Airframe)
  - Rolls Royce (Propulsion)
- **Future Upgrades:** GATM/Nav Safety/ EC-130Js undergo follow-on mod program at Lockheed Palmdale – First deliveries to Harrisburg in CY02
- **Purchase Requirements:** 10 WC-130Js, 8 EC-130Js, 12 C-130Js, 138 C-130J-30s

Functions/Performance Parameters

- **Mission Statement:** C-130J/J-30 provides immediate movement of combat troops & supplies within theaters of operation. WC-130J provides weather reconnaissance and the EC-130J provides psychological operations.
- **Performance Parameters:**
  - Crusing speed: 342 knots
  - Payload:

C-130J vs. C-130J-30

Load Comparisions	C-130E/H/J	C-130J-30	Increase
Cargo Floor Length	40 ft	55 ft	37%
463L Pallets	5	7	40%
Medical Litters	74	97	31%
CDS Bundles	16	24	50%
Combat Troops	92	128	39%
Paratroopers	64	92	44%

C-141 Starlifter

Capabilities/Profile

- **Service Ceiling:** 45,000 Feet
- **Range:** 4,600 NM (unrefueled ferry range) (unlimited with in-flight refueling)
- **Cruising Speed:** 0.74 Mach
- **Dimensions:**
  - 160 Feet (Wing Span)
  - 168 Feet (Length)
  - 39 Feet (Height)
- **Armament:** None
- **Cargo Compartment:** 93 x 10.3 x 9 Feet
- **Maximum Gross Weight:** 343,000 Pounds

Acquisition Status

- **Program Status:** Sustainment
- **Unit Assignment:** Andrews AFB, MD; Jackson ANGB, MS; March ARB, CA; McChord AFB, WA; McGuire AFB, NJ; Wright-Patterson AFB, OH; Memphis IAP, TN
- **Production:** Completed in 1968
- **Current Inventory:** Drawing down from 100 total aircraft as of Nov 01.
- **Projected Inventory:** 0 by FY07
- **Contractors:**
  - Lockheed Martin (Airframe)
  - Pratt Whitney (Propulsion)
- **Current Upgrades:** GPS, TCAS/TAWS, Avionics

Functions/Performance Parameters

- **Mission Statement:** Strategic delivery of cargo, passengers, and patients via airland and/or airdrop. Primary strategic special operations and airdrop platform.
- **Performance Parameters:** (based on 3,200nm leg)
  - Cruise Speed: 405 knots
  - Cargo Weight: 60,000 pounds
  - Passenger Capacity: 153 persons

** Cargo and Passengers are exclusive of one another*

Control and Reporting Center (CRC) and Control Reporting Element (CRE)

Acquisition Status

• **Program Status:** Sustainment

• **Unit Assignment:** *Active:* Langley AFB, VA; Eglin AFB, FL; Hill AFB, UT; Mountain Home AFB, ID; Spangdahlem AB, GE; Aviano AB, IT *Guard:* Portland, OR; Ft Dodge, IA; Volk Field, WI; Blue Ash, OH; Orange, CT; Univ Park, PA; Savannah, GA; Puerto Rico; Gulfport, MS; McDonnell AFB, KS; Kauai HI; Phoenix, AZ; Salt Lake City, UT

• **Current Inventory:** 62 Operations Modules (OM), 56 RADARs

• **Projected Inventory:** 62 OMs, 39 RADARs

• **Contractors:**
  • Northrop Grumman (RADAR)
  • Litton (MCE OMs)

• **Future Upgrades:** Tracking System (TAD MTS), Common Battle Management System (CBMS) - open system architecture and enhanced operational capabilities (for time critical targeting and sensor fusion)

Capabilities/Profile

• **Service Ceiling:** ~ 99,000 Feet

• **Surveillance Range:** ~220 NM

• **Additional Capabilities:** 24/7 battle management, command, control and communications capability. Performs multiple/simultaneous data links to include TADIL A/B/C/J, ATDL and NATO Link 1.

• **Unit Composition:** CRC consists of approximately 250 personnel, four Operations Modules (OM), two AN/TPS-75 radar sets, 75 prime movers, mobilizers, and associated communications/support equipment. CRE consists of approximately 125 personnel, two OM and one radar set with associated equipment.

Functions/Performance Parameters

• **Mission Statement:** The CRC/CRE is an air, land, and sea deployable command and control (C2) battle management (BM) platform employed at the tactical level of war. It supports planning, directing, coordinating, and controlling forces and operations. The CRC/CRE may be employed by itself or in combination with other tactical C2 assets. It may be tasked across the broad range of military operations to support all phases of the crisis/ contingency life cycle.

• **Performance Parameters:** Provides the JTF/JFACC a deployable, wide-area theater battle management C2, 24/7 capability to execute theater air operations (joint/ coalition). Core competencies are long range surveillance, identification, data link management, theater air defense and air battle execution (GCI, Air Refueling, Force Marshalling, etc.).

CV-22 Osprey

Acquisition Status

• **Program Status:** Engineering and Manufacturing Development

• **Unit Assignment:** Hurlburt Field, FL; Kirtland AFB, NM

• **Production:** Initial production begins in FY2004

• **Current Inventory:** 0

• **Projected Inventory:** 50

• **Contractors:**
  • Bell Boeing (Airframe)
  • Allison (Propulsion)
  • Raytheon (TF/TA Radar)

• **Future Upgrades:** TBD

• **Purchase Requirements:** 50 aircraft beginning in FY04

Capabilities/Profile

• **Service Ceiling:** 26,000 Feet

• **Combat Range:** Unlimited with air refueling

• **Armament:** TBD

• **Dimensions:**
  • 84.6 Feet (Wing Span)
  • 57.3 Feet (Length)
  • 22.1 Feet (Height)

• **Weight:**
  • 34,900 Pounds (Gross Weight Empty)
  • 52,600 Pounds (Max VTO Weight)
  • 57,000 Pounds (Short Takeoff Weight)
  • 60,500 Pounds (Self Deploy Weight)

• **Speed:** 230 Knots cruise

• **Payload:** 18 SOF troops

Functions/Performance Parameters

• **Mission Statement:** CV-22 will conduct long-range, adverse weather, clandestine penetration of medium to high threat environments in politically or militarily denied areas to execute personnel recovery operations, infiltrate, exfiltrate, and resupply Special Operations Forces (SOF)

• **Performance Parameters:** The CV-22 tailors the basic V-22 to meet SOF mission requirements. It maintains the inherent MV-22 characteristics including shipboard compatibility, aerial refueling, external loads, high survivability, triply redundant fly-by-wire flight controls and advanced cockpit displays. CV-22 then adds unique capabilities such as a state-of-the-art radar warning and jamming suite, terrain following/terrain avoidance radar, infrared countermeasures (IRCM), additional fuel tanks, and additional chaff and flares.

E-3
Airborne Warning and Control System (AWACS)

Acquisition Status

- **Program Status:** Sustainment
- **Units of Assignment:** Tinker AFB, OK; Elmendorf AFB, AK; Kadena AFB, JP
- **Production:** Deployed March 1977; Planned modification programs thru end of FY16
- **Current Inventory:** 33 (32 operational, plus 1 test asset)
- **Contractors:**
  - Boeing (Prime Contractor)
  - Northrop Grumman (Radar)
  - Lockheed Martin (Computer)
- **Planned Upgrades:** Radar System Improvement Program (RSIP), Block 40/45 Computers and Displays and Integrated Data GATM

Capabilities/Profile

- **Service Ceiling:** 38,000 Feet
- **Combat Range:** Unlimited with air refueling
- **Dimensions:**
  - 130 Feet, 10 Inches (Wing Span)
  - 145 Feet, 6 Inches (Length)
  - 41 Feet, 4 Inches (Height)
- **Weight:** 347,000 Pounds

Functions/Performance Parameters

- **Mission Statement:** AWACS provides all altitude surveillance, warning, and battle management for worldwide air combat operations
- **Performance Parameters:**
  - Speed: Optimum cruise Mach 0.78
  - Endurance: 8 Hours (unrefueled)
  - Operational Crew Makeup:
    - Flight crew: 4
    - Mission crew: 13-19
      - Officer and enlisted specialists
    - Crew size varies according to mission

E-4B
National Airborne Operations Center (NAOC)

Capabilities/Profile

- **Service Ceiling:** above 40,000 Feet
- **Combat Range:** 6,000+ NM air refueling capable 72 hours (air refueled)
- **Dimensions:**
  - 195 Feet, 8 inches (Wing Span)
  - 231 Feet, 4 inches (Length)
  - 63 Feet, 5 inches (Height)
- **Weight:** 800,000 Pounds (Gross Weight)

Acquisition Status

- **Program Status:** Sustainment
- **Unit Assignment:** Offut AFB, NE
- **Production:**
  - Last E-4A delivered Jul 73
  - Last E-4B delivered Jan 85
- **Current Inventory:** 4
- **Projected Inventory:** 4
- **Contractors:** Boeing Aerospace Operations
- **Future Upgrades:** Modernization upgrades of primary mission equipment and modifications to ensure compliance with global air traffic management navigation requirements

Functions/Performance Parameters

- **Mission Statement:** Most survivable node of National Military Command System (NMCS). Provides SecDef OCONUS C2 mission support. Supports Federal Emergency Management Agency (FEMA) during crisis response.
- **Performance Parameters:**
  - For NCA mission total manifest of 114: 63 crew/battle staff; 51 passengers
  - For SecDef Mission: 33 crew; 81 passengers
  - Hardened against Electromagnetic Pulse (EMP)
  - Robust communications useful in a nuclear disturbed environment

E-8C
Joint STARS

Acquisition Status

- **Program Status:** Production/Operational
- **Unit Assignment:** Robins AFB, GA
- **Production:** Through March 2004
- **Current Inventory:** 12 E-8Cs delivered to ACC
- **Projected Inventory:** 16 E-8Cs
- **Contractors**:
  - Northrop Grumman (prime)
  - Motorola (prime for Army CGSs)
  - CUBIC (sub for secure data link to Army ground stations)
  - Raytheon (sub for general purpose computers and prime for aircraft contractor logistics support)
- **Future Upgrades:** Computer Replacement Program (CRP), Radar Technology Insertion Program (RTIP), SATCOM, Link16, Global Air Traffic Management (GATM) Upgrades
- **Purchase Requirements:** 1 in FY02 (P16)

Capabilities/Profile

- **Aircraft Type:** Modified 707-300 Series
- **Aircraft Performance:**
  - Service Ceiling: 32,000 Feet
  - Range/Duration: 9hrs, 20hrs w/inflight refuel
  - Max Airspeed: .84 Mach
- **Dimensions:**
  - 130 Feet, 10 Inches (Wing Span)
  - 152 Feet, 11 Inches (Length)
  - 42 Feet, 6 Inches (Height)
- **Weight:** 336,000 Pounds (Gross Weight)

Functions/Performance Parameters

- **Mission Statement:** Joint STARS is a joint Army/Air Force program designed to enhance battle management by providing air/land component commanders with near real-time wide-area surveillance and targeting information on moving and stationary ground targets, slow moving rotary and fixed wing aircraft, rotating antennas and Theater Missile Defense targets of interest
- **Performance Parameters:**
  - Multi-mode, phased array radar; equipped with both Moving Target Indicator (MTI) and Synthetic Aperture Radar (SAR)
  - Wide area/small area surveillance with rapid revisit
  - Robust ECCM, joint mission crew, 17 multi-purpose workstations, allows rapid deployment, self-contained operation
  - Secure Surveillance and Control Data Link (SCDL) to Army Common Ground Stations (CGSs); Link 16 to Joint C3I nodes

EC-130E Commando Solo

Capabilities/Profile

- **Service Ceiling:** 20,000 Feet
- **Combat Range:** Unlimited (air refuelable)
- **Prime Mission:** Psychological operations
- **Crew Complement:** 11 - Two pilots, navigator, flight engineer, loadmaster, mission control chief/EWO, and five electronic communications specialists
- **Dimensions:**
  - 132 Feet (Wing Span)
  - 100 Feet (Length)
  - 38 Feet (Height)
- **Weight:** 155,000 Pounds (Gross Weight)

Acquisition Status

- **Program Status:** Sustainment for current EC-130E aircraft; Modernization through Congressional adds to cross-deck/convert Commando Solo special mission equipment to new C-130Js, producing EC-130Js
- **Current Inventory:** 4 operational EC-130Es and 2 EC-130Js in conversion
- **Unit Assignment:** 193rd Special Operations Wing (ANG), Harrisburg, PA

Functions/Performance Parameters

- **Mission Statement:** Conducts psychological operations and civil affairs broadcast in the AM, FM, HG, TV, and military communications bands. Typical mission consists of a single-ship orbit which is offset from the desired target audience. The targets may be either military or civilian personnel.
- **Secondary Mission:** Command, control, and communications countermeasures (C3CM) and limited intelligence gathering
- **Performance Parameters:**
  - Power Plant: Four Allison T-56-A-15 Turboprops
  - Thrust: 4,910 (equivalent shaft hp each)
  - Speed: 240-260 knots

EC-130H Compass Call

Acquisition Status

• **Program Status:** Sustainment; 1st Sqn Block 30 reached IOC, Feb99. Blk 35 will convert Blk 20 to Blk 35 and remaining Blk 30s to Blk 35. Brings fleet to common configuration and upgrades outdated receiver systems to accommodate current C2 systems.

• **Unit Assignment:** 41st and 42nd Electronic Combat Sqdns located at Davis Monthan AFB, AZ

• **Production:** Block 35 started in FY01, completes FY07

• **Current Inventory:** Block 20 - 6 A/C; Block 30 - 7A/C

• **Projected Inventory:** 13 Block 35 in FY07

• **Contractors:**

  • Prime Integrator - LMA (Palmdale, CA)
  • Prime Systems Integrators - BAE, NH;
  • Associate Contractors: Raytheon IN; General Dynamics (formerly GTE), CA

• **Future Upgrades:** Improved Offensive Counter Information (OCI) capabilities Block 40

Capabilities/Profile

• **Service Ceiling:** 25,000 Feet

• **Combat Range:** Unlimited (air refuelable)

• **Prime Mission Avionics:** 8 mission crew members using computerized, command and control warfare (C2W) jamming system comprised of integrated receivers, processors, and graphics consoles coupled with high speed jamming subsystems

• **Dimensions:**

  • 132 Feet (Wing Span)
  • 99 Feet (Length)
  • 38 Feet (Height)

• **Weight:** 155,000 Pounds (Gross Weight)

Functions/Performance Parameters

• **Mission Statement:** Provides Offensive Counter Information (OCI) capabilities to the Joint Forces Air Component Commander (JFACC) through the spectrum of war (PSO - War - transition to peace). Provides communications jamming.

• **Performance Parameters:** Classified

F-15 Eagle

Acquisition Status

- **Program Status:**
  - Production of F-15E attrition reserve aircraft
  - Modification/sustainment of fielded F-15s
- **Unit Assignment:** Worldwide
- **Production:** Last F-15 (F-15E) delivery Sep 04
- **Current Inventory:** 738 F-15A/B/C/D/E (10 a/c on-contract, in-production)
- **Projected Inventory:** 748
- **Contractors:**
  - Boeing (Airframe)
  - Pratt & Whitney (Propulsion)
  - Raytheon (Radar)
- **Future Upgrades:** Radar & Engine Upgrades, GPS/Smart Weapons Integration, Helmet Cueing, Data Link Capability, Full Band EW protection, Digital Video Recorder, radar warning receiver upgrade
- **Purchase Requirements:** Congress directed procurement of 10 additional F-15E in FY00/01.

Capabilities/Profile

- **Service Ceiling:** 65,000 Feet
- **Combat Range:** 220-1300 NM (varies with loadout & mission)
- **Armament:**
  - F-15A/B/C/D: Missiles (Air-to-Air) AIM-7/-9/-120, 20mm Cannon
  - F-15E: Adds Missiles/Bombs (Air-to-Ground) Gen Purpose, GBUs, CBUs, Maverick
- **Dimensions:**
  - 42.8 Feet (Wing Span)
  - 63.8 Feet (Length)
  - 18.5 Feet (Height)
- **Weight (Max Gross):**
  - F-15C: 68,000 lbs
  - F-15E: 81,000 lbs

Functions/Performance Parameters

- **Mission Statement:** F-15A-D is a dual engine, all weather, extremely maneuverable fighter designed to gain and maintain air superiority. F-15E retains the F-15A-D's basic air-to-air capability and is equipped to conduct all weather/night, deep penetration air-to-surface attack.
- **Performance Parameters:**
  - Speed: 1,875 mph (Mach 2.5+)
  - Range: 3,000 nautical miles ferry with conformal fuel tanks (F-15E only) and 3 external tanks
  - Thrust: F-15C: 25,000 lbs each engine, max with afterburner F-15E: 29,000 lbs each engine, max with afterburner

F-16
Fighting Falcon

Acquisition Status

- **Program Status:**
  - Production of force structure/attrition reserve aircraft
  - Modification/sustainment of fielded F-16s
- **Unit Assignment:** Worldwide
- **Production:** Last USAF a/c delivery FY07
- **Current USAF Inventory:** 1384
- **Projected Inventory:** 1410
- **Contractors:**
  - Lockheed Martin (Airframe)
  - General Electric/Pratt & Whitney (engines)
  - Northrop Grumman (Radar)
- **Future Upgrades:** GPS/Smart Weapons Integration, Link-16 Capability, Joint Helmet Mounted Cueing System, Advanced Air-to-Air Weapons, Modular Mission Computer, Night Vision Imaging System, Air-to-Air Interrogator (Blk 50), and Advanced Targeting Pod (Blk 50)
- **Purchase Requirements:** 6 a/c FY05

Capabilities/Profile

- **Service Ceiling:** 50,000 Feet
- **Combat Range:** 500 NM
- **Armament:**
  - Missiles (Air-to-Air): AIM-9/-120:
  - Missiles/Bombs (Air-to-Ground): GBUs, CBUs, Maverick, HARM, 20mm Cannon
- **Dimensions:**
  - 32.8 Feet (Wing Span)
  - 49.3 Feet (Length)
  - 16.7 Feet (Height)
- **Weight:** 42,000 Pounds (Gross Weight)

Functions/Performance Parameters

- **Mission Statement:** A single engine multi-role tactical fighter with full air-to-air and air-to-ground combat capabilities. Block 40 aircraft have the systems required to conduct night/under-the-weather precision attacks and Block 50 aircraft employ the HARM Targeting System in the Suppression of Enemy Air Defenses (SEAD) role. Block 50 Destruction of Enemy Defenses (DEAD) will occur with the delivery of the Advanced Targeting Pod in FY03.
- **Performance Parameters:**
  - Speed: 1,500 mph (Mach 2 at altitude)
  - Range: > 2,000 miles ferry range
  - Thrust: 27,000 lbs

F-22 Raptor

Capabilities/Profile

- **Service Ceiling:** 50,000 Feet
- **Combat Range:** Classified
- **Armament:**
  - AIM-120C (Air-to-Air)
  - AIM-9M/X (Air-to-Air)
  - 1,000lb JDAM (Air-to-Ground)
  - M61 (20MM) Cannon
- **Dimensions:**
  - 44 Feet, 6 Inches (Wing Span)
  - 62 Feet, 1 Inches (Length)
  - 16 Feet, 6 Inches (Height)
- **Weight:** 50,000 Pounds (Gross Weight)

Acquisition Status

- **Program Status:** Engineering & Manufacturing Development is approximately 90% complete
- **Unit Assignment:** Edwards AFB
- **Production:** Last delivery in 2012
- **Current Inventory:** 5 test aircraft (a/c)
- **Projected Inventory:** 339 (+9 EMD a/c)
- **Contractors:**
  - LM-Aero, Marietta (Center Fuselage and overall System Integration)
  - LM-Aero, FW (Mid-Fuselage)
  - Boeing (Aft Fuselage & Wings)
  - Pratt & Whitney (Propulsion)
- **Future Upgrades:** Integration of Small Diameter Bomb (SDB) and Enhanced Air-to-Ground Radar
- **Purchase Requirements:** 31 aircraft on contract. 308 aircraft remain to be procured.

Functions/Performance Parameters

- **Mission Statement:** The F-22 Program is developing the next-generation air superiority fighter to counter emerging worldwide threats. The F-22 is designed to penetrate enemy airspace and achieve a first look, first shot, first kill capability against multiple targets.
- **Performance Parameters:**
  - The F-22 is characterized by a low observable, highly maneuverable airframe, advanced integrated avionics, and aerodynamic performance allowing supersonic cruise without afterburner
  - This combination of characteristics will make the F-22 the world's premier air superiority fighter and 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-120C and two AIM-9M/X
  - 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-9M/X

F-117 Nighthawk

Acquisition Status

- **Program Status:** Sustainment
- **Unit Assignment:** Holloman AFB, NM
- **Production:** Production Line closed in 1990
- **Current Inventory:** 51
- **Projected Inventory:** 51
- **Contractors:**
  - Lockheed Martin Skunk Works (Airframe)
  - General Electric (Propulsion)
  - Raytheon (Major Subsystem)
- **Future Upgrades:** Single Configuration Fleet, Stores Management Processor, Smart Weapons Integration, Mid-Life Improvement Programs

Capabilities/Profile

- **Service Ceiling:** 35,000 Feet
- **Combat Range:** Unlimited with air refueling
- **Armament:**
  - 2-2000 Pound Laser Guided Bombs (GBU-27/GBU-10)
  - 2-2000 Pound Enhanced GBU-27 (LGB with GPS backup mode)
  - Internal Carriage
- **Dimensions:**
  - 43.3 Feet (Wing Span)
  - 63.9 Feet (Length)
  - 12.9 Feet (Height)
- **Weight:** 52,500 Pounds (max weight)

Functions/Performance Parameters

- **Mission Statement:** To penetrate dense threat environments and to deliver precision weapons against high value, highly defended targets with pinpoint accuracy. To utilize low observable technology (RADAR, IR, visual and acoustic) to achieve vehicle signatures that significantly degrade enemy defenses. To provide rapid response to the National Command Authority.
- **Performance Parameters**
  - Top Speed*:* 562 KCAS/0.9 Mach
  - Thrust: 9,040 pounds per engine

HC-130P/N King

Acquisition Status

• **Program Status:** Conversion program to deliver 11 additional aircraft converted from C-130/WC-130H configuration (Note: inventory includes 4 CSAR dedicated MC-130Ps flown by the ANG)

• **Unit Assignment:** Moody AFB, GA; Kirtland AFB, NM; Patrick AFB, FL (AFRC); Portland, OR (AFRC); Moffett FAF, CA (ANG); F.S. Gabreski Airport, NY (ANG); Kulis ANGB, AK (ANG)

• **Current Inventory:** 35

• **Projected Inventory:** 46 (by FY07)

• **Contractors:** Boeing (tanker conversion)

• **Current Upgrades:** Integrated SATCOM, NVG compatible lighting, digital low-power color radar, FLIR (partial), E-TCAS (partial), personnel locator system (partial)

• **Future Upgrades:** Partial mods expanded fleet-wide, cockpit mods under C-130 Avionics Modernization Program (AMP), in-flight refueling (receiver) capability, tactical data receivers

Capabilities/Profile

• **Service Ceiling:** 30,000 Feet

• **Combat Range:** 3,500 NM

• **Mission Crew Complement:** Three officers (pilot, co-pilot, navigator) and seven enlisted (flight engineer, communications specialist, two loadmasters, and three Pararescue specialists)

• **COMM:** UHF/VHF/SATCOM/Secure/ Anti-jam

• **NAV:** Integrated INS/GPS/Doppler, radar

• **Self-Protection:** Radar and missile warning receivers, chaff & flare dispensers, cockpit armor

• **Dimensions:**
  • 132 Feet (Wing Span)
  • 99 Feet (Length)
  • 38 Feet (Height)

• **Weight:** 155,000 Pounds (Gross Weight)

Functions/Performance Parameters

• **Mission Statement:** CSAR configured extended-range C-130. Increases the range of rescue helicopters by in-flight refueling and performs tactical delivery of Pararescue specialists (trained in emergency trauma medicine, harsh environment survival, and assisted evasion) or equipment to isolated personnel in permissive or hostile environments.

• Additional mission capabilities include extended visual/electronic searches and delivery of survival equipment over land or water, unimproved airfield operations for survivor transload/MEDEVAC

• **Performance Parameters:**
  • Power Plant: Four Allison T56-A-15 turboprop engines
  • Thrust: 4,910 shaft horsepower each engine
  • Speed: 289 miles per hour (464 kilometers per hour) at sea level

HH-60G Pave Hawk

Acquisition Status

• **Program Status:** Completely Fielded

• **Unit Assignment:** Moody AFB, GA; Nellis AFB, NV; Kirtland AFB, NM; Kadena AB, Japan; NAS Keflavik, Iceland; Patrick AFB, FL (AFRC); Davis-Monthan AFB, AZ (AFRC); Portland, OR (AFRC); Moffet FAF, CA (ANG); F.S. Gabreski Arpt, NY (ANG); Kulis ANGB, AK (ANG)

• **Production:** Future production TBD: AoA is currently underway to select long term future upgrades/replacement

• **Current Inventory:** 105

• **Projected Inventory:** 105

• **Contractors:** Sikorsky (Prime Contractor)

• **Future Major Upgrades:** Upgraded Comm/Nav/Electronic Warfare Suite, External Gun mount (.50 Cal)

• **Purchase Requirements:** TBD

Capabilities/Profile

• **Service Ceiling:** 14,200 Feet

• **Combat Range:** 500 NM

• **Armament:** GAU-2, 7.62mm mini-gun

• **COMM:** UHF/VHF/SATCOM/PLS/ Secure/HQ-II

• **NAV:** Integrated INS/GPS/Doppler

• **Self-Protection:** Integrated Chaff/Flare/ RWR, IR Jammer, Kevlar armor, Self-sealing fuel tanks

• **MSN Equip:** FLIR, OTH Tactical Receiver, Digital Moving Map/Threat Display, WX Radar, Hoist

• **Dimensions:**
  • 53 Feet (Main Rotor)
  • 64 Feet (Length)
  • 16 Feet (Height)

• **Maximum Gross Weight:** 22,000 Pounds

Functions/Performance Parameters

• **Mission Statement:** Primary operational mission is Combat Search and Rescue (CSAR). The most rapidly deployable, long range, combat capable rescue helicopter in the Air Force inventory. Conduct day/night/ marginal weather alert response missions to recover downed aircrew or other isolated personnel during war. Also performs disaster relief, international air, NEO, counter-drug, rescue operations during civil SAR, and Space Shuttle support.

• **Performance Parameters:** Mission flown at airspeeds between 120 and 150 kts. Can fly for 4 1/2 hours unrefueled. With air refueling, range is limited only by human factors. Max gross weight for takeoff is 22,000 lbs. The HH-60G employs a sophisticated avionics system to enhance crew situational awareness and to avoid threats.

Joint Strike Fighter

Capabilities/Profile USAF

- **Speed:**
  - Level Flight: 1.5 Mach > 30,000 ft
  - Design Max: 750 KCAS/ 1.6 Mach
- **"G":** +9.0/-3.0
- **Payload (Internal):**
  - 2x AIM -120 (AMRAAM)
  - 2 x 2,000 lb Class
- **Range:**
  - Threshold: 590 Nautical Miles
  - Objective: 690 Nautical Miles

Acquisition Status

- **Program Status:** System Development and Demonstration (SDD)
- **Unit Assignment:** TBD
- **Production:** 2005 - 2028
- **Projected Inventory:**
  - 1763 USAF
  - 480 USN
  - 609 USMC
  - 150 UK
- **Contractors:**
  - Lockheed Martin (Airframe)
  - Pratt & Whitney and General Electric (Propulsion)

Functions

- **Mission Statement:** The JSF program will develop and deploy an affordable, next-generation, multi-role strike fighter aircraft which can meet the requirements of all three Services, the United Kingdom (UK), and other allies
- **Service Needs:**

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

•**USN**: Multi-role, stealthy strike fighter to complement the F/A-18E/F

•**USMC**: Multi-role, STOVL strike fighter to replace the AV-8B and F/A-18

•**UK**: STOVL (supersonic) aircraft to replace the Sea Harrier and GR-7

KC-10 Extender

Acquisition Status

- **Program Status:** Sustainment
- **Unit Assignment:** McGuire AFB, NJ; Travis AFB, CA
- **Production:** Completed in 1987
- **Current Inventory:** 59
- **Projected Inventory:** 59
- **Contractors:**
  - Douglas Aircraft Corp - now Boeing (Airframe)
  - General Electric (Propulsion)
- **Future Major Upgrades:** Global Air Traffic Management (GATM) and Engine-pylon replacement

Capabilities/Profile

- **Service Ceiling:** 42,000 Feet
- **Range:** 10,000 NM (unrefueled ferry range) (unlimited with in-flight refueling)
- **Armament:** None
- **Dimensions:**
  - 165 Feet (Wing Span)
  - 181 Feet (Length)
  - 58 Feet (Height)
- **Maximum Gross Weight:** 590,000 Pounds

Functions/Performance Parameters

- **Mission Statement:** Air refueling and airlift support for deployment, employment, redeployment and joint/combined special operations
- **Performance Parameters:**
  - **Speed:** 619 mph
  - **Airlift role** - can accommodate loads ranging from 27 pallets to a mix of 17 pallets and 75 passengers; can transport up to 75 people and 170,000 pounds of cargo 4,400 miles
  - **Air Refueling role** - equipped with both advanced aerial refueling boom and hose/drogue refueling systems; maximum fuel transfer rates to receiver aircraft of 1,100 gallons per minute for the boom system and 470 gallons per minute for the drogue system; can transfer 200,000 pounds of fuel to a radius of 2,200 miles

KC-135 Stratotanker

Capabilities/Profile

- **Service Ceiling:** 50,000 Feet
- **Range:** 11,015 (ferry range)
- **Armament:** None
- **Dimensions:**
  - 131 Feet (Wing Span)
  - 136 Feet (Length)
  - 42 Feet (Height)
- **Maximum Gross Weight:** 322,500 Pounds

Acquisition Status

- **Program Status:** Sustainment
- **Unit Assignment:** 9 Active Duty, 6 Reserve and 19 Guard bases
- **Production:** Completed in 1965
- **Current Inventory (all tanker types):** 545
- **Contractors:**
  - Boeing (Airframe)
  - General Electric (Engines)
  - Pratt & Whitney (Engines)
- **Future Major Upgrades:** Global Air Traffic Management (GATM)

Functions/Performance Parameters

- **Mission Statement:** Principal mission is air refueling. The KC-135 greatly enhances the Air Force's capability to accomplish its missions of Global Reach and Global Power. Also provides aerial refueling support to Navy, Marine Corps and allied aircraft.
- **Performance Parameters:**
  - Speed: 530 mph at 30,000 feet
  - Nearly all internal fuel can be pumped through the tanker's flying boom, the KC-135's primary fuel transfer method. A special shuttlecock-shaped drogue, attached to and trailed behind the flying boom, may be used to refuel aircraft fitted with probes. Can transfer 150,000 pounds of fuel to a radius of 1,500 mi.

MC-130E/H Combat Talon

Acquisition Status

• **Program Status:** Sustainment

• **Current Inventory:** 14 MC-130E Talon I 24 MC-130H Talon II, Total of 38 MC-130E/Hs

• **Unit Assignment:** Hulburt Field, FL; Kirtland AFB, NM; RAF Mildenhall, UK; Kadena AB, JP; Duke Field, FL

• **Contractors:** Boeing for Integrated Weapon Systems Support (IWSS)

• **Future Upgrades:** Direct Infared Counter Measure (DIRCM), C-130 Avionic Modernization Program (AMP), and Helo Aerial Refueling capability for MC-130H

Capabilities/Profile

• **Service Ceiling:** 30,000 Feet

• **Combat Range:** Unlimited (air refuelable)

• **Crew Complement:** 4 officers (two pilots, one navigator and one electronic warfare officer) and three enlisted (one flight engineer and two loadmasters).

• **Dimensions:**
  • 132 Feet (Wing Span)
  • 99 Feet (Length)
  • 38 Feet (Height)

• **Weight:** 155,000 Pounds (Gross Weight)

Functions/Performance Parameters

• **Mission Statement:** The mission of the MC-130E Combat Talon I and MC-130H Combat Talon II is to provide global, day, night and adverse weather capability to airdrop and airland personnel and equipment in support of U.S. and allied special operations forces. The MC-130E also has a deep penetrating helicopter refueling role during special operations missions.

• **Performance Parameters:**
  • Power Plant: Four Allison T56-A-15 turbroprop engines
  • Thrust: 4,910 shaft horsepower each engine
  • Speed: 289 miles per hour (464 kilometers per hour) at sea level

MC-130H Combat Talon II

Capabilities/Profile

- **Service Ceiling:** 30,000 Feet
- **Combat Range:** Unlimited (air refuelable)
- **Primary Mission:** Infiltration, exfiltration, and resupply of special operations forces
- **Crew Complement**: 7 - Two pilots, one navigator, one electronic warfare officer, one flight engineer, and two loadmasters
- **Dimensions:**
  - 133 Feet (Wing Span)
  - 100 Feet (Length)
  - 39 Feet (Height)
- **Max Takeoff Weight:** 155,000 Pounds

Acquisition Status

- **Program Status:** Sustainment
- **Current Inventory:** 24
- **Unit Assignment:** Hurlburt Field, FL; Kirtland AFB, NM; RAF Mildenhall, UK; Kadena AB, JP
- **Contractors:** Boeing for Integrated Weapon Systems Support (IWSS)
- **Future Upgrades:** Directional Infrared Counter Measure (DIRCM), C-130 Avionics Modernization Program (AMP), Common Avionics Architecture for Penetration (CAAP) and Helo Aerial Refueling capability

Functions/Performance Parameters

- **Mission Statement:** The mission of the MC-130H Combat Talon II is to provide global, day, night and adverse weather capability to airdrop and airland personnel and equipment in support of U.S. and allied special operations forces
- **Performance Parameters:**
  - Power Plant: Four Allison T56-A-15 turboprop engines
  - Thrust: 4,910 shaft horsepower each engine
  - Speed: 300 miles per hour (480 kilometers per hour) at sea level

MC-130P Combat Shadow

Acquisition Status

• **Program Status:** Sustainment

• **Unit Assignment:** Duke Field, FL; Eglin AFB, FL; Mildenhall AB, UK; Kadena AB, JP

• **Contractors:** Boeing

• **Future Upgrades:** Future cockpit mods under C-130 Avionics Modernization Program (AMP)

Capabilities/Profile

• **Service Ceiling:** 30,000 Feet

• **Combat Range:** 3,500 NM

• **Crew Complement:** Four officers (pilot, co-pilot, primary navigator, secondary navigator), and four enlisted (flight engineer, communications systems operator and two loadmasters)

• **Dimensions:**
  • 132 Feet (Wing Span)
  • 99 Feet (Length)
  • 38 Feet (Height)

• **Weight:**
  • 155,000 Pounds (Gross Weight)

Functions/Performance Parameters

• **Mission Statement:** The MC-130P Combat Shadow flies clandestine or low visibility, low-level missions into politically sensitive or hostile territory to provide air refueling for special operations helicopters. The MC-130P primarily flies its single- or multi-ship missions at night to reduce detection and intercept by airborne threats. Secondary mission capabilities include airdrop of small special operations teams, small bundles, and zodiac and combat rubber raiding craft; as well as night-vision goggle takeoffs and landings.

• **Performance Parameters:**
  • Power Plant: Four Allison T56-A-15 turbroprop engines
  • Thrust: 4,910 shaft horsepower each engine
  • Speed: 289 miles per hour (464 km per hour) at sea level

MH-53J/M
Pave Low III/IV

Acquisition Status

• **Program Status:** Sustainment

• **Unit Assignment:** Hurlburt Field, FL; Kirtland AFB, FL; RAF Mildenhall, UK

• **Current Inventory:** 37

• **Contractors:**
  • Sikorsky (Airframe)
  • General Electric (Propulsion)
  • Texas Instruments (Terrain Following/ Terrain Avoidance [TF/TA] radar and Forward-Looking Infrared [FLIR])

• **Future Upgrades:** Directional Infrared Countermeasures (DIRCM)

Capabilities/Profile

• **Service Ceiling:** 16,000 Feet

• **Range:** 600 nautical miles; unlimited with air refueling

• **Armament:** Any combination of three 7.62mm miniguns and .50 caliber machine guns

• **Dimensions:**
  • 72 Feet (Rotor Diameter)
  • 88 Feet (Length)
  • 25 Feet (Height)

• **Max Takeoff Weight:** 46,000 lbs

Functions/Performance Parameters

• **Mission Statement:** Low-level, long-range, undetected penetration into denied areas, day or night, in adverse weather, for infiltration, exfiltration, and resupply of special operations forces. Missions are almost always conducted under the cover of darkness, and are frequently conducted under adverse weather conditions requiring extended flight operations as low as 50' using Night Vision Goggles or Instrument Meteorological Conditions as low as 100' Above Ground Level. Missions involve deep penetrations of hostile areas, at extreme ranges, without escort. The MH-53M employs a sophisticated avionics system to enhance crew situational awareness and to avoid threats.

• **Performance Parameters:** Normal cruise is 110 kts (125 mph) at sea level

OC-135B

Acquisition Status

- **Program Status:** Sustainment
- **Unit Assignment:** 55WG, Offutt AFB, NE
- **Production:** Complete
- **Current Inventory:** 2
- **Projected Inventory:** 2
- **Contractors:**
  - Boeing (Airframe)
  - Pratt & Whitney (Propulsion)
  - Northrop Grumman, Logicon (Major Subsystems)
- **Future Upgrades:** Avionics, on-going modernization

Capabilities/Profile

- **Service Ceiling:** 35,000 Feet
- **Range:** 8 hours unrefueled
- **Armament:** None
- **Dimensions:**
  - 132 Feet (Wing Span)
  - 136 Feet (Length)
  - 42 Feet (Height)
- **Weight:** 297,000 Pounds (Max)

Functions/Performance Parameters

- **Mission Statement:** The Open Skies (OC-135B) observation aircraft supports the Open Skies Treaty. The aircraft flies unarmed observation flights over participating parties of the Treaty, and collects images using its various imaging equipment.
- **Performance Parameters:**
  - Speed: 500 mph

RC-135S
Cobra Ball

Capabilities/Profile

- **Service Ceiling:** 35,000 Feet
- **Combat Range:** 8-10 hours unrefueled
- **Armament:** None
- **Dimensions:**
  - 131 Feet (Wing Span)
  - 140 Feet (Length)
  - 42 Feet (Height)
- **Weight:** 299,000 Pounds (Max)

Acquisition Status

- **Program Status:** Sustainment
- **Unit Assignment:** 55WG, Offutt AFB, NE
- **Current Inventory:** 3 + 1 Trainer
- **Projected Inventory:** 3 + 1 Trainer
- **Contractors:**
  - Boeing (Airframe)
  - Pratt & Whitney (Propulsion)
  - Raytheon, Textron (Major Subsystems)
- **Future Upgrades:** Re-Engine Fleet, Avionics, Primary Mission Equipment, on-going modernization

Functions/Performance Parameters

- **Mission Statement:** COBRA BALL (RC-135S) is a self-contained MASINT collection platform, providing Scientific and Technical (S&T) assessments of foreign ballistic missiles and assisting in treaty verification
- **Performance Parameters:**
  - Speed: 500 mph

RC-135U
Combat Sent

Acquisition Status

- **Program Status:** Sustainment
- **Unit Assignment:** 55WG, Offutt AFB, NE
- **Current Inventory:** 2
- **Projected Inventory:** 2
- **Contractors:**
  - Boeing (Airframe)
  - Pratt & Whitney (Propulsion)
  - Raytheon, Harris Information Systems (Major Subsystems)
- **Future Upgrades:** Re-Engine Fleet, Avionics, Primary Mission Equipment (PME), on-going modernization

Capabilities/Profile

- **Service Ceiling:** 35,000 Feet
- **Combat Range:** 8-10 hours unrefueled
- **Armament:** None
- **Dimensions:**
  - 135 Feet (Wing Span)
  - 136 Feet (Length)
  - 42 Feet (Height)
- **Weight:** 299,000 Pounds (Max)

Functions/Performance Parameters

- **Mission Statement:** COMBAT SENT (RC-135U) is a Scientific & Technical SIGINT collector for information used in the development of advanced weapon systems and dynamic reprogramming of radar warning gear
- **Performance Parameters:**
  - Speed: 500 mph

RC-135V/W Rivet Joint

Capabilities/Profile

- **Service Ceiling:** 35,000 Feet
- **Combat Range:** 8-10 hours unrefueled
- **Armament:** None
- **Dimensions:**
  - 131 Feet (Wing Span)
  - 136 Feet (Length)
  - 38 Feet (Height)
- **Weight:** 299,000 Pounds (Max)

Acquisition Status

- **Program Status:** Sustainment
- **Unit Assignment:** 55WG,Offutt AFB, NE
- **Current Inventory:** 16 + 1 Trainer
- **Contractors:**
  - Boeing (Airframe)
  - Pratt & Whitney (Propulsion)
  - Raytheon (Major Subsystems)
- **Future Upgrades:** Re-Engine Fleet, Joint SIGINT Avionics Family (JSAF), Avionics, Primary Mission Equipment, on-going modernization

Functions/Performance Parameters

- **Mission Statement:** RIVET JOINT (RC-135V/W) is a self-contained collection, processing, analysis and dissemination system. Provides direct tactical SIGINT support to theater/component commanders.
- **Performance Parameters:**
  - Speed: 500 mph

RQ-1A Predator

Acquisition Status

• **Program Status:** Production/Operational

• **Unit Assignment:** 11/15RS, 57WG located at Indian Springs AFAF, NV

• **Production:** Continues through FYDP

• **Current Inventory:** 5 partial Systems (a system includes four air vehicles, one Ground Control Station and one SATCOM suite)

• **Projected Inventory:**12 Systems

• **Contractors:**
  • General Atomics ASI (Prime)
  • Northrop Grumman (SAR)
  • L3COMM (Communications)

• **Future Upgrades:** Multispectral Targeting System (MTS) laser sensor balls; Weaponized wing kits; enabling improvements to include power upgrades, paint scheme, secure comms

• **Purchase Requirements:** Attrition aircraft across the FYDP (averages 7 per year)

Capabilities/Profile

• **Service Ceiling:** 25,000 Feet

• **Combat Range:** 400 Nautical Miles

• **Armament:** Hellfire successfully tested

• **Dimensions:**
  • 49 Feet (Wing Span)
  • 27 Feet (Length)
  • 7 Feet (Height)

• **Weight:** 2,250 Pounds (Max T/O Gross Weight)

Functions/Performance Parameters

• **Mission Statement:** Endurance Unmanned Aerial Vehicle providing airborne reconnaissance. Sensors include Electro-Optic/Infrared (EO/IR) and Synthetic Aperture Radar (SAR). Provides real-time full motion video through either line-of-sight or satellite.

• **Performance Parameters:**
  • Max Speed: 120 knots
  • Typical operating altitude: 15,000 Feet
  • Maximum operating altitude: 25,000 Feet
  • Endurance: Nominally 24 hours

RQ-4A
Global Hawk

Capabilities/Profile

- **Service Ceiling:** 65,000 Feet
- **Combat Range:** 13,500 Nautical Miles
- **Payload:** 1,960 lb. (SAR & EO/IR Sensors)
- **Armament:** None
- **Dimensions:**
  - 116 Feet (Wing Span)
  - 44 Feet (Length)
  - 15 Feet, 2 inches (Height)
- **Weight:** 25,600 Pounds (Gross Weight)

Acquisition Status

- **Program Status:** Currently in Engineering, Manufacturing, and Development (EMD) phase. Advanced Concept Technology Demonstration (ACTD) complete.
- **Unit Assignment:** In flight test at Edwards Air Force Base, CA
- **Production:** Low Rate Initial Production
- **Current Inventory:** 4 Air vehicles
- **Projected Inventory:** 18 Primary
- **Contractors:** Northrop-Grumman Ryan Aeronautical Center (Prime)
- **Future Upgrades:** SIGINT, Improved EO/IR and SAR, MP-RTIP Surveillance Radar
- **Purchase Requirements:** Total of 51 aircraft to include attrition through 2030

Functions/Performance Parameters

- **Mission Statement:** Global Hawk will provide continuous, all-weather, day/night, wide area surveillance to support the tactical warfighter. It is designed for long endurance, high altitude, standoff, image collection capabilities. Global Hawk will operate in low-to-moderate air defense threat environments with the ability to fly above, standoff, and look into high threat areas. Sensors include Electro-Optic/Infrared (EO/IR) and Synthetic Aperature Radar (SAR) with Ground Moving Target Indicator (GMTI) mode.
- **Performance Parameters:**
  - Speed: 350 knots
  - Typical operating altitude: 60-65,000 Ft
  - Endurance: Up to 35 hours

T-1A Jayhawk

Acquisition Status

- **Program Status:** Sustainment
- **Unit Assignment:** Randolph, Vance, Laughlin and Columbus AFBs
- **Production:** 1989–1995
- **Current Inventory:** 180
- **Projected Inventory:** 180
- **Contractors:**
  - Raytheon (Airframe)
  - Pratt & Whitney (Engines)
  - Collins (Avionics)
  - Quintron (Simulators)
  - McDonnell Douglas (Integration)
- **Future Upgrades:** GPS

Capabilities/Profile

- **Service Ceiling:** 41,000 Feet
- **Range:** Over 2,100 Nautical Miles
- **Armament:** None
- **Dimensions:**
  - 43 Feet, 6 Inches (Wing Span)
  - 48 Feet, 5 Inches (Length)
  - 13 Feet, 11 Inches (Height)
- **Max Takeoff Weight:**16,100 Pounds (Gross Weight)

Functions/Performance Parameters

- **Mission Statement:** Used by Air Education and Training Command as an advanced aircraft to train student pilots who will fly airlift, bomber, or tanker aircraft
- **Performance Parameters:**
  - Medium range, twin-engine jet
  - Top Speed: 538 mph (Mach .73)
  - Thrust: 2,900 pounds each engine

T-6A
Texan II

Capabilities/Profile

- **Maximum Operating Altitude:** 31,000 Feet
- **Range:** 800+ NM
- **Armament:** N/A
- **Dimensions:**
  - 33.4 Feet (Wing Span)
  - 33.3 Feet (Length)
  - 10.6 Feet (Height)
- **Weight:** 6,500 Pounds (Gross Weight)

Acquisition Status

- **Program Status:** Full Rate Production
- **Unit Assignment: USAF:** Randolph AFB, TX; Moody AFB, GA; Laughlin AFB, TX; Vance AFB, OK; Columbus AFB, MS; Sheppard AFB, TX; **USN:** NAS Whiting, FL; NAS Corpus Christi, TX; NAS Pensacola, FL
- **Production:** Through FY08 (USAF) and FY14 (USN)
- **Current Inventory:** 54
- **Projected Inventory:** 454 USAF; 328 USN
- **Contractors:**
  - Raytheon (Prime/Airframe)
  - Pratt & Whitney (Propulsion)
  - Martin Baker (Ejection)
  - Allied Signal (Avionics)
  - Flight Safety (GBTS)
- **Future Upgrades:** None currently planned
- **Purchase Requirements:** For FY02, acquire 40 USAF aircraft; continue Ground Based Training System (GBTS) acquisition

Functions/Performance Parameters

- **Mission Statement:** Provides entry level flight and ground based training for future USAF and USN pilots. Replaces USAF T-37B and USN T-34C primary trainer aircraft and associated Ground Based Training Systems (GBTS).
- **Performance Parameters:**
  - Power Plant: 1,100 horsepower Pratt& Whitney Canada PT6A-68 turbo-prop engine
  - Speed: 320 mph

T-37B/ Tweet

Acquisition Status

- **Program Status:** Sustainment
- **Unit Assignment:** Randolph, Sheppard, Vance, Columbus and Laughlin AFBs
- **Production:** 1956–1968
- **Current Inventory:** 453
- **Projected Inventory:** To be phased out by the T-6A, beginning FY00
- **Contractors:**
  - Cessna (Airframe)
  - Continental (Engines)
  - Sabreliner Corp (Structural Life Extension Program)
- **Future Upgrades:** None

Capabilities/Profile

- **Service Ceiling:** 35,000 Feet
- **Range:** 400 NM (460 Miles)
- **Armament:** T-37B, none; T-37C has provisions for two, 250-pound bombs and a 16mm gun camera
- **Dimensions:**
  - 33 Feet, 8 Inches (Wing Span)
  - 29 Feet, 3 Inches (Length)
  - 9 Feet, 2 Inches (Height)
- **Max Takeoff Weight:** 6,625 Pounds (Gross Weight)

Functions/Performance Parameters

- **Mission Statement:** Primary trainer in undergraduate pilot training, undergraduate navigator and tactical navigator training
- **Performance Parameters:**
  - Twin-engine jet
  - Top Speed: 315 mph (Mach 0.4 at sea level)
  - Thrust: 1,025 pounds each engine

T-43A

Capabilities/Profile

- **Service Ceiling:** 37,000 Feet
- **Range:** 2,604 NM
- **Armament:** None
- **Dimensions:**
  - 93 Feet (Wing Span)
  - 100 Feet (Length)
  - 37 Feet (Height)
- **Max Takeoff Weight:** 115,000 Pounds

Acquisition Status

- **Program Status:** Sustainment
- **Unit Assignment:** Randolph AFB, TX
- **Production:** 1971–1973
- **Current Inventory:** 10
- **Projected Inventory:** 10
- **Contractors:**
  - Boeing (Airframe)
  - Pratt & Whitney (Engines)
- **Future Upgrades:** Flight Data Recorder (FDR)/Cockpit Voice Recorder (CVR), Global Positioning System (GPS), Traffic Collision Avoidance System (TCAS), Terrain Avoidance Warning Systems (TAWS)

Functions/Performance Parameters

- **Mission Statement:** Used by Air Education and Training Command to train navigators for strategic and tactical aircraft
- **Performance Parameters:**
  - Medium range, jet aircraft
  - Military training version of the Boeing 737-200
  - Speed: 535 mph (Mach .72)
  - Thrust: 14,500 lbs per engine

U-2

Acquisition Status

- **Program Status:** Sustainment
- **Unit Assignment:** Beale AFB, CA
- **Current Inventory:** 35 (4-two seat trainers, 31 single seat)
- **Projected Inventory:** 35
- **Contractors:**
  - Lockheed Martin (Airframe)
  - GE (Propulsion)
  - Raytheon, Litton, Sanders, BF Goodrich Aerospace (Major Subsystems)
- **Future Upgrades:** Cockpit Modernization, ASARS Improvement Program, Senior Year Electro-Optical Reconnaissance System Pre-Planned Production Improvement (SYERS P3I) to Multi-Spectral, Advanced Defensive System

Capabilities/Profile

- **Service Ceiling:** >70,000 Feet
- **Combat Range:** >7,000 NM
- **Armament:** None
- **Dimensions:**
  - 104 Feet (Wing Span)
  - 63 Feet (Length)
  - 16 Feet (Height)
- **Weight:** 40,000 Pounds (Gross Weight)

Functions/Performance Parameters

- **Mission Statement:** Conducts high-altitude reconnaissance and surveillance utilizing state of the art IMINT and ELINT sensors. Provides Near Real Time (NRT) worldwide battlespace awareness.
- **Performance Parameters:**
  - Speed: 475 mph
  - Sortie Duration: >10 Hours
  - Payload: Advanced Synthetic Aperture Radar System (ASARS-2), SYERS electro-optical sensor, wet film camera, SIGINT suite. SIGINT and any one of the imaging sensors may be carried simultaneously. Total payload capacity is 5,000 pounds.

UH–1N Helicopter

Acquisition Status

- **Program Status:** Fielded
  - AOA completed to examine replacement of the fleet that is over 30 years old

Capabilities/Profile

- **Range:** 300 + Miles
- **Dimensions:**
  - 57.0 Feet (Length)
  - 9.5 Feet (Width)
  - 12.8 Feet (Height)
- **Power Plant:** Two Pratt and Whitney
  - T400-CP-400 twin engine at 1800 shaft hp
- **Weight:** 10,500 Pounds
- **Inventory:**
  - AFSPC-26; AFMC-2; AMC-19; AETC-10; PACAF-4; AFSOC-2
- **Deployed:** 1970
- **Primary Contractor:** Bell Helicopter

Functions/Performance Parameters

- **Mission Statement:** Provides for airlift of emergency security and disaster response forces. Provides surveillance of off-base movements of nuclear weapons and responds to normal search and rescue requests.
- **Performance Parameters**
  - Cruise Speed: 103-115 MPH
  - Max Speed: 149 MPH

UV-18

Acquisition Status

- **Program Status:** Sustainment
- **Unit Assignment:** US Air Force Academy
- **Production:** 1965-1988
- **Current Inventory:** 3
- **Projected Inventory:** 3
- **Contractors:**
  - De Havilland Canada (Airframe)
  - Pratt & Whitney of Canada (Engines)
- **Future Upgrades:** None

Capabilities/Profile

- **Service Ceiling:** 25,000 Feet
- **Range:** 610 Nautical Miles
- **Armament:** None
- **Dimensions:**
  - 65 Feet (Wing Span)
  - 51.75 Feet (Length)
  - 18.6 Feet (Height)
- **Takeoff Weight:** 11,000 Pounds

Functions/Performance Parameters

- **Mission Statement:** Airlift support for the USAFA cadet parachuting program
- **Performance Parameters:**
  - Propeller Driven
  - Military training version of De Havilland DHC-6
  - Speed: 232.7 mph
  - Thrust: 550 horsepower per engine

VC-25A

Capabilities/Profile

- **Service Ceiling:** 45,100 Feet
- **Range:** 6,800 NM (unrefueled ranged)
- **Armament:** None
- **Dimensions:**
  - 196 Feet (Wing Span)
  - 232 Feet (Length)
  - 63 Feet (Height)
- **Maximum Gross Weight:** 833,000 lbs
- **Speed:** 630 mph (Mach 0.92)

Acquisition Status

- **Program Status:** Sustainment
- **Unit Assignment:** Andrews AFB, MD
- **Production:** Completed
- **Current Inventory:** 2
- **Projected Inventory:** 2
- **Contractors:**
  - Boeing Airplane Co. (Airframe)
  - Pratt & Whitney (Propulsion)
- **Current Major Upgrades:** Global Air Traffic Management (GATM), and Mission Communications

Functions/Performance Parameters

- **Mission Statement:** Provides air transportation for the President of the United States
- **Performance Parameters:** Includes electronic and communications equipment, and accommodations for the President. Two galleys provide up to 100 meals at one sitting. Six passenger lavatories (including handicap facilities) are provided as well as a rest area and mini-galley for the aircrew. It also includes a compartment outfitted with medical equipment and supplies, a self-contained baggage loader, front and aft airstairs, and the capability for inflight refueling.

WC-135 Constant Phoenix

Acquisition Status

- **Program Status:** Sustainment
- **Unit Assignment:** 55WG Offutt AFB, NE
- **Current Inventory:** 1
- **Projected Inventory:** 1
- **Contractors:**
  - Boeing (Airframe)
  - Pratt-Whitney (Propulsion)
  - Raytheon, Harris Information Systems (Major Subsystems)
- **Future Upgrades:** Migrating to Advanced Atmospheric Research Equipment (AARE) — this will be flown on RC-135 trainer aircraft

Capabilities/Profile

- **Service Ceiling:** 35,000 Feet
- **Combat Range:** 8-10 hours unrefueled
- **Armament:** None
- **Dimensions:**
  - 135 Feet (Wing Span)
  - 136 Feet (Length)
  - 42 Feet (Height)
- **Weight:** 299,000 Pounds (Max)

Functions/Performance Parameters

- **Mission Statement:** CONSTANT PHOENIX conducts world-wide nuclear air sampling
- **Performance Parameters:**
  - Speed: 500-mph

X-45B Unmanned Combat Air Vehicle (UCAV)

Capabilities/Profile

- **Service Ceiling:** 40,000 Feet
- **Range:** 1300 Nautical Miles
- **Armament:**
  - 12 Small Diameter Bombs
  - 2-1000lb JDAM
  - 2-500lb JDAM
- **Dimensions:**
  - 44.2 Feet (Wing Span)
  - 32.9 Feet (Length)
  - 7.0 Feet (Height)
- **Weight:** 19,222 Pounds (Gross Weight)

Acquisition Status

- **Program Status:** In second of a three phase DARPA/USAF System Development Program (SDP)
- **Unit Assignment:** In test at Edwards AFB
- **Production:** TBD
- **Current Inventory:** 2 X-45A demonstrators, 3 X-45B demonstrators in FY04-05
- **Projected Inventory:** TBD
- **Contractors:** Boeing Phantom Works
- **Future Upgrades:** TBD
- **Purchase Requirements:** 14 Block 10 systems (Preemptive SEAD and Strike) by late FY08

Functions/Performance Parameters

- **Mission Statement:** The Unmanned Combat Air Vehicle (UCAV) program will demonstrate and develop an unmanned, highly survivable and interoperable weapons system capable of effectively and affordably performing lethal and non-lethal Suppression of Enemy Air Defenses (SEAD)/Strike missions. Potential future missions for UCAV include Electronic Attack, Directed Energy, and Tactical Reconnaissance.
- **Performance Parameters:**
  - Speed: >0.8M at 40K ft
  - Propeller-driven
  - Combat Radius: 650 nmi with 30 min loiter

KEY AIR FORCE PROGRAMS/ MUNITIONS

AGM-65 Maverick

Capabilities/Profile

- **Range:** <8 NM
- **Warheads:**
  - 300lb Blast/Frag - AGM–65G/K
  - 125lb Shaped - AGM–65A/B/D/H
- **Dimensions:**
  - 97 Inches (Length)
  - 12 Inches (Diameter)
- **Weight:**
  - 500lb (AGM-65A/B/D/H)
  - 650lb (AGM-65G/K)

Acquisition Status

- **Program Status:** Sustainment (inventory)
- **Current Inventory:**
  - 6,926 AGM–65A/Bs
  - 7,217 AGM-65Ds
  - 4,024 AGM-65G/G2s
- **Contractor:** Raytheon
- **Future Upgrades:**
  - 2,000-2,360 AGM–65Gs (IR seeker) will be converted to AGM–65Ks (improved EO seeker)
  - 439-450 AGM–65Bs (EO seeker) will be converted to AGM–65Hs (improved EO seeker)
  - Goal is a 70/30 mix or IR (D/G) and EO (H/K)

Functions/Performance Parameters

- Air to surface launch and leave missile
- Electro-optical (EO) or infrared (IR) guidance
- Platforms: A–10, F–16, F–15E
- Primary targets: Armor, vehicles, bunkers, air defense

AGM-86B
Air Launched Cruise Missile

Acquisition Status

• Service Life Extension Program (SLEP) Extends ALCM service life to 2030

• Form, Fit, Function Replacement - No enhanced capabilities

• CALCM/ALCM Test Instrumentation Kit
  • RDT&E - July 00
  • Procurement - FY03

• Inertial Navigation Element
  • RDT&E - FY01
  • Procurement - FY05

Capabilities/Profile

• **Range:** 1,500+ Miles

• **Armament:** W80-1 WH

• **Dimensions:**
  • 12.75 Feet (Length)
  • 12.0 Feet (Wingspan)

• **Weight:** 3,150 Pounds

Functions/Performance Parameters

• **Mission Statement:** Subsonic, highly accurate, long range, air-to-surface strategic nuclear missile. The ALCM is designed to evade air and ground-based defenses in order to strike targets at any location within any enemy's territory.

• **Performance Parameters:**
  • Speed: 550 MPH

AGM-86C Conventional Air Launched Cruise Missile (CALCM)

Capabilities/Profile

- **Range:** Nominal 500 NM
- **Warheads:** Blast/Frag
  - Block 0 - 2,000 lb. Class
  - Block I - 3,000 lb. Class
  - Block IA - 3,000 lb. Class
- **Dimensions:**
  - 21 Feet (Length)
  - 2 Feet (Width)
  - 4 Feet (Height)
- **Wing Span:** (Deployed) 12 Feet
- **Weight:** (At Launch)
  - Block 0 - 3,117 Pounds

Acquisition Status

- **Program Status:** Sustainment/Upgrade
- **Production:** N/A
- **Current Inventory:** 323
- **Projected Inventory:** 385
- **Contractors:**
  - Boeing (Prime)
  - Interstate Electronics Corp (GRIU/P)
  - Harris Corp (Anti-Jam System)
- **Future Upgrades:**
  - Global Positioning System (GPS) Receiver Interface Unit-Precision (GRIU-P)/Anti-Jam Upgrade. Allows for Precision Level accuracy insured by state-of-the-art GPS Anti-Jam protection system. Deliveries completed November 2001. Stockpile upgrade currently ongoing for Block 0/I missiles and should be completed by FY03.

Functions/Performance Parameters

- **Mission Statement:** CALCM provides the warfighter with an adverse weather, day/night, air-to-surface, accurate, long range stand-off (outside theater defense) strike capability. CALCM is equally effective for stand-alone, clandestine/punitive strikes, and fully integrated theater warfare.
- **Performance Parameters:**
  - Near Precision Accuracy - Block IA
  - Multi-Axis of Attack Capability
  - Adverse Weather Capability
  - USAF B-52H Bomber Compatibility
  - Limited In-Flight Captive Carriage Retargeting Capability

AGM-86D
CALCM Penetrator Missile

Acquisition Status

- **Program Status:** Sustainment
- **Production:** Completed
- **Current Inventory:** 37
- **Projected Inventory:** 48 units
- **Contractors:**
  - Boeing (Prime)
- **Future Upgrades:** None planned

Capabilities/Profile

- **Range:** Nominal 500 NM
- **Warheads:** Penetrating 1,000 lb. Class
- **Dimensions:**
  - 21 Feet (Length)
  - 2 Feet (Width)
  - 4 Feet (Height)
- **Wing Span:** (Deployed) 12 Feet
- **Weight:** (At Launch) - 3,250 Pounds

Functions/Performance Parameters

- **Mission Statement:** CALCM Penetrator is a long-range, air-delivered, stand-off missile mating the battle proven CALCM airframe with a penetrator warhead. Once fielded, CALCM Penetrator will provide the warfighter with a cost-effective, stand-off Outside Theater Defenses capability against a wide range of hardened, deeply buried targets.
- **Performance Parameters:**
  - Near Precision Accuracy
  - Autonomous navigation/terminal guidance
  - Capable of twice BLU–109 penetration capability
  - Multi-Axis of Attack Capability
  - Adverse Weather Capability
  - USAF B-52H Bomber Compatibility
  - Limited In-Flight Captive Carriage Retargeting Capability

AGM-88
High Speed Anti-Radiation Missile (HARM)

Capabilities/Profile

- **Range:** <60 NM
- **Warhead:**
  - 145 lb Fragmentation Warhead
  - Block III - 25,000 steel cubes
  - Block IV/V - 14,000 tungsten cubes
- **Dimensions:**
  - 164 Inches (Length)
  - 10 Inches (Diameter)
- **Weight:** 795 Pounds

Acquisition Status

- **Program Status:** Sustainment (inventory)
- **Production:** Complete
- **Current Inventory:** 7500
- **Contractor:** Raytheon
- **Future Upgrades:** None planned for USAF. USN proceeding on Block VI GPS/INS precision navigation upgrade

Functions/Performance Parameters

- **Mission Statement:** Tactical Anti-Radiation Missile used to destroy or suppress radar threats at standoff range. Block V missile adds limited geo-specificity and provides a significant step in countering rapidly improving threats
- **Performance Parameters:**
  - Accurate (18 meter CEP)
  - Adverse Weather Capability
  - USAF platform - F–16CJ
  - Navy platform F/A–18 and EA-6B

AGM-129A
Advanced Cruise Missile

Acquisition Status

- **Program Status:** Sustainment
- **Current Inventory:** 406
- **Production:** 1987 - 1993
- **Manufacturer:** General Dynamics, Hughes, and Raytheon
- Currently in a Service Life Extension Program (SLEP) extending ALCM service life to 2030

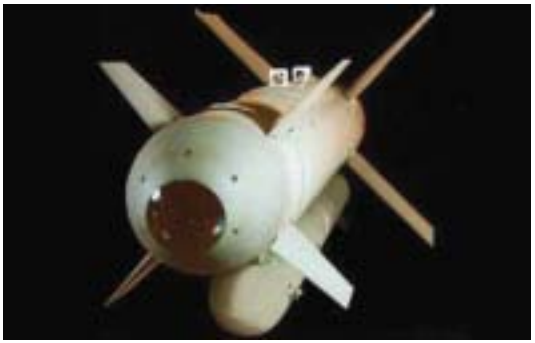
Capabilities/Profile

- **Range:** 2000+ NM
- **Armament:** W80-1 warhead
- **Dimensions:**
  - 20.8 Feet (Length)
  - 2.4 Feet (Diameter)
  - 10 Feet (Wingspan)
- **Weight:** 3,700 Pounds

Functions/Performance Parameters

- **Mission Statement:** Subsonic, low-observable air-to-surface strategic nuclear missile with significant range, accuracy, and survivability improvements over the ALCM. The ACM is designed to evade air and ground-based defenses in order to strike heavily defended, hardened targets at any location within an enemy's territory.
- **Performance Parameters:**
  - Speed: 550 MPH

AGM-130
Standoff Attack Weapon



Capabilities/Profile

- **Range:** >30 NM
- **Warhead:**
  - Blast/Frag: Mk–84
  - Penetrator: BLU–109
- **Dimensions:**
  - 156 Inches (Length)
  - 18 Inches (Diameter)
- **Weight:** 3,000 Pounds

Acquisition Status

- **Program Status:** Sustainment
- **Current Inventory:** 309
- **Contractor:** Boeing
- **Future Upgrades:** None

Functions/Performance Parameters

- **Mission Statement:** Solid rocket powered GBU–15. Autonomous INS/GPS Mid-Course Guidance provides adverse weather capability. Weapon uses TV or IR Terminal Seeker. Provides only fielded Air Force Standoff Outside Point Defense weapon with a 2,000 pound warhead. Integrated on the F–15E Strike Eagle.
- **Performance Parameters:**
  - Precise (<3 meter circular error probable (CEP))
  - Adverse Weather Capability
  - USAF platform - F–15E

AGM-142 Weapon System

Acquisition Status

- **Program Status:** Sustainment (Inventory)
- **Current Inventory:**
  - 45 Blast/Frag units
  - 111 I-800 units
- **Projected Inventory:**
  - 46 Blast/Frag units
  - 111 I-800 units
- **Contractors:** RAFAEL Industries and Lockheed Martin (Precision Guided Systems U.S. [PGSUS])

Capabilities/Profile

- **Range:** >50 NM
- **Warheads:**
  - Blast/Frag: 750 lb.
  - Penetrator: 800 lb. (I-800)
- **Dimensions:** 16 Feet Long x 21 Inches Diameter
- **Weight:** 3,000 Pounds
- **Propulsion:** Solid fuel rocket motor
- **Seeker:** TV/IIR and Upgraded Z-Seeker
- **Weapon Control:** Video and Command Data Link
- **A/C Capability:** B–52H, 3 Missiles per aircraft and One Data Link Pod

Functions/Performance Parameters

- **Mission Statement:** The AGM-142 is a 3,000 lb. air-to-surface, man-in-the-loop, precision guided, standoff missile, powered by solid propellant rocket motor, and launched from a B-52H. Specifically, procured to provide B-52s as an interim precision stand-off weapon capability, AGM-142 inventory is programmed to 'phase out' as USAF's advanced stand-off precision weapons (JSOW, JASSM) enter the Bomber inventory.

- **Performance Parameters:**
  - Precision (<3 meter circular error probable (CEP))
  - Adverse Weather Capability
  - USAF B-52H Bomber Compatible
  - Autonomous midcourse inertial navigation feature is insensitive to GPS jamming

AIM-7M Sparrow

Capabilities/Profile

- **Guidance:** Semi-Active Radar
- **Diameter:** 8 Inches
- **Length:** 12 Feet
- **Weight:** 500 Pounds
- **Warheads:**
  - Blast/Frag: WAU–17
  - Continuous Rod: WAU–10
- **Fuze:** Proximity RF
- **Propulsion:** MK-58 Rocket Motor (4.5 sec Boost; 11 sec Sustain)
- **Launcher:** LAU-106A
- **Speed:** More than 2,660 mph
- **Range:** More than 30 NM

Acquisition Status

- **Program Status:** Sustainment (Inventory)
- **OPR:** NAVAIRSYCOM PMA-259
- **AF Mgmt/Eng OPR:** WR-ALC/LKG
- **Current Inventory:** Classified
- **Contractors:**
  - Raytheon
  - General Dynamics

Functions/Performance Parameters

- **Mission Statement:** The AIM–7M Sparrow is a supersonic, medium range, semi-active radar-guided air-to-air missile with a high explosive warhead
- **Performance Parameters:**
  - Joint Project between Navy and Air Force
  - All Altitude Capability
  - All Weather Capability
  - All Aspect Capability
  - Carriage Options: F–14, F–15, F–16 ADF, F–18
  - Radar Guidance Required Throughout Time Of Flight (TOF)
  - AIM–7M H-Build: Home-On-Jam Capable

AIM-9M Sidewinder

Acquisition Status

- Joint project between Navy and Air Force
  - **OPR:** NAVAIRSYCOM PMA-259
  - **AF Mgmt/Eng OPR:** WR-ALC/LKG
- **Program Status:** Sustainment (Inventory)
- **Current Inventory:** Classified
- **Contractors:**
  - Raytheon
  - General Dynamics
- **Introduction Date:** 1956

Capabilities/Profile

- **Guidance:** Passive Infrared Homing
- **Diameter:** 5 Inches
- **Length:** 113 Inches
- **Weight:** 191 Pounds
- **Warheads:** Annular Blast/Frag
- **Fuze:** Contact and Active Optical
- **Propulsion:** MK-36 Rocket Motor
- **Speed:** Supersonic
- **Range:** 8.7+ NM

Functions/Performance Parameters

- **Mission Statement:** The AIM-9M Sidewinder is a supersonic, short range, passive infrared-guided air-to-air missile with a high explosive warhead
- **Performance Parameters:**
  - Joint Project between Navy and Air Force
  - All Altitude Capability
  - All Aspect Capability
  - Launch and Leave Capability
  - Carriage Options: A–10, F–14, F–15, F–16, F–16 ADF, F–18

AIM-9X

Capabilities/Profile

- **Length:** 119 Inches
- **Diameter:** 5 Inches
- **Weight:** 188 Pounds

Acquisition Status

- **Program Status:** Joint Navy/AF Program in Engineering and Manufacturing Development Flight Test
  - Completed 16 Separation Firings and 19 Guided Firings Resulting in 18 successful launches
  - Completed DT testing-OTRR scheduled for 30 Jan 02
- **Production:** Manufacturing Processes in Place - approved for LRIP in Sep 00
  - LRIP 1 contract awarded Nov 00
  - LRIP 2 contract awarded Nov 01
- **Contractor:** Raytheon Systems Company
- **Future Upgrades:** P3I Starting in FY04
- **Planned AF Buy:** 5097 - Combination of Full Up Rounds and Captive Air Training Missiles

Functions/Performance Parameters

Mission Statement: Regain the lead in the infrared (IR) Short Range Missile arena

Key Performance Parameters:

- Improved IR Countermeasure Performance
- Improved Probability of Kill (Pk)
- Highly Maneuverable Airframe
- High Off-boresight Acquisition and Track
- Day/Night Capability

Platform Compatibility:

- Lead Test Platforms: F-15C and F/A-18C/D
- Follow-on Platforms: F-16, F-22, and F/A-18E/F
- Integration with Joint Helmet Mounted Cueing System (JHMCS)

AIM-120 AMRAAM

Acquisition Status

• **Program Status:** Production with Pre-Planned Product Improvement (P3I) Program

• **Production:** July 2009

• **Current bought to date:** 6805

• **Projected buy:** 8498

• **Contractor:** Raytheon Systems Company

• **Future Upgrades:** P3I and Processor Modernization Program

• **Purchase Requirements:** 1693 missiles left to procure until complete

Capabilities/Profile

Guidance: Inertial/Command, Inertial & Active Radar

Diameter: 7.15 inches

Length: 144 inches

Weight: 348 pounds (C model)

Warhead: Blast/Fragmentation

Fuze: Target Detection Device

Propulsion: Boost/Sustain, Reduced Smoke

Launcher: LAU-127/128/129/142 Launchers

Speed: Supersonic

Range: 20+ nautical miles

Functions/Performance Parameters

• **Mission Statement:** The AIM-120 Advanced Medium-Range Air-to-Air Missile (AMRAAM) is a supersonic, medium range, active radar guided air-to-air missile with a high explosive warhead

• **Performance Parameters:**

- Joint project between Air Force and Navy
- All Altitude Capability
- All Weather Capability
- All Aspect Capability
- Carriage Options: F-15, F-16, F-18, F-22
- P3I Program
  - Enhanced Electronic Protection (EP) capabilities
  - Improved warhead, fuzing, and guidance
  - Increased kinematics via new 5-in stretched rocket motor

CBU-87 Combined Effects Munition (CEM)

Capabilities/Profile

- **Range:** Direct Attack Munition
- **Warhead:** 202 BLU-97 Shaped Charge Anti-Personnel/Anti-Material Frag/ Incendiary Bomblets
- **Dimensions:**
  - 92 in x 15.6 in diameter
- **Weight:** 949 Pounds

Acquisition Status

- **Program Status:** Sustainment/Upgrade
- **Current Inventory:**
  - CBU-87 - 115,045 units
  - CBU-103 - 932 units
- **Contractors:**
  - Aero General
  - Honeywell, Inc
  - Alliant Tech
- **Future Upgrades:** Upgrade to the CBU-103 Configuration with Wind Corrected Munitions Dispenser (WCMD) Tail Kits

Functions/Performance Parameters

- **Mission Statement:** The weapon dispenses the bomblets over the target in a rectangular pattern.
- **Performance Parameters:**
  - Adverse Weather Capability
  - USAF and Navy Fighter and Bomber Compatibility
  - Aircraft Carrier Operability
  - Upgrade to INS incorporated WCMD tail kits provides increased accuracy for high altitude deliveries

CBU-89 GATOR

Acquisition Status

- **Program Status:** Sustainment/Upgrade
- **Current Inventory:**
  - CBU–89 -9,956 units
  - CBU–104 -15 units
- **Projected Inventory:** CBU-104 - 5,000
- **Contractors:**
  - Honeywell
  - Aerojet
  - Olan
  - Alliant
- **Future Upgrades:** Upgrade to the CBU–104 Configuration with Wind Corrected Munitions Dispenser (WCMD) Tail Kits
- **Purchase Requirements:** Tail Kit purchases based on available funding

Capabilities/Profile

- **Range:** Direct Attack Munition
- **Warhead:**
  - 72 BLU–91 Anti-Tank Mines
  - 22 BLU–92 Anti-Personnel Mines
- **Dimensions:**
  - 92 in x 15.6 in diameter
- **Weight:** 705 Pounds

Functions/Performance Parameters

- **Mission Statement:** CBU–89 disperses 94 mines. 72 mines are anti-tank and 22 are anti-personnel. The weapon dispenses the mines over the target in a rectangular pattern. The mines have selectable self destruct times of 4, 48hrs and 15 days.
- **Performance Parameters:**
  - Adverse Weather Capability
  - USAF and Navy Fighter and Bomber Compatibility
  - Aircraft Carrier Operability
  - Upgrade to INS incorporated WCMD tail kits provided increased accuracy for high altitude deliveries

CBU-97
Sensor Fused Weapon (SFW)

SFW - CBU-97/B
SUU-66/B Dispenser

SFW Skeet

BLU-108/B
Submunition

SFW P3I Skeet

Capabilities/Profile

- **Range:** N/A - Direct Attack Munition
- **Dimensions:**
  - 7.7 Feet (Length)
  - 1.3 Feet (Width)
  - 1.3 Feet (Height)
- **Weight:** 920 Pounds

Acquisition Status

- **Program Status:** Full Rate Production
- **Production:** Ends FY07
- **Current Inventory:** 1533 as of 30 Apr 2001
- **Projected Inventory:** 5,000
- **Contractors:** Textron Systems Corporation
- **Future Upgrades:** Pre-planned product improvement (P3I) upgrade to BLU–108 submunition; Incorporation of INS guided WCMD tail kit (CBU-105)
- **Purchase Requirements:** After FY01 buy, 1963 weapons left to procure until complete

Functions/Performance Parameters

- **Mission Statement:** Provides operational forces with the capability to achieve multiple kills per pass against moving and stationary land combat vehicles. Tanks, APCs, and propelled targets are primary targets. It provides direct attack capability and interdiction against command and control centers.
- **Performance Parameters:**

	Threshold/ Baseline	Actual	Variance
Kills	Multiple/ Pass	Exceeding	+70%
Targets	Armor/Support Vehicles	✔	0
Del Altitude	200–3000* ft	✔	0
Aircraft	F–16, F–15E, A–10, B–1, B–2, B–52	✔	0
Schedule (RAA) (Required Asset Availability)	MET	MET	0

**Requirement calls for 200-3000 ft. With WCMD can be employed at altitudes up to 40,000 ft*

F–16
HARM Targeting System (HTS)

Acquisition Status

• **Program Status:** Operational at 5 locations; currently deploying Revision 6 hardware and software upgrade

• **Current Inventory:** 145

• **Projected Inventory:** 234

• **Contractor**: Raytheon Missile Systems

• **Future Upgrades:**

- Revision 7 - Precision Geolocation
- Targeting - Fielding in FY06/07
- Alternate/Dual Carriage HTS/
- Advanced Targeting Pods in FY05

• **Purchase Requirements:** 29 pods on contract for delivery by 1st Qtr FY02

• **Future Pod Requirements:** 60 additional pods needed for AEF - - includes 30 pods for current F-16s (funded in FY01; on contract by Jan 01) and 30 pods for new F-16s (funded in FY05)

Capabilities/Profile

• **Range:** N/A - F-16 Subsystem Mounted on engine inlet

• **Dimensions:**

- 56 Inches (Length)
- 25 Inches (Circumference)

• **Weight**: 90 Pounds

Functions/Performance Parameters

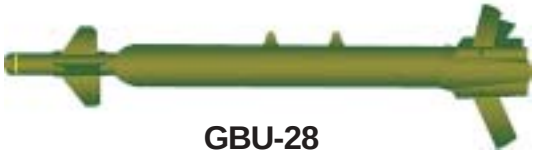
• **Mission Statement:** Provides the F-16CJ Block 50/52 aircraft with the capability for real-time targeting of enemy air defense system threats and enables employment of the AGM-88 High-Speed Anti-Radiation Missile (HARM) in the “range known” mode - the missile’s most lethal mode. HTS equipped F-16s are primary aircraft that conduct SEAD mission - - used in front line activity during engagements in Iraq and Kosovo.

• **Performance Parameters:** Detects and provides targeting information on enemy air defense radar outside the lethal range of their associated Surface-to-Air Missile (SAM). HTS targeting information increases HARM lethal range by 25% and increases probability of hitting the target radar.

• Upgrades will provide F-16 Destruction of Enemy Air Defenses (DEAD) capability and real-time JSOW precision targeting capability

GBU-10/12/24/27/28 Laser Guided Bombs

GBU-24



GBU-28

Capabilities/Profile

- **Range:** <15 NM
- **Warheads**
  - GBU-10: Mk-84 2000 lb Blast/Frag
  - GBU-12: Mk-82 500 lb Blast/Frag
  - GBU-24: Mk-84 or BLU-109 2000 lb Penetrator
  - GBU-27: BLU-109 2000 lb Penetrator
  - GBU-28: BLU-113 5000 lb Penetrator
- **Guidance**
  - GBU-10/12: Paveway II with bang-bang control and semi-active laser seeker
  - GBU-24/27/28: Paveway III with proportional navigation and semi-active laser seeker
  - EGBU-27/28: Paveway III with proportional nav, GPS/INS guidance and semi-active laser seeker

Acquisition Status

- **Program Status:** Sustainment
- **Production:** EGBU-27, EGBU-28
- **Current Inventory:** Classified
- **Contractor**: Raytheon
- **Upgrades:** EGBU-27 and EGBU-28 adds GPS/INS capability to the current guidance and control unit to provide adverse weather capability. In FY03 the BLU-113, 5000 lb. warhead for the EGBU-28 will be upgraded to improve penetration and lethality.

Functions/Performance Parameters

- **Mission Statement:** Air-to-ground glide bombs used for precision bombing against both soft and hardened targets, capable of release from low, medium, or high altitudes

- **Performance Parameters:**
  - Accuracy:
    Paveway II, GPS/INS — Near-Precision (<13 meter CEP)
    Paveway III — Precision (<3 meter CEP)

  - USAF platforms:
    F-16, F-15E (GBU-10, 12, 24)
    F-117 (GBU-27/EGBU-27)
    F-15E (GBU-28/EGBU-28)
    B-2 (EGBU-28)

GBU-15
Guided Standoff Weapon

Acquisition Status

- **Program Status:** Sustainment
- **Production:** Complete
- **Current Inventory:**
  - 924 GBU-15
  - 1,154 EGBU-15
- **Contractor:** Boeing/Raytheon
- **Future Upgrades:** EGBU-15 adds a GPS/INS capability to the current seeker to provide adverse weather capability

Capabilities/Profile

- **Range:** <15 NM
- **Warhead:**
  - Blast/Frag: Mk–84
  - Penetrator: BLU–109
- **Dimensions:**
  - 154 Inches (Length)
  - 18 Inches (Diameter)
- **Weight:** 2400 Pounds

Functions/Performance Parameters

- **Mission Statement:** Weapon uses TV or IR Terminal Seeker. After launch, weapon performs a programmed climb and operator acquires the target. Data link allows one aircraft to launch weapon and another to perform target acquisition. Integrated on the F–15E Strike Eagle.
- **Performance Parameters:**
  - Precise (<3 meter CEP)
  - USAF platform: F–15E

GBU-31/32 Joint Direct Attack Munition (JDAM)

Capabilities/Profile

- **Range:** <15 Nautical Miles
- **Warheads:**
  - Blast/Frag: Mk-83/Mk-84
  - Penetrator: BLU-109
- **Dimensions:**
  - Mk-83: 10 Feet (length)
  - Mk-84: 12.7 Feet (length)
  - BLU-109: 12.4 Feet (length)
- **Weight (USAF/USN):**
  - Mk-83: 1014/1029 Pounds
  - Mk-84: 2039/2059 Pounds
  - BLU-109: 2115/2135 Pounds

Acquisition Status

- **Program Status:** Full Rate Production, MK-84/BLU-109; EMD MK-82
- **Production:** Last Delivery FY09
- **Current Inventory:** 6,352 tail kits
  - B–1B, B–2, B–52H, F/A-18C/D Early Operational Capability
- **Projected Inventory:** 89,199 Total (61,370 AF; 27,829 USN)
- **Contractors:**
  - Boeing (JDAM)
  - Textron (Tail Assembly System)
  - Honeywell (Inertial Measurement Unit)
- **Future Upgrades:** Navy conducting a Product Improvement Program to provide JDAM a 3-meter precision capability

Functions/Performance Parameters

- **Mission Statement:** JDAM will upgrade the existing inventory of general purpose bombs by integrating them with a GPS/INS guidance kit to provide the warfighter with accurate weapon delivery in adverse weather from medium/high altitudes
- **Performance Parameters:**
  - Accurate (13 meter Circular Error Probable (CEP) with GPS-aided INS)
  - Adverse Weather Capability
  - Warhead Compatibility (MK-84, BLU-109, MK-83)
  - USAF and Navy Fighter and Bomber Compatibility
  - In-Flight Captive Carriage Retargeting
  - Aircraft Carrier Operability

Joint Air-to-Surface Standoff Missile (JASSM)

Acquisition Status

- **Program Status:**
  - MS I/Began PDRR: June 96
  - MS II/Began EMD: Nov 98
  - LRIP: Dec 01
  - B-52 RAA: Sep 03
  - MS III: Oct 03
- **Production:** Last delivery in FY16
- **Current Inventory:** 0
- **Projected Inventory:** 3700
- **Contractors:**
  - Lockheed Martin (Prime)
  - Hughes, Teledyne Ryan, Raytheon, Honeywell, Fiber Innovations, Lockheed Martin Skunkworks (Sub-Contractors)
- **Future Upgrades:** None at this time - system beginning EMD
- **Purchase Requirements:** 3700

Capabilities/Profile

- **Range:** Much greater than 100NM
- **Dimensions:**
  - 14 Feet (Length)
  - 78 Inches (Circumference)
- **Weight:** 2250 Pounds

Functions/Performance Parameters

- **Mission Statement:** Affordable, autonomous, long range, conventional, survivable, air-to-ground, precision-guided, standoff cruise missile; compatible with Air Force and Navy fighter and bomber aircraft; able to strike a variety of high value, heavily defended, fixed or relocatable targets
- **Performance Parameters:**

	Threshold/ Baseline	Actual
Range Low High	 Classified Classified	 Classified Classified
Missile Mission Effectiveness	≤ 55 missiles	Classified
Carrier Operable	yes	yes
Affordability ($FY95) (Ave Unit Proc Price)	$700K	$378K
Autonomous	yes	yes
Adverse weather capability	yes	yes
Warhead	Unitary	yes (1000 lb class)

Joint Helmet Mounted Cueing System (JHMCS)

Capabilities/Profile

• Accurately cue and display sensors and weapons during flight from negative 3.0 to positive 9.0 Gs

• Display symbol showing directional cue when item is beyond system field of view

• Off-Boresight Cueing of 90 degrees in all directions

• Helmet Weight less than or equal to 4.3 pounds

• Helmet Center of Gravity less than or equal to 2.5 inches off center

Acquisition Status

• **Program Status:** Joint Air Force/ Navy Program in EMD Flight Test

  • 700+ Flight Test Hours on F-15/F/A-18

  • Air Force/Navy Operational Assessments (OAs) complete

• **Production:** LRIP 1 Approved in May 00 With Contract Awarded in Jul 00; Milestone III Decision 4Q/FY00

• **Procurement Objective:** 1,795 units

• **Contractor:** Boeing/VSI (Kaiser/Elbit primary sub-contractors)

• **Future Upgrades:** P^3I options are currently being evaluated

Functions/Performance Parameters

• **Mission Statement:** The program is tasked to design and develop a helmet mounted display system which will provide the aircrew member the capability to cue and verify cueing of high off-boresight sensors and weapons. Allows the US to regain the combat advantage of first look/first shoot in the air-to-air within visual range arena.

• **Capabilities:**

  • Compatible with current ejection systems

  • Outstanding cueing/verification performance with the AIM-9X

  • Carriage Options: F-15C, F-16, F-22 and the Navy F/A-18C/D/E/F

  • Cueing Options: AIM-9M, Radar, FLIR, and various A/G weapons

Joint Standoff Weapon (JSOW)

Acquisition Status

- **Program Status:**
  - AGM-154A MSIII - Oct 98
  - AGM-154B LRIP - Oct 98
- **Production:** FY2013 (date factory line due to close)
- **Current Inventory:** 144
- **Projected Inventory:** 6,114
- **Contractor:** Raytheon Systems Company
- **Future Upgrades:** P3I upgrade to BLU–108 submunition (under SFW development) for JSOW/B
- **Purchase Requirements:** 6,144

AGM-154A

145BLU-97 Combined Effects

AGM-154B

6BLU-108 Submunitions

Capabilities/Profile

- **Range:** 15-40 NM
- **Dimensions:**
  - 13.3 Feet (Length)
  - 1.1 Feet (Width)
  - 1.4 Feet (Height)
- **Weight:** 1,065 Pounds

Functions/Performance Parameters

- **Mission Statement:** Long range, INS/GPS guided, standoff, air-to-ground weapon designed to attack a variety of soft and armored area targets (fixed, relocatable, and mobile) during day/night/adverse weather conditions. JSOW enhances aircraft survivablity as compared to current interdiction weapon systems by providing the capability for launch aircraft to standoff outside the range of enemy point defenses.
- **Performance Parameters:**

	Threshold/ Baseline	Actual	Variance
Launch Speed	0.6-0.95M	0.6-0.TBD	TBD
Off-Axis Launch	±30°	±178°	+493%
Range High Alt	X	1.5X	+50%
Survivability	X	X	0%
CEP	X	.83X	+17%
BLU–108 kills/wpn	X	3.5X	+250%

*F-16 launch envelope presently undefined

LGM-30G Minuteman III

Capabilities/Profile

- **Range:** 6,000+ Miles
- **Armament:** 1 - 3 MK12/12A RVs
- **Propulsion:** Three stage solid fuel (liquid PBV), hot launch
- **Dimensions:**
  - 59.9 Feet (Length)
  - 5.5 Feet (Diameter)
- **Weight:** 79,432 Pounds
- **Treaty Implications:**
  - START I sublimit - One MM wing download to single reentry vehicle (SRV)
- **Deployed:** Malmstrom AFB, Minot AFB, FE Warren AFB

Acquisition Status

- **Program Status:** Fielded; two ACAT I & three ACAT III modification programs

Guidance Replacement Program (GRP)
- **Production:** Continues through FYDP
- **Projected Inventory:** 652 units
- **Contractors:** TRW, Boeing

Propulsion Replacement Program (PRP)
- **Production:** Continues through FYDP
- **Projected Inventory:** 607 units
- **Contractors:** TRW, Thiokol, CSD

Propulsion System Rocket Engine (PSRE)
- **Development:** Continues through FY04

Safety Enhanced Reentry Vehicle (SERV)
- **Development:** Began in FY02

Rapid Exec & Combat Targeting (REACT)
- **Development:** Began in FY02

Functions/Performance Parameters

- **Mission Statement:** The MM III is an inertially-guided, ballistic missile of intercontinental range. The missile is capable of carrying up to three independently targetable reentry vehicles. A liquid propellant rocket engine provides post-boost maneuvering prior to reentry vehicle deployment. MM III provides a highly survivable, quick-reacting component to the nuclear Triad.

- **Performance Parameters:**
  - Speed: 15,000 MPH at burnout

LG–118 Peacekeeper

Acquisition Status

• **Program Status:** Fielded;
No major modifications planned
  • Currently funded for minimum sustainment on a year-to-year basis

Capabilities/Profile

• **Range:** 6,000+ Miles

• **Armament:** 10 Mk21 RVs

• **Dimensions:**
  • 71.0 Feet (Length)
  • 7.7 Feet (Diameter)

• **Propulsion:** Three stage solid fuel (liquid fourth stage PBV), cold launch

• **Weight:** 195,000 Pounds

• **Treaty Implications:**
• START II eliminates MIRVed systems; Peacekeeper to be deactivated

• **Deployed:** FE Warren AFB

Functions/Performance Parameters

• **Mission Statement:** Strategic weapon system using a ballistic missile of intercontinental range delivering 10 independently targeted warheads with very hard target kill capability

• **Performance Parameters:**
  • Speed: 15,000 MPH at burnout

Wind Corrected Munitions Dispenser (WCMD)

Capabilities/Profile

• **Range:** N/A - Tail kit for Direct Attack Munitions

• **Dimensions:**
  • 1.42 Feet (Length)
  • 1.75 Feet (Width)
  • 1.75 Feet (Height)

• **Weight:** 100 Pounds

Acquisition Status

• **Program Status:** Full rate production

• **Production:** Ends FY 2005

• **Current Inventory:** ~2000 installed on CEM and SFW

• **Projected Inventory:** ~31,000

• **Contractor:** Lockheed Martin

• **Future Upgrades:** Addition of GPS receiver and wings for standoff capability

• **Purchase Requirements:** 31,165

Functions/Performance Parameters

• **Mission Statement:** Provides accurate dispenser weapon capability when delivered from medium to high altitudes. WCMD develops a kit for use on inventory cluster weapons (CEM, Gator, SFW). Combined Effects Munition (CEM) is an anti-armor/ anti-personnel weapon. Gator delivers anti-tank and anti-personnel mines. Sensor Fuzed Weapon (SFW) is an anti-armor weapon.

• **Performance Parameters:**
  • Adverse weather performance
  • Autonomy (release and leave)
  • Retargeting capability (prior to release)
  • No degradation of Tactical Munitions Dispensor envelope
  • Core/Alternate aircraft interface
  • Compatible with CBU-87, CBU-89, & CBU-97

	Threshold	Actual (est)	Variance
Accuracy	100 ft	37 ft	+63 ft