



# 2012

UNITED STATES AIR FORCE  
**RESERVE**  
MODERNIZATION





# Foreword



Your Air Force Reserve provides effective and efficient combat capability and capacity wherever and whenever America calls!

In today's fiscally-constrained environment, investments in Air Force Reserve programs are ideal solutions that reap an outstanding return for taxpayers' dollars. Air Force Reserve's Citizen Airmen are very cost-effective and comprise 14 percent of the total Air Force authorized end-strength at only 5.3 percent of the Air Force's military personnel budget. By maintaining the right balance of combat capability in the Air Force Reserve, we leverage the strengths of our Citizen Airmen and gain significant savings for our nation.

As I write this, Citizen Airmen are serving in support of operations in Afghanistan, Bahrain, Bosnia-Herzegovina, Burkina Faso (West Africa), Cuba, Djibouti (Horn of Africa), Ethiopia, Germany, Guam, Honduras, Iraq, Italy, Japan, Kuwait, Kyrgyzstan, Libya, Nicaragua, Oman, Pakistan,

Philippines, Puerto Rico, Qatar, Saudi Arabia, South Atlantic Ocean, South Korea, Spain, Surinam (South America), Turkmenistan, Turkey, and United Arab Emirates.

As a full partner in the three Air Force components – Regular, Guard, and Reserve – the Air Force Reserve is the largest Major Command in the Air Force and supports the daily operational requirements that our nation sustains globally on five continents.

The resulting wear and tear on our aging equipment -- and the need to ensure we have full interoperability and integration of all three Air Force components -- requires a holistic approach to future modernization programs.

We've carefully reviewed our weapon systems and provided this summary of courses of action, background data and mission impacts.

Thank you for your continued oversight and support of more than 71,000 outstanding men and women who make up our Air Force Reserve. As we continue fighting the longest wars in U.S. history, I appreciate the attention and resources provided to our Citizen Airmen, world-class leaders of combat operations in air, space and cyberspace.

A handwritten signature in black ink that reads "Charles E. Stenner, Jr." The signature is written in a cursive, flowing style.

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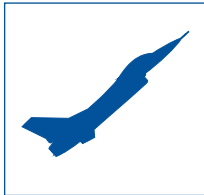
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# Operational Roles

The Air Force Reserve's (AFR) foremost responsibility is to organize, train, and equip Reserve Airmen to meet the needs of our National leadership and Combatant Commanders. As an integral member of the Joint team, America's Air Force provides the critical capabilities of *Global Vigilance*, *Global Reach*, and *Global Power*. The United States Air Force Reserve is "All In" today's Joint fight. At the same time, our investments in new capabilities will ensure we are ready for tomorrow's challenges.



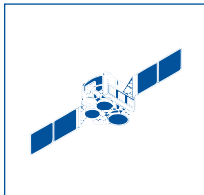
## Global Power

The Air Force's ability to control air and space, exploiting the medium to deliver a precise, tailored effect anywhere on the planet. Airborne platforms and the precision-guided munitions they deliver provide a capability that is persistent, precise, survivable, and able to produce tactical, operational, and strategic effects.



## Global Reach

Whether they are humanitarian, military, or a mix of both, the Air Force responds to global challenges with an airlift and tanker fleet that has global reach. Global Reach provides the capability to move people and equipment across the world quickly, ensuring the right force – anywhere, anytime



## Global Vigilance

An accurate picture of the battlespace is critical to understanding and confronting challenges to our national security. Global Vigilance provides the "network" that binds together Air Force Joint and interagency players, ensuring our Nation's ability to see first, think first, and act first.



## Agile Combat Support

Agile Combat Support refers to Air Force enabling systems that provide Global Power, Global Reach, and Global Vigilance to the Joint Team. This document consolidates many of the Agile Combat Support requirements under the Operational Readiness and Infrastructure sections.

The AFR 2012 modernization book is a tool to identify the resources needed to support the Air Force Total Force Integration concept. The capabilities in this the document are required to ensure the Air Force Reserve remains ready to support mission success and survivability of our airmen in today's and tomorrow's contingencies.



# Weapons Systems Modernization Requirements Process

The AFR’s goal in its modernization efforts is to see to it that all combat coded aircraft have the capability to work in unison with the Active Duty Air Force and Air National Guard in all theaters and for any contingency. The Combat Commanders have established equipment requirements for joint forces in their Areas of Responsibility (AOR) to ensure the most robust combat capability and seamless communication framework exists for the Total Force.

The AFR’s requirements process is a bottom-up driven enterprise where the operators present their warfighting needs to be evaluated, validated, and prioritized . Validated requirements can then compete for resouces from various funding streams. The venue for this process begins at the AFR Combat Planning Councils (CPCs). There are three CPCs held each year: The Combat Forces (CAF) CPC hosted by 10th Air Force, the Mobility Forces CPC hosted by 22nd Air Force, and the Agile Combat Support (ACS) CPC hosted by AFRC/A7/A4. Each CPC establishes a prioritized list according to the requirements being Critical, Essential, or Desired.

## Critical

Mission cannot be accomplished without this capability or mission failure/loss of life due to lack of capability.

## Essential

Mission accomplishment still possible but severely degraded or significant risk taken. Maintains force readiness and supports daily operations.

## Desired

Mission accomplishment will be enhanced or risk reduced.

The three lists of requirements are then evaluated and validated through panels at Air Force Reserve Command (AFRC) . These panels are made up of the Major Command (MAJCOM) Program Managers and Functional Area Managers that provide all oversight to those weapons systems at AFRC. Once the requirements are validated, they are prioritized into a master AFR requirements list called the Prioritized Integrated Requirements List (PIRL). The PIRL is then validated through the Corporate process for presentation to the AFR Requirements Council and eventually, the AFR Commander for approval. The AFR Modernization Book is then derived from the PIRL.

# Weapon Systems by State

*(Total Active Inventory October 2011)*

	A-10	B-52	C-5	C-17	C-130HC MC/WC	F-16	HH-60	KC-135	C-40
AK									
AL					8				
AR									
AZ							6		
CA				9				15	
CO					12				



	A-10	B-52	C-5	C-17	C-130HC MC/WC	F-16	HH-60	KC-135	C-40
CT									
DC									
DE									
FL					15	26	9		
GA					8				
HI									
IA									
ID									
IL									3
IN								16	
KS									
KY									
LA	24	18							
MA			16						
MD								8	
ME									
MI									
MN					8				
MO	24								
MS					18				
MT									
NC					16			16	
ND									
NE									
NH									
NJ									
NM									
NV									
NY					12				
OH			7	4	12				
OK								12	
OR									
PA					8				
RI									
SC									
SD									
TN									
TX			16			27			
UT									
VA									
VT									
WA									
WI									
WV									
WY									
TOTAL	49	18	39	13	118	53	15	67	3

# Top Unfunded Critical Requirements

Priority	Weapon System	Requirement	Cost \$
1	C-130	Secure Line-of-Sight/Beyond Line-of-Sight (SLOS/BLOS) Communication Capability	1.5M
2	F-16/A-10	Helmet Mounted Integrated Targeting (HMIT)	3.5M
3	HC-130	HC-130 Integrated Electronic Warfare (EW) Suite	7.0M
4	C-130	Modular Aerial Spray System (MASS)	18.9M
5	ACS	Expeditionary Forces Tactical Equipment	9.7M
6	F-16/A-10	Center Display Unit (CDU) Cockpit Upgrade	6.4M
7	F-16/A-10/ B-52	LITENING Procurement and Incremental Spiral Upgrade	58.5M
8	A-10	Locator and Recovery System (LARS) (v12)	5.6M
9	F-16/A-10	Digital Intercom/Spatial Awareness 3D Audio	9.1M
10	B-52	Digital Mission Data Recorder (DMDR)	5.7M
11	C-5	Brake Temperature Monitoring System	4.8M
12	F-16	Advanced Identification Friend-or-Foe (AIFF)	5.9M
13	C/HC-130	Electronic Propeller Control System (EPCS)	11.0M
14	F-16	Simultaneous SLOS/BLOS Capability	8.3M
15	C/HC-130	In-flight Propeller Balancing System (IPBS)	16.4M
16	C/HC-130	Improved Propeller	98.6M

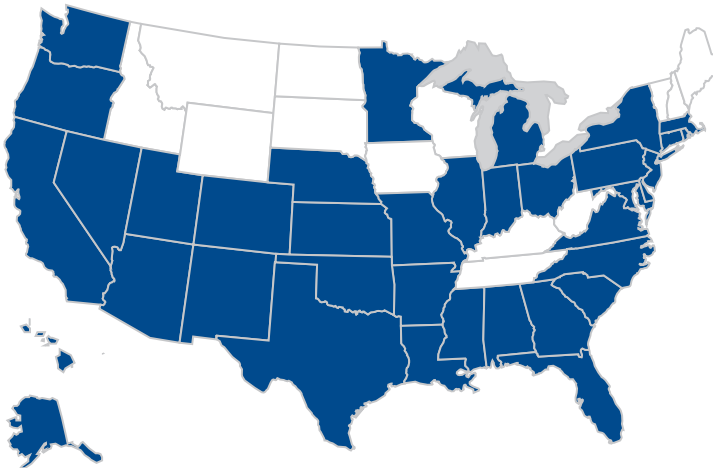
Priority	Weapon System	Requirement	Cost \$
17	C-17	Active Noise Reduction Headsets	.8M
18	A-10	On-Board Oxygen Generating System (OBOGS)	8.1M
19	ACS	Chief Information Officer (CIO) Project List	41.5M
20	ACS	Vehicle Procurement List	9.5M







# Operational Readiness



## AGILE COMBAT SUPPORT



OPERATIONAL  
READINESS PROVIDES PREMIER  
TRAINING, WORLD-CLASS  
FACILITIES, MODERN EQUIPMENT,  
AND UNWAVERING FAMILY CARE.

While weapons systems are an integral part of the Air Force, the heart of the Air Force combat capability resides with Airmen. To meet Total Force requirements, the Air Force Reserve must attract, develop and retain Citizen Airmen needed to operate and support Air Force weapon systems. To ensure this, the Air Force Reserve must provide premier training, world-class facilities, modern equipment, and unwavering family care.

Air Force Reserve Airmen are called on to perform a wide array of demanding duties. This requires updated, tactical technologies that put them on par with their Active Duty counterparts. Additionally, Reserve vehicles are the oldest of any Air Force component. To provide the seamless integration into the Total Force, our Airmen require upgraded vehicles. The current and future battle-space environments will remain uncertain. To remain the world's premier Air Force, our Airmen must be adequately equipped to train as they will fight. The cornerstone of providing battle-ready Airmen is giving them the best medical care, family support, and work environment possible. In this area, our commitment cannot waiver. If our Airmen are not ready at home, they will not be ready to fight.

AFR operational readiness requirements include expeditionary forces tactical equipment, mission support equipment, vehicle procurement, and numerous items from the AFR Chief Information Officer (CIO) Board Project List.

## Agile Combat Support Executive Summary

- Chief Information Officer (CIO) – Purchase numerous items to replace the command's various existing communication assets to include but not limited to spectrum (radio), telephone, network, and combat communication assets for the optimal operation of its AFRC Network/Systems Infrastructure.
- Security Forces (SF) and Civil Engineering (CE) Tactical Equipment – Purchase numerous AFR SF, CE, and RED HORSE–required tactical equipment—standardizes units with RegAF capabilities.
- Support Equipment – Purchase numerous items for mission readiness and training of SF, Aircraft Maintenance, CE and Communications. Items include Night Vision Goggles (NVG), NVG Testers, KC-135 Switch Boxes, Receiver Transmitters and Cutting Systems.
- Vehicles – Purchase numerous items for mission readiness and across AFR units. Items include graders, cranes, tow trucks, fuel trucks, utility vans, pick-up trucks, etc.



Unfunded Modernization Priority List Funding Profiles (\$M)

Program (Funding Appropriation)	P.E. Number	FY12	FY13	FY14	FY15	FY16	Program Total
Chief Information Officer (CIO) (3080)	0505550	\$8.3	\$8.3	\$8.3	\$8.3	\$8.3	\$41.5
Security Forces and Civil Engineering Tactical Equipment (3011 & 3080)	0207580	\$9.7	\$0.0	\$0.0	\$0.0	\$0.0	\$9.7
Support Equipment (3010, 3011 & 3080)	0502834	\$8.867	\$8.867	\$8.867	\$8.867	\$8.867	\$44.335
Vehicles (3080)	0502834	\$9.50	\$0.0	\$0.0	\$0.0	\$0.0	10.30



## CIO Board Project List

### Background

Based on recommendations from the AFR Chief Information Officer (CIO) program, the CIO seeks to replace the Component's various existing communication assets to include but not limited to spectrum (radio), telephone, network, and combat communication assets for the optimal operation of its AFR Network/Systems Infrastructure. This in turn allows AFR units to optimally execute missions/operations that require the use of computer systems that contribute to the nations readiness and defense.

### Requirement

This will acquire various IT assets to support the Command's IT infrastructure for operational compliance with DOD/AF/AFR architectural standards that will optimize the operation of the programs, databases, and NIPRNET/SIPRNET communications systems infrastructure. These requirements are driven by Communications-Computer Systems Directive/Program Plan (CSD/CSPP): AFRC-Robins-98-1, dated 2 Sep 98, and supported by AFRCHOI 16-501 AFRCI 33-101

### Impact If Not Funded

Without these assets the AFR risks operational deficiencies that will negatively impact its IT communication infrastructure. This in turn creates states of unit non-readiness, work stoppages, and non-compliance with DOD/AF/AFR directed programs and systems.

### Units Impacted

Multiple AFR Bases/Units

### Contractor

N/A

### Program Element Code

55550F

### In Air Force Program Objective Memorandum (AF POM)

No (total cost of this requirement \$41.5M)

## Expeditionary Forces Tactical Equipment

### Background

- Funds AFR SF, CE, and RED HORSE—required tactical equipment and vehicles—standardizes units with RegAF capabilities
- AFR Corporate Structure approved standup of 3 new Security Forces units, 2 new RED HORSE units, conversion and expansion of existing AFR SF and RED HORSE units, as well the addition of new CE and SF UTCs in FY10

### Requirement

- New and expanded units require tactical equipment to be mission capable. Required equipment includes M4 Carbines, M9 Pistols, M320 Grenade Launchers, M24 Rifles, M107 Rifles, and AN/PAS-13D (V)2 Thermal Imagers.

### Impact If Not Funded

- Deployment assets have to be pulled from other AFR CE or SF units, creating a void in their capability, and subsequently cascading failure throughout the component
- Inability to complete training at home station requires additional pre-deployment unit training for deploying UTCs.



### Units Impacted

- All AFR Security Forces Squadrons at Host and Tenant locations
- 567th RED HORSE Squadron, Charleston AFB, SC
- 555th RED HORSE Squadron, Nellis AFB, NV
- 556th RED HORSE Squadron, Hurlburt FLD, FL

### Contractor

Weapons will be purchased through existing procurement contracts that are managed by the Weapons Program Management Office. No additional competitive procurement is planned.

### Program Element Code

27580F

### Item Included in AF POM

Requirement not included in AFRC POM

Expeditionary Forces Tactical Equipment	FY12	FY13	FY14	FY15	FY16	FYDP
Munitions Procurement (3011)	2.7	0.0	0.0	0.0	0.0	2.7
Other Procurement (3080)	7.0	0.0	0.0	0.0	0.0	7.0
Total (\$M)	9.7	0.0	0.0	0.0	0.0	9.7

### Procurement Details

- Resources required: Equipment: \$9,747,068
  - M4 Carbines NSN 1005012310973: 450 \$ 757,800
  - M9 Pistol NSN 1005011182640: 686 \$ 264,796
  - M320 Grenade Launcher NSN 1010015669083: 500 \$ 1,298,500
  - M24 Rifle NSN 1005012402136: 24 \$ 199,512
  - M107 Rifle NSN 1005014692133: 24 \$ 180,000
  - AN/PAS-13D(V)2 Thermal Imager: 540 \$ 7,046,460

## Support Equipment Procurement

### Background

- Funds AFR support equipment (SE) shortfalls that range across all functional areas including “tooth” capabilities: flight line maintenance, munitions, and security forces
- Historically, the Air Force has never adequately funded the SE program
- Items bought by procurement funds (3010 and 3080) are POM’d by the AFMC CEMO
- AFR prioritizes needs but can contribute NGREA for unfunded items
- ’13 APPG: “Ensure ACS capabilities in support of AF are maintained”



### Requirement

- The unfunded requirement (\$44.3M/336) items requisitioned in specific budget codes:
  - A: Common aircraft ground SE: \$36.916M/ 163 items
  - E: Missile replacement equipment: \$1.947M/ 55 items
  - H: Munitions and associated equipment (No BP35 weapons): \$1.248M/ 42 items
  - H: Munitions and associated equip (BP35 weapons/no SF/no CE): \$0.011/ 10 items
  - M: Other base maintenance and SE (No NVGs): \$3.738M/ 20 items
  - M: Other base maintenance and SE (NVGs/no SF/no CE): \$0.476M/ 46 items

### Impact If Not Funded

- Units shortfall deployable assets
- Inadequate funding extends the use of SE beyond its projected life cycle, creating a replacement backlog when SE breaks

### Units Impacted

Numerous AFR units across 32 bases

**Contractor**

SE will be purchased through existing procurement contracts that are managed by the AFMC Centralized Equipment Management Office. No additional competitive procurement is planned.

**Program Element Code**

52834F

**In AF POM**

Requirement is included in AFRC POM

Support Equipment	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	7.383	7.383	7.383	7.383	7.383	36.915
Munitions Procurement (3011)	0.002	0.002	0.002	0.002	0.002	0.011
Other Procurement (3080)	1.482	1.482	1.482	1.482	1.482	7.383
<b>Total (\$M)</b>	<b>8.867</b>	<b>8.867</b>	<b>8.867</b>	<b>8.867</b>	<b>8.867</b>	<b>44.309</b>

## Vehicle Procurement

**Background**

- Vehicle program is typically underfunded and a regular source for Air Force cuts
- The vehicle requirements are currently identified in Air Force standard system (LIMS-EV); however, the funding is not available for the procurement of these assets.

**Requirement**

The unfunded requirement includes 110 requisitioned vehicles totaling \$9.5M.

**Impact If Not Funded**

Lack of sufficient vehicles has a negative effect on unit capability and training. Inadequate funding extends the use of vehicles beyond its projected life cycle and increase sustainment costs.

**Units Impacted**

Numerous AFR bases/units

**Contractor**

- Vehicles will be purchased through existing procurement contracts that are managed by WR-ALC Capabilities and Integrations Section
- No additional competitive procurement is planned.

**Program Element Code**

52834F

**In AF POM**

Requirement is included in AFRC POM

Vehicles	FY12	FY13	FY14	FY15	FY16	FYDP
Other Procurement (3080)	9.5	0.0	0.0	0.0	0.0	9.5
Total (\$M)	9.5	0.0	0.0	0.0	0.0	9.5
Quantity	110.0	0.0	0.0	0.0	0.0	110.0

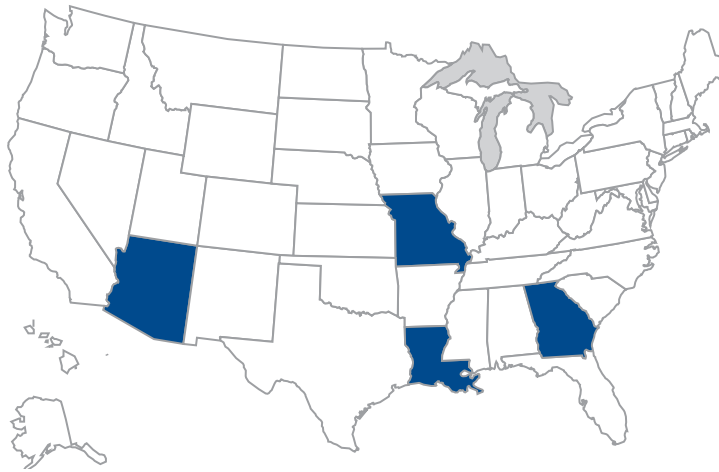




A-10  
THUNDERBOLT



# A-10 Thunderbolt II



**GLOBAL  
POWER**



PROVIDES CLOSE AIR SUPPORT, PRECISION STRIKE, FORWARD AIR CONTROL, AND COMBAT SEARCH AND RESCUE IN DAY OR NIGHT OPERATIONS.

The A-10 Thunderbolt II is the primary Air Force Close Air Support ground attack fighter. The A-10 uses the internal 30mm cannon and

external weapons load to conduct close air support, precision strike, forward air control, and Combat Search and Rescue in day or night operations. It is a highly effective, lethal, and survivable twin-engine jet aircraft used against all ground targets including tanks, other armored vehicles and hardened ground support equipment.

The Air Force Reserve maintains A-10 aircraft at the 917th Wing, Barksdale AFB, LA; and the 442nd Fighter Wing, Whiteman AFB, MO. As part of the Air Force's Total Force Integration, the Air Force Reserve teamed with Air Combat Command to establish two A-10 associate units in October 2007. More than 200 reservists support the Regular Air Force's 23rd Wing at Moody Air Force Base, GA, while 14 reservists augment the A-10 Formal Training Unit at Davis-Monthan AFB, AZ.

Contractors include General Electric (propulsion), and Lockheed Martin (major subsystems).

The Air Force Reserve A-10s require aircraft avionics and systems modernization upgrades to enable this highly accurate weapons platform to continue its critical mission performance throughout its planned lifespan. These upgrades include installation of a new Center Display Unit, Commercial Fire Control Computer, Advanced Targeting Pod spiral upgrades, addition of on-board oxygen generating systems, helmet mounted integrated targeting systems, newer combat search and rescue radios, and a 3D Audio system which improves situational awareness, threat reaction times, and communication intelligibility.

## A-10 Executive Summary

- A-10/F-16 CDU - Replace AFRC A-10/F-16 aging mechanical/analog fight instruments on the center pedestal with a digital Center Display Unit (CDU) display
- A-10/F-16 HMIT - Provide Helmet Mounted Integrated Targeting (HMIT) capability to AFR A-10 and F-16
- ATP Spiral Upgrade - LITENING advanced targeting pod spiral technology upgrades. These are upgrades to existing AFRC pods to keep them current and relevant.
- LARS V12 - Install the LARS V12 on AFR A-10s significantly improving the ability to conduct search and rescue missions.
- A-10 OBOGS - Procure/install On Board Oxygen Generation System (OBOGS) for all AFR A-10s to increase operational efficiency.

A-10  
THUNDERBOLT

- A-10/F-16 3D Audio – 3D Audio provides a spatial acoustical environment in which threat warnings and communications are easy to distinguish. 3D Audio increases situational awareness, significantly improves threat reaction time and communication intelligibility.

**Modernization List Funding Profiles (\$M)**

Program (Funding Appropriation)	P.E. Number	FY12	FY13	FY14	FY15	FY16	Program Total
A-10/F-16 CDU (3010) (3740)	52720F 52716F	2.4 0.0	2.0 0.2	2.0 0.2	0.0 0.2	0.0 0.2	6.4 0.8
A-10/F-16 HMIT (3010) (3740)	52720F 52716F	2.2 0.0	1.3 0.0	0.0 0.2	0.0 0.2	0.0 0.2	3.5 0.6
ATP Spiral Upgrade (3010)	27249F	0.0	0.0	21.6	21.6	15.3	58.5
A-10 LARS V12 (3010) (3740)	52720F	3.4 0.0	2.2 0.0	0.0 0.1	0.0 0.1	0.0 0.1	5.6 0.3
A-10 OBOGS	52720F	3.3	3.3	1.5	0.0	0.0	8.1
A-10/F-16 3D AUDIO	52720F 52716F	0.0	2.0	2.1	2.5	2.5	9.1

A-10  
THUNDERBOLT





# A-10C/F-16C Center Display Unit (CDU)

## Background

- AFRC Block 30 F-16C and A-10C analog cockpit instruments are becoming increasingly difficult to maintain and are affected by diminishing material and manufacturing sources. The CDU program integrates smart multifunction color displays into the F-16 and A-10 to replace the analog flight and engine monitoring instruments with digital instrument displays.
- The displays have the processing capacity to manipulate data external to the aircraft operational flight program. This gives pilots the ability to load mission planning data via USB like interfaces, while opening low cost pathways for the integration of future weapons and updates.
- The processors in the displays will provide pilots the ability to securely transfer still images, such as a targeting pod scenes, joint tactical air controller taskings, and target area imagery. This capability is critical to rapid coordination with ground units during close air support missions and with command and control assets during time sensitive and emerging target operations.

## Requirement

- Replace AFR A-10C and F-16C mechanical/analog fight instruments on the center pedestal with digital displays.
- Eleventh critical priority out of 30 from 10AF 2011 Combat Planning Council

## Impact If Not Funded

- The analog instruments currently installed are becoming increasingly difficult to maintain and are affected by diminishing material and manufacturing sources.
- In addition to reducing maintenance, replacing analog instruments with digital instrument displays significantly increases aircraft processing capacity. Increased processing capability will open low cost pathways for integration of future capabilities without the costly/time consuming process of changing the aircraft operational flight program.
- This capability is critical to rapid coordination with ground units during close air support missions and with command and control assets during time sensitive target operations.

## Units Impacted

- 917st Fighter Group, Barksdale AFB, LA
- 482nd Fighter Wing, Homestead ARB, FL
- 301st Fighter Wing, Carswell JRB, TX
- 442nd Fighter Wing, Whiteman AFB, MO

## Contractor

- Raytheon Corp, Indianapolis IN, for the F-16 solution
- Contractor not yet selected for the A-10 solution

## Program Element

A10: 52713F F16: 52716F

## In AF POM

No

A-10  
THUNDERBOLT

A-10/F-16 Center Display Unit	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	2.4	2.0	2.0	0.0	0.0	6.4
O&M—AFR (3740)	0.0	0.2	0.2	0.2	0.2	0.8
Total (\$M)	2.4	2.2	2.2	.2	.2	7.2
Quantity	30.0	24.0	0.0	0.0	0.0	54.0



# A-10C/F-16C

## Helmet Mounted Integrated Targeting (HMIT)

### Background

- Helmet Mounted Integrated Targeting (HMIT) is a Combatant Commander Urgent Operational Need directing a common helmet mounted cueing system on Block 30 F-16C and A-10C
- HMIT provides flight and weapons information to a display in the pilot’s helmet. This allows pilots to rapidly target advanced weapons, employ threat countermeasures, and stay aware of critical developments during high workload portions of the mission.
- HMIT supports the Global Power critical capability and the air superiority and global precision attack core functions of the Air Force. HMIT will increase the effectiveness of all A-10C and F-16C missions: close air support, interdiction, defensive and offensive counter air, combat search and rescue, forward air control–airborne and nontraditional intelligence, surveillance and reconnaissance

### Requirement

- Provide Helmet Mounted Integrated Targeting (HMIT) capability to AFR A-10C/F-16C.
- Number one critical priority out of 30 from 10AF 2011 Combat Planning Council
- A-10 and F-16 SPOs have teamed to developed common interface and specifications

### Impact If Not Funded

- Without HMIT AFR aircraft will not comply with the Combatant Commander Urgent Operational Need. HMIT is required to increase combat effectiveness and employ advanced weapons to meet low collateral damage requirements.
- HMIT provides flight and weapons information to a display in the pilot’s helmet. This allows pilots to rapidly target advanced weapons, employ threat countermeasures, and stay aware of critical developments during high workload demand portions of the mission.

### Units Impacted

- 917st Fighter Group, Barksdale AFB, LA
- 482nd Fighter Wing, Homestead ARB, FL
- 301st Fighter Wing, NAS JRB Ft Worth, TX
- 442nd Fighter Wing, Whiteman AFB, MO

### Contractor

- Gentex Corp, El Cajon California and Aurora IL
- Raytheon Corp Indianapolis IN

### Program Element Code

A10: 52713F F16: 52716F

### In AF POM

No

Helmet Mounted Integrated Targeting	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	2.2	1.3	0.0	0.0	0.0	3.5
O&M–AFR (3740)	0.0	0.0	0.2	0.2	0.2	0.6
Total (\$M)	2.2	1.3	0.2	0.2	0.2	4.1
Quantity	74.0	74.0	0.0	0.0	0.0	148.0

# LITENING A-10/F-16/B-52 ATP Procurement and Spiral Upgrades

## Background

- LITENING advanced targeting pod spiral technology upgrades. These are upgrades to existing AFR pods to keep them current and relevant.
- Currently fielded pods employ Litening Block 1 (Blk 1) and Generation Four (G4) spiral upgrades with Forward Looking Infrared (FLIR), electro-optical television/Charged Coupled Devices (CCD), and Laser Spot Search and Track (LSS/LST) to offer exceptional standoff capability and the ability to target J-Series weapons.
- The next ATP modernization spiral for Litening is the Sensor Enhanced (SE) modernization. The imagery will allow for greater stand-off ranges and increase target identification as well as employing a Plug-N-Play (PnP) IITM digital two-way, data link LRU inside the pod which will enhance working with ground parties and troops in contact.

## Requirement

- Procure Sensor Enhanced spiral upgrade kits for all AFR ATPs.
- This is the number twelve priority on the 10 AF Prioritized Requirements List from the 10 AF July 2011 Combat Planning Council.

## Impact If Not Funded

Without the LG4 ATP upgrade kits, AFR A-10, F-16, and B-52 aircraft will not have the best possible equipment to support current and future contingency operations. In addition, domestic Air Sovereignty Alert (ASA) aircraft cannot support requirements to track asymmetric threats, aid in target identification and conduct maritime interdiction tasking.

## Units Impacted

- 301st Fighter Wing, NAS JRB Ft Worth, TX
- 482nd Fighter Wing, Homestead ARB, FL
- 307th Bomber Wing, Barksdale AFB, LA
- 442nd Fighter Wing, Whiteman AFB, MO

## Contractor

Northrop Grumman Corp, Rolling Meadows, IL

## Program Element Code

A-10: 52713F F-16: 52716F B-52: 51720F

## In AF POM

No

A-10/F-16/B-52 ATP Spiral Upgrade	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	0.0	0.0	21.6	21.6	15.3	58.5
O&M—AFR (3740)	0.0	0.0	0.0	0.0	0.0	0.0
Total (\$M)	0.0	0.0	21.6	21.6	15.3	58.5
Quantity	0.0	0.0	24.0	24.0	17.0	65.0

# A-10 LARS V12 CSAR Radio

## Background

- LARS V12 is a radio that will dramatically improve the speed and success of locating a survivor. LARS V12 will display range and bearing to the survivor as well as survivor coordinates and receive encrypted data burst message from over the horizon. This information enables a quicker response time, minimizing exposure to hostile threats and greatly reducing the risk to aircrews and survivors.
- Air Combat Command has funded the non recurring engineering necessary to integrate LARS V12 into the A-10: Group A testing, software integration, antenna configuration, provisioning, ground and flight testing, validation and verification, and technical data generation

## Requirement

Install the LARS V12 on AFR A-10s significantly improving the ability to conduct search and rescue missions

## Impact If Not Funded

Continuing use of antiquated communication intensive methods to locate survivors. Not funding this upgrade increases exposure to enemy threats for survivors and rescuers, greatly jeopardizing the chances of mission success.

## Units Impacted

- 442nd Fighter Wing, Whiteman AFB, MO
- 917th Fighter Wing, Barksdale AFB, LA

## Contractor

Cubic Defense Applications Inc., San Diego, CA

## Program Element Code

52720F

## In AF POM

No

A-10 LARS V-12	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	3.4	2.2	0.0	0.0	0.0	5.6
O&M—AFR (3740)	0.0	0.0	0.1	0.1	0.1	0.3
Total (\$M)	3.4	2.2	0.1	0.1	0.1	5.9
Quantity	24.0	24.0	0.0	0.0	0.0	48.0

# A-10 On Board Oxygen Generating System (OBOGS)

## Background

- Liquid Oxygen (LOX) is the #1 issue preventing austere and bare base operations due to manpower and footprint associated with LOX generation and storage. The OBOGS removes the need for LOX.
- OBOGS has been proven in active duty A-10s to:
  - Improve deployment capability and responsiveness
  - Increase safety, loiter time, and aircraft availability
  - Reduce sortie generation time
  - Reduces servicing cost, manpower, deployment footprint

## Requirement

Procure/install OBOGS for all AFR A-10s to increase operational efficiency

## Impact If Not Funded

- Increases deployment costs, airlift requirements, servicing time/cost
- Current AFR A-10 LOX procurement/storage/transportation costs \$2.3M per year
- Split Fleet configuration problems with active duty
- Increasing cost per A-10 flying hour

## Units Impacted

- 442nd Fighter Wing, Whiteman AFB, MO
- 917th Fighter Group, Barksdale AFB, LA

## Contractor

Carlton Life Support Systems, Davenport, IA

## Program Element

52720F

## In AF POM

No

A-10 OBOGS	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	3.3	3.3	1.5	0.0	0.0	8.1
O&M—AFR (3740)	0.0	0.1	0.2	0.2	0.2	0.7
Total (\$M)	3.3	3.4	1.7	0.2	0.2	8.8
Quantity	23.0	25.0	0.0	0.0	0.0	48.0

## A-10/F-16 3D Audio

### Background

- 3D Audio integrates a digital intercom system, active and electronic noise reduction, three-dimensional spatial separation of multiple radio channels and three-dimensional auditory threat cueing.
- Audio information comes to the pilot from up to four radios, the threat warning receivers and the aircraft itself. 3D Audio provides a spatial acoustical environment in which threat warnings and communications are easy to distinguish. 3D audio increases situational awareness, significantly improves threat reaction time and communication intelligibility.
- 3D Audio System is in use on F-16s in Europe.
- In July 2010 the Guard and Reserve requested SAF/IAPQ to support a Foreign Comparative Test for 3D Audio.
- Engineering and programming oversight for the test is provided by the A-10 SPO. The test requires \$3.9M; SAF/IAPQ provided \$2.1M in FY11 with a promise of \$1.8M in FY12. A contract with TERMA North America is ready to execute as soon as the FY12 funds arrive.

### Requirement

Integrate 3D Audio into AFR A-10 and F-16 aircraft.

### Impact If Not Funded

Mission capability will degrade. Pilots will be saturated with audio input and situation awareness will drop slowing threat reactions and increasing the amount of time required to coordinate attacking targets.

### Units Impacted

- 917st Fighter Group, Barksdale AFB, LA
- 482nd Fighter Wing, Homestead ARB, FL
- 301st Fighter Wing, NAS JRB Ft Worth, TX
- 442nd Fighter Wing, Whiteman AFB, MO

### Contractor

TERMA North America, Warner Robins, GA

### Program Element

A10: 52713F F16: 52716F

### In AF POM

No

A-10/F-16 3D Audio	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	0.0	2.0	2.1	2.5	2.5	9.1
O&M—AFR (3740)	0.0	0.0	0.0	0.0	0.0	0.0
Total (\$M)	0.0	2.0	2.1	2.5	2.5	9.1
Quantity	0.0	0.0	28.0	34.0	34.0	96.0



B-52  
STRATOFORTRESS



# B-52H Stratofortress



**GLOBAL  
POWER**



**SERVES  
AS THE WORKHORSE  
OF THE CONVENTIONAL  
BOMBER FLEET POSSESSING  
INTERCONTINENTAL RANGE  
AND A LARGE, DIVERSE  
WEAPONS PAYLOAD.**

The B-52 Stratofortress serves as the workhorse of the conventional bomber fleet possessing intercontinental range and a large,

diverse weapons payload. The B-52 is an air refuelable, long-range bomber capable of performing a variety of missions, including strategic attack, precision strike, air-defense suppression, and maritime interdiction. The B-52 employs cruise missiles, the Harpoon Anti-Ship Missile, and precision munitions including laser guided bombs and Joint Direct Attack Munitions (JDAM). The airframe is certified to the year 2040.

The Air Force Reserve maintains B-52 aircraft assigned to the 917th Wing, Barksdale AFB, LA and is currently the only command that produces new aircrew for this aircraft through the Flying Training Unit program.

Contractors include: Boeing (airframe), Pratt & Whitney (propulsion), ITT (major subsystems) and Honeywell (Avionics Midlife Improvement).

The B-52 requires installation of a Digital Mission Data Recorder and upgrades to the LITENING Advanced Targeting Pod (ATP) through spiral upgrades to maintain training and combat effectiveness.

**B-52H  
STRATOFORTRESS**

## B-52 Executive Summary

Unfunded Modernization Priority List Funding Profiles (\$M)

Program (Funding Appropriation)	P.E. Number	FY12	FY13	FY14	FY15	FY16	Program Total
B-52 DMDR (3010) (3740)	0501720	\$3.20 \$0.00	\$2.50 \$0.10	\$0.00 \$0.10	\$0.00 \$0.20	\$0.00 \$0.20	\$5.70 \$0.60
ATP Spiral Upgrade (3010)	27249F	0.0	0.0	21.6	21.6	15.3	58.5

\*3740 Appropriation    \*\*3010 Appropriation

B-52H Digital Mission Data Recorder (DMDR) – Provides Playback station software capable of synchronizing multiple channels from the same aircraft and multiple channels from multiple aircraft. It provides the USAF a capability not provided with current audio/video recorders. Event cueing is also a

capability not provided with current audio/video recorders. These capabilities will enhance USAF de-brief, fault data and battle damage assessment functions. Quality and timeliness of mission information is key to efficient training and debrief of Flying Training Unit personnel and directly impacts student production capabilities.

## B-52H Digital Mission Data Recorder (DMDR)

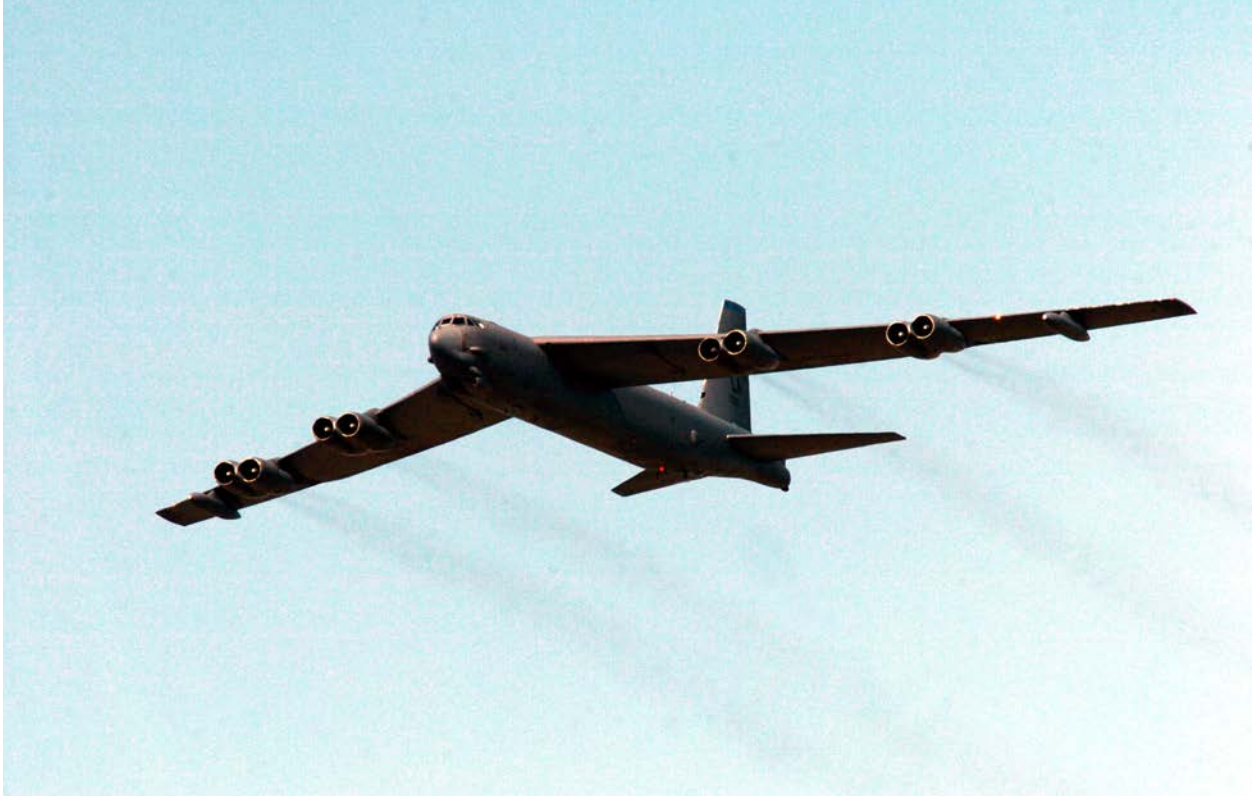
### Background

- B-52 Airborne Video Tape Recorders are no longer supportable or sustainable resulting in most missions flown without recording capability.
- Present capabilities have been lost due to complete lack of available repair sources. Equipment is so old that manufacturers no longer support parts/repair.
- Increasing sophistication of aircraft systems drives a requirement for monitoring in-flight information for a variety of reasons. Among these requirements are: Student de-brief at Training Units, Rangeless Electronic Warfare Training, Weapons effect assessment, in-flight events documentation, in-flight fault data recording, in-flight systems monitoring, and in-flight intelligence gathering.
- What CONOPS does this support? Global Strike, Close Air Support, Train & Equip.

### Requirement

- Provide Playback station software capable of synchronizing multiple channels from the same aircraft and multiple channels from multiple aircraft and provides the USAF a capability not provided with current audio/video recorders. Event cueing is also a capability not provided with current audio/video recorders. These capabilities will enhance USAF de-brief, fault data and battle damage assessment functions.
- Quality and timeliness of mission information is key to efficient training and debrief of Flying Training Unit personnel and directly impacts student production capabilities.





**Impact If Not Funded**

Mission success at risk because aircrews and Combatant Commanders have no means of timely, accurate mission debriefing and/or damage assessment.

**Units Impacted**

307th Bomb Wing, Barksdale AFB, LA

**Contractor**

- Boeing Military Aircraft, Wichita, KS
- EFW Systems, Ft. Worth, TX
- Calculex Corp, Las Cruces, NM

B-52 Digital Mission Data Recorder	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	3.2	0.0	2.5	0.0	0.0	5.7
O&M—AFR (3740)	0.0	0.1	0.1	0.2	0.2	0.6
Total (\$M)	3.2	0.1	0.1	0.2	0.2	3.8
Quantity	20.0	0.0	0.0	0.0	0.0	20.0





## LITENING A-10/F-16/B-52 ATP Procurement and Spiral Upgrades

### Background

- LITENING advanced targeting pod spiral technology upgrades. These are upgrades to existing AFR pods to keep them current and relevant.
- Currently fielded pods employ Litening Block 1 (Blk 1) and Generation Four (G4) spiral upgrades with Forward Looking Infrared (FLIR), electro-optical television/Charged Coupled Devices (CCD), and Laser Spot Search and Track (LSS/LST) to offer exceptional standoff capability and the ability to target J-Series weapons.
- The next ATP modernization spiral for Litening is the Sensor Enhanced (SE) modernization. The imagery will allow for greater stand-off ranges and increase target identification as well as employing a Plug-N-Play (PnP) IIITM digital two-way, data link LRU inside the pod which will enhance working with ground parties and troops in contact.

### Requirement

- Procure Sensor Enhanced spiral upgrade kits for all AFR ATPs.
- This is the number twelve priority on the 10 AF Prioritized Requirements List from the 10 AF July 2011 Combat Planning Council.

### Impact If Not Funded

Without the LG4 ATP upgrade kits, AFR A-10, F-16, and B-52 aircraft will not have the best possible equipment to support current and future contingency operations. In addition, domestic Air Sovereignty Alert (ASA) aircraft cannot support requirements to track asymmetric threats, aid in target identification and conduct maritime interdiction tasking.

**Units Impacted**

- 301st Fighter Wing, NAS JRB Ft Worth, TX
- 307 Bomber Wing, Barksdale AFB, LA
- 482nd Fighter Wing, Homestead ARB, FL
- 442nd Fighter Wing, Whiteman AFB, MO

**Contractor**

Northrop Grumman Corp, Rolling Meadows, IL

**Program Element**

A-10: 52713F F-16: 52716F B-52: 51720F

**In AF POM**

No

Advanced Targeting Pods	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	0.0	0.0	21.6	21.6	15.3	58.5
O&M—AFR (3740)	0.0	0.0	0.0	0.0	0.0	0.0
Total (\$M)	0.0	0.0	21.6	21.6	15.3	58.5
Quantity	0.0	0.0	24.0	24.0	17.0	65.0



B-52H  
STRATOFORTRESS

C-5  
GALAXY





# C-5 Galaxy



## GLOBAL REACH



THE C-5 GALAXY PROVIDES INTER-THEATER AIRLIFT IN SUPPORT OF U.S. NATIONAL DEFENSE.

The C-5 Galaxy provides the Air Force with inter-theater airlift in support of U.S. national defense. It can carry outsize and oversize cargo over intercontinental distances and can take off or land within relatively short distances. The C-5 Galaxy

and the C-17 Globemaster III are partners in the Air Force’s strategic airlift concept.

The Air Force Reserve operates C-5 aircraft at the 433rd Airlift Wing, Lackland AFB, TX; and the 439th Airlift Wing, Westover ARB, MA. The 433rd Airlift Wing at Lackland AFB is home to the Air Force’s C-5 Formal Training Unit (FTU), which supports aircrew training for the entire C-5 fleet. The AFR associates with the active duty on C-5 aircraft at the 512th Airlift Wing, Dover AFB, DE and 349th Air Mobility Wing, Travis AFB, CA.

Two major modernization programs address C-5 reliability and maintenance issues: the Avionics Modernization Program (AMP) and the Reliability Enhancement and Re-engining Program (RERP). An additional requirement exists to install a Brake Temperature Monitoring System to satisfy the recommendations of safety investigation AFSAS ID#319526.

Contractors include Lockheed Martin (airframe), General Electric (engines and RERP), Honeywell (AMP), ARINC (AMP), and Goodrich (RERP).

## C-5 Executive Summary

### Unfunded Modernization Priority List Funding Profiles (\$M)

Program (Funding Appropriation)	P.E. Number	FY12	FY13	FY14	FY15	FY16	Program Total
C-5 Brake Temp System (3010)	54219F	\$1.50	\$1.50	\$1.50	\$0.30	\$0.00	\$4.80

\*3010 Appropriation

Brake Temperature Monitoring System (BTMS) to provides a means of measuring brake temperatures and alerting the flight crew of brake temperature conditions

# C-5 Brake Temperature Monitoring System

## Background

- Pilots need to know the level of risk they face during a landing so they can determine if they should taxi away from other aircraft and ground personnel
- The C-5 fleet historically experiences overheated brake conditions which may cause a fuse to blow or necessitate tire, wheel, and brake inspection or other maintenance actions.
- The condition may be caused by severe usage or excessive drag.
- When extreme overheat is experienced the carbon heat stack requires replacement on all affected wheels. Elevated temperatures also cause brake seal leakage resulting in brake fires that can damage brakes, wheels, tires, and axles.
- Brake temperature sensors to the C-5 brake system will allow aircrew to monitor, in real time, brake temperatures and system performance. This will ensure crews can respond to excessive temperatures in a timely manner.
- System will enhance Take Off and Landing Data (TOLD) application and ground handling procedures. The ability to record and track brake temperatures will also assist maintenance personnel in monitoring system operations to identify degradation prior to system failure.

## Requirement

- Modify C-5 aircraft with Brake Temperature Monitoring System (BTMS) to provide a means of measuring brake temperatures and alerting the flight crew of brake temperature conditions
- System will satisfy safety investigation recommendations (Class C, Jun 03, Brake Fire, AFSAS ID# 319526)

## Impact If Not Funded

Potential injury to aircrew and ground personnel and damage or loss of aircraft from unidentified excessive brake temperatures that results in a fire.

## Units Impacted

- 433rd Airlift Wing, Lackland AFB, TX
- 439th Airlift Wing, Westover ARB, MA

## Contractor

Crane Aerospace Electronics, Burbank, CA

C-5 Brake Temp System	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	1.5	1.5	1.5	0.3	0.0	4.8
Total (\$M)	1.5	1.5	1.5	0.3	0.0	4.8
Quantity	5.0	5.0	5.0	1.0	0.0	16.0



C-5  
GALAXY





# C-17 Globemaster



## GLOBAL REACH



PROVIDES INTER-THEATER AND INTRA-THEATER AIRLIFT IN SUPPORT OF U. S. NATIONAL DEFENSE.

The C-17 Globemaster III provides the Air Force with inter-theater and intra-theater airlift in support of U.S. national defense. It is capable of performing combat airdrop and can land on short, austere airfields. The

inherent flexibility and performance of the C-17 fleet improves the ability of the total airlift system to meet the worldwide air mobility requirements of the United States.

The Air Force Reserve (AFR) operates C-17s at the 452nd Air Mobility Wing, March ARB, CA and the 445th Air Mobility Wing, Wright-Patterson AFB, OH. The AFR associates with the active duty on C-17 aircraft at the 315th Airlift Wing, Charleston AFB, SC; the 446th Airlift Wing, McChord AFB, WA; the 514th Air Mobility Wing, McGuire AFB, NJ; the 512th Airlift Wing, Dover AFB, DE and 349th Air Mobility Wing, Travis AFB, CA.

Contractors include Boeing Aircraft (airframe), Pratt & Whitney (propulsion), and Vought Aircraft Industries (major airframe components).

Required capabilities include: C-17 assault landing zones for March ARB and Wright-Patterson AFB, and new Noise Reduction Headsets for aircrew members.

## C-17 Executive Summary

### Modernization List Funding Profiles (\$M)

Program (Funding Appropriation)	P.E. Number	FY12	FY13	FY14	FY15	FY16	Program Total
C-17 Active Noise Reduction Headsets (3010)	54214F	\$0.80	\$0.00	\$0.00	\$0.00	\$0.00	\$0.80

ANR headset for the C-17 which will ultimately reduce fatigue associated with hazardous noise levels and increase hearing protection for AFRC aircrews

## C-17 Active Noise Reduction (ANR) Headsets

### Background

- Reduced noise allows for improved communications and mission effectiveness
- Currently, the only noise reduction system approved as Safe-to-Fly for the C-17A is the Attenuating Custom Communications Earphone System (ACCES) which requires a molded piece be inserted into the ear.
- Since 2004 Active Noise Reduction headsets have received approval for use on many different military platforms to include the C-5 and the C-130

### Requirement

- Procure a suitable ANR headset for the C-17 which will ultimately reduce fatigue associated with hazardous noise levels and increase hearing protection for AFR aircrews
- Occupational Health and Safety Administration Title 29 of the Code of Federal Regulations (CFR), Part 1910.95

### Impact If Not Funded

- Reduced mission effectiveness from crew fatigue due to exposure to aircraft ambient noise

### Unit Impacted

- 452nd Air Mobility Wing, March AFB, CA.
- 445th Air Wing, Wright-Patterson AFB, OH.

### Contractor

Bose Corporation, Framingham, MA.

C-17 Active Noise Reduction Headsets	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	0.8	0.0	0.0	0.0	0.0	0.8
Total (\$M)	0.8	0.0	0.0	0.0	0.0	0.8
Quantity	80.0	0.0	0.0	0.0	0.0	80.0



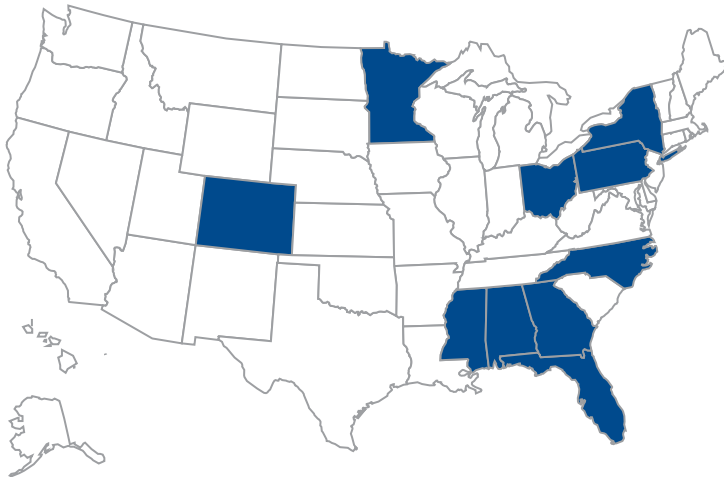




C-130  
HERCULES



# C-130 Hercules



## GLOBAL REACH



PROVIDES INTER-THEATER AND INTRA-THEATER AIRLIFT IN SUPPORT OF U.S. NATIONAL DEFENSE

The C-130 Hercules provides the Air Force with capability to takeoff and land on short, unimproved runways normally found during austere operations. The aircraft can be flown more than 3,000 nautical miles without refueling and with a maximum payload of 42,000 pounds.

Several variants of the C-130 are described below.

The C-130H2/3 provides rapid transportation of personnel or cargo for delivery day or night by parachute or landing. It can also be used for aeromedical evacuation of injured personnel. The AFR maintains C-130H2 aircraft at Niagara Falls ARS, NY; Dobbins ARB, GA; Pope AFB, NC; Maxwell AFB, AL; Youngstown ARS, OH; and Pittsburgh IAP, PA. AFR maintains C-130H3 aircraft at Peterson AFB, CO; and Minneapolis-St. Paul ARS, MN.

The HC-130P/N conducts day or night operations to affect the recovery of downed aircrews or other isolated personnel from hostile or denied environments during war. They may provide air refueling of recovery force helicopters and tactical delivery via airdrop or airland of rescue personnel watercraft, all-terrain vehicles, and/or direct assistance in advance of recovery vehicles. Current AFR HC-130P/N inventory is based at Patrick AFB, FL.

The MC-130E Combat Talon I provides infiltration, exfiltration and resupply of special operations forces and equipment in hostile or denied territories. Secondary missions include psychological operations and helicopter air refueling. The AFR maintains MC-130E aircraft at Duke Field, FL.

The C-130J is the latest and most advanced version of the C-130, with more fuel efficiency and greater range than previous versions. With increased reliability and maintainability, the C-130J reduces the cost of ownership by as much as 45%. It supports ground operations through the delivery of paratroopers and equipment to austere runways at forward bases. The C-130J conducts humanitarian relief missions and can be used for medical evacuations. The WC-130J provides weather reconnaissance capability. The AFR maintains C-130Js and WC-130Js at Keesler AFB, MS. Contractors include Lockheed Martin (airframe) and Allison (propulsion).

As the aircraft age, the Air Force must modernize to improve war-fighting capability and the safety of its mobility fleet. The Air Force Reserve is actively pursuing a secure/beyond line-of-sight communication capability, real-time battlespace information in the cockpit to include data link/common operating picture ability, an updated aerial spray system to combat oil spills and airborne vectors, modern electronic propeller control systems and in-flight propeller balancing systems, and an improved propeller. The AFR HC-130 fleet is also modernizing with a state-of-the-art integrated electronic warfare suite.

## C-130 Executive Summaries

### Unfunded Modernization Priority List Funding Profiles (\$M)

Program (Funding Appropriation)	P.E. Number	FY12	FY13	FY14	FY15	FY16	Program Total
C-130 SLOS/BLOS (RTIC) (3010)	54343F	0.0	1.5	0.0	0.0	0.0	1.5
C-130 MASS (3010)	54343F	3.5	0.0	15.4	0.0	0.0	18.9
C-130 EPCS (3010)	54343F	0.0	5.5	5.5	0.0	0.0	11.0
C-130H IPBS (3010)	54343F	8.2	8.2	0.0	0.0	0.0	16.4
C-130H Improved Propeller (3010)	54343F	44.0	42.0	12.6	0.0	0.0	98.6

\*3740 Appropriation \*\*3010 Appropriation

- C-130 Secure Line of Sight/Beyond Line of Sight (SLOS/BLOS) Communications Capability – Upgrades AFRC C-130Hs with ARC-210 and Situational Awareness DataLink (SADL) Radios to provide aircrews with a Real Time Information in the Cockpit (RTIC) System that meets current mission operational requirements for a comprehensive, networked communications capability throughout all theaters of operation, and an increased situational awareness capability.
- C-130 Modular Aerial Spray System (MASS) – Replaces the current MASS, which is becoming increasingly more difficult to support, with a new system. This is required to meet current and future aerial spray applications directed by the Center for Disease Control, Homeland Defense, and DoD requirements.
- C-130 Electronic Prop Control System (EPCS) – Replaces existing synchrophasers with new digital prop control system, providing better engine responsiveness.
- C-130H In-Flight Propeller Balancing System (IPBS) – Aircraft propellers experience two primary sources of imbalances; mass and aerodynamic. An In-Flight Propeller Balancing System (IPBS) would automatically balance propellers to 0.05 ips at all power settings and conditions.
- C-130H Improved Propeller (NP2000) – New NP2000 eight (8) bladed propeller will increase thrust for heavy weight and short field operations. Additionally, the new propellers will increase engine efficiency under normal flight conditions

# HC/MC-130 Executive Summary

Air Force Reserve HC-130 aircraft have received more sophisticated, but federated non integrated EW equipment over the past few years. Infrared threats are met semi automatically and radar threats are met entirely manually. Both types of threats are becoming more sophisticated and response timing and expendable mix can no longer be left to a manual response. Proposed system is already common to F-16C+ and A10C aircraft.

## Modernization List Funding Profiles (\$M)

Program (Funding Appropriation)	P.E. Number	FY12	FY13	FY14	FY15	FY16	Program Total
HC-130 Integrated Electronic Warfare (EW) Suite (3010)	53122F	\$3.0	\$3.0	\$1.0	\$0.0	\$0.0	\$7.0
HC-130 Integrated Electronic Warfare (EW) Suite (3400)	53122F	\$0.4	\$0.4	\$0.2	\$0.2	\$0.2	\$1.4

## C-130H Secure Line Of Sight (SLOS)/Beyond Line Of Sight (BLOS) with Datalink Real Time Information In The Cockpit (RTIC)

### Background

- C-130 aircrews lack equipment to gain timely battlespace knowledge of enemy threats, friendly positions, and other pertinent wartime information.
- Overseas Contingency Operations require comprehensive, networked command and control (C2) throughout all theaters of operation.
- A secure line of sight (SLOS)/beyond line of sight (BLSO) with data link provides the C2 link and maximizes C-130 aircrew situational awareness and provides real time information to C-130 aircrews so they can participate in present day network-centric battlespace.
- Real-time-in-the-cockpit data will enhance mission success and increase survivability through updated threat and weather information and battlespace SA.

### Requirement

Upgrade 48 AFR C-130H aircraft with an interoperable combat communications capability to exchange real time information collaboratively with all battlespace users.

### Impact If Not Funded

AFR C-130 aircrews in contingency operations that require best, current information will remain outside the C2 networks in various theaters of operation and blind to the wealth of real-time information available to the warfighter which impacts mission success and reduces survivability in combat operations.

### Units Impacted

- 302nd Airlift Wing, Peterson AFB, CO
- 440th Airlift Wing, Pope AFB, NC
- 910th Airlift Wing, Youngstown ARS, OH
- 914th Airlift Wing, Niagara Falls ARS, NY
- Det 1, Little Rock AFB, AK

**Contractor**

- Northrop Grumman Corp., San Diego, CA
- Rockwell Collins Corp, Cedar Rapids, IA
- Raytheon Corp., Fullerton, CA
- Esterline Corp., Bellevue, WA

**Program Element Code**

54343F

**In AF POM**

No

C-130 RTIC	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	0.0	1.5	0.0	0.0	0.0	1.5
Total (\$M)	0.0	1.5	0.0	0.0	0.0	1.5
Quantity (A Kits/B Kits)	0	3	0	0	0	3

*FY08, FY10, FY11, FY12 NGREA (0350) funds have been applied to procure 45 systems*





# C-130H Modular Aerial Spray System (MASS)

## Background

- The 910th Airlift Wing is tasked by DoD Directive 4150.7, Para 5.4 to maintain a large area fixed wing aerial spray capability to control disease vectors in continental U.S. disaster areas, e.g., Hurricane Katrina, combat areas and DoD installations.
- The current MASS is over 20 years old, no longer in production and becoming increasingly more difficult and expensive to maintain. It is expected to reach the end of the life cycle within the next four years.
- Supportability issues are causing system failures while performing operational missions, causing lost sorties.
- The ability of these aircraft to cover large areas with the proper pest control cannot be duplicated in the civilian sector and is not available through any other DoD units.
- This requirement will replace the current MASS with a newly designed system. This is required to meet current and future aerial spray applications directed by the Center for Disease Control, Homeland Defense, and DoD requirements.

## Requirement

Procurement and installation of a new Modular Aerial Spray System (MASS) for six (6) C-130H aircraft.

## Impact If Not Funded

If a replacement system is not procured, the DoD will not be able to maintain an aerial spray capability to control large area disease vectors, pest organisms, vegetation, or treat oil spills.

## Units Impacted

910th Airlift Wing, Youngstown ARS, OH

## Contractor

TBD

## Program Element Code

54343F

## In AF POM

No

C-130 MASS	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	3.5	0.0	15.4	0.0	0.0	18.9
Total (\$M)	3.5	3.5	0.0	0.0	0.0	18.9
Quantity	1.0	0.0	5.0	0.0	0.0	6.0

*Non-Recurring Engineering and 1st system being procured with FY12 NGREA (0350) funds; systems 2 -6 will be procured in FY14*

## C-130H Electronic Propeller Control System (EPCS)

### Background

- The EPCS provides increased reliability and operational responsiveness of propeller control which is frequent source of failure. The legacy system is based on 1950's technology using springs and flyweights and is the cause of numerous types of propeller malfunctions. This results in increased maintenance and operational costs.
- A new EPCS has been developed for use on C-130 aircraft which would reduce maintenance down time, reduce sustainment cost and increase aircraft availability. Test aircraft with the EPCS have observed markedly greater reliability and operator satisfaction with prop responsiveness.
- The mishap investigation report following the crash of a C-130H2 in Baghdad directly contributed the compressor stalls of three engines to the rapid throttle movements by the pilot. The current hydro-mechanical valve system has limited capability to anticipate propeller control based on the rate of throttle movement. EPCS has a much greater capability to handle rapid throttle inputs thus preventing potential compressor stalls.
- EPCS replaces the synchrophaser system which is another possible cause of multiple engine rollback. The electronic control greatly reduces propeller vibration which has a direct impact on the lifespan of the aircraft, aircraft equipment, and aircrew fatigue.

### Requirement

Procurement and installation of the Electronic Propeller Control System (EPCS) on 48 C-130H aircraft.

### Impact If Not Funded

Without upgrade to the new EPCS, AFR will continue to experience increased higher sustainment cost and lower mission capable rates than could be realized with the new controller. Additionally, the C-130 will remain at greater risk of mishaps attributed to rapid throttle movement and/or multiple engine rollback.

### Units Impacted

- 302nd Airlift Wing, Peterson AFB, CO
- 440th Airlift Wing, Pope AFB, NC
- 910th Airlift Wing, Youngstown ARS, OH
- 914th Airlift Wing, Niagara Falls ARS, NY
- Det 1, Little Rock AFB, AK

### Contractor

Hamilton-Sunstrand, Windsor Lock, CN

### Program Element Code

54343F

### In AF POM

No

C-130 EPCS	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	0.0	5.5	5.5	0.0	0.0	11.0
Total (\$M)	0.0	5.5	5.5	0.0	0.0	11.0
Quantity	0.0	10.0	10.0	0.0	0.0	20.0

# C-130H In-Flight Propeller Balancing System (IPBS)

## Background

- Aircraft propellers experience two primary sources of imbalances: mass and aerodynamic.
- Aerodynamic imbalances are due to the differences in lift and drag forces acting on each propeller blade. On the C-130 propeller, these aerodynamic imbalances are significant because the aluminum blades are hand shaped during original manufacture and experience varying degrees of wear in service.
- An In-Flight Propeller Balancing System (IPBS) would automatically balance propellers to 0.05 ips at all power settings and conditions.
- The aircraft propeller controls, engine components (reduction gear box, power section, accessories, and the QEC structure), and the QEC to wing support structure have long been at the top of the list as sustainment and cost of ownership drivers.
- Although difficult to quantify, balancing the propellers would result in less vibration to the aircraft engines, aircraft and onboard avionics. The US Navy conducted a test demonstrating a 27% increase in reliability of avionics installed forward of the FS 245 rack.

## Requirement

Procurement and installation of the In-Flight Propeller Balancing System (IPBS) on 48 C-130H aircraft.

## Impact If Not Funded

Without incorporation of an IPBS, AFR will continue to experience increased higher sustainment cost and lower mission capable rates due to vibration related failures.

## Units Impacted

- 302nd Airlift Wing, Peterson AFB, CO
- 440th Airlift Wing, Pope AFB, NC
- Det 1, Little Rock AFB , AK
- 910th Airlift Wing, Youngstown ARS, OH
- 914th Airlift Wing, Niagara Falls ARS, NY

## Contractor

Lord Corp., Arlington, MA

## Program Element Code

54343F

## In AF POM

No

C-130 IPBS	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	8.2	8.2	0.0	0.0	0.0	16.4
Total (\$M)	8.2	8.2	0.0	0.0	0.0	16.4
Quantity	24.0	24.0	0.0	0.0	0.0	48.0

# C-130 Improved Propeller

## Background

- New NP2000 eight (8) bladed propeller will increase thrust for heavy weight and short field operations. Additionally, the new propellers will increase engine efficiency under normal flight conditions.
- The design of the new NP2000 Propeller allows individual blades to be removed for maintenance rather than having to remove the entire hub assembly as is required with current propellers. This will result in decreased sustainment cost and increased mission capable rates.
- The new NP2000 eight (8) bladed propellers have proven to reduce engine vibration resulting in less fatigue on both the aircraft and aircrew.

## Requirement

Replace legacy 54h60 four (4) bladed propeller with new NP2000 eight (8) bladed propeller for increased thrust, decreased sustainment costs, and decreased aircraft and crew fatigue.

## Impact If Not Funded

- Increased maintenance costs associated with the older propellers.
- Increased crew fatigue, structural stress and equipment failures due to vibration.

## Impacted

- 302nd Airlift Wing, Peterson AFB, CO
- 910th Airlift Wing, Youngstown ARS, OH
- 440th Airlift Wing, Pope AFB, NC
- Det 1, Little Rock AFB, AK
- 914th Airlift Wing, Niagara Falls IAP, NY

## Contractor

Hamilton Sundstrand, Windsor Locks, CT

## Program Element Code

54343F

## In AF POM

No

C-130 Improved Propeller	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	44.0	42.0	12.5	0.0	0.0	98.6
Total (\$M)	44.0	42.0	12.6	0.0	0.0	98.6
Quantity	21.0	21.0	6.0	0.0	0.0	48.0

# HC-130 Integrated Electronic Warfare (EW) Suite

## Background

- AFR HC-130 aircraft have received more sophisticated, but federated non integrated EW equipment over the past few years
- Infrared threats are met semi automatically and radar threats are met entirely manually
- Both types of threats are becoming more sophisticated and response timing and expendable mix can no longer be left to a manual response
- System proposed for use is common to F-16C+ and A10C aircraft

## Requirement

Provide an Integrated Electronic Warfare Suite to HC-130 aircraft

## Impact If Not Funded

Increased risk of loss of aircraft and crew leading to mission failure

## Units Impacted

920th Rescue Wing, Patrick AFB, FL

## Contractor

Terma USA, Georgia Tech

## Program Element Code

53122F

## In AF POM

No

HC-130 Intergrated EW Suite	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	3.0	3.0	1.0	0.0	0.0	7.0
Q&M (3400)	0.4	0.4	0.2	0.2	0.2	1.4
Total (\$M)	3.4	3.4	1.2	0.2	0.2	8.4
Quantity	5.0	0.0	0.0	0.0	0.0	5.0



F-16  
FIGHTING FALCON



# F-16 Fighting Falcon



## GLOBAL POWER



PROVIDES CLOSE AIR SUPPORT, PRECISION STRIKE, FORWARD AIR CONTROL, AND COMBAT SEARCH AND RESCUE IN DAY OR NIGHT OPERATIONS.

The F-16 Fighting Falcon provides complete air-to-air and air-to-ground combat capabilities in a single-engine multi-role tactical fighter aircraft. The aircraft can perform day and night precision strike,

suppression of enemy air defenses, close air support and beyond-visual-range interception missions. F-16s can locate targets in all weather conditions and detect low-flying aircraft in radar ground clutter.

The Air Force Reserve maintains F-16 primary aircraft assigned to the 301st Fighter Wing, NAS JRB Fort Worth, TX and the 482nd Fighter Wing, Homestead ARB, FL.

Contractors include Lockheed Martin (airframe), General Electric (propulsion), and Northrop Grumman (radar).

AFR F-16s require several upgrades to extend viability until the end of their service life: Advanced Targeting Pod spiral upgrades, a new center display unit, Helmet Mounted Integrated Targeting systems, Automatic Identification Friend/Foe systems, secure line-of-sight/beyond-line-of-sight radio upgrades, fire control computer upgrades, and a 3D Audio system upgrade which will significantly improve situational awareness, threat reaction, and communication intelligibility. These are critical needs to maintain survivability and combat effectiveness in current and future threat environments.

## F-16 Executive Summary

- A-10/F-16 CDU - Replace AFRC A-10/F-16 aging mechanical/analog fight instruments on the center pedestal with a digital Center Display Unit (CDU) display
- A-10/F-16 HMIT - Provide Helmet Mounted Integrated Targeting (HMIT) capability to AFRC A-10 and F-16
- F-16 AIFF - Autonomous Identification Friend Foe (AIFF) gives AFRC F-16s an autonomous interrogation capability. Ability to interrogate mode 5/S signals is critical to conducting air defense missions.
- ATP Spiral Upgrade - LITENING advanced targeting pod spiral technology upgrades. These are upgrades to existing AFRC pods to keep them current and relevant.
- F-16 SLOS/BLOS Simultaneous- Replaces the existing AN/ARC-186 radio with the AN/ARC-210 in all AFRC-F16 Block 30s. This will allow the F-16 BLOCK 30 to conduct simultaneous SLOS/BLOS communications.
- F-16 Commercial Fire Control Computer (CFCC) - F-16 CFCCs are on order and funds are required to support the equipment till the depot can pick up repair operations.

- A-10/F-16 3D Audio – 3D Audio provides a spatial acoustical environment in which threat warnings and communications are easy to distinguish. 3D Audio increases situational awareness, significantly improves threat reaction time and communication intelligibility.

**Modernization List Funding Profiles (\$M)**

Program (Funding Appropriation)	P.E. Number	FY12	FY13	FY14	FY15	FY16	Program Total
A-10/F-16 CDU (3010) (3740)	52720F 52716F	2.4 0.0	2.0 0.2	2.0 0.2	0.0 0.2	0.0 0.2	6.4 0.8
A-10/F-16 HMIT (3010) (3740)	52720F 52716F	2.2 0.0	1.3 0.0	0.0 0.2	0.0 0.2	0.0 0.2	3.5 0.6
F-16 AIFF (3010)	52716F	4.6	1.3	0.0	0.0	0.0	5.9
ATP Spiral Upgrade (3010)	27249F	0.0	0.0	21.6	21.6	15.3	58.5
F-16 SLOS/BLOS Simultaneous (3010) (3740)	52716F	0.0 0.0	1.1 0.0	3.6 0.0	3.6 0.1	0.0 0.2	8.3 0.3
F-16 CFCC (3010)	52716F	1.6	0.6	0.0	0.0	0.0	2.2
A-10/F-16 3D AUDIO	52720F 52716F	0.0	2.0	2.1	2.5	2.5	9.1

## A-10C/F-16C Center Display Unit (CDU)

### Background

- AFR Block 30 F-16C and A-10C analog cockpit instruments are becoming increasingly difficult to maintain and are affected by diminishing material and manufacturing sources. The CDU program integrates smart multifunction color displays into the F-16 and A-10 to replace the analog flight and engine monitoring instruments with digital instrument displays.
- The displays have the processing capacity to manipulate data external to the aircraft operational flight program. This gives pilots the ability to load mission planning data via USB like interfaces, while opening low cost pathways for the integration of future weapons and updates.
- The processors in the displays will provide pilots the ability to securely transfer still images, such as a targeting pod scenes, joint tactical air controller taskings, and target area imagery. This capability is critical to rapid coordination with ground units during close air support missions and with command and control assets during time sensitive and emerging target operations.

### Requirement

- Replace AFR A-10C and F-16C mechanical/analog fight instruments on the center pedestal with digital displays.
- Eleventh critical priority out of 30 from 10AF 2011 Combat Planning Council

### Impact If Not Funded

- The analog instruments currently installed are becoming increasingly difficult to maintain and are affected by diminishing material and manufacturing sources.



- In addition to reducing maintenance, replacing analog instruments with digital instrument displays significantly increases aircraft processing capacity. Increased processing capability will open low cost pathways for integration of future capabilities without the costly/time consuming process of changing the aircraft operational flight program.
- This capability is critical to rapid coordination with ground units during close air support missions and with command and control assets during time sensitive target operations.

### Units Impacted

- 917st Fighter Group, Barksdale AFB, LA
- 482nd Fighter Wing, Homestead ARB, FL
- 301st Fighter Wing, NAS JRB Ft Worth, TX
- 442nd Fighter Wing, Whiteman AFB, MO

### Contractor

- Raytheon Corp, Indianapolis, IN, for the F-16 solution
- Contractor not yet selected for the A-10 solution

### Program Element Code

A10: 52713F F16: 52716F

### In AF POM

No

A-10/F-16 Center Display Unit	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	2.4	2.0	2.0	0.0	0.0	6.4
O&M—AFR (3740)	0.0	0.2	0.2	0.2	0.2	0.8
Total (\$M)	2.4	2.2	2.2	0.2	0.2	7.2
Quantity	30.0	24.0	0.0	0.0	0.0	54.0

## A-10C/F-16C Helmet Mounted Integrated Targeting (HMIT)

### Background

- Helmet Mounted Integrated Targeting (HMIT) is a Combatant Commander Urgent Operational Need directing a common helmet mounted cueing system on Block 30 F-16C and A-10C
- HMIT provides flight and weapons information to a display in the pilot’s helmet. This allows pilots to rapidly target advanced weapons, employ threat countermeasures, and stay aware of critical developments during high workload portions of the mission.
- HMIT supports the Global Power critical capability and the air superiority and global precision attack core functions of the Air Force. HMIT will increase the effectiveness of all A-10C and F-16C missions: close air support, interdiction, defensive and offensive counter air, combat search and rescue, forward air control—airborne and nontraditional intelligence, surveillance and reconnaissance

### Requirement

- Provide Helmet Mounted Integrated Targeting (HMIT) capability to AFR A-10C/F-16C.
- Number one critical priority out of 30 from 10AF 2011 Combat Planning Council

- A-10 and F-16 SPOs have teamed to developed common interface and specifications

**Impact If Not Funded**

- Without HMIT AFR aircraft will not comply with the Combatant Commander Urgent Operational Need. HMIT is required to increase combat effectiveness and employ advanced weapons to meet low collateral damage requirements.
- HMIT provides flight and weapons information to a display in the pilot’s helmet. This allows pilots to rapidly target advanced weapons, employ threat countermeasures, and stay aware of critical developments during high workload demand portions of the mission.

**Units Impacted**

- 917st Fighter Group, Barksdale AFB, LA
- 482nd Fighter Wing, Homestead ARB, FL
- 301st Fighter Wing, NAS JRB Ft Worth, TX
- 442nd Fighter Wing, Whiteman AFB, MO

**Contractor**

- Gentex Corp, El Cajon, CA and Aurora, IL
- Raytheon Corp Indianapolis, IN

**Program Element Code**

A10: 52713F F16: 52716F

**In AF POM**

No

Helmet Mounted Integrated Targeting (HMIT)	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	2.2	1.3	0.0	0.0	0.0	3.5
O&M—AFR (3740)	0.0	0.0	0.2	0.2	0.2	0.6
Total (\$M)	2.2	1.3	0.2	0.2	0.2	4.1
Quantity	74.0	74.0	0.0	0.0	0.0	148.0

## F-16 Advanced Identification Friend Foe (AIFF)

**Background**

- Provides ability to autonomously interrogate advanced IFF systems (mode 5/S).
- Upgrade to mode 5/S is mandated by the Air Force. AIFF gives AFRC F-16s an autonomous interrogation capability. Ability to interrogate mode 5/S signals is critical to conducting air defense missions. Both the 482FW and 301FW are currently positioned as Tier 2 Home Land Defense support assets for Operation Noble Eagle (ONE). When the National threat level is raised from “Elevated” to “High” both units are required to stand up alert facilities in support of ONE.

**Requirement**

- Upgrade 16 AFRC F-16 block 30 aircraft with AIFF.



- Due to the uncertainty of when the National Threat Level will rise, modifying 8 aircraft per unit with AIFF will provide enough capability to meet Tier 2 ONE Alert operations without affecting additional Unit taskings

### Impact If Not Funded

Without this capability AFR ONE tasked Units are at a severe disadvantage when tasked to intercept a possible threat in a high density traffic environment. The AIFF will reduce pilot work-load, provide increased situational awareness and increased capability to complete an intercept on a threat aircraft.

### Units Impacted

- 301st Fighter Wing, NAS JRB Ft Worth, TX
- 482nd Fighter Wing, Homestead ARB, FL

### Contractors

BAE Advanced Systems Unit, Greenlawn, NY

### Program Element Code

52716F

### In AF POM

No

F-16 AIFF	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	4.6	1.3	0.0	0.0	0.0	5.9
O&M - AFR (3740)	0.0	0.0	0.0	0.0	0.0	0.0
Total (\$M)	4.6	1.3	0.0	0.0	0.0	5.9
Quantity	16.0	0.0	0.0	0.0	0.0	16.0

## LITENING A-10/F-16/B-52 ATP Procurment and Spiral Upgrades

### Background

- LITENING advanced targeting pod spiral technology upgrades. These are upgrades to existing AFR pods to keep them current and relevant.
- Currently fielded pods employ Litening Block 1 (Blk 1) and Generation Four (G4) spiral upgrades with Forward Looking Infrared (FLIR), electro-optical television/Charged Coupled Devices (CCD), and Laser Spot Search and Track (LSS/LST) to offer exceptional standoff capability and the ability to target J-Series weapons.
- The next ATP modernization spiral for Litening is the Sensor Enhanced (SE) modernization. The imagery will allow for greater stand-off ranges and increase target identification as well as employing a Plug-N-Play (PnP) IIITM digital two-way, data link LRU inside the pod which will enhance working with ground parties and troops in contact.

### Requirement

- Procure Sensor Enhanced spiral upgrade kits for all AFR ATPs.
- This is the number twelve priority on the 10 AF Prioritized Requirements List from the 10 AF July 2011 Combat Planning Council.

### Impact If Not Funded

Without the LG4 ATP upgrade kits, AFR A-10, F-16, and B-52 aircraft will not have the best possible equipment to support current and future contingency operations. In addition, domestic Air Sovereignty Alert (ASA) aircraft cannot support requirements to track asymmetric threats, aid in target identification and conduct maritime interdiction tasking.

### Units Impacted

- 301st Fighter Wing, NAS JRB Ft Worth, TX
- 482nd Fighter Wing, Homestead ARB, FL
- 307th Bomber Wing, Barksdale AFB, LA
- 442nd Fighter Wing, Whiteman AFB, MO

### Contractor

Northrop Grumman, Rolling Meadows, IL

### Program Element Code

A-10: 52713F F-16: 52716F B-52: 51720F

### In AF POM

No

Advanced Targeting Pods	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	0.0	0.0	21.6	21.6	15.3	58.5
O&M—AFR (3740)	0.0	0.0	0.0	0.0	0.0	0.0
Total (\$M)	0.0	0.0	21.6	21.6	15.3	58.5
Quantity	0.0	0.0	24.0	24.0	17.0	65.0



# F-16 Simultaneous SLOS/BLOS (COM 3)

## Background

The F-16 BLOCK 30 lacks the capability for robust two-way frequency selectable Secure Line of Sight (SLOS) communications while simultaneous Beyond Line of Sight (BLOS) communications are occurring. Current radio equipment places operational and logistic limitations on F-16 BLOCK 30 operations.

## Requirement

Replace the existing AN/ARC-186 radio with the AN/ARC-210 in all AFR F-16 BLOCK 30s, allowing simultaneous SLOS/BLOS communications.

## Impact If Not Funded

- Operations with the current radios will run the risk of interoperability problems and reduced response times potentially impacting mission effectiveness.
- This capability is critical to rapid coordination with ground units during close air support missions and with command and control assets during time sensitive and emerging target operations.

## Units Impacted

- 301st Fighter Wing, NAS JRB Ft Worth, TX
- 482nd Fighter Wing, Homestead ARB, FL

## Contractor

Cubic Defense Rockwell Collins Government Systems, Cedar Rapids, IA

## Program Element Code

52716F

## In AF POM

No

F-16 Simultaneous SLOS/BLOS	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	0.0	1.1	3.6	3.6	0.0	8.3
O&M—AFR (3740)	0.0	0.0	0.0	0.1	0.2	0.3
Total (\$M)	0.0	1.1	3.6	3.7	0.2	8.6
Quantity	0.0	48.0	0.0	0.0	0.0	48.0

# F-16 Commercial Fire Control Computer (CFCC)

## Background

The Expanded Enhanced Fire Control Computer (EEFCC) on the F-16 has been replaced with the Commercial Fire Control Computer (CFCC); however, the CFCC repair depot at Robins AFB is not ready to accomplish repairs. It is estimated to take two years for the depot to be ready to accept CFCC for repair.

## Requirement

Fund Intermediate Contract Support (ICS) for the CFCC until the depot is functional at Robins AFB.

## Impact If Not Funded

- The CFCC is foundational to all aircraft operations and is required for flight.
- Unless funded, AFRC F-16s will face shortages of operational CFCC and aircraft will be grounded as non mission capable.

## Units Impacted

- 301st Fighter Wing, NAS JRB Ft Worth, TX
- 482nd Fighter Wing, Homestead ARB, FL

## Contractor

Modern Technology Corp (MTC), Sunset, UT

## Program Element Code

52716F

## In AF POM

No

F-16 Commercial Fire Control Computer	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	1.6	0.6	0.0	0.0	0.0	2.2
O&M—AFR (3740)	0.0	0.0	0.0	0.0	0.0	0.0
Total (\$M)	1.6	0.6	0.0	0.0	0.0	2.2
Quantity	0.0	0.0	0.0	0.0	0.0	0.0

# A-10/F-16 3D Audio

## Background

- 3D Audio integrates a digital intercom system, active and electronic noise reduction, three-dimensional spatial separation of multiple radio channels and three-dimensional auditory threat cueing.
- Audio information comes to the pilot from up to four radios, the threat warning receivers and the aircraft itself. 3D Audio provides a spatial acoustical environment in which threat warnings and communications are easy to distinguish. 3D Audio increases situational awareness, significantly improves threat reaction time and communication intelligibility.
- 3D Audio System is in use on F-16s in Europe.
- In July 2010 the Guard and Reserve requested SAF/IAPQ to support a Foreign Comparative Test for 3D Audio.
- Engineering and programming oversight for the test is provided by the A-10 SPO. The test requires \$3.9M; SAF/IAPQ provided \$2.1M in FY11 with a promise of \$1.8M in FY12. A contract with TERMA North America is ready to execute as soon as the FY12 funds arrive.

## Requirement

Integrate 3D Audio into AFR A-10 and F-16 aircraft.

## Impact If Not Funded

Mission capability will degrade. Pilots will be saturated with audio input and situation awareness will drop slowing threat reactions and increasing the amount of time required to coordinate attacking targets.

## Units Impacted

- 917st Fighter Group, Barksdale AFB, LA
- 482nd Fighter Wing, Homestead ARB, FL
- 301st Fighter Wing, NAS JRB Ft Worth, TX
- 442nd Fighter Wing, Whiteman AFB, MO

## Contractor

TERMA North America, Warner Robins, GA

## Program Element Code

52720F/52716F

## In AF POM

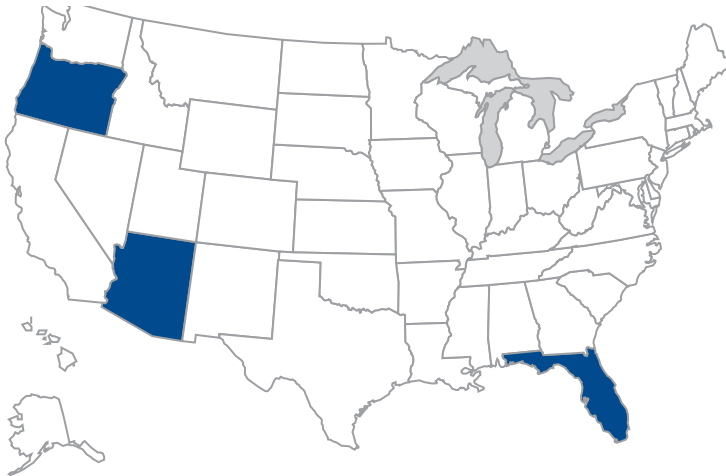
No

A-10/F-16 3D Audio	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	0.0	2.0	2.1	2.5	2.5	9.1
O&M—AFR (3740)	0.0	0.0	0.0	0.0	0.0	0.0
Total (\$M)	0.0	2.0	2.1	2.5	2.5	9.1
Quantity	0.0	0.0	28.0	34.0	34.0	96.0





# Guardian Angel



## GLOBAL REACH

PROVIDES  
WORLDWIDE COMBAT  
SEARCH AND RESCUE  
IN SUPPORT OF U.S.  
NATIONAL DEFENSE

Guardian Angel (GA) is an Air Force weapon system consisting of Combat Rescue Officers (CRO); Pararescuemen (PJ); and Survival, Evasion, Resistance, and Escape Specialists (SERE) operating

together to provide a dedicated capability to prepare, report, locate, support, recover, and reintegrate isolated personnel in support of Combat Search and Rescue (CSAR) and personnel recovery programs.

Guardian Angel forces operate in 12-man Recovery Teams (RT) with dedicated CSAR in austere and non-permissive environments involving humanitarian and disaster relief, and support NASA and other national rescue missions, including civil search and rescue operations.

Air Force Reserve GA personnel and equipment are assigned to the 920th Rescue Wing (RQW), Patrick AFB, FL. Subordinate 920th RQW GA units are located at Davis-Monthan AFB, AZ; and Portland IAP, OR. Contractors supporting GA are numerous and located throughout the United States.

Guardian Angel capability requires increased training resources and updated equipment, including common data links and wireless intercom.

GUARDIAN ANGEL

## Guardian Angel Executive Summary

Modernization List Funding Profiles (\$M)

Program (Funding Appropriation)	P.E. Number	FY12	FY13	FY14	FY15	FY16	Program Total
GA CSAR Common Data Link (3010)	53133F	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$2.50
GA Wireless Intercom (3010)	53133F	\$0.30	\$0.30	\$0.30	\$0.30	\$0.30	\$1.50

AFR Guardian Angel Pararescuemen work with more sophisticated, but non integrated datalink equipment over the past few years. Additionally, situational awareness between rescue aircrew members and pararescuemen is critical during personnel recovery missions. Common datalink and wireless intercom provide these critical capabilities.

# Guardian Angels Personnel Recovery Common Data Link

## Background

- AFR Guardian Angel Personnel require a Common Data Link system for compatible use with HH-60s and HC-130s
- Situational awareness of both aircrew and GAWS teams can save both the rescue teams and the rescue objective
- Both the HH-60 and HC-130 are being equipped with SADL, a tactical datalink

## Requirement

Provide Personnel Recovery Common Data Link to each Guardian Angles team member

## Impact If Not Funded

GA team members will continue to experience isolation from primary crew situational awareness; GA will lack seamless ground to aircraft situational awareness.

## Units Impacted

920th Rescue Wing, Patrick AFB, FL

## Contractor

TBD

## Program Element Code

53133F

## In AF POM

No

GA CSAR Common Datalink	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	0.5	0.5	0.5	0.5	0.5	2.5
Total (\$M)	0.5	0.5	0.5	0.5	0.5	2.5
Quantity	10.0	10.0	10.0	10.0	10.0	50.0





# Guardian Angels Wireless Intercom

## Background

- AFR Guardian Angel Personnel require a Wireless Intercom system for Guardian Angel use on HH-60s and HC-130s
- Wired intercom systems are limited by the number of communication cords available to GA team members, leaving some aircrew members without intercom communication capability
- The current wired intercom is easily damaged in harsh environment of the HH-60/HC-130
- Wireless Intercom would expand current intercom systems to ensure all aircrew members maintain situational awareness

## Requirement

- Provide Wireless Communications to each Guardian Angles team member
- A wireless intercom system would not replace any current system. It will add to the existing intercom system

## Impact If Not Funded

GA team members will continue to experience isolation from primary crew situational awareness; GA team members will continue to have difficulty communicating on aircraft intercom systems; GA will lack seamless ground to aircraft communications

## Units Impacted

920th Rescue Wing, Patrick AFB, FL

## Contractor

TBD

## Program Element Code

53133F

## In AF POM

No

MC-130 Wireless Intercom	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	0.3	0.3	0.3	0.3	0.3	1.5
Total (\$M)	0.3	0.3	0.3	0.3	0.3	1.5
Quantity	10.0	10.0	10.0	10.0	10.0	50.0

HH-160G  
PAVE HAWK





# HH-60G Pave Hawk



## GLOBAL REACH



PROVIDES  
WORLDWIDE COMBAT  
SEARCH AND RESCUE  
IN SUPPORT OF U.S.  
NATIONAL DEFENSE

The primary mission of the HH-60 Pave Hawk is to conduct day or night operations into hostile environments to recover downed aircrew or isolated coalition personnel. The HH-60 transports sick and wounded

personnel from hostile areas to advanced medical facilities. Because of its versatility, the HH-60 is also tasked to perform military operations other than war. These tasks include civil search and rescue, emergency aeromedical evacuations, disaster relief (including domestic relief operations like Hurricane Katrina), international aid, counterdrug activities and NASA space shuttle support.

The Pave Hawk is a highly modified version of the Army Black Hawk helicopter which features an upgraded communications and navigation suite. It includes integrated inertial navigation/global positioning/Doppler navigation systems, satellite and secure voice communications. All HH-60Gs have an automatic flight control system, night vision goggle compatible lighting, and forward looking infrared (FLIR) system that all allow Reserve airmen to effectively operate low to the ground at night. Additionally, the Pave Hawk has a color weather radar system and engine/rotor blade anti-icing system that gives the aircraft an adverse weather capability crucial to effect rescue operations.

HH-60G Rescue equipment includes a hoist capable of lifting a 600 lbs (270 kg) load from a hover height of 200 feet, and a personnel locating system that is compatible with the PRC-112 survival radio. The locating system provides range and bearing information to a survivor's location. The Air Force Reserve operates HH-60G aircraft at the 920th Rescue Wing at Davis-Monthan AFB, AZ, and Patrick AFB, FL.

The HH-60G currently requires an upgrade to its M-240 weapon system.

## HH-60 Executive Summary

### Unfunded Modernization Priority List Funding Profiles (\$M)

Program (Funding Appropriation)	P.E. Number	FY12	FY13	FY14	FY15	FY16	Program Total
HH-60 Upgraded Weapon System (M-240) (3010)	53122F	\$1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1.00

\*3010 Appropriation

HH-160G  
PAVE HAWK

HH-60 Upgraded Weapon System (M-240) – Configure 15 AFRC HH-60 aircraft with a lighter, more maneuverable can that would also be more effective because it would require fewer reloading operations during critical phases of flight, facilitating better defense of the aircraft.

## HH-60 Upgraded Weapon System (M-240)

### Background

- The HH-60 helicopter is unable to provide adequate defensive firepower in the high altitude, high temperature conditions encountered in desert environments. The M-240 weapon is used in-lieu-of heavier weapons.
- The M-240 machine gun uses a 200-round ammunition can that is heavy, cumbersome, and requires frequent reloads during mission execution.

### Requirement

Configure 15 AFRC HH-60 aircraft with a lighter, more maneuverable can that would also be more effective because it would require fewer reloading operations during critical phases of flight, facilitating better defense of the aircraft.

### Impact If Not Funded

HH-60 aircraft defense at high altitude and/or during high temperatures will continue to be marginal. This poses higher risk and could adversely affect mission accomplishment in the recovery of personnel as well as aircrew survivability.

### Units Impacted

- 920th Rescue Wing, Patrick AFB, FL
- 943rd Rescue Group, Davis-Monthan AFB, AZ

### Contractor

Dillon Aero, Scottsdale, AZ

### Program Element Code

53122F

### In AF POM

No

HH-60 Upgraded Weapon System (M-240)	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	1.0	0.0	0.0	0.0	0.0	1.0
Total (\$M)	1.0	0.0	0.0	0.0	0.0	1.0
Quantity	15.0	0.0	0.0	0.0	0.0	15.0

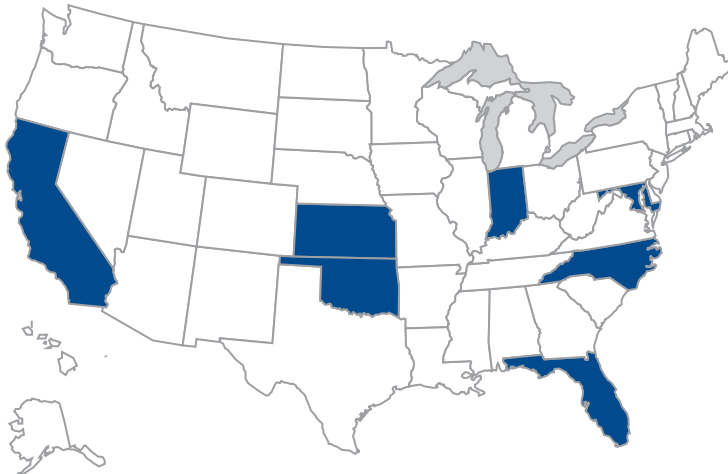


HH-160G  
PAVE HAWK





# KC-135 Stratotanker



## GLOBAL REACH



PROVIDES INTER-THEATER AND INTRA-AIR REFUELING AND AIRLIFT IN SUPPORT OF U.S. NATIONAL DEFENSE

The KC-135 Stratotanker provides worldwide air refueling and strategic airlift in support of U.S. national defense. It is a critical enabler of nearly every Air Force Service Core Function including Rapid Global Mobility.

In FY12, the Air Force Reserve operates KC-135R aircraft at the 434th Air Refueling Wing, Grissom ARB, IN; the 452nd Air Mobility Wing, March ARB, CA; the 459th Air Refueling Wing, Andrews AFB, MD; the 507th Air Refueling Wing, Tinker AFB, OK; and the 916th Air Refueling Wing, Seymour-Johnson AFB, NC. The AFR associates with the active duty on KC-135R aircraft at the 931st Air Refueling Group, McConnell AFB, KS; and the 927th Air Refueling Wing, MacDill AFB, FL.

Contractors include Boeing (engineering and depot maintenance), Rockwell Collins (avionics), and PEMCO (depot maintenance).

AFR KC-135 aircraft require the installation of the Large Aircraft Infrared Countermeasures (LAIRCM) system to reduce their vulnerability to MANPAD threats in the combat environment and be compliant with LAIRCM ORD 314-92, LAIRCM Equipage Study, dated Aug 98.

## KC-135 Executive Summary

KC-135 Large Aircraft Infrared Countermeasure (LAIRCM) – Allows aircraft to survive and operate in environments of increasing levels of threat complexity and lethality.

### Modernization List Funding Profiles (\$M)

Program (Funding Appropriation)	P.E. Number	FY12	FY13	FY14	FY15	FY16	Program Total
KC-135 LAIRCM (3010)	51421F	\$11.5	\$30.0	\$30.0	\$30.0	\$0.0	\$101.3
KC-135 LAIRCM Non-Recurring	51421F	\$8.8	\$0.0	\$0.0	\$0.0	\$0.0	\$8.8



# KC-135 Large Aircraft Infrared Countermeasures (LAIRCM)

## Background

Changes in employment concepts are placing KC-135 aircraft in high threat areas. Low altitude refueling, forward positioning, and mission sets establishing the tanker as a command and control relay are subjecting the KC-135 to increasingly hostile operational environments. This threat environment is widely populated with shoulder fired, Man Portable. MANPADs are a significant threat during takeoffs, landings, and low altitude refueling missions. An advanced IRCM system is needed to counter MANPAD threats; one that does not rely on pyrotechnic expendables (incompatible with an air refueling mission) and leverages off of previous government investments in laser based countermeasures.

## Requirement

Large Aircraft Infrared Countermeasures (LAIRCM) ORD 314-92, dated Aug 98, LAIRCM Equipage Study.

## Impact If Not Funded

KC-135 aircraft are uniquely vulnerable to MANPAD threats due to its size, lack of maneuverability, and a large combustible fuel load. There is no nitrogen inerting in the KC-135 fuel system, and old technology fuel tanks are not designed to withstand battle damage. Without defensive systems, a MANPAD attack against a KC-135 has a high probability of a kill. Additionally, lack of defensive systems limits the KC-135 from operating out of forward operating bases, causing increased flying time and fuel consumption, thus decreasing mission effectiveness by limiting fuel available for offload.

## Units Impacted

- 434th Air Refueling Wing, Grissom ARB, IN
- 452th Air Mobility Wing, March ARB, CA
- 459th Air Refueling Wing, Joint Base Andrews, MD
- 507th Air Refueling Wing, Tinker AFB, OK
- 916th Air Refueling Wing, Seymour Johnson AFB, NC

## Contractor

- BAE Systems, Nashua, NH
- Lockheed Martin, Orlando, FL
- Elbit Systems of America, Fort Worth, TX
- Northrop Grumman Electronics Systems, Rolling Meadows, IL

## Element Code

51421F

## In AF POM

No

KC-135 LAIRCM	FY12	FY13	FY14	FY15	FY16	FYDP
Aircraft Procurement (3010)	2.9	37.0	37.0	37.0	4.6	118.4
Total (\$M)	2.9	37.0	37.0	37.0	4.6	118.4
Quantity Group A/B	1/1	20/10	20/10	20/10	3/1	64/32



