

AIR NATIONAL
GUARD

2014

WEAPONS SYSTEMS MODERNIZATION PRIORITIES




GUARDING AMERICA • DEFENDING FREEDOM

FOREWORD



From the very beginnings of the Air National Guard in 1947 until today, our Airmen have been fueled by an innovative spirit that is the hallmark of our Air Force. Through this spirit, we have grown airpower into an ability to project global military power through air, space and cyberspace. We are the cornerstone of our Air Force and full participants across its core missions: Air and Space Superiority; Intelligence, Surveillance and Reconnaissance; Rapid Global Mobility; Global Strike; and Command and Control. These core missions are necessary to provide the integrated global power effects that only the United States Air Force can provide.

Through the unique National Guard structure, the Air National Guard supports global requirements while remaining prepared to support domestic security and other homeland operations. Our Air National Guard requires innovative, affordable and technically sound capabilities combined with viable tactics to defeat challengers and threats that are constantly evolving. Our Nation's adversaries seek capabilities and tactics to counter America's dominance of air, space and cyberspace, and will pursue asymmetric advantages in different arenas such as electronic and cyber warfare. The capabilities contained within the 2014 Air National Guard Weapons Systems Modernization Priorities Book are based on validated Air Force and Combatant Commander requirements vetted through a forum of Reserve Component and Active Duty warfighters at our annual Weapons and Tactics Conference. The modernization programs in this book will continue to provide our warfighters the capabilities needed to remain ready and viable for any contingency. We must maintain our airpower advantage in order to deliver Global Vigilance, Global Reach and Global Power for America.



STANLEY E. CLARKE III
Lieutenant General, USAF
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There is a separate For Official Use Only (FOUO) Annex document. This Annex provides additional details such as a prioritization table and executive summaries.

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INTRODUCTION



The 2014 Air National Guard (ANG) Weapons Systems Modernization Priorities Book documents capability priorities identified during the Dec 2013 Air Reserve Component Weapons and Tactics (WEPTAC) Conference. WEPTAC included representatives from all ANG and Air Force Reserve (AFR) units, as well as representation from the active component. The 2014 book is organized into 18 individual weapons systems Tabs. Each Tab begins with a summary page of capabilities identified at WEPTAC, categorized as Critical (crucial within the next 1 to 3 years), Essential (vital within the next 3 to 5 years), or Desired (enhances mission success in the 5-year timeframe).

For each Critical capability identified, an information paper is included within the weapon system Tab. A header within each information paper identifies its appropriate Service Core Function or functional category as one of the following:

Air Superiority / Global Precision Attack
Space Superiority / Cyberspace Superiority
Agile Combat Support
Global Integrated Intelligence, Reconnaissance
and Surveillance

Rapid Global Mobility
Command and Control
Special Operations / Personnel Recovery
Simulation, Distributed Mission Operations
and Range Instrumentation

Applicable Funding Appropriation Definitions

3840 - ANG Operations and Maintenance, 1-year funding
3010 - Aircraft Procurement, 3-year funding
3600 - Research, Development, Test and Evaluation, 2-year funding
3080 - Other Procurement, 3-year funding

In most cases, Non-Recurring Engineering (NRE) costs are paid for with 3600 Research, Development, Test and Evaluation (RDT&E) money, but in some cases they can be funded with procurement money.

The State Matrix page identifies ANG weapons systems locations by state and territory. These depictions reflect the force structure as of 1 Jan 2014, and are subject to change based on force structure changes that have not been released.



State Matrix

Weapons Systems Reference Table by State (1 Jan 2014)

Refer to Weapon System Tabs for Specific Information (Classic Associate Units are shown in red.)

	A-10	B-2	C-17	C-130	E-8/C-32	F-15	F-16	F-22	HH-60	KC-135	MQ-1 MQ-9	OSA	AOC/ACS CRC/ADS	Space / Cyber / IO	RC-26 DCGS	GA / ST / TACP	Ranges
AK			●	●●					●	●			●	Space		GA	
AL							●			●					●●		
AR	●			●							MQ-9				●		●
AZ							●			●	MQ-1		●		●		
CA				●●		●	●		●		MQ-1/9			CY/SP	●●	GA	
CO							●					●		Space			●
CT				●									●●				
DC							●					●					
DE				●										Cyber			
FL						●							●	Space	●		
GA				●	E-8								●		●	TACP	●
GU																	
HI			●					●		●			●		●		
IA							●			●	MQ-9		●				
ID	●									●			●			TACP	
IL				●						●			●			TACP	
IN	●												●		●	TACP	●●
KS										●			●	CY/SP	●	TACP	●
KY				●												ST	
LA						●							●			TACP	
MA						●							●		●		
MD	●													Cyber			
ME										●							
MI	●									●	MQ-9		●				●
MN				●			●										
MO		●		●									●●				●
MS			●							●			●		●	TACP	●
MT				●		●											
NC				●												TACP	
ND											MQ-1						
NE										●							
NH										●							
NJ					C-32		●			●			●			TACP	●
NM				●					●						●		
NV				●							MQ-1/9				●		
NY			●	●●●					●		MQ-9		●●	Space	●	GA/TP	●
OH				●			●			●	MQ-1		●				
OK							●			●			●			TACP	
OR						●							●			ST	
PA				●						●	MQ-9		●			TACP	●
PR				●									●●				
RI				●										Cyber			
SC							●										
SD							●										
TN			●							●	MQ-9						
TX				●			●				MQ-1			Cyber	●	TACP	●
UT										●			●		●		
VA								●							●		
VI																	
VT							●							Cyber			
WA										●			●	CY (2)	●	TACP	
WI							●			●			●		●		●
WV			●	●											●		
WY				●										Space			



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A-10



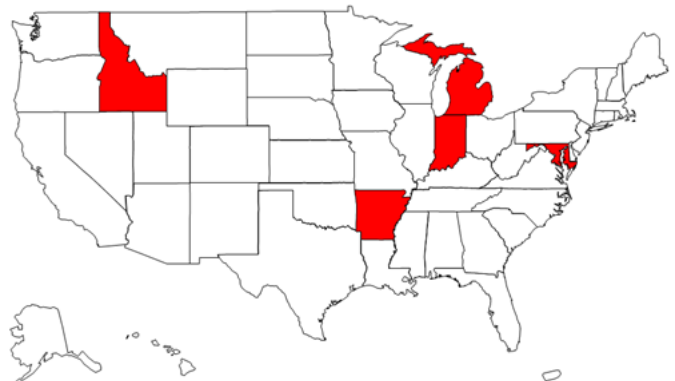
- **Close Air Support**
- **Forward Air Controller – Airborne**
- **Combat Search and Rescue**
- **ANG A-10 Units Provide 30% of the Total Fleet**

The A-10 continues to prove itself as the premier close air support platform of choice for overseas contingency operations. It operates from austere airfields, provides flexibility beyond that of any other fixed wing Air Force asset, and remains extremely viable for future conflicts. With a near continuous presence since 2002 in Operations ENDURING FREEDOM and IRAQI FREEDOM, the A-10 has proven its ability to minimize collateral damage with precision munitions and its 30 mm cannon. The significant weapons load out, coupled with its extensive loiter time and survivability at low altitudes, provides a capability that is unmatched by any current Air Force weapon system, while also giving ground forces in close proximity to enemy forces excellent support in almost any weather condition.



Air National Guard (ANG) A-10s have deployed multiple times over the last few years, and all were equipped with the AN/AAR-47 missile warning system and dual secure line-of-sight ARC-210 satellite communications radio. The next ANG A-10s to deploy will carry the Lightweight Airborne Recovery System to aid in Combat Search and Rescue, and the Scorpion Helmet Mounted Integrated Targeting system, which reduces the time to acquire targets with aircraft sensors from minutes to seconds.

While the A-10 excels at contingency operations, ongoing A-10 modernization programs will ensure the aircraft remains viable in any conflict. The first of these programs is an anti-jam embedded Global Positioning System (GPS), which will provide the ability to operate and employ in a degraded, denied or deceived GPS environment. Additionally, a three-dimensional audio cockpit system will provide spatial separation of radios and threat warnings, so a pilot can immediately determine threat location. Finally, the high resolution center display allows pilots to see the high definition picture provided by current targeting pods. Such a display allows a significant improvement in positive identification of friendly and enemy combatants, while aiding in the search, surveillance and tracking of enemy personnel.



A-10

2013 Weapons and Tactics Conference

Critical Capabilities List

- Improved Positive Identification
- Operational Flight Program
- Integrated Communications Suite
- Improved Ability to Operate in a Contested and Degraded Operations Environment
- Improved Capability to Employ from Austere Airfields

Essential Capabilities List

- Propulsion and Airframe Enhancement
- Improved Electronic Attack and Electronic Protection
- Synthetic Aperture Radar Pod
- Smart Triple Ejector Rack
- Full AIM-9 Integration

Desired Capabilities List

- Instrument Flight Rules-Certified Heads-Up Display
- Laser Threat Protection for Eyes and Sensors
- Electronic Flight Bag with Cockpit Power Source
- High Capacity Removable Mass Memory Device
- Longer Range Precision Guided Munition

A-10 IMPROVED POSITIVE IDENTIFICATION

1. Background. Positive Identification (PID) of friendly forces and enemy combatants is crucial in any conflict. Every action must be taken to eliminate fratricide and civilian casualties. Currently, three capabilities can immediately help A-10 pilots minimize misidentification. The first of these is the Helmet Mounted Integrated Targeting (HMIT) system. HMIT will reduce the time to acquire targets with aircraft sensors from minutes to seconds and allow pilots to quickly locate the position of friendly forces on the ground. By simply looking outside the cockpit using HMIT, the pilot can immediately determine a three-dimensional picture of the battlefield while assessing risk to friendly forces and civilian personnel and property. The next key in finding and identifying hostile forces is the ability to see the “best ground detail available.” Advanced Targeting Pod (ATP)-Sensor Enhancement (SE) technology can provide the scene clarity necessary for a pilot to find enemies previously undetectable from the air, while displaying the detail necessary to determine, for example, if an individual is carrying a weapon or a tool. This technology comes in the form of sensor enhancement systems that will make legacy targeting pods obsolete. Targeting pod upgrades include better connectivity and processing, as well as a digital port to send high resolution digital imagery to the cockpit. In order to maximize the effectiveness of the upgraded ATPs, A-10s require a third capability, high resolution displays, to be able to fully utilize the targeting pod image quality, improve available processing power, and replace aging flight instruments.

2. Source of Need. Combatant Command Urgent Operational Need (UON), 26 Sep 2008; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

122 FW Ft Wayne IAP, IN	127 WG Selfridge ANGB, MI	188 RW Ft Smith RAP, AR
124 FW Boise AP, ID	175 WG Martin State AP, MD	

4. Program Details. **PEC: 27131F**

Remaining Quantity Required *	Unit Cost	Program Cost
38 ATP-SE Pods (3010)	\$1,900,000	\$72,200,000
85 Color Displays (3010)	\$376,000	\$31,960,000
218 Digital Port Upgrades (3010)	\$250,000	\$54,500,000
1 Display NRE (3600)	\$6,500,000	\$6,500,000
128 HMIT Improvements (3010)	\$31,250	\$4,000,000
Total		\$169,160,000

* Includes 10% spares.

A-10 OPERATIONAL FLIGHT PROGRAM

1. Background. The A-10 requires continued updates to the Operational Flight Program (OFP) software. The A-10 OFP is the key to integrating and updating all systems and weapons carried on the aircraft. The current A-10 OFP software development cycle is 3 years, during which software candidates are prioritized and incorporated into the OFP based prioritization. When an OFP is not funded in a stable budget, candidate modifications are removed from development, significantly limiting the sustainment of aging systems, and preventing full integration of both new aircraft and weapon capabilities. The next A-10 OFP, Suite 8, is underfunded for both software development and System Integration Laboratory (SIL) development. If the A-10 remains in service for an extended period of time, follow-on OFP updates will be required and will have a significant impact on future A-10 capabilities. Sustainment items will also be vital to keep the aircraft flying. The A-10 must carry updated, more capable weapons, including an up-to-date targeting pod, which is crucial in executing the primary missions of Close Air Support (CAS), Combat Search and Rescue (CSAR), and support to Joint Terminal Air Controllers (JTAC). The A-10 requires integration of new systems like the high resolution display or the jam-resistant Global Positioning System (GPS), both of which will provide tremendous capabilities to the aircraft and Combatant Commanders in future conflict.

2. Source of Need. A-10 Operational Requirements Document (ORD), 19 Oct 1999; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

122 FW Ft Wayne IAP, IN 127 WG Selfridge ANGB, MI 188 RW Ft Smith RAP, AR
124 FW Boise AP, ID 175 WG Martin State AP, MD

4. Program Details. **PEC: 27131F**

Remaining Quantity Required	Unit Cost	Program Cost
3 OFP Software Upgrades (3600)	\$36,000,000	\$108,000,000
1 Complete Suite 8 Funding (3600)	\$9,400,000	\$9,400,000
Total		\$117,400,000

A-10 INTEGRATED COMMUNICATIONS SUITE

1. Background. The A-10 communications suite improvements consist of the ARC-210 radio, three-dimensional (3-D) audio, and Warrior Situational Awareness (SA). Two ARC-210 multi-band and multi-mode digital radios that include Satellite Communications to meet the urgent operational need for simultaneous beyond line-of-sight and secure line-of-sight communications have been fielded on all Air National Guard A-10s. Integration of Warrior SA in the ARC-210 radio will allow ground troops' Global Positioning System data, transmitted by the existing radios of thousands of ground troops, to be displayed on the A-10 Tactical Awareness Display, the targeting pod field of view, as well as within the Helmet Mounted Integrated Targeting (HMIT) system display. This capability will allow the pilot to simply look outside the cockpit and immediately see the position of friendly ground troops on a mountain side or within a village that would normally take several minutes to identify. This reduces the risk of fratricide and lowers the pilot workload in a Close Air Support (CAS) or Combat Search and Rescue (CSAR) scenario. The integration of noise-cancelling and 3-D audio increases situational awareness by spatially separating aural warnings and radio information, and providing angular cueing to ground and air threats when used in conjunction with the HMIT system. This spatial separation and reduction in ambient noise significantly increases the pilot's ability to process information coming from up to four radios and warning systems simultaneously.

2. Source of Need. 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

122 FW Ft Wayne IAP, IN	127 WG Selfridge ANGB, MI	188 RW Ft Smith RAP, AR
124 FW Boise AP, ID	175 WG Martin State AP, MD	

4. Program Details. **PEC: 27131F**

Remaining Quantity Required *	Unit Cost	Program Cost
1 Directional Audio NRE (3600)	\$3,000,000	\$3,000,000
128 Directional Audio Pilot Equipment (3010)	\$7,000	\$896,000
85 Directional Kits (3010)	\$94,000	\$7,990,000
1 Warrior SA (3010)	\$2,000,000	\$2,000,000
8 3-D Audio Unit Test Equipment (3080)	\$43,800	\$350,400
Total		\$14,236,400

* Includes 10% spares.

A-10 IMPROVED ABILITY TO OPERATE IN A CONTESTED AND DEGRADED OPERATIONS ENVIRONMENT

1. Background. The A-10 uses an Embedded Global Positioning System (GPS) / Inertial Navigation System (INS) (EGI) for precision navigation and weapons employment. The EGI is the heart of the A-10 avionics system. To counter jamming threats, the A-10 requires a Controlled Reception Pattern Antenna (CRPA) that significantly nullifies the effects of jamming systems based on the aircraft distance from that system. In addition to the new antenna, the A-10 also requires a hardware update to the current EGI system. This includes Selective Availability Anti-Spoofing Modules (SAASM), which combat these hostile jamming influences to protect Precise Positioning Systems and Standard Positioning Systems. Additionally, a current Federal Aviation Administration (FAA) ruling mandates a SAASM-based Automatic Dependent Surveillance-Broadcast (ADS-B) EGI by 2020 for all aircraft to support its transition to satellite-based air traffic control systems, capable of providing better surveillance precision and reliability. Upgrading the A-10's current EGI system will support this FAA requirement, while providing increased capability to keep the positional information accurate in a Contested and Degraded Operations (CDO) environment. The accurate positional information on the data link, provided by EGI, is critical to determine the location of friendly ground forces, and minimize the risk of fratricide, as well as civilian collateral damage when employing ordnance in any combat environment.

2. Source of Need. FAA Rule - 14 CFR Part 91 [Docket No. FAA-2007-29305; Amdt. No. 91-314], RIN 2120-AI92 - ADS-B Out Performance Requirements to Support Air Traffic Control Services, 28 May 2010; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

122 FW Ft Wayne IAP, IN	127 WG Selfridge ANGB, MI	188 RW Ft Smith RAP, AR
124 FW Boise AP, ID	175 WG Martin State AP, MD	

4. Program Details. **PEC: 27131F**

Remaining Quantity Required *	Unit Cost	Program Cost
85 Anti-Jam EGI (3010)	\$155,000	\$13,175,000
1 Anti-Jam EGI NRE (3600)	\$2,100,000	\$2,100,000
Total		\$15,275,000

* Includes 10% spares.

A-10 IMPROVED CAPABILITY TO EMPLOY FROM AUSTERE AIRFIELDS

1. Background. The A-10 is the only fighter aircraft in the Air Force inventory that has the ability to land at austere, unimproved airfields to include dry lake beds. This capability gives Combatant Commanders a tremendous amount of flexibility to pre-deploy A-10s closer to the expected battlespace, and allows them a quicker response time for the three primary missions of Close Air Support (CAS), Forward Air Controller-Airborne (FAC-A), and Combat Search and Rescue (CSAR). Emerging capabilities will further improve the A-10's ability to effectively operate out of austere airfields, while reducing maintenance and logistics personnel and equipment required to support such operations. The first of these new capabilities is a covert / overt landing light that will give pilots the option to select a night vision-compatible landing light. Second, a combat-capable external fuel tank will provide additional flight time and limit the requirement to put a tanker aircraft in harm's way for extended missions in enemy territory. Third, to limit the support equipment footprint, an On-Board Oxygen Generating System (OBOGS) removes the requirement for maintenance personnel to refill the current liquid oxygen system between missions. Fourth, a parking brake allows pilots to sit in the aircraft waiting for launch instructions without additional personnel to place and remove wheel chocks. Finally, the Advanced Precision Kill Weapon System (APKWS) allows the A-10 to carry at least 35 precision guided rockets. These weapons have many positive characteristics in that they are easily hand-loaded into a rocket pod already mounted on the aircraft minimizing the munitions personnel required at austere airfields. The APKWS weapons are lightweight, very precise, have significant destructive capabilities, and minimize collateral damage.

2. Source of Need. A-10 Operational Requirements Document (ORD), 19 Oct 1999; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

122 FW Ft Wayne IAP, IN	127 WG Selfridge ANGB, MI	188 RW Ft Smith RAP, AR
124 FW Boise AP, ID	175 WG Martin State AP, MD	

4. Program Details. PEC: 27131F

Remaining Quantity Required *	Unit Cost	Program Cost
63 Combat Fuel Tanks (3010)	\$80,000	\$5,040,000
43 Covert / Overt Landing Lights (3010)	\$27,500	\$1,182,500
85 OBOGS (3010)	\$208,000	\$17,680,000
43 Parking Brakes (3010)	\$25,000	\$1,075,000
126 Advanced Precision Kill Weapon Systems (3020)	\$83,000	\$10,458,000
Total		\$35,435,500

* Includes 10% spares.

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Command & Control



- **Air Defense and Surveillance for North America**
- **Air Battle Management**
- **C-NAF Integration / Augmentation**
- **Military Range Control**
- **Centralized Control**
- **Ground Controlled Intercept**
- **Flight Safety Monitoring**



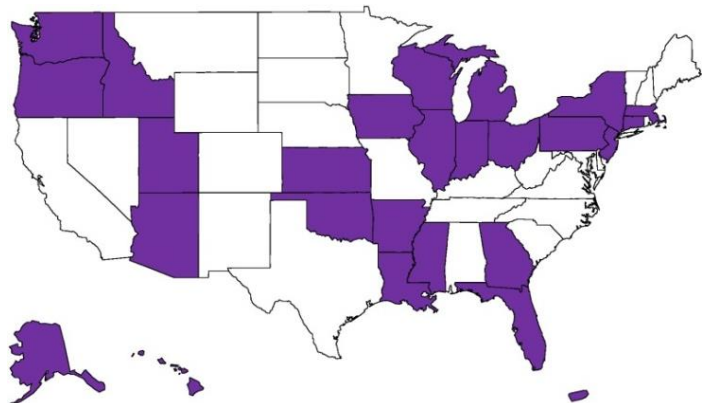
Air National Guard (ANG) Command and Control (C2) weapons systems are integral to the joint fight in Overseas Contingency Operations (OCO), and transforming the rapidly expanding Homeland Defense (HD) mission area.

Air and Space Operations Center (AOC) - The Component-Numbered Air Force (C-NAF) is comprised of an AOC and Air Force Forces (AFFOR) Staff. The AOC weapon system is the capstone of the Theater Air Control System (TACS) employed by the

Commander, Air Force Forces (COMAFFOR) providing centralized control and decentralized execution of aerospace forces to the Joint Force Air Component Commander (JFACC). The A-Staff is organized functionally, with a command section, personal staff and functional staff A1 through A9, as well as a variety of cross-functional teams that support the COMAFFOR as the AF service component commander.

Control and Reporting Center (CRC) / Air Control Squadron (ACS) - An ACS is the only Air Force 24/7 deployable and sustainable ground Battle Management Command and Control (BMC2) platform. The CRC provides operational and tactical surveillance, weapons control, communications, data links and combat-related air battle management of joint air operations with real-time Shared Situational Awareness (SSA).

Air Defense Sector (ADS) - An ADS provides tactical communication and data link capabilities to bridge communications between civil authorities and other military units responsible for planning, directing, coordinating and controlling forces for air surveillance, air defense and control of sovereign US airspace.



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Critical Capabilities List

Air and Space Operations Center:

- Recurring Event 11 Upgrade
- Direct Operational Secure Voice Communication
- Trusted Thin Client - Single Pane of Glass
- Mission Network Access

Control and Reporting Center:

- Modular Tactical Electrical Power Mission Support Systems
- Integrated Digital Mission Recording
- Remote Voice Communications

Air Defense Sector:

- Battle Control Center Beyond Line-of-Sight Tactical Satellite Communications
- Battle Control Center Line-of-Sight Communications

Air Defense Sector:

- Nationwide Integrated Data Link Architecture
- Battle Control Center Mission System Migration to Battlespace Command and Control Center Software and Multiple Source Correlator Tracker
- Next Generation Operator Environment Using Networked Architecture Capable of Information Sharing and Full Sensor Integration
- Sensor Enhancements to Find, Fix, Target and Track Low-Altitude/Low-Radar Cross Section Non-Cooperative Targets

Desired Capabilities List

Essential Capabilities List

Air and Space Operations Center:

- Air and Space Operations Center Communications Training Tool
- Targeting Application Weapon System
- Cross-Domain Solution for Information Exchange
- Air Reserve Component Network
- Multiple Source Correlator Tracker

Control and Reporting Center:

- Organic Networking and Communications Equipment
- Upgrade Command and Control Engine to Meet Current and Future Operations

Air and Space Operations Center:

- None

Control and Reporting Center:

- None

Air Defense Sector:

- None

AIR AND SPACE OPERATIONS CENTER RECURRING EVENT 11 UPGRADE

1. Background. The Air and Space Operations Center (AOC) Weapon System Recurring Event (RE) 11 represents significant progress over previous Theater Battle Management Core Systems (TBMCS) and is the mission system core of the AOC weapon system baseline (RE 12 and 13 will follow-on as planned upgrades). RE 11 contains a major system platform change, as well as an equipment upgrade. It provides improved internal AOC network capability, server virtualization, security updates and corrects vulnerabilities identified in the underlying applications and subsystems. RE 11 is programmed for installation within all active duty AOCs. However, only one Air Reserve Component (ARC)-aligned Air Operations Group (AOG) is currently funded for this upgrade. ARC AOG programmed upgrades are scheduled at a 12+ month delay from their active duty-aligned counterpart. The AOC weapon system baseline funding shortfall creates an operational mismatch between active duty- and ARC-aligned units, affecting training and mission relevance. The lack of a common AOC weapons system configuration results in significant training and operational divergences between the ARC AOGs and their active duty-aligned AOCs, specifically the Combat Operations Division (COD) and Combat Plans Division (CPD).

2. Source of Need. Program Action Directive (PAD) 10-2; Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3505.01A; 2013 ARC WEPTAC Critical Requirement.

3. Units Impacted.

102 IW Otis ANGB, MA 112 AOS State College, PA 217 AOG Battle Creek IAP, MI

4. Program Details. **PEC: 507411F**

Remaining Quantity Required	Unit Cost	Program Cost
3 RE 11 (3080)	\$2,000,000	\$6,000,000
Total		\$6,000,000

AIR AND SPACE OPERATIONS CENTER DIRECT OPERATIONAL SECURE VOICE COMMUNICATION

1. Background. Air and Space Operations Centers (AOC) continue to use Radio Frequency (RF) as a means to communicate with joint services, allies, partner nations, aircraft platforms and associate units. To support their aligned AOCs, Air National Guard (ANG) units require the Core Radio Package System (CRPS) or AccessNet to properly train and equip both operators and maintainers. An additional benefit is an enhanced state of readiness providing real-time training between multiple in-state units. AOC units must train on the same systems as the AOCs they support. Also, the radio-to-Internet Protocol (IP) bridge, such as AccessNet, can be used by ANG AOCs to simulate and train realistic Tactical Air Control System (TACS) control procedures; participate in real-world events; conduct distributed operations; interface with aligned units; and increase readiness training. A CRPS should consist of at least two PRC-117G model radio stations to include batteries; handset and speaker; Communications Security (COMSEC) equipment; and associated high-gain antenna and low loss cables. Moreover, a radio-IP bridge provides digital voice communications that route live radio voice traffic between multiple sites over local and wide area data networks for additional capabilities.

2. Source of Need. Program Action Directive (PAD) 10-2; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

102 AOG	Otis ANGB, MA	157 AOG	Jefferson Barracks, MO	701 COS	March ARB, CA
112 AOS	State College, PA	183 AOG	Springfield, IL	710 COS	Langley AFB, VA
152 AOG	Syracuse, NY	217 AOG	Battle Creek, MI		

4. Program Details. **PEC: 507411F**

Remaining Quantity Required	Unit Cost	Program Cost
8 Secure Voice Communications Suites (3080)	\$100,000	\$800,000
Total		\$800,000

AIR AND SPACE OPERATIONS CENTER TRUSTED THIN CLIENT - SINGLE PANE OF GLASS

1. Background. Air and Space Operations Center (AOC) operators and Air Force Forces (AFFOR) Command contingency planners require daily use of multiple domain networks to conduct distributed operations and training. Information across multiple domains needs to be visible simultaneously to provide effective training and operational support to their respective Component-Numbered Air Force (C-NAF), as well as to their State Joint Force Headquarters Joint Operations Centers (JFHQ JOC) to conduct Domestic Operations (DOMOPS). A cross-domain solution via a Trusted Thin Client facilitates multiple views of different networks operating at various classification levels within the Air Operations Group (external to the Falconer Weapons System). The Cross-Domain / Trusted Thin Client provides simultaneous views of Non-Secure Internet Protocol Router (NIPR), Secure Internet Protocol Router (SIPR), Command and Control Air National Guard (C2ANG), Secret, Top Secret and/or coalition networks. The system must include Top Secret and Below Interoperability (TSABI) and Secret and Below Interoperability (SABI). The system also must include Global Network Enterprise Construct concepts for information sharing, decreasing network / user footprint and providing multiple domain access to the warfighter.

2. Source of Need. 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

101 AOG	Tyndall AFB, FL	112 AOG	State College, PA	183 AOG	Springfield, IL
102 AOG	Otis ANGB, MA	152 AOG	Syracuse, NY	217 AOG	Battle Creek, MI
109 AOG	JBPHH, HI	157 AOG	Jefferson Barracks, MO	286 AOG	Meridian, MS
111 AOG	Horsham, PA				

4. Program Details. **PEC: 507411F**

Remaining Quantity Required	Unit Cost	Program Cost
10 Cross Domain Network Solutions (3080)	\$450,000	\$4,500,000
Total		\$4,500,000

AIR AND SPACE OPERATIONS CENTER MISSION NETWORK ACCESS

1. Background. The network access required to successfully support the Air National Guard (ANG) Component-Numbered Air Force (C-NAF) enterprise mission is significant and growing. The level and quality of network bandwidth must support the Falconer Air Operations Center Program of Record, Domestic Operations, Distributed Operations, and training with aligned Regular Air Force units, Continuity of Operations Planning, and remote and localized exercises. Additionally, the growth of cyber and Intelligence, Surveillance and Reconnaissance (ISR) training demands across the Air and Space Operations Center (AOC) continue to strain the infrastructure of ANG C-NAF units. An increase in size and throughput from the current T1 (1.5 MB) Secret Internet Protocol Router (SIPR) line, and increased bandwidth on distributed training networks (e.g., Joint Training and Experimentation Network, Air Reserve Component Network, Distributed Mission Operations Network) are required to accommodate growth. Redundant circuits will be required for units providing Distributed Operations, as well as a direct connection to aligned Regular Air Force units. A suggested baseline of a redundant, synchronous DS3 (45 MB) on SIPR is recommended, but specific bandwidth requirements for each site must be determined and documented.

2. Source of Need. Program Action Directive (PAD) 10-2; 2011-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

101 AOG	Tyndall AFB, FL	112 AOG	State College, PA	183 AOG	Springfield, IL
102 AOG	Otis ANGB, MA	152 AOG	Syracuse, NY	217 AOG	Battle Creek, MI
109 AOG	JBPHH, HI	157 AOG	Jefferson Barracks, MO	286 AOG	Meridian, MS
111 AOG	Horsham, PA				

4. Program Details. **PEC: 507411F**

Remaining Quantity Required	Unit Cost	Program Cost
11 Network Bandwidth Access 1(3080)	\$50,000	\$550,000
11 Network Bandwidth Access 2(3080)	\$20,000	\$220,000
Total		\$770,000

CONTROL AND REPORTING CENTER MODULAR TACTICAL ELECTRICAL POWER MISSION SUPPORT SYSTEMS

1. Background. The Control and Reporting Center (CRC) is a mobile Battle Management Command and Control (BMC2) capability with the deployable radar elements of the Theater Air Control System (TACS). The CRC integrates a comprehensive air picture via multiple data links from air-, sea-, and land-based sensors, as well as from its embedded surveillance and control radars. It performs decentralized Command and Control (C2) of joint operations by conducting threat warning, battle management, theater missile defense, weapons control, combat identification and strategic communications. For continuous operations the CRC requires safe and reliable power to operate in a deployed environment. An integrated power grid consists of the Power Distribution Panel Systems (PDPS), all weather tactical power cables and state-of-the-art tactical generators that enable consolidation and reduction of numerous legacy electrical power production units and support systems. The primary power grid interconnected with PDPS must be capable of load balancing. Although the primary components of the PDPS equipment have been delivered to all units, interconnect cables and components are still required for all units to have a fully functional, safe and efficient power distribution system; and enable the ability to rapidly deploy and connect power to mission essential equipment.

2. Source of Need. 2010-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

103 ACS	Orange, CT	123 ACS	Blue Ash, OH	134 ACS	McConnell AFB, KS
109 ACS	Salt Lake City, UT	128 ACS	Volk Field, WI	141 ACS	Punta Borinquen, PR
116 ACS	Warrenton, OR	133 TS	Fort Dodge, IA	255 ACS	Gulfport, MS
117 ACS	Savannah, GA				

4. Program Details. **PEC: 52672F**

Remaining Quantity Required	Unit Cost	Program Cost
10 Power Distribution Systems (3080)	\$195,000	\$1,950,000
Total		\$1,950,000

CONTROL AND REPORTING CENTER INTEGRATED DIGITAL MISSION RECORDING

1. Background. The Control and Reporting Center (CRC) is a mobile Battle Management Command and Control (BMC2) capability with the deployable radar elements of the Theater Air Control System (TACS). The CRC integrates a comprehensive air picture via multiple data links from air-, sea-, and land-based sensors, as well as from its embedded surveillance and control radars. The Operations Module (OM) has a very limited communications recording capability based on an outdated reel-to-reel system. The current system only records audio inputs from the four operator positions in the OM. The playback feature is difficult to use and can only be accessed in the OM. The CRC currently has no way to capture a video feed fused with audio for mission review, significantly degrading the debrief and mission reconstruction capability required for safety and training. The CRC also lacks the ability to display any mission related activity outside of the OM. The CRC requires a stand-alone appliance for recording and/or streaming video display combined with operator audio inputs into a single source. The system must be able to capture the Video Graphics Array (VGA)-based high definition display operators use while working a duty position. The appliance must combine the audio from an adapter placed in line with the user's headset. The recorder will combine these inputs into a synchronized time-stamped data stream. The recorded content can then be replayed and stored as a safety item for mission playback. To comply with information security the video recording appliance must be modular to enable secure storage when the OMs are not operational. This modular design will allow use in future BMC2 platforms within the CRC.

2. Source of Need. Operations Module System Life Extension Program (OM SLEP) Functional Capabilities Document (FCD); AN-TYQ-23 Modification FCD; AF Form 1067 Air Combat Command (ACC) 09-074; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

103 ACS	Orange, CT	123 ACS	Blue Ash, OH	134 ACS	McConnell AFB, KS
109 ACS	Salt Lake City, UT	128 ACS	Volk Field, WI	141 ACS	Punta Borinquen, PR
116 ACS	Warrenton, OR	133 TS	Fort Dodge, IA	255 ACS	Gulfport, MS
117 ACS	Savannah, GA				

4. Program Details. **PEC: 52672F**

Remaining Quantity Required	Unit Cost	Program Cost
80 Recorder / Audio Adapters (3080)	\$3,000	\$240,000
20 Stand Alone Laptops (3080)	\$900	\$18,000
Total		\$258,000

CONTROL AND REPORTING CENTER REMOTE VOICE COMMUNICATIONS

1. Background. Air Combat Command (ACC) has tasked the Air National Guard (ANG) to provide 10 Air Control Squadrons (ACS) to execute mission functions and capabilities of a deployable Control and Reporting Center (CRC) in support of air operations. The CRC is a mobile Battle Management Command and Control (BMC2) capability with the deployable radar elements of the Theater Air Control System (TACS). CRC operators have a critical training requirement to conduct specialized live missions to obtain proficiency and remain combat mission ready. The upcoming availability of Non-Organic Radar Access (NORA) from the System Program Office, along with an ability to utilize remote radar and radio data within each CRC will not only satisfy this requirement, but also prove invaluable in training, mission operations and overall combat readiness. The long haul communications package capability will mitigate a current training deficiency within the mission set, provide first of its kind capability to control various types of live fly missions locally from each respective unit, and significantly reduce the cost of sending personnel to different locations to obtain specialized training. The ACC community requires an accredited and approved technical capability providing software and hardware components enabling all CRCs remote radar and radio access over an Internet Protocol (IP)-based network. The remote voice capability enables full use of the NORA system.

2. Source of Need. North American Aerospace Defense Command (NORAD) Contingency Plan (CONPLAN) 3310-12; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

103 ACS	Orange, CT	123 ACS	Blue Ash, OH	134 ACS	McConnell AFB, KS
109 ACS	Salt Lake City, UT	128 ACS	Volk Field, WI	141 ACS	Punta Borinquen, PR
116 ACS	Warrenton, OR	133 TS	Fort Dodge, IA	255 ACS	Gulfport, MS
117 ACS	Savannah, GA				

4. Program Details. **PEC: 52672F**

Remaining Quantity Required	Unit Cost	Program Cost
10 Communications Suites (3840)	\$200,000	\$2,000,000
Total		\$2,000,000

AIR DEFENSE SECTOR BATTLE CONTROL CENTER BEYOND LINE-OF-SIGHT TACTICAL SATELLITE COMMUNICATIONS

1. Background. Battle Control Centers (BCC) require a baseline capability to use beyond line-of-sight (BLOS) Tactical Satellite Communications (TACSAT) to achieve 100 percent radio and data coverage in the US and its territories. TACSAT must be voice and data capable and have the ability to support connectivity in the extreme northern latitudes (North of 66 00°). Radios must be located at the BCC to allow direct control of the waveform by the BCC operators. While the primary method of communication in Homeland Defense (HD) will continue to be via line-of-sight (LOS), the vast expanse of the area of operations means there are significant LOS gaps. Because of these gaps, the BCCs require communications via satellite, enabling 100 percent communication connectivity for HD. Employment of TACSAT at the BCC will positively affect voice and data connectivity in all North American Aerospace Defense Command-Northern Command (NORAD-NORTHCOM) mission sets to include HD, Defense Support to Civil Authorities (DSCA) and Aerospace Control Alert (ACA).

2. Source of Need. Battle Control Center Enabling Concept; 2008-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

169 ACWS Wheeler AAF, HI 176 ADS Elmendorf AFB, AK

4. Program Details. **PEC: 51311F**

Remaining Quantity Required	Unit Cost	Program Cost
16 Communications Suites (3080)	\$37,000	\$592,000
Total		\$592,000

AIR DEFENSE SECTOR BATTLE CONTROL CENTER LINE-OF-SIGHT COMMUNICATIONS

1. Background. Air Defense Sector (ADS) Battle Control Centers (BCC) require the capability to communicate via next-generation Ultra High Frequency / Very High Frequency (UHF/VHF) channels in high band, anti-jam (HAVE QUICK) and secure modes. BCCs must be able to directly manipulate their integrated line-of-sight (LOS) UHF and VHF waveforms by having access to the operational radios from their operational position. The communications device must be located at the BCCs and the operational connectivity architecture should allow access via modem to remote antennae at strategic locations throughout the Area of Operation (AOO). Access to these antennae will be on a demand basis, allowing the BCCs to focus their communications architecture to desired regions based on weight of operational effort. LOS communications are the primary means of communicating with Homeland Defense (HD), Aerospace Control Alert (ACA), and Defense Support to Civil Authorities (DSCA) assets. While the LOS communications network cannot provide 100 percent coverage of the AOO, it must provide the same coverage as the current communications system. The BCCs require LOS radios be capable of clear / secure voice and secure data at each ADS location. BCC operators must have the capability to adjust the parameters of HAVE QUICK, load / clear crypto real time, and switch between red (clear) and green (secure / anti-jam) channels from the operations floor.

2. Source of Need. Battle Control Center Enabling Concept; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

WADS	McChord AFB, WA	169 ACWS	Wheeler AAF, HI
EADS	Rome, NY	176 ADS	Elmendorf AFB, AK

4. Program Details. **PEC: 51311F**

Remaining Quantity Required	Unit Cost	Program Cost
100 Communications Suites (3080)	\$40,000	\$4,000,000
Total		\$4,000,000

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C-17



- **Strategic Airlift**
- **Outsized and Oversized Cargo Airlift**
- **Aeromedical Evacuation Missions**
- **ANG C-17 Units Provide 11% of the Total Fleet**

The C-17 Globemaster III is the nation's core military airlifter and continues to excel in a wide range of operational mission scenarios. It provides the flexibility to support both inter-theater and intra-theater missions and allows Air Mobility Command to significantly improve throughput during contingency operations. Using C-17s as an intra-theater airlift platform has provided relief to the C-130 fleet and reduced ground forces' dependence on vehicle convoys.

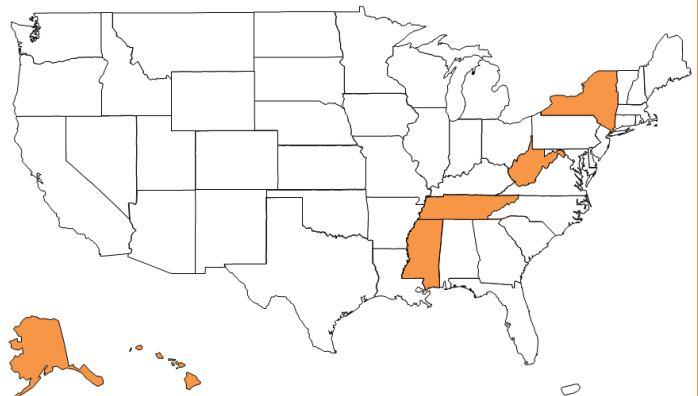


The Air National Guard (ANG) currently operates 24 C-17 aircraft assigned to the 105 AW at Stewart ANGB, NY, 172 AW at Jackson-Evers, MS and 164 AW at Memphis IAP, TN. The 154 AW at Hickam AFB, HI and the 176 WG at Elmendorf AFB, AK are ANG classic associate units. The 167 AW at Eastern WV RAP, WV will begin conversion to C-17s in Fiscal Year 2014.



information such as position of other aircraft, weather, threat, mission events and resource status to the crew.

The C-17's aeromedical capability is critical to the Air Force mission. These missions require non-stop flights from overseas to medical centers within the United States. Extended range fuel tanks are vital to this mission and eliminates the need for in-flight air refueling and reduces transit time. Secure line-of-sight / beyond line-of-sight data link and internet protocol capability with integrated cockpit display units will provide aircrews with the crucial ability to report and receive battlespace



C-17

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Critical Capabilities List

- Extended Range Fuel Tanks
- Block 30 Large Aircraft Infrared Countermeasures
- Secure Line-of-Sight / Beyond Line-of-Sight Data Link and Internet Protocol Capability with Integrated Cockpit Display Unit
- Heads-Up Countermeasures Dispenser Control
- Integrated Class III Electronic Flight Bag

Essential Capabilities List

- Large Aircraft Infrared Countermeasures Enhanced Situational Awareness
- Active Noise Reduction Headsets
- Remote Countermeasures Dispenser System
- Forward Area and Refueling Point Carts
- Improved Seat Armor

Desired Capabilities List

- Hostile Fire Indicator
- Replacement Heads-Up Display
- Radar Warning Receiver
- Advanced Situational Awareness Countermeasures System
- Mission Computer Upgrade

C-17 EXTENDED RANGE FUEL TANKS

1. Background. Airlift is the foundation of the nation's ability to project military power worldwide. Air National Guard (ANG) C-17A Globemaster IIIs routinely transport troops and equipment around the world, provide humanitarian relief and perform Aeromedical Evacuation (AE) missions carrying wounded soldiers, sailors, airmen and/or marines. The C-17A, with Extended Range (ER) fuel tanks installed, has the capability to carry an additional 65,000 pounds of fuel and fly an additional 1,800 NM (empty aircraft) when compared to non-ER C-17As. This added capability reduces the need for fuel stops, enables faster cargo delivery and results in less wear and tear on the aircraft due to eliminating landing and takeoff cycles. ER fuel tanks also reduce the need for air-to-air refueling. ER-modified C-17As are required in most cases to perform AE missions departing from European Command bases due to patient requirements prohibiting fuel stops. The ER modification is done in conjunction with On Board Inert Gas Generating System II (OBIGGS) which reduces the vulnerability of fuel explosion induced by small arms fire.

2. Source of Need. Air Mobility Command (AMC) C-17 Requirements and Planning Council ranked ER/OBIGGS II #4 out of 53 at the 2013 Executive Session; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

105 AW Stewart ANGB, NY 167 AW Eastern WV RAP, WV 172 AW Jackson-Evers IAP, MS
164 AW Memphis IAP, TN

4. Program Details. PEC: 41130

Remaining Quantity Required	Unit Cost	Program Cost
18 Extended Range Fuel Tanks (3010)	\$12,000,000	\$216,000,000
Total		\$216,000,000

C-17 BLOCK 30 LARGE AIRCRAFT INFRARED COUNTERMEASURES

1. Background. Air National Guard (ANG) C-17s operate worldwide in environments where Man-Portable Air Defense System (MANPADS) Infrared (IR) seeking missiles are widely available and represent a significant threat during takeoff and landing. These missiles are extremely advanced and are designed to defeat flare-based defensive systems. The Block 30 Large Aircraft Infrared Countermeasures (LAIRCM) system will provide the most effective countermeasures against MANPADS. C-17s transferring to the ANG may not arrive with LAIRCM installed, while those that do usually require upgrade to the Block 30 version from earlier variants. LAIRCM and its sensors are a prerequisite to having the Next Generation AAR-54 missile launch detector. This will provide better IR threat detection and significantly increase flare or LAIRCM effectiveness. The upgraded launch detect system allows crewmembers to see previously blind sectors and react accordingly. New sensors will allow high fidelity of IR missile engagements, as well as detection of small arms based on location and trajectory. They will also aid in low visibility ground operations and provide better references during low visibility approaches.

2. Source of Need. LAIRCM Operational Requirements Document (ORD) 314-92, Aug 1998; Air Mobility Command (AMC) Requirements and Planning Council ranked Defensive Systems as #6 out of 53 at the Executive Session; AF Form 1067 AMC 11-170, 11-169 and 11-168; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

105 AW Stewart ANGB, NY 167 AW Eastern WV RAP, WV 172 AW Jackson-Evers IAP, MS
164 AW Memphis IAP, TN

4. Program Details. PEC: 41130

Remaining Quantity Required	Unit Cost	Program Cost
1 Next Generation NRE (3600)	\$12,000,000	\$12,000,000
32 LAIRCM Group A Kits (3010)	\$2,100,000	\$67,200,000
32 LAIRCM Group B Kits (3010)	\$3,000,000	\$96,000,000
96 IR Sensors (3010)	\$3,000,000	\$288,000,000
Total		\$463,200,000

**C-17 SECURE LINE-OF-SIGHT / BEYOND LINE-OF-SIGHT DATA LINK AND
INTERNET PROTOCOL CAPABILITY WITH INTEGRATED COCKPIT DISPLAY
UNIT**

1. Background. Current information-based dynamic battlespace environments require secure airborne data communications with other aircraft, Command and Control (C2) agencies, and ground-based forces. Data link (DL) and data transfer will provide aircrews the ability to report and receive battlespace information from monitoring C2 agencies such as position of other aircraft, weather, threat, mission events, mission status, task completion, resource status, etc. This increased situational awareness allows agencies the ability to track mission progress and facilitate rapid decisions and adjustments during mission execution. Additionally, near real-time aircrew reporting will enable information exchanges with global and theater Air and Space Operations Centers (AOC) and Mobility Air Force (MAF) assets (to include those that are airborne), which will improve synchronization of supporting and supported forces.

2. Source of Need. Air Mobility Command (AMC) Requirements and Planning Council ranked Integrated Real-Time Information in the Cockpit and Data Link #10 out of 50 at the 2013 Executive Session; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

105 AW Stewart ANGB, NY 167 AW Eastern WV RAP, WV 172 AW Jackson-Evers IAP, MS
164 AW Memphis IAP, TN

4. Program Details. PEC: 41130

Remaining Quantity Required	Unit Cost	Program Cost
1 NRE (3600)	\$10,000,000	\$10,000,000
32 Group A Kits (3010)	\$100,000	\$3,200,000
32 DL Radios (3010)	\$330,000	\$10,560,000
32 DL Processors (3010)	\$100,000	\$3,200,000
Total		\$26,960,000

C-17 HEADS-UP COUNTERMEASURES DISPENSER CONTROL

1. Background. Air National Guard (ANG) C-17s operate worldwide in environments where Man-Portable Air Defense System (MANPADS) Infrared (IR) seeking missiles are widely available and represent a significant threat during takeoff and landing. Currently, the Tactics, Techniques and Procedures (TTP) for all C-17s are to defeat IR missiles with flares, as not all aircraft have the integrated Large Aircraft Infrared Countermeasures (LAIRCM) system. In the C-17 cockpit, the flare dispenser switch is located on the center pedestal. If crews are required to launch flares during an engagement, one crewmember is required to go “heads down” to verify flares are launched during this critical phase of flight. The solution places a dispense switch on the stick or glare shield allowing the pilot monitoring the flares to remain "heads up" during critical phases of flight while dispensing flares simultaneously.

2. Source of Need. 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

105 AW Stewart ANGB, NY 167 AW Eastern WV RAP, WV 172 AW Jackson-Evers IAP, MS
164 AW Memphis IAP, TN

4. Program Details. **PEC: 41130**

Remaining Quantity Required *	Unit Cost	Program Cost
1 Stick- or Glare Shield-Mounted Flare Dispense Switch NRE (3600)	\$1,500,000	\$1,500,000
36 Stick- or Glare Shield-Mounted Flare Dispense Switches (3010)	\$30,000	\$1,080,000
Total		\$2,580,000

* Includes four spares.

C-17 INTEGRATED CLASS III ELECTRONIC FLIGHT BAG

1. Background. The definition of an Electronic Flight Bag (EFB), according to the Federal Aviation Administration's (FAA) Advisory Circular (AC) No. 120-76A is, "an electronic display system intended primarily for cockpit / flight deck or cabin use. EFB devices can display a variety of aviation data or perform basic calculations." In short, an EFB is an electronic information management device that helps to improve situational awareness, cockpit efficiency, productivity and safety. EFBs typically consist of a screen and a control unit that may be installed, mounted or contained in one sole portable unit. EFBs can electronically store and retrieve documents required for flight operations, such as Technical Orders, Air Force Instructions, Flight Operations Manual, Minimum Equipment Lists, as well as providing the most current Flight Information Publications (FLIP). Additional motivators for using an EFB are significant cost savings on annual paper FLIP purchases and the considerable reduction of paper waste associated with each FLIP changeover. The potential to receive significant mission changes during worldwide cargo and personnel transport missions is extremely high. Aircrews need the ability to have all possible mission information and performance calculation capabilities at their fingertips.

2. Source of Need. Air Mobility Command (AMC) Requirements and Planning Council ranked EFB as #24 out of 53 at the 2013 Executive Session; AF Form 1067 AMC 09-164; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

105 AW Stewart ANGB, NY 167 AW Eastern WV RAP, WV 172 AW Jackson-Evers IAP, MS
164 AW Memphis IAP, TN

4. Program Details. **PEC: 41130**

Remaining Quantity Required	Unit Cost	Program Cost
1 Electronic Flight Bag NRE (3600)	\$2,400,000	\$2,400,000
32 Electronic Flight Bags (3010)	\$240,000	\$7,680,000
Total		\$10,080,000

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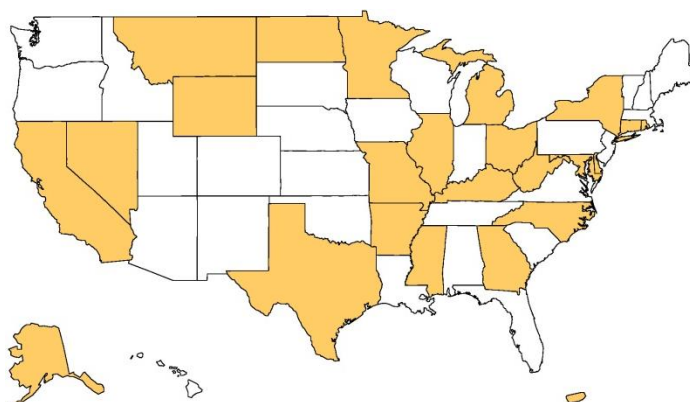


C-130H/J



- **Tactical Airlift**
- **ANG C-130 Units Provide 40% of the Total Fleet**

The C-130 Hercules is the US military's primary combat delivery aircraft. In addition to its primary role in tactical airlift, Air National Guard (ANG) C-130s support humanitarian, peacekeeping and disaster relief operations worldwide. Procurement efforts continue to address avionics obsolescence and global airspace access, propulsion system upgrades, enhanced situational awareness, improved self-protection and single-pass precision airdrop. These capabilities will ensure the ANG remains viable and relevant in tomorrow's fight.



C-130H/J

2013 Weapons and Tactics Conference

Critical Capabilities List

C-130H:

- Avionics Obsolescence and Global Airspace Access
- Propulsion System Upgrades
- Enhanced Situational Awareness
- Improved Self-Protection
- Single-Pass Precision Airdrop

C-130J:

- Improved Self-Protection
- Single-Pass Precision Airdrop
- Aircraft Broker / Special Mission Processor
- Tactical Plot Suite
- Cargo Compartment Camera

Essential Capabilities List

C-130H:

- Improved Dual-Mode External Lighting
- Cargo Compartment Modernization
- Three-Dimensional Audio
- Military Secure Precision Global Positioning System Coupled with Flight Management System

C-130J:

- Improved Heads-Up Display readability during Night Vision Instrument System Mode
- Selective Calling Call
- Enhanced Personal Firearms for Aircrew

Desired Capabilities List

C-130H:

- Permanent 115V AC, 60 Hz in Flight Deck
- Wireless Fidelity Systems

C-130J:

- Wireless Fidelity Systems

C-130H AVIONICS OBSOLESCENCE AND GLOBAL AIRSPACE ACCESS

1. Background. The delay of the Avionics Modernization Program (AMP) resulted in a tight timeline for Air National Guard (ANG) C-130H models to meet the 2020 deadline for international Communications, Navigation and Surveillance / Air Traffic Management (CNS/ATM) mandates established by Federal Aviation Administration (FAA) Directive Order 242A, and related International Civil Aviation Organization (ICAO) documents. The C-130 fleet faces severe sustainment challenges with mission-required avionics equipment. Diminishing manufacturing sources have rendered 25 percent of current avionics obsolete. C-130H models will not meet Precision and Area Navigation (P-RNAV) / Automatic Dependent Surveillance-Broadcast (ADS-B) requirements to operate worldwide beyond 1 Jan 2020. Current cockpit lighting is substandard for Night Vision Goggle (NVG) operations. A modern Flight Management System (FMS) with Global Positioning System (GPS) approach capability and a modern “glass” flight deck will increase mission capability and training effectiveness rates with higher equipment reliability, lower maintenance costs and enhanced safety. Updated avionics with ADS-B Out will address CNS/ATM mandates, increase operational effectiveness and efficiency by opening up airspace that requires more stringent navigational requirements, and allow the use of GPS approaches currently prohibited for the legacy C-130 fleet. A glass cockpit will reduce crew workload through presentation of a consolidated situational awareness picture. Improving the Night Vision Instrument System (NVIS) lighting compatibility will ensure compliance with Air Force Instruction (AFI) 11-2C130 V3 and Military Standard (MIL-STD) 3009, and increase both capability and sustainability to operate safely in night environments.

2. Source of Need. FAA Directive Order 242A, 27 May 2010; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

103 AW Bradley IAP, CT	136 AW JRB Fort Worth, TX	165 AW Savannah IAP, GA
109 AW Schenectady CAP, NY	139 AW St Joseph AP, MO	166 AW New Castle CAP, DE
120 AW Great Falls, MT	145 AW Charlotte-Douglas IAP, NC	176 AW JB Elmendorf, AK
123 AW Louisville IAP, KY	152 AW Reno-Tahoe IAP, NV	179 AW Mansfield-Lohm, OH
130 AW Yeager AP, WV	153 AW Cheyenne RAP, WY	182 AW Peoria IAP, IL
133 AW Mpls-St Paul IAP, MN	156 AW Luis Munoz IAP, PR	189 AW Little Rock AFB, AR

4. Program Details. **PEC: 41115**

Remaining Quantity Required *	Unit Cost	Program Cost
154 Avionics Kits (3010)	\$5,700,000	\$877,800,000
1 NRE (3600)	\$50,000,000	\$50,000,000
154 NVIS (3010)	\$465,000	\$71,610,000
Total		\$999,410,000

* Includes 10% spares.

C-130H PROPULSION SYSTEM UPGRADES

1. Background. C-130H engines require capability upgrades to operate in high density altitudes and hot environments. Additionally, fuselage, avionics and wingbox life span deficiencies drive initiatives to reduce the sources of airframe stress through excessive vibrations. Upgrading the T-56 engine with the 3.5 engine modification will increase engine life cycle, improve fuel economy, reduce takeoff distances and increase the acceptable cargo load. The comprehensive solution to propulsion deficiencies include incorporating modular blade technology (NP2000), Electronic Propeller Control System (EPCS), and In-flight Propeller Balancing System (IPBS) which will provide increased performance, reliability and reduce airframe stress. Oil Cooler Augmentation (OCA) is required to decrease engine wear and prevent engine shutdowns during ground operations in hot climates. In addition to extending lifespan of the aircraft and its avionics this comprehensive solution provides significantly higher safety margins in aircraft performance, reduces crew fatigue and decreases maintenance costs both fiscally and in man-hours.

2. Source of Need. 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

103 AW Bradley IAP, CT	136 AW JRB Fort Worth, TX	165 AW Savannah IAP, GA
109 AW Schenectady CAP, NY	139 AW St Joseph AP, MO	166 AW New Castle CAP, DE
120 AW Great Falls, MT	145 AW Charlotte-Douglas IAP, NC	176 AW JB Elmendorf, AK
123 AW Louisville IAP, KY	152 AW Reno-Tahoe IAP, NV	179 AW Mansfield-Lohm, OH
130 AW Yeager AP, WV	153 AW Cheyenne RAP, WY	182 AW Peoria IAP, IL
133 AW Mpls-St Paul IAP, MN	156 AW Luis Munoz IAP, PR	189 AW Little Rock AFB, AR

4. Program Details. **PEC: 41115**

Remaining Quantity Required *	Unit Cost	Program Cost
154 EPCS (3010)	\$825,000	\$127,050,000
1 EPCS/IPBS NRE (3010)	\$8,000,000	\$8,000,000
154 IPBS (3010)	\$350,000	\$53,900,000
154 NP2000 (3010)	\$2,000,000	\$308,000,000
154 OCA (3010)	\$666,667	\$102,666,718
616 T-56 3.5 MOD Engines (3010)	\$1,400,000	\$862,400,000
Total		\$1,462,016,718

* Includes 10% spares.

C-130H ENHANCED SITUATIONAL AWARENESS

1. Background. Combat operations have highlighted the need for comprehensive and networked battlespace awareness within the C-130 community. The C-130 Real-Time Information in the Cockpit (RTIC) system allows C-130 aircraft to participate on the network by utilizing technologies already fielded on other Department of Defense (DOD) assets. Upgrades to the C-130 RTIC program will increase the data link capability and provide a common processing and display platform for previously federated systems, resulting in a consolidated situational awareness picture. Integration with the Advanced Integrated Electronic Combat System (AIECS) will provide the capability for on-board / off-board threat correlations, data sharing, on-board Radar Threat System geo-location, route re-planning, and automated countermeasures. Combining the control and outputs of multiple systems into one common graphical interface reduces crew workload, decreases “heads down” time, and provides improved decision support for aircrews operating in the tactical environment. Additional shortfalls in situational awareness, such as the lack of Terrain Awareness Warning System (TAWS) and Electronic Takeoff and Landing Data (ETOLD) systems, degrade Crew Resource Management (CRM) and highlight the need to develop, field and sustain these capabilities. Lastly, the integration of noise-cancelling and three-dimensional audio in the cockpit will increase situational awareness by spatially separating aural warning and radio signals providing angular cueing to ground and air threats.

2. Source of Need. Mobility Air Forces (MAF) Network Enabling Concept, 26 Apr 2006; Air Mobility Command (AMC) MAF Data Link Integration Technical Requirements Document (TRD), 25 Oct 2006; Tactical Data Link Transformation Capability Development Document (CDD), Increment 1, Joint Requirements Oversight Council Memorandum (JROCM), 23 Jun 2004; AMC Requirements and Planning Council Mission Essential 2007 and 2008; AMC Advanced Situational Awareness Countermeasures (ASACM) CDD, Jan 2008; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

103 AW Bradley IAP, CT	136 AW JRB Fort Worth, TX	165 AW Savannah IAP, GA
109 AW Schenectady CAP, NY	139 AW St Joseph AP, MO	166 AW New Castle CAP, DE
120 AW Great Falls, MT	145 AW Charlotte-Douglas IAP, NC	176 AW JB Elmendorf, AK
123 AW Louisville IAP, KY	152 AW Reno-Tahoe IAP, NV	179 AW Mansfield-Lohm, OH
130 AW Yeager AP, WV	153 AW Cheyenne RAP, WY	182 AW Peoria IAP, IL
133 AW Mpls-St Paul IAP, MN	156 AW Luis Munoz IAP, PR	189 AW Little Rock AFB, AR

4. Program Details. **PEC: 41115**

Remaining Quantity Required	Unit Cost	Program Cost
154 AIECS Kits (3010)	\$150,000	\$23,100,000
1 AIECS NRE (3600)	\$10,000,000	\$10,000,000
1 Directional Audio NRE (3600)	\$5,000,000	\$5,000,000
155 Directional Kits (3010)	\$50,000	\$7,750,000
Total		\$45,850,000

C-130H/J IMPROVED SELF-PROTECTION

1. Background. C-130 aircraft perform demanding missions in close proximity to Man-Portable Air Defense Systems (MANPADS) and Radio Frequency (RF) threats. Current Combatant Command (COCOM) plans rely heavily on airlift for logistical support to front-line troops requiring C-130s to operate closer to adversary tactical Surface-to-Air Missile (SAM) systems. The AN/AAQ-24 Large Aircraft Infrared Countermeasures (LAIRCM) Block 30 system provides the most capable countermeasures against MANPADS threats with the latest Infrared (IR) sensors. The Block 30 configuration, being fielded on Air Mobility Command (AMC) C-17 aircraft, delivers greater warning, lower false alarm rates and higher reliability. At present, several of the Air National Guard (ANG) C-130Hs have limited RF detection capability. A Radar Warning Receiver (RWR) is a requirement for all ANG C-130 aircraft to employ in worldwide Anti-Access / Area Denial (A2/AD) combat operations.

2. Source of Need. AMC Advanced Situational Awareness Countermeasures (ASACM) Capability Development Document (CDD), Jan 2008; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

103 AW Bradley IAP, CT	139 AW St Joseph AP, MO	165 AW Savannah IAP, GA
109 AW Schenectady CAP, NY	143 AW Quonset SAP, RI	166 AW New Castle CAP, DE
120 AW Great Falls, MT	145 AW Charlotte-Douglas IAP, NC	176 AW JB Elmendorf, AK
123 AW Louisville IAP, KY	146 AW Channel Islands ANG, CA	179 AW Mansfield-Lohm, OH
130 AW Yeager AP, WV	152 AW Reno-Tahoe IAP, NV	182 AW Peoria IAP, IL
133 AW Mpls-St Paul IAP, MN	153 AW Cheyenne AP, WY	189 AW Little Rock AFB, AR
136 AW JRB Fort Worth, TX	156 AW Luis Munoz IAP, PR	

4. Program Details. **PEC: (C-130H) 41115, (C-130J) 41132**

Remaining Quantity Required	Unit Cost	Program Cost
16 C-130J LAIRCM Group A Kits (3010)	\$970,000	\$15,520,000
8 C-130J LAIRCM Group B Kits (3010)	\$4,400,000	\$35,200,000
158 C-130H/J NexGen Group A Kits (3010)	\$420,000	\$66,360,000
40 C-130H/J NexGen Group B Kits (3010)	\$774,855	\$30,994,200
Total		\$148,074,200

C-130H/J SINGLE-PASS PRECISION AIRDROP

1. Background. The Air National Guard (ANG) C-130 fleet has several shortfalls in its ability to accurately deliver airdrop loads in Contested and Degraded Operations (CDO) in both Instrument and Visual Meteorological Conditions (IMC/VMC). The US Army's objective for airdrop accuracy is 50 meters Circular Error Average (CEA); traditional methods provide 300-meter CEA accuracy. Current precision airdrop methods require multiple passes (increased exposure to threats) over the drop zone for atmospheric calculations before dropping actual bundles. Effective airdrop operations require early identification of the drop zone (crucial during on-call operations), real-time Airdrop Damage Estimates (ADE), real-time winds (altitude to surface), displayed Continuously Calculated Impact Point (CCIP) / Launch Acceptability Region (LAR), and post drop assessment. Targeting pods with Light Detection and Ranging (LIDAR) can provide this capability during VMC operations, especially in CDO. Software and hardware upgrades to the APN-241 Radar will provide Synthetic Aperture Radar (SAR) and wind sensing to meet these requirements in IMC airdrops. Radar upgrades along with the addition of targeting pods provide a highly accurate all-weather single-pass airdrop capability with significant reduction in human induced errors. Additionally, these capabilities can be utilized during domestic and contingency operations.

2. Source of Need. Mission Need Statement (MNS) Air Mobility Command (AMC) / Combat Air Forces (CAF) / Air Education and Training Command (AETC) / Air Force Special Operations Command (AFSOC) / Air Force Materiel Command (AFMC) 301-97; C-130 Avionics Modernization Program (AMP) System Requirement Document, 31 March 2000; Required Theater CEA/Mitigate ADE; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

103 AW Bradley IAP, CT	139 AW St Joseph AP, MO	165 AW Savannah IAP, GA
109 AW Schenectady CAP, NY	143 AW Quonset SAP, RI	166 AW New Castle CAP, DE
120 AW Great Falls, MT	145 AW Charlotte-Douglas IAP, NC	176 AW JB Elmendorf, AK
123 AW Louisville IAP, KY	146 AW Channel Islands ANG, CA	179 AW Mansfield-Lohm, OH
130 AW Yeager AP, WV	152 AW Reno-Tahoe IAP, NV	182 AW Peoria IAP, IL
133 AW Mpls-St Paul IAP, MN	153 AW Cheyenne AP, WY	189 AW Little Rock AFB, AR
136 AW JRB Fort Worth, TX	156 AW Luis Munoz IAP, PR	

4. Program Details. **PEC: (C-130H) 41115, (C-130J) 41132**

Remaining Quantity Required	Unit Cost	Program Cost
1 APN-241 Radar Upgrade (3010)	\$3,000,000	\$3,000,000
1 Laser Designator Pod NRE (3600)	\$16,000,000	\$16,000,000
77 Laser Designator Pods (3010)	\$2,000,000	\$154,000,000
Total		\$173,000,000

C-130J AIRCRAFT BROKER / SPECIAL MISSION PROCESSOR

1. Background. To operate in future contingencies, with constantly changing enemy tactics and increased mission demands, C-130Js require a nimble processing system to negotiate the dynamic tactical environment. Examples of emerging systems processed by an integrated aircraft broker include Tactical Data Link, Communications, Navigation and Surveillance / Air Traffic Management (CNS/ATM), Digital Radar Warning Receiver (RWR), Joint Precision Airdrop System (JPADS), and new parachute ballistic calculations for airdrop. The current aircraft improvement process hinders system enhancements until programmed block upgrades occur. This yields complicated, non-integrated workarounds while aircrew await the contracted aircraft update cycles. Acquiring an aircraft broker / Special Mission Processor (SMP) allows immediate access to the 1553 data bus. This rapid plug-and-play capability is more cost effective, meets the time-sensitive needs of the warfighter, and presents a system-integrated solution, which is pivotal to the C-130J two-man cockpit.

2. Source of Need. Air Mobility Command (AMC) Tactics Review Board (TRB) 2012-2013; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

143 AW Quonset State, RI

146 AW Channel Islands, CA

4. Program Details. PEC: 41132

Remaining Quantities Required	Unit Cost	Program Cost
1 NRE (3010)	\$5,000,000	\$5,000,000
18 Aircraft Broker / Special Mission Processor Kits (3010)	\$120,000	\$2,160,000
Total		\$7,160,000

C-130J TACTICAL PLOT SUITE

1. Background. The C-130J's current software suite permits the use of only 10 Tactical Plots (TAC PLOT), which are limited to a circular dimension. Aircrews currently use these TAC PLOTS to display factor airspace and threats "under the glass" on the C-130J Digital Map, the Navigation Radar Display, the Terrain Awareness Warning System (TAWS) display, and Coordinated Aircraft Position / Station Keeping Equipment (CAP/SKE). The current 10 circular TAC PLOTS are not adequate to display the robust tactical airspace picture where killbox / keypads, political borders, Restricted Operating Zones (ROZs), and departure / arrival corridors. A TAC PLOT suite for the C-5M has already been developed, and similar software code is required for the C-130J. This software can be easily interfaced with the C-130J Mission Computer (MC), Communication Navigation Interface-Management Unit (CNI-MU) and Heads Down Displays (HDD). This TAC PLOT suite allows the plotting of accurate killbox / keypads, arrival / departure sectors, and zone plotting where pilots can use multiple waypoints to draw uniquely structured airspace. Lastly, this software allows 50 entries of each type of TAC PLOT.

2. Source of Need. Air Mobility Command (AMC) Tactics Review Board (TRB) 2012-2013; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

143 AW Quonset State, RI

146 AW Channel Islands, CA

4. Program Details. **PEC: 41132**

Remaining Quantities Required	Unit Cost	Program Cost
1 NRE (3600)	\$5,000,000	\$5,000,000
Total		\$5,000,000

C-130J CARGO COMPARTMENT CAMERA

1. Background. C-130J aircrews require the capability to monitor activity within the cargo compartment during heavy equipment airdrops and Engine Running On-load and Off-load (ERO) operations. This capability permits operations within the cargo compartment to be simultaneously monitored in the cargo compartment and on the flight deck. In addition, the ability to monitor parachute deployments, condition of extraction parachutes, cargo pallet extraction, as well as personnel movement within the cargo compartment is required. This solution, to include all sensors, controls and displays, must be Night Vision Goggle (NVG) compatible. The existing C-130J crew complement does not permit using a primary crewmember to serve as a safety observer for operations within the cargo compartment during ERO operations. Safety observation is accomplished by the navigator in the C-130E/H aircraft and through the use of a pilot observation bubble on the C-17.

2. Source of Need. Air Mobility Command (AMC) Requirements and Planning Council Essential Item; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

143 AW Quonset SAP, RI 146 AW Channel Islands ANG, CA

4. Program Details. PEC: 41132

Remaining Quantities Required	Unit Cost	Program Cost
18 Cargo Compartment Camera Kits (3010)	\$350,000	\$6,300,000
1 NRE (3600)	\$2,000,000	\$2,000,000
Total		\$8,300,000



C-130

Special Mission



- **Commando Solo**
- **Special Operations Forces / Personnel Recovery (PR)**
- **Special Mission (Airborne Firefighting, Antarctic Logistics)**
- **ANG Commando Solos Provide 100% of the Total Fleet**
- **ANG PR HC/MC-130s Units Provide 35% of the Total Fleet**
- **ANG LC-130s Provide 100% of the Total Fleet**

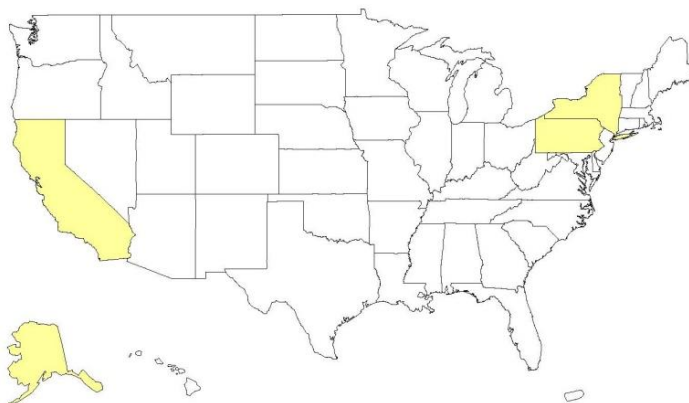


EC-130J - The EC-130J “Commando Solo” conducts information operations, psychological operations and civil affairs broadcasts. Procurement efforts continue for the Large Aircraft Infrared Countermeasures (LAIRCM) system, tactical data link secure line-of-sight / beyond line-of-sight (SLOS/BLOS) capabilities, radio communication upgrades and loadmaster crashworthy seats.

HC/MC-130 - The Air National Guard (ANG) provides 35 percent of the Air Force’s (AF) HC/MC-130 personnel recovery capability. ANG HC/MC-130 units continue to deploy in support of Overseas Contingency Operations (OCO) and provide emergency rescue and relief support during Domestic Operations (DOMOPS). Upcoming modernization efforts for the ANG HC/MC-130 fleet include loadmaster crashworthy seats, Aircrew Flight Equipment Racks, Electro-Optical / Infrared (EO/IR) Sensor Upgrades and Heavy Equipment (HE) airdrop capability.



LC-130 - ANG LC-130Hs from Schenectady, NY have ski-equipped landing gear to enable landings and takeoffs on snow and ice. The current fleet consists of six AF-owned and four National Science Foundation (NSF)-owned aircraft. The LC-130 operates on snowfields in remote areas of the Polar Regions in support of the NSF. In order to keep the aircraft up-to-date, several modification efforts are underway including the Electronic Propeller Control System (EPCS), eight-bladed propellers and the Crevasse Detection Radar (CDR). The ANG is also working with the NSF on the development of a pod-based scientific payload capability for the LC-130s.



C-130 Special Mission 2013 Weapons and Tactics Conference

Critical Capabilities List

EC-130J:

- Communication / Situational Awareness Suite
- Large Aircraft Infrared Countermeasures
- Mission Information Support Operations System
- Intelligence, Surveillance and Reconnaissance

HC/MC-130P/N:

- Integrated Beyond Line-of-Sight / Secure Line-of-Sight Data Link
- Information Superiority
- Combat Penetrator Suite
- Enhanced Engine and Propeller Performance
- Mission Flexible Refueling and Airdrop Capability

LC-130H:

- Propulsion Improvements
- Retractable External Arm and Crevasse Detection Radar
- Flight Deck Night Vision Goggle Compatibility
- Flight Deck Communications Upgrade
- Avionics Obsolescence and Global Airspace Access

Essential Capabilities List

EC-130J:

- Single-Pass Precision Guided Airdrop
- Emergency Equipment Bins
- Increased Aircraft Fuel Capacity

HC/MC-130P/N:

- Variable Speed Drogue
- Gas Turbine Compressor to Auxiliary Power Unit Upgrade
- Communications, Navigation and Surveillance / Air Traffic Management Compliant Avionics
- Distributed Mission Operations and Training
- Roll-on/Roll-off External Arm

Desired Capabilities List

HC/MC-130P/N:

- Visual Threat Recognition and Avoidance Training
- Global Positioning System Internal Repeater
- Radar Altimeter on Copilot Instrument Panel
- Altitude Alerter
- Terrain Following / Terrain Avoidance Low-Level Navigation

EC-130J COMMUNICATION / SITUATIONAL AWARENESS SUITE

1. Background. Special Operations Forces Air Mission Suite / Enhanced Situational Awareness (SAMS/ESA) is the Air Force Special Operations Command (AFSOC) standard situational awareness system to be installed on all of the command's airframes. The system is a computer network-based communication and data link integration system. It consists of multiple line-of-sight (LOS) and over-the-horizon radios, an electronic flight publication database, software for in-flight planning and re-planning, secure internet, and live video reception and transmission. These capabilities are provided to the crew through dedicated Multi-Function Color Displays. SAMS/ESA Phase 1 has been funded for EC-130s, but a follow-on Phase 2 capability is still required. Phase 1 of SAMS/ESA includes Situational Awareness Data Link (SADL), beyond line-of-sight and LOS radios, Air Force Tactical Receiver System-Ruggedized (AFTRS-R), touch screen displays and ruggedized computers. Phase 2 will provide Full Motion Video send and receive capability. Additionally, all AFSOC aircraft require Satellite Communications (SATCOM) to conduct tasked United States Special Operations Command (USSOCOM) missions. Currently four EC-130J aircraft are utilizing a nonintegrated man-portable PRC-117 SATCOM radio.

2. Source of Need. AF Form 1067 AFSOC 11104 and 09037; USSOCOM Lesson Learned and TERESA Capability Development Document (CDD); 2012-2013 ARC WEPTAC Critical Capability.

3. Unit Impacted.

193 SOW Harrisburg IAP, PA

4. Program Details. **PEC: 41132F**

Remaining Quantity Required	Unit Cost	Program Cost
8 Full Motion Video (3010)	\$500,000	\$4,000,000
8 Mobile Broadband Modems (3010)	\$50,000	\$400,000
4 ARC-210 Gen V Upgrades (3010)	\$500,000	\$2,000,000
4 SATCOM Radios (3010)	\$1,000,000	\$4,000,000
Total		\$10,400,000

EC-130J LARGE AIRCRAFT INFRARED COUNTERMEASURES

1. Background. Air National Guard (ANG) EC-130Js perform demanding missions worldwide in a low-to-medium threat environment where shoulder-fired Man-Portable Air Defense System (MANPADS) Infrared (IR) seeking missiles are widely available creating a significant threat during all phases of flight. The ANG requires the AN/AAQ-24 Large Aircraft Infrared Countermeasures (LAIRCM) system, which provides the best countermeasures against MANPADS threats and does not rely on pyrotechnic expendables. The Next Generation (NexGen) configuration, currently being fielded, is comprised of two Guardian Laser Transmitter Assemblies, five NexGen Ultra Violet sensors, one processor, and one Control Indicator Unit that would provide greater warning, fewer false alarm rates and higher reliability. Currently, two of seven aircraft have been modified with Group A wiring, and testing is complete.

2. Source of Need. LAIRCM Operational Requirements Document (ORD) 314-92, Aug 1998; Air Force Special Operations Command (AFSOC) Statement of Need, 001-91, Infrared Countermeasures Improvements; 2012-2013 ARC WEPTAC Critical Capability.

3. Unit Impacted.

193 SOW Harrisburg IAP, PA

4. Program Details. PEC: 41132F

Remaining Quantity Required	Unit Cost	Program Cost
5 LAIRCM Group A Kits (3010)	\$1,212,500	\$6,062,500
6 LAIRCM Group B Kits (3010)	\$4,000,000	\$24,000,000
5 NexGen Group A Kits (3010)	\$420,000	\$2,100,000
6 NexGen Group B Kits (3010)	\$774,855	\$4,649,130
Total		\$36,811,630

EC-130J MISSION INFORMATION SUPPORT OPERATIONS SYSTEM

1. Background. Only three of the seven EC-130J aircraft are fully capable of performing the primary mission of Mission Information Support Operations (MISO) broadcasting. The Removable Airborne Mission System is a combination of the Fly-Away Broadcast System (FABS) and a retractable external arm. The FABS is a US Army developed and fielded portable transmitter system used to broadcast MISO messages. This is a low-cost solution to mounting systems on C-130 aircraft without the need for permanent modifications to either the airframe or power systems. Systems are designed to be installed in just 2 to 3 hours and use existing power ports, cargo floor and/or cargo rails. Some systems are palletized; thus, they can potentially be configured in the cargo compartment allowing for cargo or personnel delivery and parallel employment of the system. The retractable external arm makes the aircraft multi-mission capable and is a system capable of holding multiple pod mounted sensors, kinetic weapons, airborne imaging and/or antennae.

2. Source of Need. AF Form 1067 Air Force Special Operations Command (AFSOC) 10041; Lessons Learned from Operations ENDURING FREEDOM (OEF) and IRAQI FREEDOM (OIF); 193d Special Operations Wing Strategic Way Ahead FY12-37; 2012-2013 ARC WEPTAC Critical Capability.

3. Unit Impacted.

193 SOW Harrisburg IAP, PA

4. Program Details. **PEC: 41132F**

Remaining Quantity Required	Unit Cost	Program Cost
1 Crashworthy Seat Kit (3010)	\$60,000	\$60,000
1 FABS NRE (3600)	\$6,000,000	\$6,000,000
4 FABS Operator Stations (3010)	\$750,000	\$3,000,000
8 FABS Systems (3010)	\$500,000	\$4,000,000
7 Retractable Arm Kits (3010)	\$1,245,714	\$8,719,998
Total		\$21,779,998

EC-130J INTELLIGENCE, SURVEILLANCE AND RECONNAISSANCE

1. Background. The Air Force Special Operations Command (AFSOC) Commander identified the 193d Special Operation Wing's C-130J, with its sustained loiter time, to support an immediate theater requirement to provide Intelligence, Surveillance and Reconnaissance (ISR) capability. There is an immediate need to install a retractable external arm and an ISR collection system on a C-130J. The retractable external arm requires a crashworthy seat for the observer and the system should be equipped with a sensor turret with appropriate controls and recording equipment at the work station. The system must include the capability to store and transfer ISR data to a Processing, Exploitation and Dissemination (PED) ground station post-mission and should be capable of beyond line-of-sight (BLOS) transmissions. Additionally, the system should transmit Full Motion Video (FMV) to line-of-sight (LOS) ground forces via current Special Operations Forces video transmission devices. The retractable external arm is a flexible system capable of holding multiple pod-mounted sensors, kinetic weapons, Remotely Piloted Aircraft (RPA) control systems and/or antennae, and would make the aircraft multi-mission capable.

2. Source of Need. AF Form 1067 AFSOC #12047; 193d Special Operations Wing Strategic Plan FY12-37; 2012-2013 ARC WEPTAC Critical Capability.

3. Unit Impacted.

193 SOW Harrisburg IAP, PA

4. Program Details. PEC: 27253

Remaining Quantity Required	Unit Cost	Program Cost
1 Crashworthy Seat Kit (3010)	\$60,000	\$60,000
1 ISR NRE (3600)	\$2,000,000	\$2,000,000
7 Electro-Optical / Infrared Sensors (3010)	\$1,600,000	\$11,200,000
7 Retractable Arm Kits (3010)	\$1,245,714	\$8,719,998
Total		\$21,979,998

HC/MC-130P/N INTEGRATED BEYOND LINE-OF-SIGHT / SECURE LINE-OF-SIGHT DATA LINK

1. Background. Installation of a Tactical Data Link (TDL) provides comprehensive Command and Control (C2) and maximizes HC/MC-130P/N aircrew situational awareness with beyond line-of-sight (BLOS) and secure line-of-sight (SLOS) capabilities. It provides critical real-time data to aircrews so they can participate in the present day network-centric battlespace. A TDL capability should be compatible with any situational awareness cockpit display unit utilized by the community; and compatible with existing Task Force TDL technology. To comply with Personnel Recovery (PR) doctrine the HC/MC-130P/N must perform as an Airborne Mission Commander, Rescue Mission Commander and On-Scene Commander requiring crucial gateways that allow different data links to communicate. Current survival radios require additional upgrades in order to keep up with new technology such as the Combat Survivor Evader Locator (CSEL) radio to avoid a capability gap in locating survivors. Secure Internet Protocol data will enable aircrews to receive near real-time Blue Force data and text messaging from the battlefield. Blue Force Tracker (BFT) is a modernized joint tracking system which is complimentary with Situational Awareness Data Link and Link-16 providing BLOS interactive data communication between aviation assets and C2.

2. Source of Need. Mobility Air Forces (MAF) Network Enabling Concept, 26 Apr 2006; Air Mobility Command (AMC) MAF Data Link Integration Technical Requirements Document (TRD), 25 Oct 2006; Tactical Data Link Transformation Capability Development Document (CDD), Increment 1, Joint Requirements Oversight Council Memorandum (JROCM), 23 Jun 2004; AMC Requirements and Planning Council Mission Essential 07/08; Real-Time Information in the Cockpit (RTIC); Global Information Grid Capability Requirements Document (CRD), JROCM 134-01, 30 Aug 2001; Air Force Tactical Data Link Master Plan; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

106 RQW Gabreski AP, NY 129 RQW Moffett Fld, CA 176 WG JB Elmendorf, AK

4. Program Details. **PEC: (HC-130) 27224, (MC-130) 27230**

Remaining Quantity Required	Unit Cost	Program Cost
13 BFT Kits (3010)	\$100,000	\$1,300,000
13 Gateway Kits (3010)	\$500,000	\$6,500,000
1 Gateway NRE (3600)	\$1,000,000	\$1,000,000
Total		\$8,800,000

HC/MC-130P/N INFORMATION SUPERIORITY

1. Background. Rescues performed in combat and during the aftermath of Hurricane Katrina highlighted the need to modernize the HC/MC-130P/N situational awareness capability. Real-time information exchange is paramount during personnel recovery operations, requiring great precision and speed in asymmetric battlespace environments. Recent technical advancements provide the means to integrate existing HC/MC-130P/N sensors with modern processors and data links facilitating superior Command and Control (C2) and tactical coordination from either an overhead or offset orbit. Having an integrated eye-safe laser range finder, illuminator and designator capability in a state-of-the-art Electro-Optical / Infrared (EO/IR) sensor that can Find, Fix, Track and Target (F2T2) targets of interest, or to precisely determine survivor location information, expedites recovery and increases survivability. Equipping HC/MC-130P/N aircraft with an enhanced EO/IR sensor capable of Full Motion Video (FMV) relieves reliance on high-demand Intelligence, Surveillance and Reconnaissance (ISR) assets. In order for rescue forces to fully support Information Superiority operations they require the ability to utilize the Internet while on board the aircraft. The Internet-on-Board (IOB) allows for efficient information sharing across a digital network. The final requirement of Information Superiority is to bring real-time threat situational awareness into the flight deck to increase crew survivability. The Air Force Tactical Receiver System-Ruggedized (AFTRS-R) is a proven system currently in use on other weapons systems that is an ideal solution for the Combat King aircraft.

2. Source of Need. Personnel Recovery Core Function Master Plan; Air Mobility Command (AMC), RMC and OSC duties as outlined in Air Force Tactics, Techniques and Procedures (AFTTP) 3-3.HC/MC-130; AMC Requirements and Planning Council Mission Essential 07/08; Real-Time Information in the Cockpit; Global Information Grid CRD; Joint Requirements Oversight Council Memorandum (JROCM) 134-01, 30 Aug 2001; AF Form 1067 Air Combat Command (ACC) 11-296 and 11-359, 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

106 RQW Gabreski AP, NY 129 RQW Moffett Fld, CA 176 WG JB Elmendorf, AK

4. Program Details. **PEC: (HC-130) 27224, (MC-130) 27230**

Remaining Quantity Required	Unit Cost	Program Cost
13 EO/IR Sensor Upgrades (3010)	\$1,075,000	\$13,975,000
13 FMV (3010)	\$192,300	\$2,499,900
13 IOB (3010)	\$50,000	\$650,000
1 NRE (3010)	\$15,000,000	\$15,000,000
13 AFTRS-R (3010)	\$100,000	\$1,300,000
Total		\$33,424,900

HC/MC-130P/N COMBAT PENETRATOR SUITE

1. Background. The HC/MC-130P/N rescue platform has limited ability to counter radar threats. In order to operate in a high threat environment, the HC/MC-130P/N requires a Radio Frequency (RF) jammer, improved radar detection capability, integrated defensive systems capable of supporting three-dimensional (3-D) audio, and a Hostile Fire Indicator (HFI). Improved radar detection will provide more sensitivity and improved range and accuracy for supplying the crew with information on radar threat type and location. An RF jammer will allow the Combat Search and Rescue Task Force to perform rescues in an elevated radar threat environment. The ALQ-213 Electronic Combat system is required to integrate these Electronic Warfare systems, providing easy-to-understand information which will allow for timely threat reactions by the crew. The ALQ-213 will also pave the way for future growth into 3-D audio and the Virtual Electronic Countermeasure Training System (VECTS), which provides advanced training to the crews and further increases their likelihood of surviving a threat engagement. The next generation HFI is capable of detecting small arms and rocket propelled grenade fire which cannot be detected by current aircraft defensive systems even though they are widely proliferated in virtually every threat environment.

2. Source of Need. AF Form 1067 Air Combat Command (ACC) 12-029; Personnel Recovery Core Function Master Plan; Lessons Learned from Operations ENDURING FREEDOM (OEF) and IRAQI FREEDOM (OIF); US Special Operations Command (USSOCOM) Capability Development Document (CDD), 27 Feb 2013; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

106 RQW Gabreski AP, NY 129 RQW Moffett Fld, CA 176 WG JB Elmendorf, AK

4. Program Details. **PEC: (HC-130) 27224F, (MC-130) 27230F**

Remaining Quantity Required	Unit Cost	Program Cost
13 Enhanced RF Detection Systems (3010)	\$1,300,000	\$16,900,000
1 Enhanced RF Detection NRE (3600)	\$2,000,000	\$2,000,000
13 Hostile Fire Indicators (3010)	\$270,000	\$3,510,000
13 RF Jammers (3010)	\$5,000,000	\$65,000,000
1 RF Jammer NRE (3600)	\$5,000,000	\$5,000,000
Total		\$92,410,000

HC/MC-130P/N ENHANCED ENGINE AND PROPELLER PERFORMANCE

1. Background. Currently the HC/MC-130P/N aircraft is performance-limited creating a safety hazard for the aircrew. They routinely operate with the heavy gross weights associated with fuel loads for Helicopter Air-to-Air Refueling (HAAR) and Forward Area Refueling Point (FARP), and fly in conditions with high outside air temperatures and high pressure altitudes. The HC/MC-130P/N also operates in the low-altitude environment (<500 feet) in mountainous terrain, requiring enhanced engine performance in order to prevent Controlled Flight Into Terrain (CFIT) incidents. Multiple aircraft upgrades are required to include the Electronic Propeller Control System (EPCS), NP2000, Oil Cooler Augmentation (OCA), In-Flight Propeller Balancing (IFPB) system, and Electronic Takeoff and Landing Data (ETOLD). The EPCS enhances performance because of improved synchrophasing during ground operations and improved thrust responsiveness from the controls (very little delay after making throttle adjustments). The NP2000 is an eight-bladed, composite propeller that significantly improves the thrust output of the current HC/MC-130P/N engines during takeoff and at low altitude. The OCA is critical for FARP operations in desert climates and humanitarian operations for the older HC/MC-130Ps that have difficulty keeping engine oil from overheating in hot desert environments. The IFPB system eliminates the need for regular maintenance and results in reduced noise, less damage from vibration, and improved aircraft availability. ETOLD is a system that electronically calculates engine performance data and significantly reduces the time a crewmember spends manually extracting the information from charts.

2. Source of Need. AF Form 1067 Air Combat Command (ACC) 10-242, 11-358 and 11-360; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

106 RQW Gabreski AP, NY

129 RQW Moffett Fld, CA

176 WG JB Elmendorf, AK

4. Program Details. PEC: (HC-130) 27224, (MC-130) 27230

Remaining Quantity Required	Unit Cost	Program Cost
13 EPCS (3010)	\$879,000	\$11,427,000
1 EPCS, IFPB and NP2000 NRE (3600)	\$6,000,000	\$6,000,000
13 IFPB (3010)	\$350,000	\$4,550,000
13 NP2000 (3010)	\$2,200,000	\$28,600,000
Total		\$50,577,000

HC/MC-130P/N MISSION FLEXIBLE REFUELING AND AIRDROP CAPABILITY

1. Background. The HC/MC-130P/N has recently been modified with the dual-rail system which increases the mission capability of the aircraft. The increased mission capability requires a more survivable and capable cargo compartment, to include an Aircrew Flight Equipment (AFE) Rack, Palletized Fuel Tank, and Heavy Equipment (HE) Airdrop capability. A standardized equipment rack is required so that storage of loose items will not interfere with a palletized fuel tank, Benson fuel tank, cargo on-loading and off-loading, and airdrop operations. Non-standard loading of rescue equipment and AFE create a potential safety hazard by having loose items in the cargo compartment. A palletized fuel tank compatible with the dual-rails will allow for more expeditious reconfiguration that will provide greater mission flexibility to support Hot Refueling and Forward Area Refueling Point (FARP) Operations. It is also capable of withstanding small arms fire and is equipped with fire retardant material creating a safer flight environment. H/MC-130 aircraft currently have low speed air refueling drogues to refuel helicopters. These low speed drogues are not capable of refueling higher speed aircraft such as the CV-22. Variable or high speed drogues are required to increase refueling capabilities. In order to support evolving rescue missions the HC/MC-130P/N aircraft must be capable of supporting Guardian Angel requirements by conducting HE airdrops for large terrain and ocean rescue craft.

2. Source of Need. AF Form 1067 Air Combat Command (ACC) 11-322, 12-062, 13-235 and 13-236; Class A Mishap MC-130P 20020213FTEV016A Safety Investigation Board (SIB) Recommendation; 20020612FTEV033A Report, ORS 6, Fall 04-07; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

106 RQW Gabreski AP, NY

129 RQW Moffett Fld, CA

176 WG JB Elmendorf, AK

4. Program Details. PEC: (HC-130) 27224, (MC-130) 27230

Remaining Quantity Required	Unit Cost	Program Cost
9 Dual-Rail Fuel Tanks (3010)	\$1,800,000	\$16,200,000
13 High Speed Drogues (3010)	\$100,000	\$1,300,000
9 FARP Kits (3010)	\$70,000	\$630,000
Total		\$18,130,000

LC-130H PROPULSION IMPROVEMENTS

1. Background. The LC-130 mission requires operation out of austere environments and landing on deep field runways and unimproved snow and ice. In order to ensure successful takeoff from deep field bases, the use of Jet Assisted Take-Off (JATO) rocket motors is required. Dwindling supplies of circa-1950s JATO motors will require replacements at a cost of more than \$6 million per year. The NP2000 is an eight-bladed, composite propeller that improves thrust 20 percent over the current LC-130 propeller during takeoff, negating the need for JATO in most cases, while reducing vibration and shock. The Electronic Propeller Control System (EPCS) is a prerequisite and integral subsystem of the NP2000. It replaces current mechanical valve housings and synchrophasers (1970s design) with modern electronic valve housings and propeller controls, improving responsiveness while eliminating the need for regularly scheduled maintenance required by the mechanical system. Regular propeller balancing is difficult to accomplish at bare-base locations and reduces aircraft availability when down for maintenance. The In-Flight Propeller Balancing (IFPB) system eliminates the need for regular maintenance as the propeller is continuously balanced during operation. The IFPB virtually eliminates propeller balance induced vibration, which equates to reduced noise, less damage and improved aircraft availability. All these systems combine for an increase in performance, system reliability, improved aircraft availability and an estimated 20 percent reduction in required maintenance.

2. Source of Need. AF Form 1067 National Guard Bureau A4MY NP2000 11-066, 10 Oct 2011; AF Form 1067 EPCS 09-003, 31 May 2011; 2012-2013 ARC WEPTAC Critical Capability.

3. Unit Impacted.

109 AW Schenectady, NY

4. Program Details. **PEC: 41115F**

Remaining Quantity Required *	Unit Cost	Program Cost
1 EPCS Spares (3010)	\$1,500,000	\$1,500,000
10 IFPB (3010)	\$350,000	\$3,500,000
1 IFPB NRE (3600)	\$3,000,000	\$3,000,000
10 NP2000 (3010)	\$2,000,000	\$20,000,000
1 NP2000 NRE (3010)	\$5,000,000	\$5,000,000
Total		\$33,000,000

* Includes 10% spares.

LC-130H RETRACTABLE EXTERNAL ARM AND CREVASSE DETECTION RADAR

1. Background. Over the last four decades, LC-130H aircraft have sustained serious damage while landing on unsurveyed ice- and snow-covered areas. Current methods to identify hazards with national imaging assets entail long lead times and increasing unreliability. The 109th Airlift Wing (AW) has a need for Crevasse Detection Radar (CDR) with additional capabilities including survivability enhancements, polar search and rescue, and airborne sensing. The Air National Guard (ANG) completed the evaluation and implementation of Sandia Labs X-band radar that meets the requirement. The system is fielded but additional changes are required to improve the performance and operational capabilities of the system. Also, the CDR is mounted on the aircraft using a flexible external articulating arm. Additional effort is required to establish the retractable external arm as a permanent modification to the LC-130H fleet. Although partially funded, additional funding is required for updating and supporting the CDR and the retractable external arm.

2. Source of Need. AF Form 1067 National Guard Bureau (NGB) A4MY 07-007, 19 Nov 2004; AF Form 1067 NGB A4MY 11-012, 15 Apr 2011; 2012-2013 ARC WEPTAC Critical Capability.

3. Unit Impacted.

109 AW Schenectady, NY

4. Program Details. **PEC: 41115F**

Remaining Quantity Required	Unit Cost	Program Cost
1 CDR Operational Improvements (3010)	\$1,000,000	\$1,000,000
1 Retractable External Arm Modification (3010)	\$1,000,000	\$1,000,000
Total		\$2,000,000

LC-130H FLIGHT DECK NIGHT VISION GOGGLE COMPATABILITY

1. Background. The 109th Airlift Wing (AW) has seven LC-130Hs that are not Night Vision Goggle (NVG) compatible. In accordance with regulations and current procedures, NVG operations have become a core competency of the US Air Force, particularly in mobility aircraft. All C-130 aircrew deploying to combat zones are required to be proficient in Air Force Tactics Techniques and Procedures (AFTTP) 3-3.C-130E/H, Air Force Instruction (AFI) 11-2C-130V1, and V3 NVG guidance. As the arctic air operations grow in importance, LC-130Hs and crews will be tasked to perform Search and Rescue (SAR) and air-land / airdrop using NVG operations. The drawbacks of non-compatible aircraft are self-evident as aircrew members go overdue on NVG events due to lack of a compatible aircraft. All LC-130Hs should be standardized and available for crews to maintain NVG currency and proficiency to safely and efficiently execute all of the unit's missions. In order to take full advantage of NVG operations, a complete covert lighting solution must be employed, to include NVG cargo loading operations. Finally, current dual mode landing lights are barely adequate when using overt lighting for takeoff and landing. A new light is being developed that would offer improved overt and covert lighting performance when compared to the standard dual mode lamp currently being used.

2. Source of Need. AF Form 1067 National Guard Bureau A4MY 09-060, 8 Mar 2010; 2012-2013 ARC WEPTAC Critical Capability.

3. Unit Impacted.

109 AW Schenectady, NY

4. Program Details. PEC: 41115F

Remaining Quantity Required *	Unit Cost	Program Cost
7 Cockpit NVG Upgrades (3010)	\$375,000	\$2,625,000
1 NVG NRE (3010)	\$1,000,000	\$1,000,000
10 Cargo Compartment NVG Upgrades (3010)	\$41,000	\$410,000
10 Dual Mode Landing Light Wiring (3010)	\$14,000	\$140,000
11 Upgraded Dual Mode Landing Lights (3010)	\$8,000	\$88,000
Total		\$4,263,000

* Includes 10% spares.

LC-130H FLIGHT DECK COMMUNICATIONS UPGRADE

1. Background. The LC-130 requires a long-range beyond line-of-sight (BLOS) communications capability due to the mission's remote polar locations. Satellite Communications (SATCOM) are limited at polar high latitudes and High Frequency (HF) radios are unreliable during periods of high solar flare activity. Weather, Air Traffic Control (ATC) and Command and Control (C2) communications (voice and text) are critical to ensure safe flight operations in Antarctica and the Arctic. The LC-130H currently uses a portable system with the Iridium phone and associated components all housed in a tailored pelican case. Although functional, the pelican case is not a robust package and can affect reliability. Window-mounted antennas have poor reception and the sextant port antenna needs to be frequently removed for celestial navigation. Additionally, the non-integrated, portable system becomes a hazard with exposed wires on the flight deck and often needs repair due to fragile connections. The Air National Guard (ANG) requires a permanently installed Iridium voice and data solution with an external flush-mount antenna, and secure communication with text messaging.

2. Source of Need. AF Form 1067 National Guard Bureau A4MA 20070212; 2012-2013 ARC WEPTAC Critical Capability.

3. Unit Impacted.

109 AW Schenectady CAP, NY

4. Program Details. **PEC: 41115F**

Remaining Quantity Required *	Unit Cost	Program Cost
11 Flight Deck Upgrades (3010)	\$100,000	\$1,100,000
1 Communications NRE (3010)	\$1,000,000	\$1,000,000
Total		\$2,100,000

* Includes 10% spares.

LC-130H AVIONICS OBSOLESCENCE AND GLOBAL AIRSPACE ACCESS

1. Background. The delay of the Avionics Modernization Program (AMP) has established a very short timeline for Air National Guard (ANG) LC-130H models to meet the year 2020 deadline for international Communications, Navigation and Surveillance / Air Traffic Management (CNS/ATM) mandates established by International Civil Aviation Organization (ICAO). As of now, all C-130H models will not meet Precision and Area Navigation (P-RNAV) and Automatic Dependent Surveillance-Broadcast (ADS-B) requirements to operate worldwide beyond 1 Jan 2020. The LC-130 fleet is also facing severe sustainability challenges with mission-required avionics equipment. Diminishing Manufacturing Sources (DMS) challenges have rendered 25 percent of current avionics obsolete. A modern Flight Management System (FMS) with Global Positioning System (GPS) approach capability and a modern glass cockpit will reduce crew workload through presentation of a consolidated situational awareness picture, and increase mission capability and training effectiveness rates with higher equipment reliability, lower maintenance costs, and enhance flight safety. Updated avionics with ADS-B Out will address CNS/ATM mandates, address the DMS issues, and increase operational effectiveness and efficiency by opening up airspace that requires more stringent navigational requirements, and supports GPS approaches currently prohibited for the legacy C-130 fleet.

2. Source of Need. Federal Aviation Administration (FAA) Directive Order 242A; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

109 AW Schenectady CAP, NY

4. Program Details. **PEC: 41115F**

Remaining Quantity Required *	Unit Cost	Program Cost
1 CNS / ATM NRE (3600)	\$5,000,000	\$5,000,000
10 Avionics Kits (3010)	\$5,700,000	\$57,000,000
Total		\$62,000,000

* Includes 10% spares.



E-8C & C-32B



- **Robust “Sensor-To-Shooter” Airborne, Manned Battle Management**
- **Wide-Area Ground, Littoral and Maritime Surveillance / Tracking**
- **ANG E-8 Unit Provides 100% of the Total Fleet**
- **ANG C-32 Unit Provides 100% of the Total Fleet**

E-8C Joint Surveillance and Target Attack Radar System (JSTARS) - The E-8C JSTARS is the world's premier wide-area surveillance Moving Target Indicator (MTI), airborne, manned Battle Management Command and Control (BMC2) aircraft. It brings a unique combination of robust communication and real-time surveillance to air, ground, and surface domains. The aircraft's capability to find, fix, track and orient shooters to air, ground and surface Targets of Interest (TOI) allows friendly forces to respond rapidly to a changing battlefield environment.



The Air National Guard (ANG) 116 ACW at Robins AFB, GA is home to 16 E-8Cs and E-8(T)C. Team JSTARS is the premier example of Total Force Integration Association. They have accrued more than 92,000 combat hours and 8,700 combat sorties over Kosovo, Iraq, Afghanistan and Libya. In FY13, JSTARS provided 8,800 hours of simultaneous Battle Management, Command and Control, and ISR supporting all six Combatant Commanders. As an Active Association, there are approximately 750 full-time and 350 traditional ANG personnel comprising the 116 ACW (ANG) Host unit, and 1,368 active duty airmen, soldiers and Individual Mobilization Augmentees (AFRES) comprising the 461 ACW (active duty) Associate unit. Modernization efforts will enhance the warfighting capabilities well into the 21st century through programs such as the Communication / Network Upgrade, Beyond Line-of-Sight Network Architecture Upgrade (BNAU), Multi-Agency Communications Capability (MACC), and a cross-domain security solution to include multi-theater chat, e-mail and web access.

C-32B - The C-32B provides dedicated rapid response worldwide airlift through the Commander, United States Special Operations Command, in support of the US Government crisis response activities, both domestic and abroad. The 150 SOS of the New Jersey ANG operates the C-32B from Joint Base McGuire, NJ.



E-8C & C-32B

2013 Weapons and Tactics Conference

Critical Capabilities List

E-8C:

- Global Imagery Server
- Integrated Broadcast Service Modernization
- Integrated Personnel Recovery Compatible Interrogation Radio
- Integrated Automatic Identification System
- Network Centric Collaborative Targeting

C-32B:

- Satellite Communications System with Secure Ku Bandwidth
- Communications Management System Replacement

Essential Capabilities List

E-8C:

- Unclassified Network (including Email to Bridge / Relay Defense Support to Civil Authorities, Homeland Defense Voice and Data)
- Beyond Line-of-Sight Tactical Data Link Interoperability Multi-Data Link Gateway
- Enhanced Electronic Protection (Global Positioning System) for Navigation and Communication Systems
- Self Defense Suite (Airframe)
- Common Data Link with Common Ground Station

C-32B:

- Audio / Video System Replacement

Desired Capabilities List

E-8C:

- Data Link with Net Enabled Weapons
- Electronic Flight Bag
- Moving Target Indicator / Link-16 / Battle Management Command and Control Deployable Ground System Capability
- Three-Dimensional Spatial Audio
- TMSS Modernization
- Common Data Link with Common Ground Station

C-32B:

- None

E-8C GLOBAL IMAGERY SERVER

1. Background. Imagery is needed onboard E-8C Joint Surveillance and Target Attack Radar System (JSTARS) to allow organic Moving Target Indicator (MTI) to be layered in context with known geospatial information (water, land, urban features, and Intelligence, Surveillance and Reconnaissance (ISR) products) to support the JSTARS battle management and surveillance responsibilities. The layering of information allows operators to better identify, track and predict movement for targets of interest. Currently, the JSTARS imagery system provides very limited and outdated mission center specific imagery (underlays). Because of the proprietary data formats currently used on the JSTARS system, imagery creation and updates require months of processing and extensive manpower support. The system was created prior to modern server architectures and, as a result, individual imagery disks are needed for each crew station (18 stations x 16 aircraft) requiring days of replication. The new imagery server must use imagery products in standard / native data formats, be capable of storing and serving worldwide imagery data, and be updated rapidly as new imagery products become available. Integration of the modern imagery server coupled with low cost, high capacity storage will provide mission crews with significantly more accurate and updated image products with higher resolution. In addition, the system will drastically reduce support manpower requirements by reducing the processing timelines from months to hours, and eliminating the need for disk replication for each crew station.

2. Source of Need. JSTARS Operational Requirements Document (USAF 001-84) I/II/II A (Rev 5), Dec 2004; 116 ACW Capability Needs List (Imagery Server); 2012-2013 ARC WEPTAC Critical Capability.

3. Unit Impacted.

116 ACW Robins AFB, GA

4. Program Details. **PEC: 27581F**

Remaining Quantity Required	Unit Cost	Program Cost
16 Imagery Servers (3010)	\$525,000	\$8,400,000
5 Training (3840)	\$320,000	\$1,600,000
Total		\$10,000,000

E-8C INTEGRATED BROADCAST SERVICE MODERNIZATION

1. Background. Integrated Broadcast Service (IBS) received via the Commander's Tactical Terminal / Hybrid Receive Only (CTT/H-R) receivers is the primary system used to identify and locate threats to the E-8C Joint Surveillance and Target Attack Radar System (JSTARS) aircraft. To support JSTARS Battle Management responsibility, IBS provides Electronic Intelligence, Signals Intelligence and Human Intelligence reports for fusion with JSTARS Moving Target Indicator (MTI) to support target nomination and identification tasks. JSTARS CTT/H-R receivers are obsolete and do not support Common Message Format, Common Interactive Broadcast waveforms and encryption requirements. A replacement is needed to sustain mission crew critical threat information and combat identification capabilities. Air Force Tactical Receiver System-Ruggedized (AFTRS-R) terminals are fielded as the new Air Force standard and fully capable of supporting IBS requirements. This program integrates the AFTRS-R on the JSTARS aircraft and provides training and a support infrastructure.

2. Requirement. JSTARS Operational Requirements Document (USAF 001-84) I/II/II A (Rev 5), Dec 2004; 2012 -2013 ARC WEPTAC Critical Capability.

3. Unit Impacted.

116 ACW Robins AFB, GA

4. Program Details. PEC: 27581F

Remaining Quantity Required	Unit Cost	Program Cost
16 IBS (3010)	\$550,000	\$8,800,000
3 Training (3840)	\$400,000	\$1,200,000
Total		\$10,000,000

E-8C INTEGRATED PERSONNEL RECOVERY COMPATIBLE INTERROGATION RADIO

1. Background. The E-8C Joint Surveillance and Target Attack Radar System (JSTARS) provides overwatch support for Combat Search and Rescue (CSAR) of potential hostile extraction areas, guides isolated personnel and extraction teams, and provides Command and Control (C2) to strike assets in support of extraction operations. JSTARS has a requirement to support CSAR operations using a Personnel Recovery (PR) radio capable of communicating with isolated personnel. Currently, JSTARS aircrew carry the QuickDraw2 handheld airborne interrogator. However, the Combat Survivor Evader Locator (CSEL) is the current US Department of Defense program of record for Joint Search and Rescue and replaces the older AN/PRC-112G radio. The QuickDraw2 interrogator is not compatible with the CSEL and must be upgraded or supplemented to provide a PR system capable of interfacing with both the AN/PRC-112G radios and the CSEL. The overall objective of the PR program is to provide line-of-sight text and voice communications with isolated personnel and extraction teams with enhanced surveillance, connectivity and security through interoperability with the E-8C via the secure PR data links. JSTARS, with an integrated PR capability, provides a persistent airborne Command and Control, Intelligence, Surveillance and Reconnaissance (C2ISR) node to support isolated personnel and extraction teams.

2. Source of Need. Air Combat Command (ACC) JSTARS Requirements List (CSAR Support); 2012-2013 ARC WEPTAC Critical Capability.

3. Unit Impacted.

116 ACW Robins AFB, GA

4. Program Details. **PEC: 27581F**

Remaining Quantity Required	Unit Cost	Program Cost
16 PRC Radios (3010)	\$562,500	\$9,000,000
2 Training (3840)	\$500,000	\$1,000,000
Total		\$10,000,000

E-8C INTEGRATED AUTOMATIC IDENTIFICATION SYSTEM

1. Background. The E-8C Joint Surveillance and Target Attack Radar System (JSTARS) recently expanded its maritime surveillance capabilities via the addition of the Enhanced Land Maritime Mode. As a result, JSTARS is receiving more taskings to support real world maritime missions. JSTARS requires an organic, integrated capability to provide near real-time identification of maritime vessels. The Automatic Identification System (AIS) is the current recognized system of record for providing this capability. AIS is an automated tracking system used on ships and Vessel Tracking Services (VTS) for identifying and locating vessels by electronically exchanging data with other nearby ships and VTS stations. Receiving a vessel's identity, position, course and speed greatly enhances a crew's ability to distinguish neutral and suspect maritime entities. AIS gives the mission crew the capability to focus on suspect vessels and expedite cross cueing of potential targets with external agencies. An integrated AIS system which overlays AIS reports on the JSTARS Operator Work Station, allows expeditious comparison of organic Moving Target Indicator (MTI) data with received AIS transponder returns.

2. Source of Need. JSTARS Operational Requirements Document (USAF 001-84) I/II/II A (Rev 5), Dec 2004; 116 ACW Capability Needs List; 2012-2013 ARC WEPTAC Critical Capability.

3. Unit Impacted.

116 ACW Robins AFB, GA

4. Program Details. **PEC: 27581F**

Remaining Quantity Required	Unit Cost	Program Cost
16 AIS (3010)	\$210,000	\$3,360,000
3 Training (3840)	\$210,000	\$630,000
Total		\$3,990,000

E-8C NETWORK CENTRIC COLLABORATIVE TARGETING

1. Background. Network Centric Collaborative Targeting (NCCT) is a machine-to-machine interface between similar and dissimilar Battle Management Command and Control (BMC2) and Intelligence, Surveillance and Reconnaissance (ISR) assets. It enables direct sensor collaboration between platforms, as well as speeding target detection and reporting with increased confidence in target identification and location accuracy. The E-8C Joint Surveillance and Target Attack Radar System (JSTARS) implementation would reduce kill chain timelines by automating cross cueing of Electronic Intelligence (ELINT), Communications Intelligence (COMINT), Moving Target Indicator (MTI), Imagery Intelligence (IMINT), Automatic Identification System (AIS), and radar sensors. Fusion of JSTARS MTI and off-board sensor data (ELINT, COMINT) provides JSTARS high confidence identification and precise target location not achieved or resolved by individual platforms or systems. NCCT establishes a peer-to-peer ISR network consisting of beyond line-of-sight and line-of-sight communications.

2. Source of Need. JSTARS Operational Requirements Document (USAF 001-84) I/II/II A (Rev 5), Dec 2004, contains a requirement for Combat Identification (CID); 2012-2013 ARC WEPTAC Critical Capability.

3. Unit Impacted.

116 ACW Robins AFB, GA

4. Program Details. **PEC: 27581F**

Remaining Quantity Required	Unit Cost	Program Cost
16 NCCT (3010)	\$235,000	\$3,760,000
1 Training (3840)	\$235,000	\$235,000
Total		\$3,995,000

C-32B SATELLITE COMMUNICATION SYSTEM WITH SECURE KU BANDWIDTH

1. Background. The current Satellite Communications (SATCOM) system does not provide reliable, sufficient, secure and dedicated bandwidth to meet operationally defined requirements. The legacy system relies on a commercially available service consisting of a finite amount of bandwidth that is approaching saturation. Additionally, the Chief Information Officer (CIO) of the Department of Defense (DOD) declares the system must be replaced. A Ku transmit / receive capability exists and is fielded on similar aircraft. Installation of SATCOM hardware must coincide with availability of secure Ku bandwidth.

2. Source of Need. DOD CIO Memo, “Discontinuation of Legacy Inmarsat Services,” 25 Aug 2011; US Air Force / National Guard Bureau (NGB) classified Operational Requirements Document 001-57 I/II/III, 8 Aug 2002; 2011-2013 ARC WEPTAC Critical Capability.

3. Unit Impacted.

150 SOS JB McGuire, NJ

4. Program Details. **PEC: 1160408BB**

Remaining Quantity Required	Unit Cost	Program Cost
5 Ku Bandwidth (3840)	\$14,000,000	\$70,000,000
2 Satellite Communication Systems (3010)	\$1,400,000	\$2,800,000
Total		\$72,800,000

C-32B COMMUNICATIONS MANAGEMENT SYSTEM REPLACEMENT

1. Background. The Communications Management System (CMS) provides the operators a means to control mission radios and provides C-32B system access. Without the CMS no mission communications, voice or data, enters or leaves the aircraft. The current system is nearly a decade old, and multiple modifications have maintained its viability. The life expectancy of the current CMS is extremely limited and a replacement should be procured now before missions are impacted. The main Line Replacement Unit (LRU) board and operating system are no longer available or manufactured. The inability to procure replacement parts combined with the spare parts pool for the LRU being depleted necessitates procurement of a new system.

2. Source of Need. US Air Force / National Guard Bureau (NGB) classified Operational Requirements Document (ORD) 001-57 I/II/III, 8 Aug 2002; 2011-2013 ARC WEPTAC Critical Capability.

3. Unit Impacted.

150 SOS JB McGuire, NJ

4. Program Details. **PEC: 1160408BB**

Remaining Quantity Required	Unit Cost	Program Cost
1 CMS Replacement (3010)	\$4,500,000	\$4,500,000
Total		\$4,500,000

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F-15 & F-22



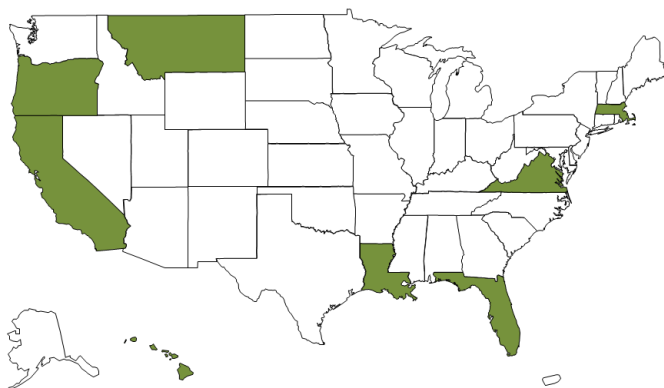
- **Air Dominance**
- **Homeland Defense**
- **ANG F-15 Units Provide 52% of the Total Fleet**
- **ANG F-22 Units Provide 11% of the Total Fleet**

F-15 - The Air National Guard (ANG) possesses over 40 percent of the Combat Air Forces (CAF) Air Dominance capability. These units also provide 37 percent of the nation's Aerospace Control Alert (ACA) assets ensuring 24-hour Homeland Defense (HD). The introduction of the Active Electronically Scanned Array (AESA) radar on ANG F-15Cs provides the Combatant Commander with vital HD capability.

Operating six of nine combat-coded F-15C squadrons, the ANG possesses the majority of the air superiority assets available for Air Expeditionary Force (AEF) commitments. Additionally, the ANG operates the only F-15 flying training unit at the 173 FW, Klamath Falls IAP, OR and trains all F-15C pilots.

ANG F-15 modernization programs are necessary to improve this combat-proven fighter's capabilities for both HD and Overseas Contingency Operations (OCO). These programs include the APG-63(v)3 AESA radar, air dominance enabler, a modernized self-protection suite, multi-spectral search / target / track system and a modernized cockpit. Accomplishing these upgrades provides a dramatic increase in persistent, lethal air superiority available to Combatant Commanders.

F-22 - The ANG has two F-22 classic associate units at JB Langley-Eustis, VA and Tyndall AFB, FL. The Hawaii ANG has the first operational ANG F-22 squadron at Hickam AFB, providing ACA support for the Hawaiian Islands and enabling Air Dominance in the Pacific. F-22 modernization efforts include incorporation of a helmet-mounted display and federated processors. Communication upgrades, including fourth / fifth and fifth / fifth generation data link, provide the F-22 with an efficient method to address HD and OCO missions.



F-15 & F-22

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Critical Capabilities List

F-15:

- Active Electronically Scanned Array Radar
- Persistent Air Dominance Enabler
- Modernized Cockpit
- Multi-Spectral Search / Target / Track System
- Modernized Self-Protection Suite

F-22:

- Helmet-Mounted Display
- Survivability Enhancements
- Communications Upgrade (Broadband, Beyond Line-of-Sight Communications, Fourth / Fifth Generation and Fifth / Fifth Generation Data Link)
- Federated Processors
- Multi-Spectral Sensor Capabilities

Essential Capabilities List

F-15:

- External Missile Launcher
- High Fidelity Networked Simulators at Air National Guard Bases
- Offensive Electronic Attack
- Organic US Government Owned F-15 Operational Flight Program
- Joint Mission Planning System / Common Mission Debrief Program Support System

F-22:

- None

Desired Capabilities List

F-15:

- Realistic Training Opportunities
- Air Launched Hit-to-Kill
- Next Generation Weapon

F-22:

- None

F-15 ACTIVE ELECTRONICALLY SCANNED ARRAY RADAR

1. Background. Active Electronically Scanned Array (AESA) technology exponentially increases detection and track ranges of airborne targets and greatly improves identification capability. AESA radar gives the F-15C true multi-target track and attack capability, and vastly increases capabilities against advanced Electronic Attack (EA) from enemy systems. AESA radars are critical for Homeland Defense (HD) missions because the system enables pilots to locate a Target of Interest (TOI) in a saturated air traffic environment, or detect and track small, asymmetric threats. AESA radars also eliminate the hydraulic and electrical systems associated with mechanically operated radars such as the APG-63(v)0, resulting in dramatically improved reliability and maintainability. The APG-63(v)0 is 1970s technology and unable to keep pace with current and postulated threats. Additionally, the Mean Time Between Failure (MTBF) for the (v)0 is 10-12 hours of flight time, while the MTBF for an AESA radar is over 30 times greater. To date, Congressional appropriations have purchased at least 48 AESA radars for the Air National Guard (ANG). However, ANG F-15C units continue to operate the only combat-coded APG-63(v)0 radar systems in the Combat Air Forces (CAF) and are not currently planned for conversion to AESA. The Department of Defense's (DOD) strategic pivot to the Pacific has adjusted the ANG requirement for F-15C AESA radars in order to effectively support Combatant Commands and preserve the commitment to HD. The ANG requirement has been modified to account for the combat-coded (v)0 ANG aircraft that are not currently scheduled to receive an AESA upgrade. Further, the amendment allows each operational ANG unit to provide AESA-equipped F-15Cs for worldwide deployment while simultaneously providing 24/7 HD at Aerospace Control Alert (ACA) locations. Finally, the AESA is required to create the physical space needed for installation of Advanced Data Core Processor (ADCP) II, which is the foundation of fleet commonality.

2. Source of Need. F-15C/D Radar Improvement Program; APG-63(v)3 Capability Development Document (CDD), 21 Apr 2005; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

104 FW	Westfield-Barnes RAP, MA	142 FW	Portland IAP, OR	159 FW	JRB New Orleans, LA
120 FW	Great Falls IAP, MT	144 FW	Fresno IAP, CA	173 FW	Klamath Falls AP, OR
125 FW	Jacksonville IAP, FL				

4. Program Details. **PEC: 27130F**

Remaining Quantity Required *	Unit Cost	Program Cost
23 APG-63(v)0 AESA Conversions (3010)	\$9,500,000	\$218,500,000
Total		\$218,500,000

* Includes installation, spares and program costs.

F-15 PERSISTENT AIR DOMINANCE ENABLER

1. Background. Adding Conformal Fuel Tanks (CFTs) and an updated non-cooperative target identification capability to the F-15C/D provides the single greatest impact to combat operations planning for air dominance through 2040. These modifications are vital elements of the Air Component Commander's ability to deliver persistent, lethal air superiority. CFTs, coupled with advanced weapons and updated electronic countermeasures, enable one formation of combat-configured F-15s to provide nearly twice the normal duration of coverage in contested environments without the need for air refueling support. CFTs also streamline weapons development and integration for all versions of F-15 through standardized weapons communication, thereby enabling the Air Force to exploit rapid evolutions in weapons development throughout the F-15 fleet. Combatant Commands can quickly exploit the advantages of a common F-15 fleet if all aircraft readily accommodate advanced weapons or off-the-shelf defensive countermeasure upgrades, such as a pylon-mounted fiber-optic towed decoy. No other fighter aircraft in the US inventory can deliver the same capability and mix of lethality at significant combat range without an extensive support bridge. With an aging air refueling fleet, anti-access / area denial challenges, and a decreasing number of air dominance platforms, the Air National Guard (ANG) must enable persistent air dominance using the F-15C/D.

2. Source of Need. F-15C/D Operational Requirements Document (ORD), 7 Apr 1992; LF10-054 Revision A Tasking; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

104 FW	Westfield-Barnes RAP, MA	142 FW	Portland IAP, OR	159 FW	JRB New Orleans, LA
125 FW	Jacksonville IAP, FL	144 FW	Fresno IAP, CA	173 FW	Klamath Falls AP, OR

4. Program Details. **PEC: 27130F**

Remaining Quantity Required *	Unit Cost	Program Cost
105 F-15 Conformal Fuel Tanks (3010)	\$2,200,000	\$231,000,000
Total		\$231,000,000

* Includes required spares, support equipment and technical orders.

F-15 MODERNIZED COCKPIT

1. Background. The current displays and communication / navigation functionality in the F-15 cockpit were designed based on the amount of information accessible by the pilot in the 1970s. The F-15 fleet has experienced an exponential growth in capability and lethality in its 30+ years of combat-proven service due to the modernization of radars, weapons, sensors and data links. Fully utilizing these enhancements requires a complex pilot interface. The current legacy displays and communication architecture are incapable of properly presenting this information due to display size, outdated technology and minimalist audio integration. Replacement of legacy displays with larger color and/or smart color display systems increases the lethality of Air National Guard (ANG) F-15s by more intuitively processing and displaying data. The addition of three-dimensional (3-D) audio separation allows the pilot to rapidly interpret complex data based on proper scientific understanding of the Pilot-to-Vehicle Interface (PVI). Further, these capabilities allow the pilot to make full operational use of current and planned aircraft capabilities. Based on the proposed Air Force F-15 modernization schedule, new displays and 3-D audio are the most effective means available for the ANG to bridge current system limitations and provide a solid platform as new capabilities are realized.

2. Source of Need. F-15C/D Operational Requirements Document (ORD), 7 Apr 1992; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

104 FW	Westfield-Barnes RAP, MA	142 FW	Portland IAP, OR	159 FW	JRB New Orleans, LA
120 FW	Great Falls IAP, MT	144 FW	Fresno IAP, CA	173 FW	Klamath Falls AP, OR
125 FW	Jacksonville IAP, FL				

4. Program Details. PEC: 27130F

Remaining Quantity Required *	Unit Cost	Program Cost
130 F-15 Vertical Situation Display Upgrades (3010)	\$20,000	\$2,600,000
105 F-15 3-D Audio (3010)	\$60,000	\$6,300,000
Total		\$8,900,000

* Assumes installation, program costs and 10% spares.

F-15 MULTI-SPECTRAL SEARCH / TARGET / TRACK SYSTEM

1. Background. Air National Guard (ANG) F-15s are tasked for threat areas throughout the world as part of the Air and Space Expeditionary Force (AEF) while defending the homeland. A multi-spectral search / target / track system exploits a target's signature across the electromagnetic spectrum. Current adversary aircraft and air defense networks employ sophisticated detection and Electronic Attack (EA) methods that degrade system performance and make allied aircraft vulnerable to attack. Multi-spectral search / target / track systems provide alternatives not susceptible to EA or other advanced radar countermeasures. These systems must be able to detect, identify and track threats to friendly aircraft as a time-synchronized, integrated function of the existing sensor systems for detection and weapons cueing. It is not a capability employed in lieu of Active Electronically Scanned Array (AESA) radars or as a stand-alone infrared search and track function, but rather a part of the integrated fire-control system that dramatically increases probability of threat detection. Further, the multi-spectral system must be coordinated with radar warning to provide robust threat alerts to friendly aircraft. Multi-spectral search / target / track systems are a revolutionary capability essential to air dominance and a critical enabler for integrated fourth-fifth generation fighter operations, ballistic missile detection and asymmetric threat defense.

2. Source of Need. F/A-18 Infrared Search-and-Track System Capability Development Document (CDD), Mar 2011, US Air Force Annex; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

104 FW	Westfield-Barnes RAP, MA	142 FW	Portland IAP, OR	159 FW	JRB New Orleans, LA
120 FW	Great Falls IAP, MT	144 FW	Fresno IAP, CA	173 FW	Klamath Falls AP, OR
125 FW	Jacksonville IAP, FL				

4. Program Details. PEC: 27130F

Remaining Quantity Required *	Unit Cost	Program Cost
50 Multi-Spectral Systems (3010)	\$3,500,000	\$175,000,000
105 ALQ-128 (3010)	\$450,000	\$47,250,000
Total		\$222,250,000

* Assumes Full Rate Production.

F-15 MODERNIZED SELF-PROTECTION SUITE

1. Background. The existing F-15C/D Electronic Warfare (EW) internal self-protection suite is comprised of 1980s era EW equipment and is incapable of providing adequate defensive situational awareness and countermeasures against present and future radar systems. The Air Force documented these shortfalls in a Capability Development Document (CDD) entitled Eagle Passive Active Warning Survivability System (EPAWSS) and initiated funding in Fiscal Year 2013 in concert with the removal of sustainment funding for the existing EW suite. A robust integrated Electronic Attack (EA) suite is required to enable the F-15 to counter current and future radars, to include enemy fighters. The attributes of this integrated suite shall incorporate a digital Radar Warning Receiver (RWR), a Digital Radio Frequency Memory (DRFM) jammer, the ALE-58 BOL, and integration with the replacement for the ALQ-128. While the AF plans to begin fielding EPAWSS on the F-15C in Fiscal Year 2018, the expected fielding date for ANG F-15C/D aircraft is much later, requiring the fielding of an interim “gap filler” system.

2. Source of Need. Tactical Air Forces (TAF) 304-80-I/II/III-C System Operational Requirements Document (ORD) for the F-15A-D Tactical Electronic Warfare Suite, 7 Apr 1992; EPAWSS Capability Development Document (CDD), Jun 2007; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

104 FW	Westfield-Barnes RAP, MA	142 FW	Portland IAP, OR	159 FW	JRB New Orleans, LA
120 FW	Great Falls IAP, MT	144 FW	Fresno IAP, CA	173 FW	Klamath Falls AP, OR
125 FW	Jacksonville IAP, FL				

4. Program Details. PEC: 27130F

Remaining Quantity Required *	Unit Cost	Program Cost
105 EPAWSS (3010)	\$6,600,000	\$693,000,000
1 F-15 Towed Decoy NRE (3600)	\$5,500,000	\$5,500,000
50 F-15 Towed Decoys (3010)	\$2,500,000	\$125,000,000
120 BOL-IR (3010)	\$90,000	\$10,800,000
Total		\$834,300,000

* Includes required spares, support equipment and technical orders.

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F-16



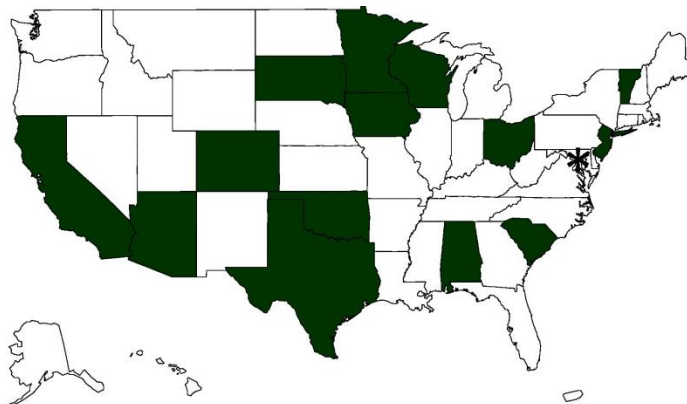
- **Close Air Support / Interdiction/ Precision Strike**
- **Suppression / Destruction of Enemy Air Defenses**
- **Air Superiority for Homeland Defense**
- **ANG F-16 Units Provide 37% of the Total Fleet**

Air National Guard (ANG) F-16s directly support and have proven critical to the success of contingencies around the globe including Operations NOBLE EAGLE (ONE), IRAQI FREEDOM (OIF), ENDURING FREEDOM (OEF), and NEW DAWN (OND); and Homeland Defense (HD) scrambles. Since 2003, ANG F-16Cs have fulfilled over 30 percent of Air Force Central Command (AFCENT) Precision Guided Munitions (PGM) and Close Air Support (CAS) taskings, including convoy escort, dedicated infrastructure defense, border patrol and raid support.



The ANG operates 341 Block 25/30/32/40/42/50/52 F-16C/Ds. Block 25/30/32 aircraft equipped with Situational Awareness Data Link (SADL) and Block 40/42/50/52 aircraft outfitted with Link-16 provide tremendous capability across the operational theaters. Planned enhancements to the Block 40/42 and Block 50/52 aircraft will make them more capable for advanced mission sets.

Modernization efforts for ANG F-16s focus on fielding affordable systems with all-weather targeting capability, secure line-of-sight (SLOS) and beyond line-of-sight (BLOS) communication suites, smart displays with data processing capability, advanced helmet mounted target cueing for air and ground weapons employment, enhanced self-protection suites, and improved radar performance and reliability.



F-16

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Critical Capabilities List

- All Weather Air-to-Ground Self-Targeting and High Quality Coordinate Generation
- Integrated Self-Protection and Threat Detection Suite
- Continued Targeting Pod Spiral Development, High Definition in Cockpit Display and Broadband Uplink
- Secure Line-of-Sight and Beyond Line-of-Sight with Three-Dimensional Audio Communications
- Day / Night Compatible Helmet Mounted Integrated Targeting
- APG-68 Radar Enhancements

Essential Capabilities List

- Incremental Development of Targeting Pod Data Link Supporting Two-Way Encrypted Video Downlink
- Increased Jam Resistance In Embedded Global Positioning System Inertial Navigation
- Auto Ground Collision Avoidance System
- Drag chute
- Ventral Fin Antenna Set - Frequency Modulation Antenna improvement
- Proliferation and Sustainment of Concurrent High Fidelity Ready Aircrew Proficiency Quality Simulators
- Incorporate Live-Virtual-Constructive Technology into Current Systems
- Increased Smart Weapon Payload Capacity

Desired Capabilities List

- Capability to Interpret and Display Currently Non-Compatible Data Link Information
- Color Video from the Targeting Pod
- Ability to Fly Global Positioning System Instrument Approaches
- Extended Range Fuel Configuration Options
- Increased Digital Video Recorder Capabilities

F-16 ALL WEATHER AIR-TO-GROUND SELF-TARGETING AND HIGH QUALITY COORDINATE GENERATION

1. Background. Air National Guard (ANG) F-16 Block 30/40/42/50/52 aircraft require the ability to self-generate high quality, targetable coordinates in all weather conditions. Synthetic Aperture Radars (SAR) can generate images of high enough quality to achieve targetable coordinates. Any system must include the ability to derive high quality, targetable coordinates from ranges far enough away to avoid modern tactical Surface-to-Air Missiles (SAMs) and/or reduce noise footprint to enemy combatants. The system's ability to generate large SAR maps is necessary to engage surface targets and perform the full spectrum of combat capabilities in poor weather conditions, amplifying the strike capability of Suppression of Enemy Air Defenses (SEAD), Destruction of Enemy Air Defenses (DEAD), Air Interdiction (AI) and Close Air Support (CAS) missions.

2. Source of Need. Tactical Air Forces (TAF) 303-76-I/II/III-A System Original Requirements Document (SORD) for the F-16C/D; Combat Air Forces (CAF) Operational Requirements Document (ORD) 303-76-I/II/III-D F-16C/D Multi-Stage Improvement Program (MSIP), 14 Aug 2000; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

113 WG JB Andrews, MD	149 FW Duluth, MN	177 FW Atlantic City IAP, NJ
115 FW Truax Field, WI	158 FW Burlington, VT	180 FW Toledo, OH
138 FW Tulsa, OK	162 FW Tucson, AZ	187 FW Dannelly Field, AL
140 WG Buckley, CO	169 FW Eastover, SC	

4. Program Details. PEC: 27133F

Remaining Quantity Required	Unit Cost	Program Cost
1 APG-68 NRE (3600)	\$20,000,000	\$20,000,000
178 APG-68 Upgrades (3010)	\$670,000	\$119,260,000
Total		\$139,260,000

F-16 INTEGRATED SELF-PROTECTION AND THREAT DETECTION SUITE

1. Background. The current F-16 Block 30/32/40/42/50/52 Electronic Warfare (EW) suite is comprised of EW equipment designed in the 1980s. The defensive systems suffer from sustainment issues and have significant limitations against many modern threat systems. A robust, integrated Electronic Attack (EA) suite will enable all F-16 blocks to counter current and future radars. The new EW suite should incorporate an upgraded Radar Warning Receiver (RWR), Digital Radio Frequency Memory (DRFM) EA pod, pylon Missile Warning System (MWS), and the ALQ-213 Electronic Combat (EC) integration system. The F-16 fleet has two legacy analog RWRs (ALR-69 and ALR-56M) and two legacy analog EA pods (ALQ-131 and ALQ-184). All require sustainment as well as digital-based performance upgrades. The ALQ-213 EC integration system is installed on all F-16 pre-blocks, but must be installed on all F-16 high-blocks.

2. Source of Need. AN/ALR-69A Capability Production Document (CPD), 17 Nov 2005; Combat Air Forces (CAF) 301-01-B Operational Requirements Document (ORD); F-16 C/D Block 25/30/32 Multi-Stage Improvement Program (MSIP) ORD, 15 Dec 2004; CAF 303-76-I/II/III-D; F-16C/D MSIP ORD, 14 Aug 2000; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

113 WG JB Andrews, MD	149 FW Duluth, MN	177 FW Atlantic City IAP, NJ
115 FW Truax Field, WI	158 FW Burlington, VT	180 FW Toledo, OH
138 FW Tulsa, OK	162 FW Tucson, AZ	187 FW Dannelly Field, AL
140 WG Buckley, CO	169 FW Eastover, SC	

4. Program Details. PEC: 27133F

Remaining Quantity Required *	Unit Cost *	Program Cost
141 ALQ-213 (3010)	\$160,000	\$22,560,000
1 RWR NRE (3600)	\$15,000,000	\$15,000,000
260 RWR Systems (3010)	\$700,000	\$182,000,000
1 ALQ-213 NRE (3600)	\$28,000,000	\$28,000,000
1 MWS with 3-D Ground Support Equipment (3080)	\$4,120,000	\$4,120,000
150 MWS with 3-D Audio (3010)	\$1,330,000	\$199,500,000
Total		\$451,180,000

* Includes 10% spares.

F-16 CONTINUED TARGETING POD SPIRAL DEVELOPMENT HIGH DEFINITION IN COCKPIT DISPLAY AND BROADBAND UPLINK

1. Background. Procurement of Advanced Targeting Pods (ATP) has been an Air National Guard (ANG) top priority for several years. LITENING and SNIPER are multi-sensor systems that enhance all F-16 mission taskings to include Aerospace Control Alert (ACA) operations. Modernization with fourth generation capability, including 1K FLIR, 1K CCD, Laser Target Image Processing and broadband digital video downlinks, vastly improves day and night target acquisition at extended ranges in both air-to-ground and air-to-air roles. The ANG requires continuing spiral upgrades to fourth generation capability on all ATPs. ATP digital port connections allow direct display of high quality targeting pod video on the F-16 Center Display Unit. This provides un-matched high quality imagery display, greatly enhancing the capability of the pilot to identify and engage the enemy in the current and future fight.

2. Source of Need. Combatant Commander Urgent Need Request (UNR), Nov 2004; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

113 WG JB Andrews, MD	140 WG Buckley, CO	169 FW McEntire JNGS, SC
114 FW Sioux Falls, SD	148 FW Duluth, MN	177 FW Atlantic City IAP, NJ
115 FW Truax Field, WI	149 FW Lackland AFB, TX	180 FW Toledo, OH
132 FW Des Moines, IA	158 FW South Burlington, VT	187 FW Dannelly Field, AL
138 FW Tulsa, OK	162 FW Tucson, AZ	

4. Program Details. PEC: 27133F

Remaining Quantity Required	Unit Cost	Program Cost
20 ATP-SE Pods (3010)	\$1,700,000	\$34,000,000
259 Color Display Kits (3010)	\$183,764	\$47,594,876
33 4th Gen Upgrades (3010)	\$1,500,000	\$49,500,000
259 IBS Receiver Kits (3010)	\$176,061	\$45,599,799
1 Broadband NRE (3600)	\$10,000,000	\$10,000,000
25 Broadband Systems (3010)	\$1,000,000	\$25,000,000
Total		\$211,694,675

F-16 SECURE LINE-OF-SIGHT AND BEYOND LINE-OF-SIGHT WITH THREE-DIMENSIONAL AUDIO COMMUNICATIONS

1. Background. Current upgrades to F-16s provide secure line-of-sight (SLOS) and improved beyond line-of-sight (BLOS) communications through the installation of one ARC-210 radio. The ARC-210 modification provides an improved ability to securely communicate with ground and Command and Control (C2) forces, but does not allow simultaneous operations on SLOS/BLOS frequencies. Homeland Defense (HD) and in-theater operations require simultaneous SLOS/BLOS communications to concurrently maintain contact with both C2 and friendly forces. A second ARC-210 permits growth to extended data and image transfer when linked to an advanced display. The combination of two ARC-210s plus a legacy radio allows simultaneous in-theater communications on a C2 frequency, a secure tactical frequency with ground forces, and an intra-flight frequency. In the HD mission, this radio configuration enables monitoring C2, air traffic control and intra-flight frequencies. The integration of noise cancelling and three-dimensional audio clarifies interpretation of simultaneous radio calls by spatially separating aural warning and radio signals. These capabilities are critical to operations in remote areas, dense threat environments, and dynamic HD missions.

2. Source of Need. Combat Air Forces (CAF) Operational Requirements Document ORD 303-76-I/II/III-D; F-16C/D Multi-Stage Improvement Program (MSIP) ORD, 14 Aug 2000; Central Command (CENTCOM) Urgent Operational Need (UON); Northern Command (NORTHCOM) Integrated Priority List; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

113 WG	JB Andrews, MD	140 WG	Buckley, CO	162 FW	Tucson, AZ
114 FW	Sioux Falls, SD	148 FW	Duluth, MN	169 FW	McEntire JNGS, SC
115 FW	Truax Field, WI	149 FW	Lackland AFB, TX	177 FW	Atlantic City IAP, NJ
138 FW	Tulsa, OK	158 FW	Burlington, VT	187 FW	Dannelly Field, AL

4. Program Details. PEC: 27133F

Remaining Quantity Required *	Unit Cost	Program Cost
259 ARC-210 Radio Kits (3010)	\$150,000	\$38,850,000
1 Directional Audio NRE (3600)	\$5,200,000	\$5,200,000
259 Directional Kits (3010)	\$45,000	\$11,655,000
311 Group C Kits (3010)	\$6,700	\$2,083,700
10 Unit Test Equipment (3080)	\$43,800	\$438,000
Total		\$58,226,700

* Includes 10% spares.

F-16 DAY / NIGHT COMPATIBLE HELMET MOUNTED INTEGRATED TARGETING

1. Background. SCORPION Helmet Mounted Integrated Targeting (HMIT) dramatically reduces target acquisition with aircraft sensors from minutes to seconds. Currently, pilots typically acquire targets by pointing the aircraft at the target to place it within the heads-up display field of view. This is time consuming and often drives the aircraft closer to a threat. SCORPION performs precise, head-steered weapons and sensor cueing, thereby enabling pilots to fly parallel to targets and maximize standoff distance, thus improving survivability. Additionally, SCORPION's high resolution color display enables constant updates of adversary and friendly positions, without the need to perform a heads-down scan across the cockpit, further improving survivability. The HMIT system is compatible with existing AN/AVS-9 Night Vision Goggles (NVG) and fully supports night operations. Air National Guard (ANG) F-16 Block 40/42/50/52 aircraft are equipped with the day-only Joint Helmet Mounted Cueing System (JHMCS), so HMIT would provide NVG-compatible night cueing without the need to modify existing JHMCS wiring.

2. Source of Need. JHMCS Operational Requirements Document (ORD) Combat Air Forces (CAF)-US Navy 308-93-II-A, Dec 1996; CAF ORD 301-01-B; F-16C/D Block 25/30/32 Multi-Stage Improvement Program (MSIP) ORD, 15 Dec 2004; Central Command (CENTCOM) Urgent Operational Need (UON); 2013 ARC WEPTAC Critical Capability.

3. Units Impacted

113 WG JB Andrews, MD	148 FW Duluth, MN	169 FW McEntire JNGS, SC
114 FW Sioux Falls, SD	149 FW Lackland AFB, TX	177 FW Atlantic City IAP, NJ
115 FW Truax Field, WI	158 FW Burlington, VT	180 FW Toledo, OH
138 FW Tulsa, OK	162 FW Tucson, AZ	187 FW Dannelly Field, AL
140 WG Buckley, CO		

4. Program Details. PEC: 27133F

Remaining Quantity Required *	Unit Cost	Program Cost
166 HMIT Kits (3010)	\$122,451	\$20,326,866
129 JHMCS Night Kits (3010)	\$240,000	\$30,960,000
Total		\$51,286,866

* Includes 10% spares.

F-16 APG-68 RADAR ENHANCEMENTS

1. Background. Air National Guard (ANG) F-16 Block 30/32/40/42 aircraft require updated components to enhance the legacy APG-68 radar. Capabilities include increased airborne threat detection ranges, improved electronic attack and protection, enhanced capability against low radar cross section targets, improved ability to ground-map surface targets, and lowered sustainment costs than the current APG-68. This upgrade provides the capability to detect, track and eliminate multiple airborne threats, allowing pilots to locate targets of interest in the dense air traffic environments prevalent around major population centers, a critical capability for Aerospace Control Alert. The system's ability to generate radar maps is necessary to engage surface targets and perform the full spectrum of combat capabilities in poor weather conditions, amplifying the strike capability of Suppression of Enemy Air Defenses / Destruction of Enemy Air Defenses (SEAD/DEAD) missions. New and enhanced radar components should dramatically improve reliability, maintenance and sustainment costs.

2. Source of Need. Tactical Air Forces (TAF) 303-76-I/II/III-A System Operational Requirements Document (SORD) for the F-16C/D; Combat Air Forces (CAF) Operational Requirements Document (ORD) 303-76-I/II/III-D; F-16C/D Multi-Stage Improvement Program (MSIP) ORD, 14 Aug 2000; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

113 WG JB Andrews, MD	140 WG Buckley, CO	177 FW Atlantic City IAP, NJ
115 FW Truax Field, WI	158 FW Burlington, VT	180 FW Toledo, OH
138 FW Tulsa, OK	162 FW Tucson, AZ	187 FW Dannelly Field, AL

4. Program Details. **PEC: 27133F**

Remaining Quantity Required	Unit Cost	Program Cost
1 APG-68 NRE (3600)	\$20,000,000	\$20,000,000
178 APG-68 Upgrades (3010)	\$670,000	\$119,260,000
Total		\$139,260,000



HH-60



- **Personnel Recovery**
- **ANG HH-60 Units Provide 18% of the Total Fleet**

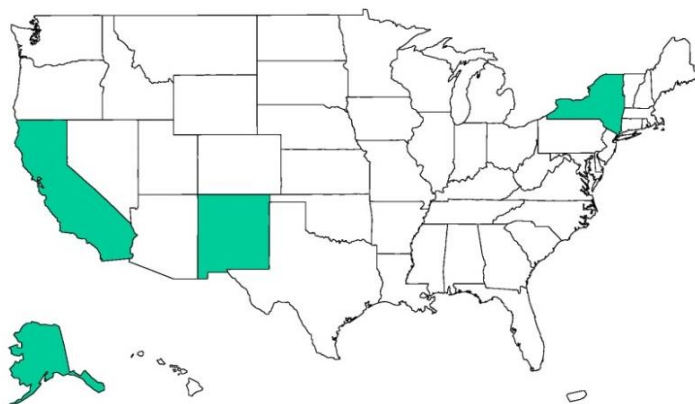


Air National Guard (ANG) Personnel Recovery (PR) helicopters and crews play a critical and highly involved role in support of Overseas Contingency Operations (OCO) while also responding to increasingly high demand for Domestic Operations (DOMOPS). These ANG PR helicopters and crews are based in Alaska, California, New Mexico and New York.

In Fiscal Year 2013, the 129 RQS continued to provide civil search and rescue capabilities to the state of California and flew numerous aerial firefighting missions. They also supported Operation ENDURING FREEDOM (OEF). The 210 RQS held a 24-hour, state-wide, rescue alert in Alaska resulting in 88 missions and 83 lives saved; and executed 36 missions with 35 lives saved or assisted in support of OEF. The 101 RQS from New York deployed to OEF and accounted for over 100 saves, while simultaneously supporting DOMOPS during Hurricane Sandy. The 188 RQS is a classic associate unit in New Mexico that maintains readiness to respond to domestic disasters and provides training to produce mission ready aircrew.



In Fiscal Year 2013, the Air Force continued modernization programs for the HH-60 to include the Aircraft Gun Unit (GAU-21) and the PEDROS high fidelity simulator. ANG modernization programs expected to continue are the Avionics Communication Suite Upgrade (ACSU) program, the Smart Multi-Function Display program, and completion of the AN/ARS v12 Personnel Locator System. The ANG intends to pursue modernization programs such as Blue Force Tracker and improved defensive equipment to include a hostile fire detector.



HH-60

2013 Weapons and Tactics Conference

Critical Capabilities List

- Advanced Electronic Warfare Penetrator Suite
- Modernized Defensive Systems Suite
- Integrated Flight Deck
- Helmet Mounted Cueing Situational Awareness
- Crew Served Aircraft Weapons Modernization

Essential Capabilities List

- Distributed Mission Operations Capable HH-60 Aircraft Simulator
- Overwater Mission Survivability Equipment
- Improved Ballistic Protection
- Federal Aviation Administration Global Positioning System Certified Aircraft
- Wireless Intercom

Desired Capabilities List

- Identification Friend or Foe Mode 5/S
- Improved Aircraft Generators
- Aircrew Flight Equipment Enhancements
- Electronic Flight Bag
- Instrumentation Upgrade

HH-60 ADVANCED ELECTRONIC WARFARE PENETRATOR SUITE

1. Background. HH-60 crews are expected to operate in advanced Radio Frequency (RF) threat environments. The HH-60 has limited defensive systems when recovering isolated personnel. The APR-39Bv2 presently installed on the HH-60 is an analog system with limited processing capability. The system is not capable of displaying RF threats without ambiguity and therefore puts the aircrew in vulnerable situations. HH-60 crews must operate in RF threat engagement zones to recover personnel and require advanced detection systems to alert the crew of hostile threats. An integrated RF jammer that inhibits the ability to engage the aircraft is needed to ensure survivability of the crew.

2. Sources of Need. Lessons Learned from current operations, Personnel Recovery (PR) Operations Plan (OPLAN) and Contingency Plan (CONPLAN); PR Core Function Master Plan, 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

106 RQW Gabreski AP, NY 129 RQW Moffett Field, CA 176 WG JB Elmendorf, AK

4. Program Details. PEC: 53114F

Remaining Quantity Required	Unit Cost	Program Cost
17 RF Jammers (3010)	\$5,000,000	\$85,000,000
1 RF Jammer NRE (3600)	\$5,000,000	\$5,000,000
1 Radar Warning Receiver NRE (3600)	\$2,000,000	\$2,000,000
17 Radar Warning Receivers (3010)	\$1,240,000	\$21,080,000
3 Unit Test Equipment (3080)	\$58,400	\$175,200
Total		\$113,255,200

HH-60 MODERNIZED DEFENSIVE SYSTEM SUITE

1. Background. The HH-60 requires a precise, integrated defensive system that detects and displays current threat systems such as small arms fire, Rocket Propelled Grenades (RPGs), and Man-Portable Air Defense Systems (MANPADS) with visual and audio indications. The current method employed to detect RPGs and small arms fire is visual detection or radio notification from a ground party which does not provide crews the required time to react and defeat enemy threats. Three-dimensional (3-D) audio equipment is required to integrate the audio warnings from a Missile Warning System, Hostile Fire Indicator, and Radar Warning Receiver, with communication and mission equipment. Three-dimensional audio equipment enables crews to rapidly return precise and immediate defensive fire, effectively suppressing or destroying the enemy threat. Crews also require training software integrated into the Electronic Warfare (EW) Suite in order to effectively train for combat scenarios.

2. Sources of Need. Lessons Learned from current operations Personnel Recovery (PR) Operations Plan (OPLAN) and Contingency Plan (CONPLAN); PR Core Function Master Plan; AF Form 1067 Air Combat Command (ACC) 10-252; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

106 RQW Gabreski AP, NY 129 RQW Moffett Field, CA 176 WG JB Elmendorf, AK

4. Program Details. PEC: 53114F

Remaining Quantity Required	Unit Cost	Program Cost
108 3-D Audio Kits (3010)	\$7,000	\$756,000
17 Hostile Fire Indicators (3010)	\$270,000	\$4,590,000
1 Defensive System NRE (3600)	\$2,000,000	\$2,000,000
1 Directional Audio NRE (3600)	\$6,000,000	\$6,000,000
3 Unit Test Equipment (3010)	\$58,400	\$175,200
17 ALQ-213 with 3-D Audio Kits (3010)	\$234,000	\$3,978,000
Total		\$17,499,200

HH-60 INTEGRATED FLIGHT DECK

1. Background. Current military and domestic operations require HH-60 crews to process fragmented and dissimilar information presented by various legacy systems to rapidly formulate courses of action in dynamic and time sensitive threat environments. Full Motion Video (FMV) capability will allow critical visual Drop Zone and Landing Zone data to be received from Intelligence, Surveillance and Reconnaissance (ISR) assets before dangerous insertion and extraction operations. To reduce crew workload and enhance mission effectiveness, the current Smart Multi-Function Color Display installed on Air National Guard (ANG) HH-60s must be fully integrated with the Situational Awareness Data Link (SADL), Lightweight Airborne Recovery System (LARS) Version 12, and the Air Force Tactical Receiver Segment-Ruggedized (AFTRS-R). The capability to quickly access mission essential data from one centralized display will enable HH-60 aircrews to reduce “heads down” time and vastly improve situational awareness. Secure Internet Protocol (SIP) data will enable aircrews to receive near real-time Blue Force Tracker (BFT) data and text messaging from the battlefield. BFT is a modernized joint tracking system which is cooperative with SADL and Link-16 and provides beyond line-of-sight (BLOS) interactive data communication between aviation assets and Command and Control. A secure-capable, multi-spectrum radio capable of supporting Solider Radio Waveform (SRW) assures military and civil command authorities that rescue helicopters will be ready for any and all relief operations. This also increases the Combat Search and Rescue capability by filling an existing secure radio shortfall.

2. Sources of Need. Lessons Learned from current operations, Personnel Recovery Operations Plan (OPLAN) and Contingency Plan (CONPLAN), and Defense Support to Civil Authorities necessitate the requirement for line-of-sight and BLOS situational awareness and modernized communications management; AF Forms 1067 Air Combat Command (ACC) 04-043, 05-078, 09-153 and 10-229; Combat Air Forces (CAF) Urgent Operational Need (UON) 306-09; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

106 RQW Gabreski AP, NY 129 RQW Moffett Fld, CA 176 WG JB Elmendorf, AK

4. Program Details. **PEC: 53114F**

Remaining Quantity Required	Unit Cost	Program Cost
1 AFTRS-R Installation (3010)	\$2,500,000	\$2,500,000
18 Blue Force Trackers (3010)	\$100,000	\$1,800,000
18 Full Motion Video (3010)	\$200,000	\$3,600,000
Total		\$7,900,000

HH-60 HELMET MOUNTED CUEING SITUATIONAL AWARENESS

1. Background. The addition of day and night helmet mounted cueing and display capability in the HH-60 significantly increases aircrew Situational Awareness (SA) and weapons employment capability, enhances terminal area search and rescue operations, and speeds overall internal communication during critical mission phases. A Helmet Mounted Cueing System (HMCS) allows all crewmembers to quickly build SA with minimal need for voice communication. Sensor and data link symbols are visible on the helmet mounted display superimposed over the geographic location of friendly, hostile and survivor positions. Additionally, the ability to display sensor pictures and data link information while maintaining a heads-up posture will greatly enhance safety while flying in the low-level (<500 ft) environment. Since the majority of the HH-60 mission employment occurs at night, this capability must be compatible with Night Vision Goggles. Three-dimensional (3-D) Landing Zone (LZ) symbology integrated into a HMCS provides crews with sufficient situational awareness to maneuver the aircraft in reduced visibility conditions.

2. Source of Need. AF Form 1067 Air Combat Command (ACC) 09-258; Lessons Learned from Operations ENDURING FREEDOM (OEF) and IRAQI FREEDOM (OIF); 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

106 RQW Gabreski AP, NY

129 RQW Moffett Fld, CA

176 WG JB Elmendorf, AK

4. Program Details. PEC: 53114F

Remaining Quantity Required	Unit Cost	Program Cost
18 3-D Landing Zone Kits (3010)	\$1,000,000	\$18,000,000
1 3-D Landing Zone NRE (3600)	\$10,000,000	\$10,000,000
18 HMCS Aircraft Kits (3010)	\$335,294	\$6,035,292
102 HMCS Helmet Kits (3010)	\$87,843	\$8,959,986
1 HMCS NRE (3600)	\$6,000,000	\$6,000,000
102 Night Vision Units (3010)	\$65,882	\$6,719,964
Total		\$55,715,242

HH-60 CREW SERVED AIRCRAFT WEAPONS MODERNIZATION

1. Background. The HH-60 has a requirement to provide reliable defensive firepower to support various combat mission operations. Currently fielded are the GAU-2B and the GAU-18 weapons systems. The GAU-21 .50-caliber machine gun is scheduled to replace the GAU-18 weapon system. It is an accurate, reliable, lightweight, high rate of fire, open-bolt weapon that effectively suppresses threats out to a distance of 1,500 meters. The GAU-2B (7.62 mm) weapon system allows aircrews the ability to continue operating with a reliable defensive capability but at a lower mission weight, since the HH-60 routinely operates at maximum allowable gross weight. The M134D mini-gun is a GAU-2B weapon system that, once updated with the improved weapon components, will provide overall weight savings and bring the weapon system to an up-to-date capability. Improved weapons components include an ergonomic designed grip, safing sector housing cover, 3,000-round firing trigger, direct current drive motor with battery and cable set, low-drag ammo feed chute, rigid expended brass link chute, and a barrel clamp safety retainer. Currently, the system relies on an electronic control unit and aircraft power to operate. In the event an aircraft must land in an austere environment and loses aircraft power, there is no capability to fire the weapon for aircrew self-defense.

2. Source of Need. Air Combat Command (ACC) Project 96-012A HH-60G Cabin Configuration Follow-on Operational Test and Evaluation (FOT&E) Final Report, Apr 1997; Combat Air Forces (CAF) Operational Requirements Document (ORD) 306-00-I/II/III HH-60G Block 152 state the requirement for a .50-caliber machine gun on the Rescue HH-60Gs; ACC / Central Command (CENTCOM) Combat Mission Need Statement (CMNS) 02-501; AF Form 1067 ACC 08-115; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

106 RQW Gabreski AP, NY 129 RQW Moffett Fld, CA 176 WG JB Elmendorf, AK

4. Program Details. PEC: 53114F

Remaining Quantity Required	Unit Cost	Program Cost
36 M134D Mini-Gun Components (3010)	\$30,000	\$1,080,000
36 M134D Mini-Guns (3010)	\$66,667	\$2,400,012
Totals		\$3,480,012

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KC-135



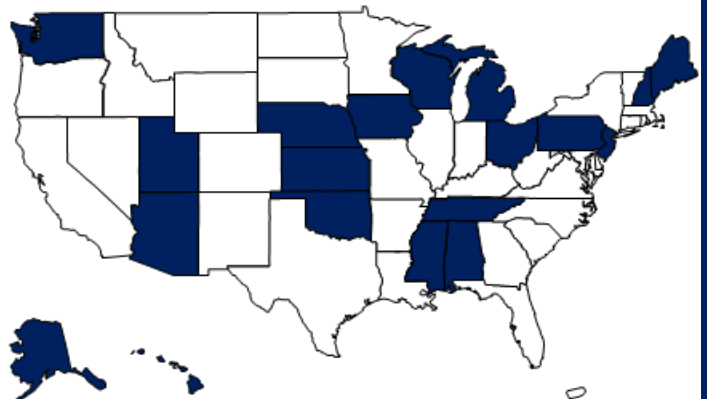
- **Air Refueling**
- **Aeromedical Evacuation**
- **Airlift**
- **ANG KC-135 Units Provide 44% of the Total Fleet**



Air refueling is vital to air mobility and serves to enable and multiply the effects of airpower at all levels of warfare. The KC-135 Stratotanker is Air Mobility Command's primary air refueling platform providing approximately 87 percent of air refueling in support of US, allied and coalition military aircraft. The KC-135 enhances air refueling capabilities and supports deployment, employment, sustainment and redeployment of joint forces across the full range of military operations including nuclear warfare, routine military activities and irregular warfare.

In today's ever-changing environments, the KC-135 is being tasked to operate close to high-threat areas. Defensive systems are necessary to prevent shoulder-fired surface-to-air missile systems from destroying aircraft during takeoff, landing and in low-altitude flight over mountainous terrain.

Tactical data link technologies and situational awareness displays that bring real-time threat information, as well as secure radio capability, will greatly enhance KC-135 air refueling, airlift and aeromedical evacuation missions.



KC-135

2013 Weapons and Tactics Conference

Critical Capabilities List

- Block 30 Large Aircraft Infrared Countermeasures
- Secure Line-of-Sight / Beyond Line-of-Sight Data Link and Situational Awareness Cockpit Display Units
- External Overt / Covert Lighting
- Fuel Tank Fire Explosion Protection
- Aircraft Ground Cooling Capability

Essential Capabilities List

- Soft Basket Quick Connect Boom Drogue Adapter
- Block 45 including Electronic Engine Instrument Display Integrated Handset Control Software
- Auto-throttles
- Improved Cargo Compartment Lighting
- Cockpit Armor

Desired Capabilities List

- Improved Aircrew Cockpit Seating
- Improved Crew Bunks
- Advanced Squadron Level Simulator Systems

KC-135 BLOCK 30 LARGE AIRCRAFT INFRARED COUNTERMEASURES

1. Background. Changes in employment tactics place 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 Air Defense Systems (MANPADS) Infrared (IR) seeking missiles. MANPADS are a significant threat during takeoffs, landings and low-altitude refueling missions. A Large Aircraft Infrared Countermeasures (LAIRCM) system utilizing current Block 30 components will counter MANPADS threats and will not rely on pyrotechnic expendables that are incompatible with a fuel-laden aircraft.

2. Source of Need. LAIRCM Operational Requirements Document (ORD) 314-92, Aug 1998; LAIRCM Equipage Study; Air Mobility Command (AMC) Requirements and Planning Council ranked Defensive Systems as #2 out of 41 at the 2013 Executive Session; AF Form 1067 AMC 10-137 and 12-053; 2010-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

101 ARW	Bangor IAP, ME	128 ARW	Gen Mitchell IAP, WI	161 ARW	Phoenix IAP, AZ
108 ARW	JB McGuire, NJ	134 ARW	McGhee Tyson AP, TN	168 ARW	Eielson AFB, AK
117 ARW	Birmingham IAP, AL	151 ARW	Salt Lake City IAP, UT	171 ARW	Pittsburgh IAP, PA
121 ARW	Rickenbacker IAP, OH	154 WG	Hickam AFB, HI	185 ARW	Sioux Gateway AP, IA
126 ARW	Scott AFB, IL	155 ARW	Lincoln AP, NE	186 ARW	Meridian RAP, MS
127 WG	Selfridge ANGB, MI	157 ARW	Pease ITAP, NH	190 ARW	Forbes Fld, KS

4. Program Details. **PEC: 41218F**

Remaining Quantity Required	Unit Cost	Program Cost
105 Group A Kits (3010)	\$500,000	\$52,500,000
30 Group B Kits (3010)	\$2,000,000	\$60,000,000
Total		\$112,500,000

KC-135 SECURE LINE-OF-SIGHT / BEYOND LINE-OF-SIGHT DATA LINK AND SITUATIONAL AWARENESS COCKPIT DISPLAY UNITS

1. Background. Recent combat operations highlighted the need for comprehensive, networked Command and Control (C2) throughout all theaters of operation. Installation of a robust and secure Tactical Data Link (TDL) provides this C2 link and maximizes KC-135 aircrew situational awareness with beyond line-of-sight and line-of-sight capabilities. TDL provides critical real-time info to KC-135 aircrews such as position of other aircraft, weather conditions and current threat locations. This greatly increases the tanker's ability to effectively participate in the present day network-centric battlespace. The resulting connectivity enables C2 elements near real-time monitoring of mission events, mission status, task completion and resource status. It also enhances the situational awareness of both tanker formations and the joint and coalition aircraft involved in aerial refueling operations.

2. Source of Need. Draft annex to Tanker Operational Requirement Document (ORD) (AF/A5R); Mobility Air Forces (MAF) Network Enabling Concept, 26 Apr 2006; Air Mobility Command (AMC) MAF Data Link Integration Technical Requirements Document, 25 Oct 2006; TDL Transformation Capability Development Document (CDD), Increment 1, Joint Requirements Oversight Council Memorandum (JROCM), 23 Jun 2004; AMC Requirements and Planning Council ranked Real-Time Information in the Cockpit / Tanker TDL #5 out of 41 at the 2013 Executive Session; AF Form 1067 AMC 11-143; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

101 ARW	Bangor IAP, ME	128 ARW	Gen Mitchell IAP, WI	161 ARW	Phoenix IAP, AZ
108 ARW	JB McGuire, NJ	134 ARW	McGhee Tyson AP, TN	168 ARW	Eielson AFB, AK
117 ARW	Birmingham IAP, AL	151 ARW	Salt Lake City IAP, UT	171 ARW	Pittsburgh IAP, PA
121 ARW	Rickenbacker IAP, OH	154 WG	Hickam AFB, HI	185 ARW	Sioux Gateway AP, IA
126 ARW	Scott AFB, IL	155 ARW	Lincoln AP, NE	186 ARW	Meridian RAP, MS
127 WG	Selfridge ANGB, MI	157 ARW	Pease ITAP, NH	190 ARW	Forbes Fld, KS

4. Program Details. PEC: 41218F

Remaining Quantity Required	Unit Cost	Program Cost
177 Group A Kits (3010)	\$120,000	\$21,240,000
1 NRE (3600)	\$9,000,000	\$9,000,000
195 TDL Radios and Processors (3010) *	\$380,000	\$74,100,000
Total		\$104,340,000

* Includes one spare per unit.

KC-135 EXTERNAL OVERT / COVERT LIGHTING

1. Background. Current KC-135 exterior lighting does not meet Military Specification illumination standards. This deficiency has been highlighted during ground testing conducted by the Air Force Research Laboratory. By replacing the existing incandescent lighting with updated Light Emitting Diode (LED) lighting, KC-135 combat and peacetime operations benefit in three areas: safety, survivability and sustainability. LED lighting increases safety margins by providing significantly better aircraft visual acquisition during ground and airborne operations. The covert mode allows KC-135 crews the ability to operate in accordance with theater requirements while allowing friendly forces with night vision devices to see the aircraft. Covert lighting drastically reduces the potential of a mid-air collision, which has been identified as a safety concern during night operations in theater. The upgraded lighting will increase Mean Time Between Failures (MTBF) from 40 to 60 hours for incandescent bulbs to over 10,000 hours with LEDs. This significant increase in MTBF will drastically reduce supply costs and decrease maintenance requirements.

2. Source of Need. Air Mobility Command (AMC) Requirements and Planning Council ranked external overt / covert lighting as #22 out of 41 at the 2013 Executive Session; AF Form 1067 AMC 10-044; 2011-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

101 ARW	Bangor IAP, ME	128 ARW	Gen Mitchell IAP, WI	161 ARW	Phoenix IAP, AZ
108 ARW	JB McGuire, NJ	134 ARW	McGhee Tyson AP, TN	168 ARW	Eielson AFB, AK
117 ARW	Birmingham IAP, AL	151 ARW	Salt Lake City IAP, UT	171 ARW	Pittsburgh IAP, PA
121 ARW	Rickenbacker IAP, OH	154 WG	Hickam AFB, HI	185 ARW	Sioux Gateway AP, IA
126 ARW	Scott AFB, IL	155 ARW	Lincoln AP, NE	186 ARW	Meridian RAP, MS
127 WG	Selfridge ANGB, MI	157 ARW	Pease ITAP, NH	190 ARW	Forbes Fld, KS

4. Program Details. **PEC: 41218F**

Remaining Quantity Required *	Unit Cost	Program Cost
197 LED Light Kits (3010)	\$70,000	\$13,790,000
Total		\$13,790,000

* Includes 20 spares.

KC-135 FUEL TANK FIRE EXPLOSION PROTECTION

1. Background. Changes in employment concepts are placing KC-135 aircraft in a threat environment that is widely populated with shoulder-fired, Man-Portable Air Defense Systems (MANPADS), Anti-Aircraft Artillery, and small arms. All of these threats are significant during takeoff, landing and low-altitude flight over mountainous terrain. Even though tankers have multiple engines and redundant flight control systems, fires and wing structural damage induced by fire can cause these systems to fail and destroy the aircraft. Fuel tank fire explosion protection reduces that vulnerability. The Federal Aviation Administration (FAA), through FAA RIN 2120-AI23 Fuel Tank Flammability Inerting, sets acceptable flammability exposure values in tanks most prone to explosion or requires the installation of an ignition mitigation system in an affected fuel tank. The KC-135 flies into areas with potential MANPADS threats and requires explosion protection in their fuel tanks.

2. Source of Need. FAA RIN 2120-AI23 Fuel Tank Flammability Inerting; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

101 ARW	Bangor IAP, ME	128 ARW	Gen Mitchell IAP, WI	161 ARW	Phoenix IAP, AZ
108 ARW	JB McGuire, NJ	134 ARW	McGhee Tyson AP, TN	168 ARW	Eielson AFB, AK
117 ARW	Birmingham IAP, AL	151 ARW	Salt Lake City IAP, UT	171 ARW	Pittsburgh IAP, PA
121 ARW	Rickenbacker IAP, OH	154 WG	Hickam AFB, HI	185 ARW	Sioux Gateway AP, IA
126 ARW	Scott AFB, IL	155 ARW	Lincoln AP, NE	186 ARW	Meridian RAP, MS
127 WG	Selfridge ANGB, MI	157 ARW	Pease ITAP, NH	190 ARW	Forbes Fld, KS

4. Program Details. **PEC: 41218F**

Remaining Quantity Required	Unit Cost	Program Cost
177 Fuel Tank Conversions (3010)	\$1,000,000	\$177,000,000
1 NRE (3600)	\$5,000,000	\$5,000,000
Total		\$182,000,000

KC-135 AIRCRAFT GROUND COOLING CAPABILITY

1. Background. KC-135 aircraft currently have no internal means of cooling when below 2,000 feet Above Ground Level (AGL), which is the point at which the cockpit becomes pressurized and cooling systems become effective. Current and future employment locations require crews and aircraft to operate in extreme environments. Temperatures at deployed locations routinely exceed 100°F. This ambient temperature results in cockpit temperatures of 140°F and cargo compartment temperatures of 170°F. Crews generally spend greater than one hour in these conditions, which is not conducive to mission accomplishment. Currently ground cooling carts are the primary method to attempt aircraft and crew temperature reduction. Ground cooling carts are removed prior to engine start and are not usable if mission delays occur. Multiple civilian companies build vapor cycle air conditioning units for aircraft to supplement ground cooling. Commercial systems can produce 24,000 British Thermal Units of cooling at 600 cfm, approximately a normal house-sized air conditioner, within normal aircraft power and weight requirements. The KC-135 can leverage this technology to provide a limited amount of cooling for crew and aircraft performance. This limited system provides crews and aircraft a more robust operating capability, reduces crew fatigue and minimizes unsafe temperature conditions.

2. Source of Need. AF Form 1067 Air Mobility Command (AMC) 06-131; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

101 ARW	Bangor IAP, ME	128 ARW	Gen Mitchell IAP, WI	161 ARW	Phoenix IAP, AZ
108 ARW	JB McGuire, NJ	134 ARW	McGhee Tyson AP, TN	168 ARW	Eielson AFB, AK
117 ARW	Birmingham IAP, AL	151 ARW	Salt Lake City IAP, UT	171 ARW	Pittsburgh IAP, PA
121 ARW	Rickenbacker IAP, OH	154 WG	Hickam AFB, HI	185 ARW	Sioux Gateway AP, IA
126 ARW	Scott AFB, IL	155 ARW	Lincoln AP, NE	186 ARW	Meridian RAP, MS
127 WG	Selfridge ANGB, MI	157 ARW	Pease ITAP, NH	190 ARW	Forbes Fld, KS

4. Program Details. **PEC: 41218F**

Remaining Quantity Required *	Unit Cost	Program Cost
107 Ground Cooling Units (3010)	\$40,000	\$4,280,000
Total		\$4,280,000

* Includes 20 spares.

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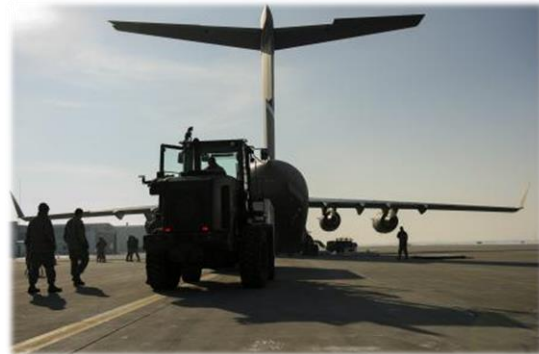


Logistics



- **Homeland Defense**
- **Provide Agile and Responsive Forces**
- **Viability Through Modernization**

The contributions of our citizen airmen are without equal and provide both State Governors and Combatant Commanders with highly skilled, professional and flexible forces on a daily basis. Air National Guard (ANG) Logistics is the largest career field in the US Air Force, encompassing over 21 different occupational series. They range in scope from Aircraft Maintenance and Inventory Management, to Traffic Management and Petroleum, Oils and Lubricants Management. Logistics operations in the 54 States, Territories and the District of Columbia prepare and train for their dual mission of supporting worldwide contingency deployments as well as responding to State emergencies. The Logistics team plays a key role in getting people and supplies where they need to be when they need to be there in order to generate sorties in support of Domestic Operations and Overseas Contingency Operations.



Presently the ANG has functioned at a prolonged high operations tempo, driving the need to concurrently modernize and recapitalize its aircraft fleet. The ANG operates and maintains the oldest aircraft in the Air Force inventory, with the average age of ANG aircraft being 27 years.

Today's increasingly austere fiscal environment drives the need for logisticians to reduce both product life cycle costs and the cost of enterprise logistics processes. Procurement of devices that enhance maintenance efficiency and safety, while improving capabilities, will lead to improved aircraft availability, reduced operating costs, and enhanced Agile Combat Support (ACS). Devices such as the maintenance inspection platforms, leak detectors and digital test equipment will reduce aircraft downtime, permit Logistics personnel to maintain a high rate of sortie generation, and ensure the longevity, relevance, and reliability of our aging fleet in a safe and efficient manner.



Logistics

2013 Weapons and Tactics Conference

Critical Capabilities List

- Aircraft Test Equipment
- Aircraft Support Equipment
- Advanced Repair Capability
- Maintenance Support Vehicles
- Maintenance Stands and Platforms

Essential Capabilities List

- Maintenance Lift and Hydraulic Equipment; Gantry Crane, Remotely Piloted Aircraft Ground Control Station Lift for Aircraft Loading and Shipment, Universal Hydraulic Test Stands with Purifier, and Portable Steam Cleaner
- Engine Test Equipment; F-15 Secondary Power Tester, HH-60 Engine Test Stand, Engine Borescope, and Handheld Thermal Imaging
- Maintenance Test Equipment; Version 3 Moving Target Simulator, and Joint Surveillance and Target Attack Radar System Bus Tester
- Multi-Purpose Maintenance Vehicle
- KC-135 Interior Lighting

Desired Capabilities List

- Storage and Shelter Maintenance Equipment; Compliant Fall Restraint, F-15 External Fuel Tank Storage, Sunshade Maintenance Equipment
- Modernized and Standard Aircraft Equipment; Heat Shield Brakes, High Output Hydraulic Pumps, Offload Totalizer
- Joint Surveillance and Target Attack Radar System G-Meter
- HH-60 Cribbing
- HH-60 Collapsible and Deployable Towbar

LOGISTICS AIRCRAFT TEST EQUIPMENT

1. Background. Aircraft test equipment critical to daily operations at Air National Guard (ANG) units is quickly nearing the end of its designed useful life. As the equipment ages, it becomes increasingly difficult to sustain and expensive to repair. In many cases, the original manufacturer is no longer in business, is unwilling to produce outdated equipment, or allows other sources to produce their proprietary equipment. The following critical maintenance capabilities require immediate attention: Airdata / Pitot Static test set, 50/60 Stray Voltage Pre-Load Tester, and multi-platform hydrogen leak detector. The Airdata / Pitot Static test sets and 50/60 testers (F-16, A-10 and F-15) are unsustainable, requiring fielding of replacement testers suitable for use during deployed sortie generation. The multi-platform Airdata / Pitot Static testers accurately simulate in-flight pressure conditions by precisely controlling and measuring altitude and airspeed pressure with the aircraft's pitot-static system. This tester is used to test, certify, calibrate and troubleshoot aircraft pitot-static systems or associated pneumatic flight control systems. The dual channel operation allows operators to perform dynamic, qualitative calibration and leak testing for "on ground" simulation of altitude and airspeed pressures. The 50/60 tester is a stray voltage tester used by munitions personnel to verify the absence of voltage prior to munitions loading, and that it is safe to load the munition. The tester verifies communication between smart weapons and the aircraft. Procurement of modern leak detection equipment using tracer gas or ultrasonic sound to identify leaks will enable maintenance personnel to troubleshoot and repair leaks faster than when using legacy tools and methods. Current methods require technicians to refuel aircraft to determine the validity of a fuel system repair. If a leak is still noted, the aircraft must be defueled, repaired and then refueled again to check the validity of the repair, creating a time-consuming cycle to resolve the discrepancy.

2. Source of Need. 2011-2013 ARC WEPTAC Critical Requirement.

3. Units Impacted. The multi-platform Airdata / Pitot Static tester and the multi-platform Hydrogen Leak Detector impact all ANG manned aircraft wings. The 50/60 tester impacts F-16, A-10 and F-15 units.

4. Program Details. **PEC: 22834F, 72834F**

Remaining Quantity Required *	Unit Cost *	Program Cost
180 50/60 Testers (3080)	\$25,000	\$4,500,000
156 Hydrogen Leak Detectors (3080)	\$30,000	\$4,680,000
176 Airdata / Pitot Static Testers (3080)	\$100,000	\$17,600,000
Total		\$26,780,000

* Includes 10% in spares.

LOGISTICS AIRCRAFT SUPPORT EQUIPMENT

1. Background. Current maintenance operations depend upon support equipment with technology from the 1970s and 1980s. This legacy equipment is cumbersome to use, expensive to operate, and often produces significant safety concerns. Procurement of updated equipment enhances maintenance efficiency and safety while improving aircraft availability, reducing operating costs, and enhancing Agile Combat Support (ACS) capabilities. MJ-1E electric jammers will improve load crew training effectiveness and safety by eliminating noise and pollution from legacy diesel engines used in enclosed training facilities. This equipment conforms to the Presidential Directive to reduce the use of fossil fuels within the Department of Defense (DOD). The enhanced e-Tools reader with tablet technology eliminates the use of expensive laptop devices, which introduce safety concerns when used in certain maintenance activities. Replacements reduce the cost of the e-Tools program to one-third of the current cost while also improving technical order access and usability. Procurement of the VXI-based mid-life upgrade for the Improved Avionics Intermediate Shop (IAIS) will update electronics, rectify diminishing manufacturing source issues, and extend the shop's useful life to 2030. A shortfall for 72 kW flight line generators exists, affecting the ability of wings to prep aircraft for flight. A replacement to the 35-ton E-8 Joint Surveillance and Target Attack Radar System (JSTARS) Axle Jack will provide greater safety and reduce task duration since the jacks are at capacity.

2. Source of Need. Presidential Directive on Energy Conservation; 2011-2013 ARC WEPTAC Critical Capability.

3. Units Impacted. MJ-1E electric jammer: all ANG Combat Air Forces (CAF) units. VXI-IAIS systems: all ANG F-16 and A-10 units. Axle Jack: 116 ACW. Flight Line Generators and e-Tools: all ANG aircraft maintenance organizations.

4. Program Details. PECs: 22834F, 52844F, 72834F, 207133F

Remaining Quantity Required	Unit Cost	Program Cost
6053 e-Tools (3080)	\$2,842	\$17,202,626
56 MJ-1E Electric Jammers (3080)	\$140,000	\$7,840,000
13 VXI-IAIS Upgrade Kits (3080)	\$2,540,000	\$33,020,000
10 Axle Jack E-8 JSTARS (3080)	\$15,000	\$150,000
186 Flight Line Generators 75 kW (3080)	\$60,000	\$11,160,000
Total		\$69,372,626

LOGISTICS ADVANCED REPAIR CAPABILITY

1. Background. The F108 engine has been reliable for many years. More than half of the F108 engines installed on the KC-135 airframe have not been reworked since they were installed during the R-model conversion. During its life cycle, the F108 has experienced common and known issues that impact its availability. Specifically, the engine has an identified issue with shroud droop and compressor stator delamination. The F108 System Program Office currently recommends waivers to technical order guidance requiring engine removal or advises placing the engine on Foreign Object Damage watch lists. Neither answer provides a physical repair to damaged but crucial engine components. The F108 has now entered into the CFM Propulsion Upgrade Program (C-PUP) with a schedule that called for 60 engines to be upgraded last year (FY13), doubling to 120 engines annually in following years until all 1,440 F108 engines in the KC-135 fleet have been overhauled. This process is expected to take 12 years to complete. The long term C-PUP solution does not provide an interim or more immediate solution for F108 engine issues prevalent in the Air National Guard (ANG). Either identification of interim repair capabilities that fix the known issues with F108 engines or an acceleration of the C-PUP initiative is critical to ensure long-term KC-135 fleet availability and safety of flight. A candidate for an interim solution is the F108 Upper / Lower Case Replacement initiative recently validated by the Air Force Life Cycle Management Center. At 1/14 the cost of the C-PUP overhaul, this repair involves the installation of modernized parts with improved coatings providing a viable interim solution.

2. Source of Need. 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

101 ARW	Bangor IAP, ME	128 ARW	Gen Mitchell IAP, WI	161 ARW	Phoenix IAP, AZ
108 ARW	JB McGuire, NJ	134 ARW	McGhee Tyson AP, TN	168 ARW	Eielson AFB, AK
117 ARW	Birmingham IAP, AL	151 ARW	Salt Lake City IAP, UT	171 ARW	Pittsburgh IAP, PA
121 ARW	Rickenbacker IAP, OH	154 WG	Hickam AFB, HI	185 ARW	Sioux Gateway AP, IA
126 ARW	Scott AFB, IL	155 ARW	Lincoln AP, NE	186 ARW	Meridian RAP, MS
127 WG	Selfridge ANGB, MI	157 ARW	Pease ITAP, NH	190 ARW	Forbes Fld, KS

4. Program Details. PEC: 41218F, 22834F, 72834F

Remaining Quantity Required	Unit Cost	Program Cost
5 F108 Enhanced Engine Repair Capabilities (3080)	\$1,000,000	\$5,000,000
72 F108 Upper / Lower Cases (3080)	\$260,000	\$18,720,000
100 F108 C-PUP (3080)	\$4,000,000	\$400,000,000
Total		\$423,720,000

LOGISTICS MAINTENANCE SUPPORT VEHICLES

1. Background. Current maintenance operations depend upon equipment with technology from the 1970s and 1980s. This legacy equipment is cumbersome to use, expensive to operate and produces safety concerns. Procurement of safe tow vehicles enhances maintenance efficiency and safety, while improving capabilities, and ultimately leads to improved aircraft availability, lowered operating costs and enhanced Agile Combat Support (ACS) capabilities. The alternative tow vehicle utilizes new technology to provide improved maneuverability and visibility during towing operations, resulting in better utilization of hangar space, as well as improved sheltering of aging aircraft. This vehicle is intuitive to operate, requires less time to position aircraft which saves man-hours, enhances operational safety, and reduces the current deployment footprint. This vehicle conforms to the Presidential Directive to reduce use of fossil fuels within the Department of Defense (DOD).

2. Source of Need. Presidential Directive on Energy Conservation; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted. All ANG Combat Air Forces (CAF) and Remotely Piloted Aircraft (RPA) units.

4. Program Details. **PEC: 22834F**

Remaining Quantity Required *	Unit Cost	Program Cost
56 CAF Alternative Tow Vehicles (3080)	\$200,000	\$11,200,000
Total		\$11,200,000

* Includes 10% spares.

LOGISTICS MAINTENANCE STANDS AND PLATFORMS

1. Background. Current isochronal (ISO) inspection stands no longer meet Air Force Occupational Safety and Health Administration (AFOSH) or Occupational Safety and Health Administration (OSHA) standards. Many stands currently in use are over 40 years old and require frequent maintenance actions in order to maintain serviceability yet the stands are still critical to accomplishing periodic inspection requirements. Established workarounds delay completion of those inspection requirements, effectively doubling inspection times and negatively impacting aircraft availability. New stands alleviate unnecessary risk and allow maintainers to complete aircraft-specific tasks.

2. Source of Need. Occupational Safety and Health Administration (OSHA) Standards, 29 CFR 1910 Subpart D; 2010-2013 ARC WEPTAC Critical Capability.

3. Units Impacted. All ANG C-130H, C-17 and KC-135 units. Fifteen stands were procured through FY13 for C-130H units.

4. Program Details. **PEC: 41115F, 41130F, 41218F**

Remaining Quantity Required	Unit Cost	Program Cost
3 C-130 Maintenance Platforms and Stands (3080)	\$545,000	\$1,635,000
5 C-17 Maintenance Platforms and Stands (3080)	\$6,000,000	\$30,000,000
18 KC-135 Maintenance Platforms and Stands (3080)	\$4,000,000	\$72,000,000
Total		\$103,635,000

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Intelligence, Surveillance & Reconnaissance



- **Multi-Discipline Intelligence Collection**
- **Distributed Common Ground System (DCGS)**

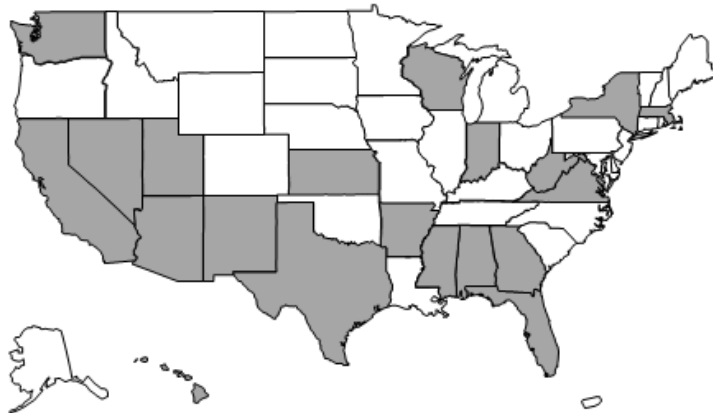
The Air National Guard (ANG) manned airborne reconnaissance and Processing, Exploitation and Dissemination (PED) assets fill critical Intelligence, Surveillance and Reconnaissance (ISR) and Incident Awareness and Assessment (IAA) requirements. These ANG resources can be called upon to support Combatant Commands (COCOM) in the specific Areas of Responsibility (AOR) as well as for Defense Support to Civil Authorities (DSCA) operations and Counter-Drug (CD) enforcement.

RC-26B Condor - The RC-26B is a unique manned ISR platform providing day and night Full Motion Video (FMV) for IAA and ISR requirements with two configurations: Block 20 and Block 25. The RC-26B is a Low Density / High Demand (LD/HD) platform that operates in the US and overseas. The aircraft supports COCOM Overseas Contingency Operations (OCO), and IAA for disaster response, National Special Security Events (NSSE), South-West Border operations (SWB), and CD. All



modernization efforts will move toward a common configuration of aircraft. Eleven aircraft are attached to 11 ANG units from three gaining commands: Air Combat Command (ACC), Air Mobility Command (AMC) and Air Education and Training Command (AETC). RC-26B locations include AL, AZ, CA, FL, MS, NM, NY, TX, WA, WI and WV.

Distributed Common Ground System (DCGS) - The Air Force DCGS, designated the AN/GSQ-272 Sentinel, is the primary ISR PED system. DCGS provides multi-discipline intelligence derived from ISR platforms to COCOMs, Component-Numbered Air Forces (C-NAF), and national command authorities across the globe 24 hours a day, 7 days a week. Through distributed (reach-back and deployed) and collaborative operations, DCGS personnel enable the Air Force to engage in multiple, simultaneous military operations across the globe. ANG DCGS locations include AL, AR, CA, GA, HI, IN, KS, MA, NV, UT and VA.



Intelligence, Surveillance & Reconnaissance 2013 Weapons and Tactics Conference

Critical Capabilities List

RC-26B:

- Block 25 Reconfiguration
- Block 20 to Block 25 Common Configuration
- Avionics Modernization
- Interoperable Beyond Line-of-Sight Communications Data Link
- Second Full Motion Video Sensor Including Laser Designator

Distributed Common Ground System:

- Fully Integrated Processing, Exploitation and Dissemination Suite
- Unclassified Processing, Analysis and Dissemination System and Network Architecture

Essential Capabilities List

RC-26B:

- Late Generation Target Tracking Radar
- Aircraft Performance Upgrade
- Electronic Attack (Communication Denial)
- Tactical Airborne Command, Control, Communications and Computer

Distributed Common Ground System:

- AN/ASQ-230 Signals Intelligence Scenario Based Trainer

Desired Capabilities List

RC-26B:

- Generator Upgrade
- Simulator
- Conformal Pod Capability

Distributed Common Ground System:

- Mission Fusion and Analysis Toolset

RC-26B BLOCK 25 RECONFIGURATION

1. Background. The Block 25 RC-26 Mission Management System (MMS), Electro-Optical / Infrared (EO/IR) Full Motion Video (FMV) sensor and communications suite are outdated and unsupportable due to diminishing manufacturing sources. The EO/IR sensor is dated, unreliable and not capable of High Definition (HD) FMV. Due to evolving battlespace communications requirements the Block 25 communications suite no longer provides adequate capabilities for Combatant Commands (COCOM) or Domestic Operations. To remedy these shortfalls, the Block 25 aircraft requires major upgrades. MMS hardware and software capabilities must be sustainable, expandable and provide HD FMV imagery for intelligence exploitation. A late generation EO/IR HD FMV sensor system provides industry standard HD imagery and sensor reliability. The existing radio suite does not provide the latest generation communication capability required for full spectrum ground element voice and data and could compromise safety. A late generation radio suite will provide real-time data link and voice providing expanded situational awareness for all Intelligence, Surveillance and Reconnaissance (ISR) elements. The addition of a line-of-sight data link for sensor slewing and downlink will provide bi-directional analog and/or digital data and video transmission simultaneously. This system will be capable of multi bi-directional band transmission integrating into the MMS via Web-browser control and provide for both Type 1 National Security Agency (NSA) and Advanced Encryption Standard (AES) encryption. Data rates will be capable of supporting a minimum of two HD video streams with metadata and include H.264, Moving Pictures Expert Group (MPEG-4) and Frequency Modulation (FM) analog waveforms. It will simultaneously transmit common data to multiple platforms using two different channels in one or two different bands and receive in two different channels from a single source. The downlink capability will also integrate legacy L-band line-of-sight (LOS) FMV downlink and will be capable of beyond line-of-sight (BLOS) data, voice, data and video transmission.

2. Source of Need. AF Form 1067 RC-26B Reconfiguration A4MY 13-032; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

115 FW	Truax Fld, WI	144 FW	Fresno IAP, CA	174 ATW	Syracuse IAP, NY
125 FW	Jacksonville IAP, FL	147 RW	Ellington IAP, TX	186 ARW	Meridian RAP, MS
130 AW	Yeager AP, WV	150 FW	Kirtland AFB, NM	187 FW	Montgomery RAP, AL
141 ARW	Fairchild AFB, WA	162 FW	Tucson IAP, AZ		

4. Program Details. PEC: 502889F

Remaining Quantity Required *	Unit Cost	Program Cost
1 Reconfiguration NRE (3600)	\$200,000	\$200,000
6 Shipset Kits (3010)	\$1,063,000	\$11,500,000
Total		\$11,700,000

* Includes 10% spares.

RC-26B BLOCK 20 TO BLOCK 25 COMMON CONFIGURATION

1. Background. The RC-26B fleet of 11 aircraft is currently split into two configurations: Block 20 and Block 25. Each has completely different sensor systems including Mission Management Systems (MMS) and communications suites for Intelligence, Surveillance and Reconnaissance (ISR) operations. Currently, six Block 25 aircraft are programmed to be reconfigured with late generation sensors, mission equipment and a communications capability. However, five Block 20 aircraft do not meet threshold mission capability requirements for Overseas Contingency Operations (OCO). Additionally, training and scheduling are problematic due to differences in aircraft block configurations. Operational missions require comprehensive integrated sensor capabilities throughout all theaters of operation including domestic operations. The RC-26B requires a common configuration and threshold capabilities of the Block 25 aircraft across the fleet. Common configuration distributes flight hours and extends airframe life cycles resulting in greater mission efficiencies. The Block 25 capability provides sustainable and expandable MMS hardware and software that enables intelligence exploitation of HD FMV imagery. In addition, late generation Electro-Optical / Infrared (EO/IR) High Definition (HD) Full Motion Video (FMV) sensor systems provide industry standards in advanced HD imagery and sensor reliability. A late generation radio suite provides real-time situation data and voice capabilities for the enhancement of ISR situational awareness and safety. Also, the addition of a line-of-sight data link for sensor slewing and downlink provides bi-directional analog and/or digital data and video transmission in multiple bands simultaneously. A beyond line-of-sight (BLOS) data link capable of voice, data and video transmission is also needed. In addition, the aircraft needs the capability of an adaptable antenna mounting system and a self-protection system.

2. Source of Need. 2009-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

115 FW	Truax Fld, WI	144 FW	Fresno IAP, CA	174 ATW	Syracuse IAP, NY
125 FW	Jacksonville IAP, FL	147 RW	Ellington IAP, TX	186 ARW	Meridian RAP, MS
130 AW	Yeager AP, WV	150 FW	Kirtland AFB, NM	187 FW	Montgomery RAP, AL
141 ARW	Fairchild AFB, WA	162 FW	Tucson IAP, AZ		

4. Program Details. **PEC: 502889F**

Remaining Quantity Required *	Unit Cost	Program Cost
1 Reconfiguration NRE (3600)	\$400,000	\$400,000
5 Reconfiguration: Multiple Systems (3010)	\$980,000	\$4,900,000
Total		\$5,300,000

* Includes 10% spares.

RC-26B AVIONICS MODERNIZATION

1. Background. RC-26B avionics are obsolete and unsustainable due to diminishing manufacturing sources. The affected areas of the overall avionics system are the Global Positioning System (GPS), Electronic Flight Information System (EFIS) Displays, Flight Management System (FMS), as well as the navigation and communication radios. The FMS is not certified to perform GPS approaches and does not comply with Federal Aviation Administration (FAA) and International Civil Aviation Organization (ICAO) Communications, Navigation and Surveillance / Air Traffic Management (CNS/ATM) requirements. A GPS failure would restrict crews to operating in Visual Meteorological Conditions (VMC) only. The RC-26B does not have Frequency Modulation (FM) frequency immunity on any of its navigation radios, and the communication radios do not have the proper frequency spacing requirements to legally operate in today's congested European Command (EUCOM) area of operations. Modernization of the avionics system ensures the RC-26B is compliant with global airspace mandates. The current configuration compromises safety as the airspace worldwide becomes increasingly congested. FM frequency immunity is required to ensure safe operation of aircraft when flying terminal area approaches to prevent a mishap and possible Controlled Flight Into Terrain (CFIT). Additionally, battlefield requirements now demand the use of night vision compatible cockpits and utilization of certified GPS approaches to safely depart and land at austere and remote airfields. The current RC-26B avionics suite and GPS do not meet these requirements.

2. Source of Need. 2009-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

115 FW	Truax Fld, WI	144 FW	Fresno IAP, CA	174 ATW	Syracuse IAP, NY
125 FW	Jacksonville IAP, FL	147 RW	Ellington IAP, TX	186 ARW	Meridian RAP, MS
130 AW	Yeager AP, WV	150 FW	Kirtland AFB, NM	187 FW	Montgomery RAP, AL
141 ARW	Fairchild AFB, WA	162 FW	Tucson IAP, AZ		

4. Program Details. **PEC: 502889F**

Remaining Quantity Required *	Unit Cost	Program Cost
1 Avionics NRE (3600)	\$1,300,000	\$1,300,000
11 Avionics (3010)	\$1,420,000	\$15,620,000
Total		\$16,920,000

* Includes 10% spares.

RC-26B INTEROPERABLE BEYOND LINE-OF-SIGHT COMMUNICATIONS DATA LINK

1. Background. The RC-26B has no capability to interact in the Global Information Grid (GIG) using broadband beyond line-of-sight (BLOS) technology or to communicate within a Common Data Link (CDL) environment. The rapidly advancing requirement for real-time intelligence in a network-centric battlespace is the standard that airborne Intelligence, Surveillance and Reconnaissance (ISR) assets are currently utilizing. BLOS CDL and High Definition (HD) Full Motion Video (FMV) downlink capabilities to Command and Control (C2) nodes and ground forces are critical for all airborne ISR platforms. The RC-26 provides a vast amount of intelligence data and HD FMV that cannot be fully utilized by the warfighter due to its BLOS challenge. This modernization will enhance operational situational awareness for intelligence gatherers and ground elements, and enable platform-to-platform and platform-to-C2 data exchange and sensor slewing. Enabling the manned RC-26 ISR aircraft with wideband BLOS FMV and data will greatly enhance ground force situational awareness, safety and provide a vast amount of HD intelligence imagery for any Combatant Commands (COCOM) or Domestic Operations tasking.

2. Source of Need. AF Form 1067 A4MY 10-024; 2011-2013 ARC WEPTAC Critical Capability.

34. Units Impacted.

115 FW	Truax Fld, WI	144 FW	Fresno IAP, CA	174 ATW	Syracuse IAP, NY
125 FW	Jacksonville IAP, FL	147 RW	Ellington IAP, TX	186 ARW	Meridian RAP, MS
130 AW	Yeager AP, WV	150 FW	Kirtland AFB, NM	187 FW	Montgomery RAP, AL
141 ARW	Fairchild AFB, WA	162 FW	Tucson IAP, AZ		

4. Program Details. **PEC: 502889F**

Remaining Quantity Required *	Unit Cost	Program Cost
1 Communications Down Link NRE (3600)	\$1,000,000	\$1,000,000
11 Interoperable BLOS Communications Data Links (3010)	\$482,000	\$5,302,000
Total		\$6,302,000

* Includes 10% spares.

RC-26B SECOND FULL MOTION VIDEO SENSOR INCLUDING LASER DESIGNATOR

1. Background. The RC-26B fleet currently operates two aircraft configurations (Block 20 and Block 25) each with a single Electro-Optical / Infrared (EO/IR) Full Motion Video (FMV) sensor. Combatant Commands (COCOM) require distinct dual EO/IR FMV sensor capability from each platform. The capability to simultaneously track multiple targets is needed for increased security and safety for ground elements and provides enhanced intelligence gathering. The addition of a laser designator will provide the capability to complete target exploitation. Dual sensors with laser designation capability are the threshold for current battlefield commanders, provide a common configuration across more than one ISR asset, and provide similar capabilities for war planners and operations. Current mission requirements dictate a comprehensive integrated dual High Definition (HD) sensor capability throughout all theaters of operation, including Domestic Operations.

2. Source of Need. 2011-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

115 FW	Truax Fld, WI	144 FW	Fresno IAP, CA	174 ATW	Syracuse IAP, NY
125 FW	Jacksonville IAP, FL	147 RW	Ellington IAP, TX	186 ARW	Meridian RAP, MS
130 AW	Yeager AP, WV	150 FW	Kirtland AFB, NM	187 FW	Montgomery RAP, AL
141 ARW	Fairchild AFB, WA	162 FW	Tucson IAP, AZ		

4. Program Details. PEC: 502889F

Remaining Quantity Required *	Unit Cost	Program Cost
1 Sensor NRE (3600)	\$1,100,000	\$1,100,000
11 Sensors (3010)	\$482,000	\$5,302,000
Total		\$6,402,000

* Includes 10% spares.

DISTRIBUTED COMMON GROUND SYSTEM FULLY INTEGRATED PROCESSING, EXPLOITATION AND DISSEMINATION SUITE

1. Background. Air National Guard (ANG) and Air Force (AF) Distributed Common Ground Systems (DCGS) lack the capability to efficiently provide Processing, Exploitation and Dissemination (PED) support for the Combatant Command (COCOM)-tasked Full Motion Video (FMV) missions. To support today's fast-paced tactical missions and avoid the software limitations inherent in the current architecture, ANG DCGS analysts are growing increasingly reliant on workarounds and supplemental systems. The current architecture requires the use of five separate systems to accomplish current mission taskings. Use of multiple systems leads to task saturation, making it difficult to meet the stringent timelines implemented by COCOMs. Moving from five systems to a single standardized hardware and software solution immediately reduces exploitation timelines by an average of 50 percent and yields less reliance on workarounds, thus enhancing overall analytical support. In addition, the AF DCGS enterprise has migrated to United States Special Operations Command (USSOCOM) standards as the baseline for mission execution. It is paramount to implement a capability that provides the same functionality and support employed by Air Force Special Operations Command (AFSOC) and Active Duty Air Force sites. This capability will reduce complexity and interface seamlessly with the existing AN/GSQ-272 SENTINEL weapons system architecture, which will enhance support to both conventional and Special Forces ground commanders. Production timelines significantly decrease while providing proven data archival, exploitation, sort and retrieval capabilities. Additionally, acquiring updated systems will allow the ANG to provide PED to Quick Reaction Capabilities (QRC) such as Wide Area Motion Imagery (WAMI) and Light Detection and Ranging (LIDAR). The software and hardware solution exists and includes the required exploitation capabilities for current and future mission requirements.

2. Source of Need. 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

102 IW	Otis ANGB, MA	123 IS	Little Rock AFB, AR	181 IW	Terre Haute IAP, IN
117 IS	Birmingham IAP, AL	152 IS	Reno-Tahoe IAP, NV	184 IW	McConnell AFB, KS

4. Program Details. **PEC: 505208F**

Remaining Quantity Required	Unit Cost	Program Cost
6 PED Suites (3080)	\$860,000	\$5,160,000
6 PED Suite Training (3840)	\$210,000	\$1,260,000
Total		\$6,420,000

**DISTRIBUTED COMMON GROUND SYSTEM UNITS UNCLASSIFIED
PROCESSING, ANALYSIS AND DISSEMINATION SYSTEM AND NETWORK
ARCHITECTURE**

1. Background. Air National Guard (ANG) Intelligence, Surveillance and Reconnaissance (ISR) units have highly trained and experienced analysts who frequently provide intelligence products for both State and Federal missions. Current intelligence systems and architectures lack the ability to provide efficient and effective products in a timely manner. DCGS units require the capability to produce intelligence products from any ANG Remotely Piloted Aircraft (RPA) or manned ISR platform, as well as other civil assets, including the required communication architecture and hardware. Installing an unclassified Processing, Assessment and Dissemination (PAD) system and communication architecture allows unit personnel at home station to provide direct support to first responders, State and Federal agencies, and other involved parties regardless of location.

2. Source of Need. US Air Force Katrina / Rita Lessons Learned, 2006; US Air Force Homeland Defense Briefs, 27 Feb - 1 Mar 2007; California Wildfires 2007-2013; Haiti, 2010; Gulf of Mexico Oil Spill, 2010; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

102 IW	Otis ANGB, MA	123 IS	Little Rock AFB, AR	181 IW	Terre Haute IAP, IN
117 IS	Birmingham IAP, AL	152 IS	Reno-Tahoe IAP, NV	184 IW	McConnell AFB, KS

4. Program Details. PEC: 505208F

Remaining Quantity Required	Unit Cost	Program Cost
13 Mobile Receiver / Analysis Work Centers (3080)	\$250,000	\$3,250,000
13 PAD Hardware and Software Suites (3080)	\$602,000	\$7,826,000
13 Video Downlink Receivers (3080)	\$200,000	\$2,600,000
13 Tactical Radios (PRC-117) (3080)	\$35,000	\$455,000
13 Prime Movers (3080)	\$50,000	\$650,000
Total		\$14,781,000

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Operational Support Aircraft



- **Provides Special Mission Transportation of Distinguished Visitors**
- **ANG OSA Units Provide: C-38 - 100%, C-40 - 27%, C-21 - 7% of the Total Fleet**

The Air National Guard (ANG) supports crucial special missions including Distinguished Visitor (DV) transportation. Each of these special missions has unique requirements beyond the traditional support provided to the rest of the ANG fleet.

The ANG Operational Support Aircraft (OSA) fleet includes the C-40C and C-38A flown by the District of Columbia, Air National Guard's 201st Airlift Squadron

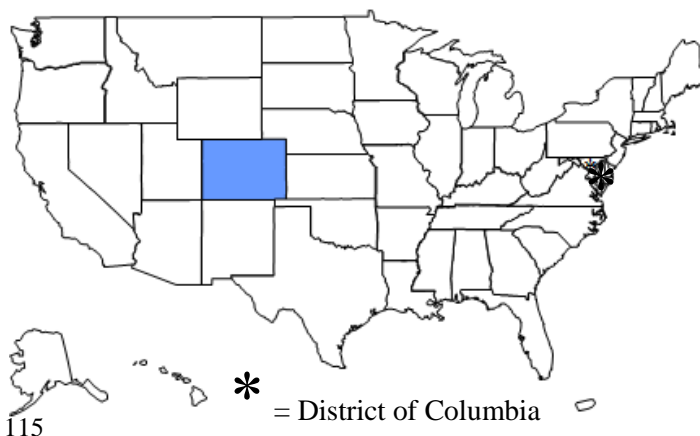


(AS) at Joint Base Andrews, MD and the

C-21A flown by the 201 AS at Colorado Springs. The C-21A currently does not have any critical capability requirements. The 201 AS aircraft provide worldwide DV transportation for Congressional, Department of Defense, Air Force and National Guard missions. The primary mission of all OSA aircraft is to ensure

passenger safety and comfort while providing the utmost in reliability. The ANG's modernization efforts will continue to focus on keeping these aircraft modernized and safe.

Since the ANG began the C-40C mission, demand has increased significantly. In order to improve service and increase mission availability an additional C-40C aircraft is required. The C-38A was originally acquired to support Continental United States (CONUS) operations while current missions dictate more overseas travel. Replacing the C-38A fleet with a more capable aircraft will extend the range into European airspace and provide the required support.



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Critical Capabilities List

C-38A:

- Replacement Aircraft Program

C-40C:

- Avionics Modernization
- Land-Based High Speed Data
- Procurement
- Cabin Refurbishment

Essential Capabilities List

C-38A:

- None

C-40C:

- Multi-Scan Weather Radar
- Satellite Based Television
- Digital Heads-Up Display with Synthetic Vision Technology

Desired Capabilities List

C-38A:

- None

C-40C:

- None

C-38A REPLACEMENT AIRCRAFT PROGRAM

1. Background. A C-38A replacement aircraft is required to support the existing Distinguished Visitor (DV) transportation fleet at the 201st Airlift Squadron (AS). The unit supports Congressional members and delegations, Executive Branch, Department of Defense, Air Force and National Guard travel missions worldwide. Current requirements identify four small DV support aircraft. The 201 AS currently operates only two C-38A aircraft. Replacing the C-38A fleet addresses several operational shortfalls and significantly improves the mission capability. The replacement aircraft will extend the non-stop range of the aircraft well into European airspace and complement the existing larger C-40Cs for smaller contingents. This capability eliminates time-consuming enroute refueling stops and decreases extended duty days for passengers and aircrews. In addition to the lack of range, the C-38A has historically demonstrated a substandard mission capable rate, which is unacceptable for aircraft in the DV transportation arena.

2. Source of Need. Air Mobility Command (AMC) Operational Requirements Document (ORD) 000-90, 12 Jun 1995, modified 3 May 1996; NGB Mission Need Statement 002-94 and NGB ORD 002-94, 24 Jul 1994; 2012-2013 ARC WEPTAC Critical Capability.

3. Unit Impacted.

201 AS JB Andrews, MD

4. Program Details. PEC: 41314F

Remaining Quantity Required	Unit Cost	Program Cost
2 Additional Aircraft (3010)	\$66,752,500	\$133,505,000
2 Replacement Aircraft (3010)	\$66,752,500	\$133,505,000
Total		\$267,010,000

C-40C AVIONICS MODERNIZATION

1. Background. The changing technological landscape has re-defined the equipment and tools necessary to effectively conduct business in today's corporate and government environments. The C-40C is not equipped to take advantage of, nor comply with, the emergence of several next generation Federal Aviation Administration (FAA) capabilities. The first of these capabilities is the Wide Area Augmentation System (WAAS) which augments the aircraft's Global Positioning System (GPS) by improving its accuracy, integrity and availability, and allows the aircraft to rely on GPS for guidance during precision approaches. Localizer Performance with Vertical Guidance (LPV) is another requirement that allows the highest precision GPS (WAAS enabled) approaches to be flown. Automatic Dependent Surveillance-Broadcast (ADS-B) enhances safety by making an aircraft visible, real-time, to Air Traffic Control (ATC) and to other appropriately equipped aircraft, and will be mandatory by 1 Jan 2020. These capabilities allow the aircraft to operate with increased safety.

2. Source of Need. Air National Guard (ANG) Operational Requirements Document 002-02, 19 Feb 2001; 2013 ARC WEPTAC Critical Capability.

3. Unit Impacted.

201 AS JB Andrews, MD

4. Program Details. PEC: 41314F

Remaining Quantity Required	Unit Cost	Program Cost
3 Avionics Suites (3010)	\$1,000,000	\$3,000,000
Total		\$3,000,000

C-40C LAND-BASED HIGH SPEED DATA

1. Background. The 201st Airlift Squadron (AS) utilizes the C-40C to provide worldwide air transportation to Congressional Members and delegations, the Executive Branch, Department of Defense officials and high-ranking US and foreign dignitaries. In today's information age, the amount of data needed to effectively conduct business has exponentially increased. The current C-40C fleet relies on an expensive, low bandwidth satellite-based capability that fails to provide the needed throughput to allow Internet Protocol video and data capabilities that senior leaders require. More C-40C customers are flying in the Continental United States (CONUS) region and require faster, more reliable data service.

2. Source of Need. Air National Guard (ANG) Operational Requirements Document 002-02, 19 Feb 2001; 2013 ARC WEPTAC Critical Capability.

3. Unit Impacted.

201 AS JB Andrews, MD

4. Program Details. **PEC: 41314F**

Remaining Quantity Required	Unit Cost	Program Cost
3 Land-Based High Speed Data Systems (3010)	\$300,000	\$900,000
1 NRE (3600)	\$400,000	\$400,000
Total		\$1,300,000

C-40C PROCUREMENT

1. Background. The 201st Airlift Squadron (AS), District of Columbia Air National Guard (ANG), provides worldwide air transportation for Congressional Members and delegations, Executive Branch, Department of Defense officials, high-ranking US and foreign dignitaries and Headquarters US Air Force inspection teams. The 201 AS currently operates three C-40Cs (military modified Boeing 737 Business Jets). The ANG is one aircraft short of meeting operational requirements. A fourth aircraft will significantly improve fleet readiness and reliability. Scheduled maintenance and high operational tempo coupled with unscheduled maintenance actions will lead to cancelled flights and less availability. An additional aircraft will allow the unit to overlap schedules and significantly improve aircraft availability. This aircraft will increase airlift capability, reliability and support additional airlift requests.

2. Source of Need. Mission Need Statement National Guard Bureau 001-97, 10 Jun 1997; ANG Operational Requirements Document 002-02, 19 Feb 2004; 2013 ARC WEPTAC Critical Capability.

3. Unit Impacted.

201 AS JB Andrews, MD

4. Program Details. PEC: 41314F

Remaining Quantity Required	Unit Cost	Program Cost
1 C-40C Aircraft (3010)	\$103,000,000	\$103,000,000
Total		\$103,000,000

C-40C CABIN REFURBISHMENT

1. Background. The 201st Airlift Squadron (AS), District of Columbia Air National Guard (ANG), provides worldwide air transportation for Congressional Members and delegations, Executive Branch, Department of Defense officials, high-ranking US and foreign dignitaries and Headquarters US Air Force inspection teams. Due to their age and routine operation, the C-40C aircraft are in need of an interior refurbishment. The C-40C interior refurbishment includes upgraded seats, seat coverings, veneers, carpet, counter tops and an inflight entertainment system. These aircraft are some of the oldest within the Air Force fleet, and have not received a full interior refurbishment since production approximately 12 years ago.

2. Source of Need. 2013 ARC WEPTAC Critical Capability.

3. Unit Impacted.

201 AS JB Andrews, MD

4. Program Details. **PEC: 41314F**

Remaining Quantity Required	Unit Cost	Program Cost
3 Cabin Refurbishments (3010)	\$8,000,000	\$24,000,000
Total		\$24,000,000

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Guardian Angel, Special Tactics & Tactical Air Control Party



- **Personnel Recovery**
- **Special Operations**
- **ANG GA Units Provide 30% of the Total Force**
- **ANG ST Units Provide 25% of the Total Force**
- **ANG TACP Units Provide 35% of the Total Force**

Guardian Angel (GA) - The Air National Guard (ANG) has three Guardian Angel squadrons: 103 RQS, Francis S. Gabreski Airport, NY; 131 RQS, Moffett Federal Airfield, CA; and 212 RQS, Joint Base Elmendorf-Richardson, AK. Pararescue consists of Combat Rescue Officers and Pararescue Jumpers. Their mission is to recover downed and injured aircrew members in austere and non-permissive environments. Pararescue provides emergency medical treatment necessary to stabilize and evacuate injured personnel while acting in an enemy-evading recovery role.



Special Tactics (ST) - The ANG has two Special Tactics Squadrons: 123 STS, Standiford Field, KY and 125 STS, Portland IAP, OR. Special Tactics teams are quick-reaction, deployable units, which are uniquely organized, trained and equipped to facilitate the air / ground interface during joint special operations and sensitive recovery missions. Special Tactics personnel provide quick-reaction Command and Control, Close Air Support, positive air traffic management, and casualty recovery, treatment and evacuation staging during joint air and ground / maritime operations including short notice, sensitive contingencies.

Tactical Air Control Party (TACP) - TACP provide direct support to Army commanders by integrating airpower into the ground battle. During planning, TACP provide expert advice on the proper integration of air and space power at decisive points in the battle. During execution, TACP Joint Terminal Attack Controllers direct the employment of air and surface firepower onto enemy forces. The Air Support Operations Center is comprised of specially trained TACP for command and control of attack aircraft, moving assets in real time to where they are needed most.



Guardian Angel, Special Tactics & Tactical Air Control Party

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Critical Capabilities List

Guardian Angel:

- Human Performance Optimization
- Combat Survivability Suite
- Weapons Modernization Suite
- Storage Solutions Suite

Special Tactics:

- Employment Enhancement Suite
- Dismounted Operator Suite
- Environmental Assessment Suite
- Communications Enhancement Suite
- Home Station Training Suite

Tactical Air Control Party:

- Rapidly Deployable Joint Operational Communications System
- Lightweight Dismounted Sensor and Targeting System
- Software Targeting and Data Management System
- Air Support Operations Center Tactical Data Link Control Terminal Suite

Essential Capabilities List

Guardian Angel:

- K-9 Search and Rescue
- Joint Terminal Air Controller Simulation Suite
- Single Pass Precision Guided Airdrop
- Signature Management Suite

Special Tactics:

- Covert Night Marking Capability
- Two Channel Voice and Data Capability
- Operator Wireless Network
- Training / Simulation of Alternate Insertion / Extraction Equipment
- Optimized Lightweight Dismounted Operator Kit

Tactical Air Control Party:

- Three Kilowatt Lightweight Generator
- Joint Terminal Air Controller Targeting Pod
- Tactical Air Control Party Small Arms Weapons Modification
- Portable Next Generation Power Production

Desired Capabilities List

Guardian Angel:

- Armored Vehicle
- Water Recovery Suite
- Hazardous Material Suite
- Military Navigation

Special Tactics:

- Air-Ground Two-Way Data Link
- Organic Indirect Fire Capability
- Technical Rope Rescue System

Tactical Air Control Party:

- None

GUARDIAN ANGEL HUMAN PERFORMANCE OPTIMIZATION

1. Background. Air National Guard (ANG) Guardian Angels (GA) lack progressive methods of regaining fitness and ensuring proper rest and rehabilitation of injuries consistent with other Special Operations Forces weapon systems. Injuries have a negative impact on the health and mission readiness of the GA Weapon System and are the primary reason for excessive lost work-days. The current medical system does not provide a detailed initial medical screening for elite Air Force specialists, nor does it address past injuries and structural concerns. The Human Performance Optimization (HPO) System will provide contracted personnel, such as a professional team of physical therapists, injury managers, strength coaches, nutritionists and physician assistants that are capable of addressing structural concerns and tracking data throughout the life cycle of the operator. The second part of the HPO System is procurement of necessary equipment for program execution. Rehabilitation, physical training, strength conditioning and reconditioning equipment are capabilities needed for program execution.

2. Source of Need. HPO requirement identified by the GA Senior Leaders Working Group and supported by the Weapon System Council; Referenced as "Sustainment" of the Force in the GA Vision 2020 document currently in coordination; Tactical Human Optimization, Rapid Rehabilitation and Reconditioning Program and current Air Force Special Operations Command (AFSOC) HPO program; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

106 RQW Gabreski AP, NY 129 RQW Moffett Fld, CA 176 WG JB Elmendorf, AK

4. Program Details. PEC: 53119

Remaining Quantity Required	Unit Cost	Program Cost
3 Human Performance Optimization Equipment Systems (3840)	\$100,000	\$300,000
3 Human Performance Optimization Teams (3840)	\$535,000	\$1,605,000
Total		\$1,905,000

GUARDIAN ANGEL COMBAT SURVIVABILITY SUITE

1. Background. Air National Guard (ANG) Guardian Angel (GA) missions demand agile combat capability to defeat conventional and guerrilla-style threats in a broad range of environments. Lessons learned show that in prosecution of the GA mission, it is extremely difficult for the operator to determine the direction of incoming fire. To alleviate this constraint, a lightweight, man-portable Hostile Fire Indicator (HFI) is essential. Similarly, the proliferation of Global Positioning System (GPS) denial systems require enhanced equipment that is less susceptible to jamming and is capable of providing improved navigation accuracy in both mounted and dismounted applications. Additionally, the GA must possess the capability to see into areas of reduced visibility (low ambient light, fog, smog or concealment measures). A fusion goggle that operates day or night, incorporates thermal and Night Vision Goggle (NVG) technology, and gives the operator “heads-up” information such as distance and bearing to a select objective fulfills this capability gap. GA success on the battlefield depends heavily on the ability to designate threats for supporting parties. A handheld day / night target designator is essential. Acquisition of a lightweight and compact communication system, capable of delivering voice and high-speed data in both line-of-sight and over-the-horizon while on the move, dramatically improves GA capability. Ground rescue vehicles are needed to ensure Pararescue Jumpers can respond quickly and survive over-land rescue scenarios. The Guardian Angel mission continues to evolve creating new requirements that burden airmen with weight and complexity.

2. Source of Need. Lessons Learned from Operations ENDURING FREEDOM (OEF) and IRAQI FREEDOM (OIF); Mission Required Equipment Shortfalls identified in the Guardian Angel Modernization Initial Capabilities Document and the GA Capabilities-Based Assessment (CBA) Final Report; 2010-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

106 RQW Gabreski AP, NY 129 RQW Moffett Fld, CA 176 WG JB Elmendorf, AK

4. Program Details. PEC: 53119

Remaining Quantity Required	Unit Cost	Program Cost
150 Fusion Goggles (3080)	\$32,000	\$4,800,000
30 HFI (3080)	\$1,800	\$54,000
150 Invisio V60 (3080)	\$2,000	\$300,000
54 MicroDAGR (3080)	\$1,450	\$78,300
36 Night / Day Target Designators (3080)	\$18,500	\$666,000
73 AN PVS-31 Binocular Night Vision Devices (3080)	\$10,000	\$730,000
3 Tactical Tablets (3080)	\$32,000	\$96,000
Total		\$6,724,300

GUARDIAN ANGEL WEAPONS MODERNIZATION SUITE

1. Background. Guardian Angels (GA) require a simple, versatile and long-range weapon for the defense of personnel and mission objectives against an entrenched enemy when Close Air Support (CAS) is not available. GAs need the capability to control crowds and unknown hostiles, and hold them at an ineffective and safe distance from an incident site. Lessons learned from Operation ENDURING FREEDOM highlighted the need for improvements to current GA outdated weapons capabilities (lethal and non-lethal) which would greatly improve the probability of mission success. The current 9 mm weapon is heavy and has insufficient stopping power for personal defense, as well as a heavy trigger-pull which reduces accuracy. Additionally, the components easily corrode. A modification or replacement of the 9 mm is required. The US Army determined the M-4 does not need replacement. This drives the need to modernize the M-4. The M-4 has an unacceptable malfunction rate of one failure in every 5,000 rounds fired. Modifications could improve malfunction rates to one failure in every 50,000 rounds. Lastly, GAs require the resources to train consistently on current weapons which will greatly enhance their successful employment. Training quality and quantity could be substantially improved with the purchase of suitable multi-lane 25-meter ranges.

2. Source of Need. Lessons Learned from Operations ENDURING FREEDOM (OEF) and IRAQI FREEDOM (OIF); Mission Required Equipment Shortfalls identified in the Guardian Angel Modernization Initial Capabilities Document and the GA Capabilities-Based Assessment (CBA) Final Report; ARC 2012-2013 WEPTAC Critical Capability.

3. Units Impacted.

106 RQW Gabreski AP, NY 129 RQW Moffett Fld, CA 176 WG JB Elmendorf, AK

4. Program Details. PEC: 53119

Remaining Quantity Required	Unit Cost	Program Cost
150 M-4 Modernization (3080)	\$2,370	\$355,500
150 M-9 Modernization (3080)	\$550	\$82,500
11 Multi-Role Stand-Off Systems (3080)	\$28,000	\$308,000
11 Non-Lethal Weapons (3080)	\$12,500	\$137,500
3 Combat Shooting Trainers (3080)	\$4,000,000	\$12,000,000
Total		\$12,883,500

GUARDIAN ANGEL STORAGE SOLUTIONS SUITE

1. Background. Air National Guard (ANG) Guardian Angels (GA) have inadequate space and access to mission critical equipment. Growth of mission requirements over the past decade resulted in additional mission equipment without an increase in storage capacity. Currently, GAs must procure temporary storage facilities to prevent damage to mission critical gear stored outside. GAs can partially address the storage deficiency by purchasing space saver equipment for existing facilities. Better use of existing facilities in concert with procurement of temporary shelters protects and provides acceptable access to mission critical equipment.

2. Source of Need. Identified by the GA Senior Leaders Working Group and supported by the Weapon System Council; Wing Commanders identified this as a critical need; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

106 RQW Gabreski AP, NY 129 RQW Moffett Fld, CA 176 WG JB Elmendorf, AK

4. Program Details. PEC: 53119

Remaining Quantity Required	Unit Cost	Program Cost
3 Temporary Climate Controlled Facilities (3080)	\$535,000	\$1,605,000
3 Multiple Storage Solutions (3080)	\$200,000	\$600,000
Total		\$2,205,000

SPECIAL TACTICS EMPLOYMENT ENHANCEMENT SUITE

1. Background. Special Tactics Squadron (STS) operators require reliable tactical vehicles and watercraft to conduct contingency and domestic missions. Maritime Support Boats need to be larger, more seaworthy and reliable with a heated cabin capable of supporting lifesaving emergency operations in the case of an injured jumper. The Maritime Forward-Looking Infrared system will greatly enhance safety by enabling rapid detection and marking the location of personnel in the water. Replacement of aging small swift-water boats permits STS to safely conduct reconnaissance and recovery operations in fast moving waters. Microfly devices allow precise Global Positioning System-guided deployment of cargo utilizing existing personnel parachutes. These devices relieve the burden placed on the parachutists to attach the bundle to their bodies. Additionally, Battlefield Airmen currently utilize small All-Terrain Vehicles (ATV) to conduct ground transportation in remote environments. These ATVs suffer from a low cargo capability and minimal range; and are extremely terrain limited. A vehicle capable of transporting a minimum of two personnel plus equipment over extremely rugged terrain is urgently required. New snow machine trailers are required to transport snow machines by aircraft or vehicle. There is a critical shortage of storage space to support the employment enhancement equipment. An Individual Storage Unit (ISU) organizational system will ensure there is adequate space to store equipment.

2. Source of Need. Lessons Learned from Operation ENDURING FREEDOM (OEF); Air Force Special Operations Command (AFSOC)/A5KB and US Air Force Battlefield Airman Requirements Working Group; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

123 STS Louisville IAP, KY 125 STS Portland IAP, OR

4. Program Details. **PEC: 53130**

Remaining Quantity Required	Unit Cost	Program Cost
2 ISU Organization Systems (3080)	\$100,000	\$200,000
8 ATV Track Systems (3080)	\$10,000	\$80,000
2 Maritime FLIR Mounting Systems (3080)	\$300,000	\$600,000
1 Maritime Support Boat (3080)	\$300,000	\$300,000
2 Search and Rescue Tactical Vehicles (3080)	\$250,000	\$500,000
2 Swift-Water Boats (3080)	\$13,000	\$26,000
2 C-130 ECW Trailers (3080)	\$6,000	\$12,000
2 Microfly Parachute Devices (3080)	\$28,500	\$57,000
Total		\$1,769,000

SPECIAL TACTICS DISMOUNTED OPERATOR SUITE

1. Background. Special Tactics Squadron (STS) operators require the lightest, most accurate and easiest to use gear available. This suite provides a single lightweight system to increase lethality on the battlefield by first using personal weapons and then gaining situational awareness to quickly bring precise airpower to bear on the enemy while avoiding fratricide. Capabilities of the components are complementary and interoperable throughout the entire STS mission set in wartime and domestic operations. The package includes a small tactical information display with tablet, a Video Down Link receiver, Laser Target Designators, Laser Range Finders, Satellite Communications Antennas and Night Vision Devices. The Night Vision Devices will include hands free optics, a wireless interface between night vision devices and peripherals, and weapon accessories.

2. Source of Need. Lessons Learned from Operation ENDURING FREEDOM (OEF); Air Force Special Operations Command (AFSOC)/A5KB and US Air Force Battlefield Airman Requirements Working Group; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

123 STS Louisville IAP, KY 125 STS Portland IAP, OR

4. Program Details. PEC: 53130

Remaining Quantity Required	Unit Cost	Program Cost
10 Situational Awareness Tablets (3080)	\$10,000	\$100,000
25 Video Down Links (3080)	\$30,000	\$750,000
6 Laser Target Designators (3080)	\$15,000	\$90,000
20 Night Vision Devices (3080)	\$12,000	\$240,000
30 NexGen Small Laser Range Finders (3080)	\$8,500	\$255,000
10 ManPack SATCOM Antennas (3080)	\$5,000	\$50,000
Total		\$1,485,000

SPECIAL TACTICS ENVIRONMENTAL ASSESSMENT SUITE

1. Background. Special Tactics Squadrons (STS) require updated, lightweight and easy to operate assault zone equipment. Procurement of Landing Zone (LZ) assessment equipment, riverine analysis kits and atmospheric sounding kits will enable STS operators to conduct vital reconnaissance missions and with far greater accuracy, efficiency and safety. Furthermore, operations in and around natural disasters have highlighted current Search and Rescue (SAR) technique limitations that are often inaccurate in locating survivors and extremely labor intensive. Procuring canines to assist SAR operations during natural disasters is paramount for mission success.

2. Source of Need. Lessons Learned from Operation ENDURING FREEDOM (OEF); Air Force Special Forces Command (AFSOC)/A5KB and US Air Force Battlefield Airman Requirements Working Group; ARC 2013 WEPTAC Critical Capability.

3. Units Impacted.

123 STS Louisville IAP, KY 125 STS Portland IAP, OR

4. Program Details. **PEC: 53130**

Remaining Quantity Required	Unit Cost	Program Cost
11 LZ Assessment Modular Upgrades (3080)	\$25,000	\$275,000
12 Riverine Analysis Kits (3080)	\$3,300	\$39,600
6 Tactical Atmospheric Sounding Kits (3080)	\$21,000	\$126,000
100 High Visibility Domestic Operations Protective Combat Uniforms (3080)	\$1,500	\$150,000
1 Search and Rescue Canine (3080)	\$80,000	\$80,000
Total		\$670,600

SPECIAL TACTICS COMMUNICATIONS ENHANCEMENT SUITE

1. Background. Special Tactics Squadrons (STS) consist of Combat Control Teams, Pararescue Teams and Special Operations Weather Teams. The teams must communicate Command and Control (C2) information to a variety of assets on the battlefield and in Domestic Operations (DOMOPS) via both line-of-sight (LOS) and beyond line-of-sight (BLOS) mediums. Critical C2 data and voice transmissions must be clear, while the equipment must be lightweight, durable and easy to operate. The communications enhancement suite allows operators to communicate more effectively in austere and maritime environments through LOS and Satellite Communication radios with all military and US emergency responders. Procurement of enhanced communications equipment includes antennas, power systems, global rapid response devices, remote control units and test systems. This equipment will enable STS operators to safely conduct their vital missions in any environment with far greater efficiency.

2. Source of Need. Lessons Learned from Operation ENDURING FREEDOM (OEF); Air Force Special Operations Command (AFSOC)/A5KB and US Air Force Battlefield Airman Requirements Working Group; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

123 STS Louisville IAP, KY 125 STS Portland IAP, OR

4. Program Details. PEC: 53130

Remaining Quantity Required	Unit Cost	Program Cost
2 High-Bandwidth SATCOM Antennas (3080)	\$5,000	\$10,000
2 Power Solution Systems (3080)	\$6,000	\$12,000
3 Global Rapid Response Devices (3080)	\$50,000	\$150,000
3 Digital Radio Test Sets (3080)	\$50,000	\$150,000
3 Tactical Radio Test Systems (3080)	\$16,000	\$48,000
4 RF Remote Controls (3080)	\$12,000	\$48,000
4 VHF 108-174 MHz Antennas (3080)	\$500	\$2,000
4 UHF 225-400 MHz Antennas (3080)	\$500	\$2,000
Total		\$422,000

SPECIAL TACTICS HOME STATION TRAINING SUITE

1. Background. The sustainment of the personnel force has become a high visibility issue within the Special Operations community. The importance of this is highlighted by the Special Operations Command (SOCOM) Tactical Human Optimization, Rapid Rehabilitation and Reconditioning (THOR3) Program and the Air Force Special Operations Command (AFSOC) Human Performance Program (HPP). These programs placed subject matter experts at each of the Air National Guard (ANG) Special Tactics Squadrons (STS) as well as new physical conditioning equipment with a focus on combat readiness. However, equipment shortfalls created a training suite capability gap. The equipment shortfall consists of training turf, a hydrotherapy system and a high angle training wall. Additionally, the influx of personnel and equipment requires storage capability to properly house and utilize new assets and equipment to include the ANG Advanced Joint Terminal Attack Controller (JTAC) Training System (AAJTS) simulator.

2. Source of Need. THOR3 Program; Human Performance Program; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

123 STS Louisville IAP, KY 125 STS Portland IAP, OR

4. Program Details. PEC: 53130

Remaining Quantity Required	Unit Cost	Program Cost
2 Temporary Storage Facilities (3080)	\$150,000	\$300,000
2 AAJTS Open Storage (3080)	\$800,000	\$1,600,000
2 Movement Training Turfs (3080)	\$50,000	\$100,000
1 Hydrotherapy System (3080)	\$20,000	\$20,000
1 Indoor High Angle Training Wall (3080)	\$200,000	\$200,000
Total		\$2,220,000

TACTICAL AIR CONTROL PARTY RAPIDLY DEPLOYABLE JOINT OPERATIONAL COMMUNICATIONS SYSTEM

1. Background. The legacy Tactical Air Control Party (TACP) vehicular communications system is unsustainable, unreliable and forces operators to rely upon non-amplified man-portable communication systems. An integrated radio suite providing modern amplified multi-band and High Frequency (HF) radios is required to ensure mission critical communication with tactical and disaster response agencies. The capability integrates multiple radios into one control rack and is powered from any external source. Joint Terminal Attack Controllers (JTAC) are in an ever-evolving communication-intensive operating environment under direct combat conditions where an improved communication system is needed. This capability provides persistent communications with aircraft and other remote sites in a non-permissive environment.

2. Source of Need. Air Combat Command (ACC) TACP Requirements Working Group and LOGDET Review validated requirement; Air Force Materiel Command (AFMC) Pre-Solicitation reference number R1550; Air Force Research Lab (AFRL) request for solutions solicitation number BAA-RWK-10-0003; Lessons Learned from Operations ENDURING FREEDOM (OEF) and IRAQI FREEDOM (OIF); 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

111 ASOS Camp Murray, WA	138 CTF Camp Gruber, OK	169 ASOS Peoria IAP, IL
113 ASOS Terre Haute IAP, IN	146 ASOS Will Rodgers WAP, OK	227 ASOS Atlantic City IAP, NJ
116 ASOS Camp Murray, WA	147 ASOS Ellington IAP, TX	238 ASOS Meridian RAP, MS
118 ASOS New London, NC	148 ASOS Ft Indiantown Gap, PA	274 ASOS Syracuse Hancock IAP, NY
122 ASOS Camp Beauregard, LA	165 ASOS Garden City, GA	284 ASOS Smoky Hill, KS
124 ASOS Boise AP, ID	168 ASOS Peoria IAP, IL	

4. Program Details. PEC: 52671

Remaining Quantity Required	Unit Cost	Program Cost
271 JTAC Vehicle Communication Systems (3080)	\$183,400	\$49,701,400
Total		\$49,701,400

TACTICAL AIR CONTROL PARTY LIGHTWEIGHT DISMOUNTED SENSOR AND TARGETING SYSTEM

1. Background. Joint Terminal Attack Controllers (JTAC) must carry multiple single-use function devices to provide ranging, covert marking, designating and detection. Simultaneous use of these devices is prohibitive due to their capability, weight, size and power limitations. JTACs need a combined Laser Target Marker, Laser Target Designator and Laser Range Finder (LRF) with the capability to identify and designate a tank-sized target at distances greater than 2 kilometers and the ability to mark greater than 3 kilometers. Additionally, the capability to visually locate pulse-coded frequency lasers is needed to confirm aircraft-based lasers track the same targets ground forces designate or mark. Current JTAC sensor and targeting solutions are tied to equipment which requires numerous cables for connectivity. A secure Wireless Personal Area Network (WPAN) would increase the combat capability of JTACs while decreasing weight and potential for equipment failure.

2. Source of Need. Air Combat Command (ACC) Tactical Air Control Party (TACP) Requirements Working Group validated requirement; Air Force Research Laboratory (AFRL) request for solutions solicitation number BAA-RWK-10-0003; Air Force Materiel Command (AFMC) Request for Proposal solicitation number TACPCASS061512; Lessons Learned from Operations IRAQI FREEDOM (OIF) and ENDURING FREEDOM (OEF); 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

111 ASOS Camp Murray, WA	138 CTF Camp Gruber, OK	169 ASOS Peoria IAP, IL
113 ASOS Terre Haute IAP, IN	146 ASOS Will Rodgers WAP, OK	227 ASOS Atlantic City IAP, NJ
116 ASOS Camp Murray, WA	147 ASOS Ellington IAP, TX	238 ASOS Meridian RAP, MS
118 ASOS New London, NC	148 ASOS Ft Indiantown Gap, PA	274 ASOS Syracuse Hancock IAP, NY
122 ASOS Camp Beauregard, LA	165 ASOS Garden City, GA	284 ASOS Smoky Hill, KS
124 ASOS Boise AP, ID	168 ASOS Peoria IAP, IL	

4. Program Details. **PEC: 52671**

Remaining Quantity Required	Unit Cost	Program Cost
252 TACP Day / Night Coded Spot Trackers (3080)	\$60,000	\$15,120,000
252 Lightweight Range Mark Designators (3080)	\$86,000	\$21,672,000
340 JTAC WPAN Capabilities (3080)	\$15,000	\$5,100,000
Total		\$41,892,000

TACTICAL AIR CONTROL PARTY SOFTWARE TARGETING AND DATA MANAGEMENT SYSTEM

1. Background. Dismounted Joint Terminal Attack Controllers (JTAC) lack a lightweight integrated solution capable of sharing targeting data with a wide range of Close Air Support (CAS) aircraft. JTACs need the capability to simultaneously operate geospatial mapping, navigation, and precision targeting software with the option to provide direct, near real-time connectivity with supporting aircraft and ground forces. These capabilities will shorten the kill chain timeline and help mitigate collateral damage and fratricide. JTACs require software and lightweight man-portable hardware solutions optimized for the human machine interface requirements of the battlefield. The current Digitally Aided CAS software of record was designed for use by Command and Control agencies on desktop computers, and is not useable on small form factor, touch screen devices. A JTAC-centric capability requires transmission of timely and accurate targeting solutions directly to airborne platforms without requiring beyond line-of-sight communications through a remote gateway. Enhanced sharing of targeting data and situational awareness dramatically decreases voice communications and target misidentification, while expediting accurate kinetic strikes on known targets.

2. Source of Need. Air Force Research Laboratory (AFRL) request for solutions solicitation number BAA-RWK-10-0003; Lessons Learned from Operations IRAQI FREEDOM (OIF) and ENDURING FREEDOM (OEF); Urgent Operational Need from OEF; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

111 ASOS Camp Murray, WA	138 CTF Camp Gruber, OK	169 ASOS Peoria IAP, IL
113 ASOS Terre Haute IAP, IN	146 ASOS Will Rodgers WAP, OK	227 ASOS Atlantic City IAP, NJ
116 ASOS Camp Murray, WA	147 ASOS Ellington IAP, TX	238 ASOS Meridian RAP, MS
118 ASOS New London, NC	148 ASOS Ft Indiantown Gap, PA	274 ASOS Syracuse Hancock IAP, NY
122 ASOS Camp Beauregard, LA	165 ASOS Garden City, GA	284 ASOS Smoky Hill, KS
124 ASOS Boise AP, ID	168 ASOS Peoria IAP, IL	

4. Program Details. PEC: 52671

Remaining Quantity Required	Unit Cost	Program Cost
140 JTAC Dismount Computer Kits (3080)	\$28,000	\$3,920,000
180 Targeting Pod Based Data Links (3080)	\$60,000	\$10,800,000
220 JTAC Targeting Software Kits (3080)	\$10,000	\$2,200,000
Total		\$16,920,000

**TACTICAL AIR CONTROL PARTY AIR SUPPORT OPERATIONS CENTER
TACTICAL DATA LINK CONTROL TERMINAL SUITE**

1. Background. Air Support Operations Centers (ASOC) serve as the principal air control agency of the Theater Air Control System (TACS), and are responsible for the direction and control of air operations supporting the ground combat element. They process and coordinate requests for immediate air support, and coordinate air missions requiring integration with other supporting air and ground forces. They normally co-locate with the US Army tactical headquarters senior Fire Support Coordination Center within the ground combat element. The ASOCs aid with long-haul voice and data communications and serve as the primary link between Joint Terminal Attack Controllers (JTAC) and airborne assets. The ASOCs lack a lightweight, transportable, tactical network suite capable of linking JTACs, aircrews and senior echelons in the TACS. This tactical network should include three routers, three switches and crypto to facilitate both classified and unclassified transmissions. The capability needs a Voice Over Internet Protocol (VOIP) server and VOIP phones to support voice demand and support a minimum bandwidth of 5 Mbps.

2. Source of Need. Air Force Research Laboratory (AFRL) request for solutions solicitation number BAA-RWK-10-0003; US Special Operations Command (USSOCOM) sponsored recommendation for deployable Command, Control, Communications, Computers and Intelligence (C4I) requirements; Lessons Learned from Operations IRAQI FREEDOM (OIF) and ENDURING FREEDOM (OEF); 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

111 ASOS Camp Murray, WA 168 ASOS Peoria, IL

4. Program Details. PEC: 52671

Remaining Quantity Required	Unit Cost	Program Cost
2 Tactical Network Suites (3080)	\$980,000	\$1,960,000
Total		\$1,960,000

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MQ-1 & MQ-9

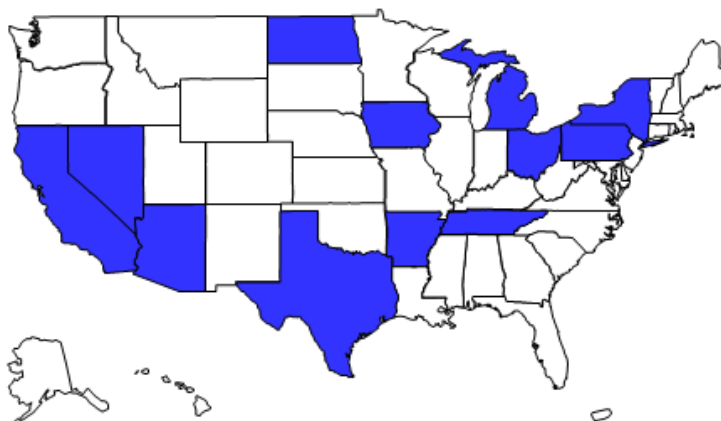


- **Intelligence, Surveillance and Reconnaissance**
- **Air Interdiction / Armed Reconnaissance**
- **Close Air Support to Ground Forces**
- **ANG MQ-1 / MQ-9 Units Provide 18% of the Total Fleet**

MQ-1 Predator Remotely Piloted Aircraft - The MQ-1 Predator is a medium-altitude, long endurance Remotely Piloted Aircraft (RPA) system. The primary MQ-1 mission is to act as an Intelligence, Surveillance and Reconnaissance (ISR) asset, employing sensors to provide real-time data to commanders and intelligence specialists at all levels. The MQ-1 conducts interdiction and armed reconnaissance with a system integrating Electro-Optical / Infrared (EO/IR) laser designator and laser illuminator into a single sensor package. The aircraft can employ two laser-guided AGM-114 Hellfire missiles. Additionally, the MQ-1 is a theater asset for reconnaissance, surveillance and target acquisition organic to the Joint Force Air Component Commander's (JFACC) forces. The MQ-1 Predator is flown by ND, AZ, TX, OH and CA Air National Guard (ANG) units. The NV ANG supports active duty MQ-1 operational and training sorties.



MQ-9 Reaper Remotely Piloted Aircraft - The MQ-9 Reaper is a medium-to-high altitude, long-endurance RPA system. Because of its robust weapons payload capacity and long endurance on-station times, the primary MQ-9 mission is hunter-killer operations against emerging targets. The secondary MQ-9 mission is to act as an ISR asset, employing sensors to provide real-time data to commanders and intelligence specialists at all levels. The MQ-9 Reaper is designed to prosecute time-sensitive targets using its capabilities of precision targeting and long endurance to find, fix and destroy or disable those targets. The MQ-9 Reaper is flown by AR, IA, MI, NY, PA and TN Air National Guard units. The NV ANG supports active duty MQ-9 operational and training sorties.



MQ-1 & MQ-9

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Critical Capabilities List

- Integrated Communications Suite
- High Speed Exploitation Support Data
- Rapid, Robust Data Transfer and Sharing
- Virtual Collaboration Mission Execution Framework

Essential Capabilities List

- Sense and Avoid for Operations in the National Airspace System and International Civil Aviation Organization Airspace
- Rapid Reaction Package
- Imminent Threat Warning and Targeting
- High Definition Multi-Spectral Targeting System with Directed Energy Counter-Countermeasures, Laser Spot Search and Track, Moving Target Indicators, and Improved Video Tracks
- Weapons Simulate Mode

Desired Capabilities List

- Improved Electronic Protection for Global Positioning Systems Operations in a Denied, Deceived or Degraded Environment
- Onboard Link Equipment
- Synthetic Aperture Radar Image Export
- Airborne C-Band Repeater
- Multi-Spectral Targeting System Image Geo-Registration and Overlay

MQ-1/MQ-9 INTEGRATED COMMUNICATIONS SUITE

1. Background. MQ-1/MQ-9 aircraft lack sufficient means to establish and maintain communications with Command and Control (C2) and tactical agencies in the Area of Responsibility (AOR). Line-of-sight (LOS) voice communication is limited to a single ARC-210 radio and the connectivity of the Ground Control Station (GCS) enabling use of off-board, beyond line-of-sight (BLOS) voice capabilities such as Defense Switching Network (DSN), Voice Over Internet Protocol (VOIP), and Radio Over Internet Protocol (ROIP). These systems are stand-alone and often require simultaneous operations during mission execution. MQ-1/MQ-9 operators require an integrated, expandable, multi-level secure communications capability for the current and future fight, which will involve both domestic and overseas operations with a variety of partners at multiple classification levels. The capability must include provisions for clear, consistent, reliable and timely communications across all enclaves. It should consist of a single interface and a single-point reception and transmission capability, integrating inter- and intra-GCS communication, intelligence personnel, aircraft ARC-210, and GCS DSN and IP-based voice systems.

2. Source of Need. Capability Production Document (CPD) for MQ-9 HUNTER-KILLER paragraph 14c(2)(c), 8 Aug 2006; Air Force Central Command (AFCENT) Urgent Operational Need (UON) Combat Air Forces (CAF) 301-12, 17 Feb 2012; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

118 AW	Nashville IAP, TN	163 RW	March ARB, CA	178 FW	Springfield MAP, OH
119 WG	Hector IAP, ND	174 ATW	Syracuse IAP, NY	214 RS	Davis-Monthan AFB, AZ
147 RW	Ellington IAP, TX				

4. Program Details. **PEC: 53219F**

Remaining Quantity Required	Unit Cost	Program Cost
1 GCS Intercom NRE (3600)	\$2,100,000	\$2,100,000
23 GCS Intercom Mod Suites (3080)	\$600,000	\$13,800,000
Total		\$15,900,000

MQ-1/MQ-9 HIGH SPEED EXPLOITATION SUPPORT DATA

1. Background. Exploitation Support Data (ESD) is the telemetry stream from the Remotely Piloted Aircraft (RPA) that informs essential situational awareness and warfighting displays in both the Squadron Operations Center (SOC) and Ground Control Station (GCS). Current ESD is parceled externally at 0.3 Hz, or once every three seconds. This results in aircraft positional updates that are relatively slow and choppy in tactical displays. High Speed ESD (HS ESD) involves simple hardware modifications that increase this sample rate to 20 Hz, creating a 600 percent improvement in aircraft and Sensor Point of Interest (SPI) refresh rate. This further enables automation of several essential warfighting tools including Hellfire Missile Impact Tool and Skynet. It also supports off-board threat warning systems crucial to increasing survivability in contested environments, as well as geo-registration of the Full Motion Video (FMV) in Processing, Exploitation and Dissemination (PED) software such as Catalina 2d3. Higher positional refresh rates mean higher fidelity navigational data, a key part of operating in the National Airspace System (NAS) for Domestic Operations (DOMOPS). The 556th Test and Evaluation Squadron (TES), along with the New York Air National Guard (ANG) at Syracuse, have been successfully operating with HS ESD for the last 3 years.

2. Source of Need. 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

118 AW	Nashville IAP, TN	163 RW	March ARB, CA	178 FW	Springfield MAP, OH
119 WG	Hector IAP, ND	174 ATW	Syracuse IAP, NY	214 RS	Davis-Monthan AFB, AZ
147 RW	Ellington IAP, TX				

4. Program Details. **PEC: 53219F**

Remaining Quantity Required	Unit Cost	Program Cost
18 High Speed ESD Suites (3080)	\$117,000	\$2,106,000
Total		\$2,106,000

MQ-1/MQ-9 RAPID, ROBUST DATA TRANSFER AND SHARING

1. Background. Remotely Piloted Aircraft (RPA) crews require a universally accessible, large bandwidth, multi-domain server to provide rapid access to mission-essential information. RPA squadrons have amassed a significant amount of locally stored intelligence data, after action reports, and training products during the past 12+ years and 2,000,000 hours of continuous combat operations. Squadron archives are overflowing with information that remains largely unshared because most items, especially Full Motion Video (FMV) footage, are typically too large to share across the community via conventional means. The Air National Guard (ANG) MQ-1/MQ-9 RPAs need an effective electronic medium for the storage, access and dissemination of information across local networks.

2. Source of Need. Capability Development Document (CDD) 6.1.8 and 8.0; TRI-MAJCOM SOC Requirement Working Group; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

118 AW	Nashville IAP, TN	163 RW	March ARB, CA	178 FW	Springfield MAP, OH
119 WG	Hector IAP, ND	174 ATW	Syracuse IAP, NY	214 RS	Davis-Monthan AFB, AZ
147 RW	Ellington IAP, TX				

4. Program Details. **PEC: 53219F**

Remaining Quantity Required	Unit Cost	Program Cost
7 Data Transfer Systems (3080)	\$200,000	\$1,400,000
Total		\$1,400,000

MQ-1/MQ-9 VIRTUAL COLLABORATION MISSION EXECUTION FRAMEWORK

1. Background. The ability for aircrew and intelligence personnel to gain and maintain situational awareness in today's rapidly evolving battlespace hinges on a robust, redundant and flexible digital network architecture. The MQ-1/MQ-9 enterprise currently lacks a multi-level, collaborative, fused framework that effectively supports the warfighter. The fusion, synchronization and simultaneous access of real-time voice, video and data are often the difference between mission success and failure. The inability of our current tactical display framework to present, share, transfer and filter mission-critical data creates a potential and often realized weakness for today's most requested combat asset. The framework must be a real-time, dynamic, collaborative data fusion architecture, combining SIRIS, Zeus, Cursor-on-Target, Google Earth™, and other mission execution tools. It must allow full access to all information by aircrew, exploiters, supported units and potential Higher Headquarters (HHQ) decision makers. This system should be accessible via the Global Information Grid (GIG) from austere locations with limited bandwidth or connectivity. This system must be Unmanned Aerial System Command and Control Initiative (UCI) compliant and provide development potential to meet emerging needs.

2. Source of Need. US Army Special Operations Command (ARSOC) Capability Development Document (CDD); ARC 2008-2010; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

118 AW	Nashville IAP, TN	163 RW	March ARB, CA	178 FW	Springfield IAP, OH
119 WG	Hector IAP, ND	174 ATW	Syracuse IAP, NY	214 RS	Davis-Monthan AFB, AZ
147 RW	Ellington IAP, TX				

4. Program Details. **PEC: 53219F**

Remaining Quantity Required	Unit Cost	Program Cost
1 Virtual Collaborative Execution Tool (3080)	\$2,400,000	\$2,400,000
Total		\$2,400,000



Simulation, Distributed Mission Operations & Range Instrumentation



- **Advanced Simulator Development**
- **Operational Training Environments**

Innovation and agile technology integration are hallmarks of the Air National Guard's (ANG) program of squadron-level simulators and trainers to meet specific warfighter requirements. The devices span the spectrum from very high fidelity to a family of trainers and micro simulators. As part of the ANG's "fly before you buy" policy, both flight and mission crew simulator proofs of concept are constructed in partnership with government technology development centers and industry. Production decisions are made only after thorough operational testing. This approach ensures that deployment decisions are made only after evaluation by ANG subject matter experts, resulting in reduced risk, cost and schedule.



Current major programs include the KC-135 Boom Operator Simulation System (BOSS) in cooperation with the Army's Program Executive Office, Simulation, Training and Instrumentation; the ANG Advanced Joint Terminal Air Controllers (JTAC) Training System (AAJTS); C-130 Multi-Mission Crew Trainer (MMCT); and the next generation F-16C Full Mission

Trainer (FMT). Aircrew Procedures Trainers (APT) include the HH-60, RC-26 and MQ-9.

Live-Virtual-Constructive architectures supported by Distributed Mission Operations (DMO) remains a baseline component of all ANG training systems. The Distributed Training Operations Center (DTOC), 132 FW Detachment 1, provides the operational environment for DMO by linking a wide array of flight and mission crew simulators at ANG, Air Force Reserve Command (AFRC), active duty Air Force and other Service operational simulator sites.



The ANG has invested significant resources to continuously modernize equipment and infrastructure to support all current weapons systems in the Department of Defense (DOD) inventory. As new weapons systems are delivered, such as the F-22, F-35, the Joint Direct Attack Munitions (JDAM), improved Precision Guided Munitions (PGM), airborne lasers, Remotely Piloted Aircraft (RPA) and Information Warfare (IW), range modernization must keep pace. The constant evolution of these technologies requires new training space, equipment, infrastructure and instrumentation to evolve and remain relevant.

Simulation, Distributed Mission Operations & Range Instrumentation

2013 Weapons and Tactics Conference *

Critical Capabilities List

Simulation and Distributed Mission Operations:

- Air National Guard Advanced Joint Terminal Attack Controller Training System
- Battle Control Center Multi-Level Security Distributed Mission Operations Mission Training Center
- Control and Reporting Center Deployable Mission Simulation Training Support Systems
- EC-130J Simulator Training Devices
- MQ-1/MQ-9 Distributed Mission Operations Capable Simulator Connectivity with the Distributed Training Operations Center
- Air and Space Operations Center Joint Range Extension with Joint Distributed Operational Training System
- Guardian Angel Full Spectrum Capabilities
- Distributed Common Ground System with Fully Integrated Suite of Distributed Training Operations Center Equipment, Software and Connectivity

Range Instrumentation:

- High-Fidelity Surrogate Targets
- Mobile High-Fidelity Threat Simulators
- Communications and Tactical Data Link Architecture Support
- Joint Advanced Weapon Scoring System
- “Rangeless” Air Combat Maneuvering Instrumentation

Essential Capabilities List

Simulation and Distributed Mission Operations:

- Combat Air Force: Air Reserve Component Network
- Joint Terminal Attack Controller Simulation
- Distributed Mission Operations and Training Capability for HC/MC-130
- Distributed Mission Operations-Capable HH-60H Aircraft Simulator
- Special Tactics Training / Simulation Alternate Insertion and Extraction Tower

Range Instrumentation:

- Infrared Man-Portable Air Defense Systems Threat Simulators
- Global Positioning System Ground Target and Safety Tracking
- Joint Terminal Attack Controller Training Simulation

Desired Capabilities List

Simulation and Distributed Mission Operations:

- KC-135R Advanced Squadron Level Simulator Systems
- RC-26 Simulator

Range Instrumentation:

- Global Positional System Jamming Capability
- Remotely Piloted Aircraft Operations and Support
- Surrogate Remotely Piloted Aircraft Support

* Note: Simulation and Distributed Mission Operations did not have a separate breakout session at the ARC 2013 WEPTAC. The ANG Range Council met prior to WEPTAC to determine capability requirements. Capabilities are extracted from the referenced weapon system Tab and consolidated in this Tab for clarity.

SIMULATION AIR NATIONAL GUARD ADVANCED JOINT TERMINAL ATTACK CONTROLLER TRAINING SYSTEM

1. Background. Joint Terminal Air Controllers (JTAC), at both Air Support Operations Squadrons (ASOS) and Special Tactics Squadrons (STS), operate simulators with very limited training capability. The Air National Guard (ANG) JTAC Training System (AAJTS) was developed in partnership with industry to rapidly field a robust, high-fidelity, immersive simulator. Training requirements are rapidly approaching the point where the lack of live-fly air assets will reduce the JTAC's ability to maintain Combat Mission Ready (CMR) training requirements. AAJTS provides a simulator at each squadron with both stand-alone and Distributed Mission Operations (DMO) capabilities. This simulation system consists of a multi-channel visual display system including image generators, screens and projectors; a robust Instructor Operating Station (IOS) with scenario generation capability; high resolution visual models and terrain databases; and associated hardware and software. The IOS, including a role player station, includes functionality to access both virtual and constructive forces to facilitate the configuration of environment generation capabilities required for stand-alone event control. Follow-on Preplanned Product Improvements (P3I) will add additional capabilities including a two-position Tactical Operations Center (TOC), additional visual databases and emulators. Due to delays in fielding the Air Force Program of Record, the ANG, with support from other commands, initiated an interim program to equip ANG ASOS and STS with the AAJTS and funded 10 AAJTS out of a total requirement for 17 for fielding in FY14. Funding for the remaining quantity required is listed below.

2. Source of Need. Air Force Instruction (AFI) 13-112v1 Joint Terminal Attack Controller Training Program; AFI 13-114v1 Air Support Operations Center Training Program; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

111 ASOS Camp Murray, WA	146 ASOS Will Rogers WAP, OK	227 ASOS Atlantic City IAP, NJ
113 ASOS Terre Haute IAP, IN	147 ASOS Ellington IAP, TX	238 ASOS Meridian RAP, MS
116 ASOS Camp Murray, WA	148 ASOS Ft Indiantown Gap, PA	274 ASOS Syracuse IAP, NY
118 ASOS New London, NC	165 ASOS Garden City, GA	284 ASOS Smoky Hill, KS
122 ASOS Camp Beauregard, LA	168 ASOS Peoria IAP, IL	902 MSG/TD Randolph AFB TX
124 ASOS Boise AP, ID	169 ASOS Peoria IAP, IL	

4. Program Details. PEC: 52671

Remaining Quantity Required	Unit Cost	Program Cost
7 AAJTS (3080)	\$2,258,000	\$15,806,000
1 Non Recurring Integration (3080)	\$650,000	\$650,000
Total		\$16,456,000

**SIMULATION BATTLE CONTROL CENTER MULTI-LEVEL SECURITY
DISTRIBUTED MISSION OPERATIONS MISSION TRAINING CENTER**

1. Background. Battle Control Centers (BCC) operating in the North American Aerospace Defense Command (NORAD) area of operations require the capability to train and integrate into the Live-Virtual-Constructive (LVC) environment to achieve and maintain combat mission readiness with fourth and fifth generation fighters. BCCs require an initial proof of concept to connect and train to current Distributed Mission Operations (DMO) at appropriate classification levels. Currently, there is no way for BCCs to fully train with all fourth and fifth generation fighter capabilities. In the long term, it is mandatory for BCCs to train at current facilities while able to fully manage all fighter and future platforms. This long term vision of “multi-level security” DMO will allow mission planning, briefing, mission execution and debriefing. In the interim, efforts are aimed at providing relevant training to include installing appropriate DMO connections and the ability to brief, video teleconference, provide command and control, and debrief pilots via Air Reserve Component Network (ARCNet) and the Distributed Training Operations Center (DTCO). This initial proof of concept of DMO is a critical step for BCCs to explore the full potential of LVC Mission Training Centers and the future of Total Force Integration.

2. Source of Need. Department of Defense Directive (DODD) 1322.18 Military Training; Air Force Instruction (AFI) 36-2251 Management of Air Force Training Systems; Contingency Plan (CONPLAN) 3310-12 Aerospace Defense and Maritime Warning; 2011-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

169 ACWS	Wheeler AAF, HI	176 ADS	Joint Base Elmendorf, AK
EADS	Rome, NY	WADS	Joint Base Lewis-McChord, WA

4. Program Details. PEC: 51311F

Remaining Quantity Required	Unit Cost	Program Cost
3 BC-3/T (EADS, WADS, HI) (3080)	\$425,000	\$1,275,000
6 Work Stations (EADS, WADS, HI) (3840)	\$5,000	\$30,000
3 ARCNet Gateways (EADS, WADS, HI) (3840)	\$15,000	\$45,000
4 T1 Lines (EADS, WADS, HI, AK) (3840)	\$4,200	\$16,800
3 Plexsys ASCOT (EADS, WADS, HI) (3080)	\$300,000	\$900,000
3 VTC (EADS, WADS, HI) (3840)	\$10,000	\$30,000
6 Desktop PCs (EADS, WADS, HI) (3840)	\$6,000	\$36,000
Total		\$2,296,836

**SIMULATION CONTROL AND REPORTING CENTER DEPLOYABLE
MISSION SIMULATION TRAINING SUPPORT SYSTEMS**

1. Background. The Control and Reporting Center (CRC) integrates a comprehensive air picture via multiple data links from air-, sea-, and land-based sensors, as well as from its embedded surveillance and control radars. It performs decentralized Command and Control (C2) of joint operations by conducting threat warning, battle management, theater missile defense, weapons control, combat identification, and strategic communications. Simulation and well-scripted training events are a critical part of the training required to meet these mission crew capabilities. The organic CRC simulation system is not able to simulate Higher Headquarters (HHQ) or robust training scenarios. A man-portable, fully-integrated, comprehensive CRC Simulation Suite that is high-fidelity and capable of providing training in Battle Management, Weapons Control, Wide Area Surveillance, Combat Identification (CID), Airspace Management, and Tactical Data Link (TDL) is critical to CRC mission crew training. The system must be scalable, Distributed Mission Operation (DMO)-capable and able to be networked with other like-systems. It must also be flexible enough to run Tactical Display Framework (TDF) and accept inputs from the Non-Organic Radar Access (NORA) system of record. It must include an integrated communications capability that is compatible with the TYQ-23 equipment.

2. Source of Need. Air Combat Command Instruction (ACCI) 13-1 Mission Training Program (MTP); 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

103 ACS	Orange, CT	123 ACS	Blue Ash, OH	141 ACS	Punta Borinquen, PR
109 ACS	Salt Lake City IAP, UT	128 ACS	Volk Fld, WI	255 ACS	Gulfport CRTC, MS
116 ACS	Warrenton, OR	133 TS	Ft Dodge, IA		
117 ACS	Savannah IAP, GA	134 ACS	McConnell AFB, KS		

4. Program Details. PEC: 52672F

Remaining Quantity Required	Unit Cost	Program Cost
10 Simulation Suites (3080)	\$1,065,000	\$10,650,000
Total		\$10,650,000

SIMULATION EC-130J SIMULATOR TRAINING DEVICES

1. Background. The EC-130J performs missions for Air Force Special Operations Command (AFSOC) providing specialized Military Information Support Operations and clandestine infiltration, exfiltration and resupply of Special Operations Forces. Future budgets are predicted to dramatically reduce flying hours available for aircrew refresher and proficiency / continuation training. AFSOC's strategic objective to meet increasing mission requirements requires the implementation of a distributed system of strategically placed aircraft simulators. The EC-130J Weapons Systems Trainer (WST) flight deck simulator meets AFSOC/A3 objectives of co-located simulators with operational units. It permits refresher training for the Combat Systems Officer (CSO) without incurring travel costs of 16 crews per year. In addition, a significant number of pilot, CSO and loadmaster currency events can be accomplished in the simulator versus the aircraft. Estimated flying hour requirements are reduced from 35 to 12 hours per week resulting in a \$5,600,000 annual reduction in operational costs. Currently, the C-130J Flight Simulator does not meet EC-130J mission profiles allowing only for emergency procedures training for pilots and loadmasters. Since the C-130J Flight Simulator is not configured for a CSO Flight Station, CSOs have a simulator waiver. The E/MC-130J Multi-Function Training Aid (MFTA) will support cockpit familiarization, procedures training, ground and inflight checklists, and emergency procedures training. This device is crucial as a training device for check ride requirements and aircrew proficiency. The Ku-Band Spread Spectrum (KuSS) System Trainer will integrate the Partial Task Trainer (PTT), and greatly enhance its abilities to reduce operational flying requirements. In addition, the KuSS trainer will significantly reduce aircraft maintenance issues associated with the hatch-mounted antenna. Currently, training is accomplished on an "as available" basis with no more than two of seven aircraft configured for KuSS training.

2. Source of Need. Program Objective Memorandum (POM) issue #16-361; US Special Operations Command Commander (USSOCOM/CDR) FY12-15 Commander's Training Guidance, 17Aug 2011; AFSOC Vision, Mission and Priorities Statement, Aug 2011; 2013 ARC WEPTAC Critical Capability.

3. Unit Impacted.

193 SOW Harrisburg IAP, PA

4. Program Details. **PEC: 41132F**

Remaining Quantity Required	Unit Cost	Program Cost
1 EC-130J WST (3010)	\$30,261,000	\$30,261,000
1 EC-130J MFTA (3010)	\$2,500,000	\$2,500,000
1 KuSS Training System (3010)	\$400,000	\$400,000
Total		\$33,161,000

**SIMULATION MQ-1/MQ-9 DISTRIBUTED MISSION OPERATIONS CAPABLE
SIMULATOR CONNECTIVITY TO THE DISTRIBUTED TRAINING OPERATIONS
CENTER**

1. Background. Simulators often provide the only Continuation Training (CT) opportunities for Remotely Piloted Aircraft (RPA) aircrew, though most units have only one Predator Mission Aircrew Training System (PMATS) on site. This limitation does not allow aircrew to train to evolving multi-ship Tactics, Techniques and Procedures (TTPs). Multi-ship TTPs are a high-emphasis item because they address the spectrum of RPA's weapons employment vulnerabilities. Multi-ship tactics dramatically increase probability of kill against all target sets, and mitigate collateral damage by providing extra sensors to boost commanders' situational awareness. To bridge the training gap, the RPA community needs the ability to participate in the Live-Virtual-Constructive (LVC) distributed training structure afforded by Distributed Mission Operations (DMO) and the Distributed Training Operations Center (DTOC). Training with the DTOC would allow for practice and development of multi-ship tactics for both current and future missions. In addition, the DTOC architecture will allow all crew members, including intelligence personnel, to train in the scenario, an ability that is non-existent in fielded RPA simulators. Finally, participation in DMO would allow other combat assets to train with RPAs thereby enhancing interoperability and lethality across the Combat Air Forces (CAF). Gateways are installed by the DTOC to connect the unit simulator to the Air Reserve Component Network (ARCNet).

2. Source of Need. DTOC User Requests; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

118 AW Nashville IAP, TN 163 RW March ARB, CA 178 FW Springfield MAP, OH
119 WG Hector IAP, ND 174 ATW Syracuse IAP, NY 214 RS Davis-Monthan AFB, AZ
147 RW Ellington IAP, TX

4. Program Details. **PEC: 53219F**

Remaining Quantity Required	Unit Cost	Program Cost
1 PMATS DMO Integration (3840)	\$145,000	\$145,000
1 ARCNet Gateway v1 (3080)	\$35,000	\$35,000
7 ARCNet Gateways v2 (3080)	\$27,750	\$194,250
Total		\$374,250

SIMULATION AIR AND SPACE OPERATIONS CENTER JONT RANGE EXTENSION WITH JOINT DISTRIBUTED OPERATIONAL TRAINING SYSTEM

1. Background. The Theater Battle Management Core System (TBMCS) Part Task Trainer (PTT) does not support link degradation and manipulation training. Consequently, Air Reserve Component (ARC) Air and Space Operations Center (AOC) units cannot conduct in-garrison training on a significant number of Air Combat Command (ACC)-mandated Combat Operations Division (COD) Joint Interface Control Cell (JICC) Task Training List (TTL) items. Air National Guard (ANG) units cannot consistently accomplish training using “live” data and thus require a training simulation capability. Each ARC AOC unit requires Joint Range Extension (JRE) and Joint Distributed Operational Training System (JDOTS). JRE allows JICC to build, initiate, manage, manipulate, track and link data in the AOC COD. JDOTS is a training suite necessary to create simulated link and track data. Non-ARC AOCs do not utilize JDOTS because they are able to effectively accomplish training using “live” data links. It is critical that ARC AOC units obtain JRE with JDOTS software in order to effectively keep their JICC personnel trained on essential equipment. In order to ensure seamless training capability, units also require installation, configuration, user training and 24/7 help desk support.

2. Source of Need. 2013 ARC WEPTAC Critical Capability.

3. Units Impacted:

101 AOG	Tyndall AFB, FL	112 AOS	State College, PA	183 AOG	Springfield, IL
102 AOG	Otis ANGB, MA	152 AOG	Syracuse IAP, NY	701 COS	March AFB, CA
109 AOG	JBPHH, HI	157 AOG	Jefferson Barracks, MO	710 COS	Langley AFB, VA
217 AOG	Battle Creek IAP, MI				

4. Program Details. **PEC: 57411F**

Remaining Quantity Required	Unit Cost	Program Cost
10 JDOTS (3840)	\$36,000	\$360,000
10 Help Desk / Support * (3840)	\$11,600	\$116,000
Total		\$476,000

* Recurring annual expense.

SIMULATION GUARDIAN ANGEL FULL SPECTRUM CAPABILITIES

1. Background. Guardian Angel (GA) missions demand continual training 365 days a year. With an evolving battlefield and continually changing Tactics, Techniques and Procedures (TTP), GAs are finding it increasingly difficult to meet the tactical training requirements to safely utilize battlefield assets. With limited available time and no co-located facilities, GAs are forced to accomplish hazardous live tactical training, often without ground-based simulations, causing great risk to the individual and equipment. The GA's goal is to develop a core training suite to enhance training capability, improve overall safety and reduce unneeded travel and costs. The suite must encompass all core tactical aspects of the GA mission set to include military parachute operations and water operations proficiency. These two areas have proven to be the most dangerous and perishable skillsets in the GA career field. The suite will allow GAs to safely train in a controlled environment versus performing potentially life threatening procedures with no simulated training. The GA's vision is to provide instructors the ability to properly train members in a safe and controlled environment, which will greatly reduce the possibility of injuries. With the addition of the Full Spectrum Suite, GAs will have the ability to focus core tactical training on specific individual skillsets, resulting in a more capable weapons system and overall total force.

2. Source of Need. Full Spectrum Capabilities Suite identified by the GA Senior Leaders Working Group and supported by the Weapon System Council; Current Wing Commanders identify this as a critical need to support the mission by preventing training deficiencies and wasted resources on core training requirements; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

106 RQW Gabreski AP, NY 129 RQW Moffett Fld, CA 176 WG JB Elmendorf, AK

4. Program Details. PEC: 53119F

Remaining Quantity Required	Unit Cost	Program Cost
3 Water Operation Trainers (3080)	\$1,200,000	\$3,600,000
3 Military Parachute Trainers (3080)	\$3,800,000	\$11,400,000
Total		\$15,000,000

SIMULATION DISTRIBUTED COMMON GROUND SYSTEM NETWORKED MISSION SIMULATOR WITH FULLY INTEGRATED SUITE OF DISTRIBUTED TRAINING OPERATIONS CENTER EQUIPMENT, SOFTWARE AND CONNECTIVITY

1 Background. Air National Guard (ANG) and Air Force (AF) Distributed Ground Sites (DGS), designated the AN/GSQ-272 SENTINEL Distributed Common Ground System (DCGS) weapon system, lack an integrated mission trainer able to provide analysts a predictable, reliable and tailorable Desired Learning Objective (DLO)-driven networked simulation. The solution must enable crews to accomplish training and maintain Mission Ready status as well as accomplish proficiency training in the absence of live theater Intelligence, Surveillance and Reconnaissance (ISR) missions. Currently, some units have recorded past Full Motion Video (FMV) missions for limited home station training. While AF ISR Agency published a DCGS Weapons System Trainer (WST) Flight Plan in Sep 2013, the Flight Plan does not integrate DCGS into live and virtual Large Force Employment (LFE) exercises until approximately Jan 2017. The ANG Distributed Training and Operations Center (DTOC) is an existing multi-domain network providing coordinated virtual LFE planning and execution among geographically separated joint Service participants. Expansion of DTOC into DCGS sites integrates the DCGS community into training for the future Contested and Degraded Operations (CDO) battlespace without requiring movement of personnel or aircraft. The DTOC's ability to record and archive missions enhances training opportunities throughout the entire DCGS community. It also enhances LFE debriefings and playback that serve as ready off-the-shelf training for DCGS crews. The WST Flight Plan is a multi-year endeavor adding DTOC to ANG DCGS sites to provide a near-term solution to maintain proficiency as available live ISR sorties decrease, address a shortfall for LFE-style training and integration, and provide a ready-made complement to WST.

2. Source of Need. Air Force ISR 2023: Delivering Decision Advantage; AF ISR Agency Strategic Plan 2013-2023, Dec 2013; AF ISR Agency DCGS Weapons System Trainer Flight Plan, Sep 2013; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

102 IW	Otis ANGB, MA	152 IS	Reno-Tahoe IAP, NV	192 IS	JB Langley-Eustis, VA
117 IS	Birmingham IAP, AL	169 IS	Salt Lake City IAP, UT	201 IS	JB PH-Hickam, HI
123 IS	Little Rock AFB, AR	181 IW	Terre Haute IAP, IN	234 IS	Beale AFB, CA
139 IS	Ft. Gordon, GA	184 IW	McConnell AFB, KS		

4. Program Details. PEC: 55208F

Remaining Quantity Required	Unit Cost	Program Cost
11 ARCNet Gateway Racks (3080)	\$20,250	\$222,750
11 Site Installs / Training (3840)	\$1,500	\$16,500
11 Interface Hardware Suites (3080)	\$45,550	\$501,050
Total		\$740,300

RANGE INSTRUMENTATION HIGH-FIDELITY SURROGATE TARGETS

1. Background. The Air National Guard (ANG) has a shortfall in realistic target identification and acquisition training. To meet Ready Aircrew Program (RAP) tasking requirements, the ANG's primary training ranges require realistic target surrogates to replicate real-world complex target sets. These ranges have the airspace and real estate infrastructure necessary to fully utilize surrogate assets. High-value complex target arrays mimicking unique vehicles, tanks, mobile communication equipment and other targets require the physical characteristics to include visual footprint, density and heat signatures to simulate real systems. High-fidelity surrogate target arrays, used in conjunction with complex mission scenarios, advanced aviation targeting pods and electronic sensors, provide a cost effective solution to providing visual target density, as well as targeting pod identification and acquisition associated with physical and heat signatures of real systems. Acquisition of these systems will provide local access for ANG units to accomplish realistic training from home station and during deployments to the Combat Readiness Training Centers (CRTC). This accurate re-creation of target systems will allow aviators to hone their skills and add increasingly difficult training scenarios for a constantly changing environment. These high-fidelity target arrays are used at ANG training ranges to support primary users (both air and ground forces) during all phases of training and exercises to include air-to-ground gunnery, laser operations and Close Air Support (CAS) training.

2. Source of Need. RAP Tasking Messages; ANG Training Ranges and Airspace Roadmap, FY10; ANG Mission Directive 10.01; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

Adirondack Range, NY	Airburst Range, CO	Atterbury Range, IN
Bollen Range, PA	Cannon Range, MO	Grayling Range, MI
Hardwood Range, WI	Jefferson Range, IN	McMullen Range, TX
Razorback Range, AR	Shelby Range, MS	Smoky Hill Range, KS
Townsend Range, GA	Warren Grove Range, NJ	

4. Program Details. **PEC: 52634**

Remaining Quantity Required	Unit Cost	Program Cost
79 High-Fidelity Targets (3080)	\$135,000	\$10,665,000
70 Inflatable Infrared Targets (3080)	\$36,000	\$2,520,000
Total		\$13,185,000

RANGE INSTRUMENTATION MOBILE HIGH-FIDELITY THREAT SIMULATORS

1. Background. The Air National Guard (ANG) has a shortfall in realistic Electronic Warfare (EW) threat training. To meet Ready Aircrew Program (RAP) tasking requirements, the ANG's Combat Readiness Training Centers (CRTC) ranges require realistic simulators to replicate an Integrated Air Defense System (IADS) environment. These ranges have the airspace and real estate infrastructure necessary to fully utilize EW assets. These EW packages will consist of three major components: Mobile Control Threat Units (CTU) to provide regional support in moving current Joint Threat Emitters (JTE); Information Friend and Foe (IFF) Tracking Radar Systems to provide tracking for JTE; and upgraded JTE emitters from the recently awarded contract by Air Combat Command. Acquisition of these systems will provide regional access to ANG units to accomplish realistic IADS training from home station and during deployments to the CRTCs through Distributed Mission Operations (DMO). This accurate threat signal generation will allow aviators to hone their initial EW skills and add increasingly difficult threat scenarios to simulate a constantly changing environment. Threat simulators will be connected to Air Combat Maneuver Instrumentation (ACMI) systems and data link systems located at the CRTCs. These systems will be used in a deployable configuration at ranges to facilitate training with a wide array of ANG aircraft (A-10, C-130, C-17, F-15 and F-16).

2. Source of Need. RAP Tasking messages; ANG Training Ranges and Airspace Roadmap, FY10; ANG Mission Directive 10.01; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

Adirondack Range, NY	Airburst Range, CO	Atterbury Range, IN
Bollen Range, PA	Cannon Range, MO	Grayling Range, MI
Hardwood Range, WI	Jefferson Range, IN	McMullen Range, TX
Razorback Range, AR	Shelby Range, MS	Smoky Hill Range, KS
Townsend Range, GA	Warren Grove Range, NJ	

4. Program Details. **PEC: 27429**

Remaining Quantity Required	Unit Cost	Program Cost
4 EW Emitters (3080)	\$8,500,000	\$34,000,000
2 Mobile CTUs (3080)	\$2,300,000	\$4,600,000
2 Ranges Mobile High-Fidelity Threat Simulators (3080)	\$1,500,000	\$3,000,000
Total		\$41,600,000

RANGE INSTRUMENTATION COMMUNICATIONS AND TACTICAL DATA LINK ARCHITECTURE SUPPORT

1. Background. The Air National Guard (ANG) has a shortfall in realistic communications and data link immersive environments at the critical nodes within the range training infrastructure. To meet Ready Aircrew Program (RAP) tasking requirements, the ANG's Combat Readiness Training Centers (CRTC) and Primary Training Ranges (PTR) require realistic, standardized, full spectrum, and immersive electronic training environments that include appropriate levels of communications and data link systems. These ranges have the airspace and real estate infrastructure necessary to support every phase of ANG combat training from employment through After Action Review (AAR). The items referenced below are required to replicate the operating environment, record / score employment and relay the information in a useable format back to the warfighter. Acquisition of these systems will provide ANG units the ability to accomplish realistic full-spectrum training from home station. Battlefield Operational Support, Global Positioning System (GPS) tracking, Joint Range Extensions (to include Link-16 radios and range voice radios) configured together provide an accurate re-creation of the electronic wartime operating environment, and recording of aircrew actions and performance. This will allow aviators to hone their cockpit resource management skills and push their personal envelopes of task saturation prior to experiencing them on the battlefield. The systems will be located at the CRTCs and PTRs with distributed AAR to the squadron level.

2. Source of Need. RAP Tasking Messages; ANG Training Ranges and Airspace Roadmap, FY10; Training Range Infrastructure Connectivity Contingency Operations Plan FY09; ANG Management Directive (MD) 10.01; 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

Adirondack Range, NY	Airburst Range, CO	Atterbury Range, IN
Bollen Range, PA	Cannon Range, MO	Grayling Range, MI
Hardwood Range, WI	Jefferson Range, IN	McMullen Range, TX
Razorback Range, AR	Shelby Range, MS	Smoky Hill Range, KS
Townsend Range, GA	Warren Grove Range, NJ	Alpena CRTC, MI
Gulfport CRTC, MS	Savannah CRTC, GA	Volk Field CRTC, WI

4. Program Details. PEC: 52634

Remaining Quantity Required	Unit Cost	Program Cost
13 Battlefield Operational Support Systems (3840)	\$297,000	\$3,861,000
13 GPS Tracking Systems (3080)	\$1,100,000	\$14,300,000
11 Joint Range Extension Systems (3840)	\$132,000	\$1,452,000
12 LVT-2 Link-16 Radios (3080)	\$270,000	\$3,240,000
12 Range Radio Systems (3080)	\$86,000	\$1,032,000
Total		\$23,885,000

RANGE INSTRUMENTATION JOINT ADVANCED WEAPON SCORING SYSTEM

1. Background. Using off-the-shelf technology, Joint Advanced Weapon Scoring System (JAWSS) upgrades the Tactical Ordnance Scoring System (TOSS) with a joint Air Force / Navy system by providing night and laser scoring capabilities. These systems provide greater accuracy, night and day scoring capabilities, laser scoring, strafe scoring, virtual reality Imaging Weapons Training System (IWTS), No-Drop Weapon Scoring (NDWS), and automated remote feedback for home station debrief. JAWSS consists of five systems: Weapon Impact Scoring System (WISS), Laser Evaluation System-Mobile (LES-M), Large Scale Target Sensor System (LSTSS), Remote Strafe Scoring System (RSSS), and the Imaging Weapons Training System (IWTS). Upgrading systems currently in use at 14 Air Gunnery Ranges provides pilots immediate feedback during training events at local ANG ranges to meet training and Ready Aircrew Program (RAP) requirements.

2. Source of Need. Range Working Group; Combat Training Range Group; Ready Aircrew Program; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

Adirondack Range, NY	Airburst Range, CO	Atterbury Range, IN
Bollen Range, PA	Cannon Range, MO	Grayling Range, MI
Hardwood Range, WI	Jefferson Range, IN	McMullen Range, TX
Razorback Range, AR	Shelby Range, MS	Smoky Hill Range, KS
Townsend Range, GA	Warren Grove Range, NJ	

4. Program Details. PEC: 52634

Remaining Quantity Required	Unit Cost	Program Cost
14 JAWSS Spares / Upgrades (3840)	\$200,000	\$2,800,000
14 Replacement WISS Systems (3840)	\$500,000	\$7,000,000
14 Site Communications Infrastructures (3840)	\$250,000	\$3,500,000
Total		\$13,300,000

RANGE INSTRUMENTATION “RANGELESS” AIR COMBAT MANEUVERING INSTRUMENTATION

1. Background. “Rangeless” instrumentation capability is a long-standing requirement of the Combat Air Forces (CAF). The next generation of the Air Combat Maneuvering Instrumentation (ACMI) pod (P5) provides this capability by leveraging Global Positioning System (GPS) receivers, data recorders and on-board simulation technology to provide ACMI training independent of ground infrastructure. This technology allows training to occur at any location to support home station and deployed training. This capability provides greater training to pilots by increasing development of situational awareness and provides more effective debriefing. Without this capability, Air National Guard (ANG) units must deploy to a Combat Readiness Training Center (CRTC) to train with a traditional “tethered” ACMI system. The P5 pod system reduces operations tempo while providing higher levels of more complex training. With the limited availability of traditional, part-time ANG pilots, and the high operations tempo being maintained, it is essential to maximize training opportunities. The CAF Combat Training Range Review Board has programmed 250 P5 pods for the ANG. The ANG requires a total of 100 additional pods to meet immediate requirements and complete transition to the “Rangeless” system.

2. Source of Need. Ready Aircrew Program (RAP) Tasking Messages; ANG Training Ranges and Airspace Roadmap, FY10; ANG Mission Directive 10.01; ANG ACMI / Electronic Warfare Concept of Operations; Revision #5 to CAF Operational Requirements Document (ORD) #305-76-I/II/III-H for P5 Combat Training System, 29 Jul 2004; Improvements to Combat Air Forces Ranges, validated 6 Dec 1976; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

Alpena CRTC, MI
Gulfport CRTC, MS

Savannah CRTC, GA

Volk Field CRTC, WI

4. Program Details. PEC: 27429

Remaining Quantity Required	Unit Cost	Program Cost
100 P5 Pods (3010)	\$170,000	\$17,000,000
Total		\$17,000,000

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Space Operations, Cyber Warfare & Information Operations



- **Missile Warning and Satellite Control**
- **Network Warfare / Information Ops**
- **ANG CW is 40% of AF Network Warfare / Information Ops**
- **ANG Space is 20% of AF MW and SATC2**

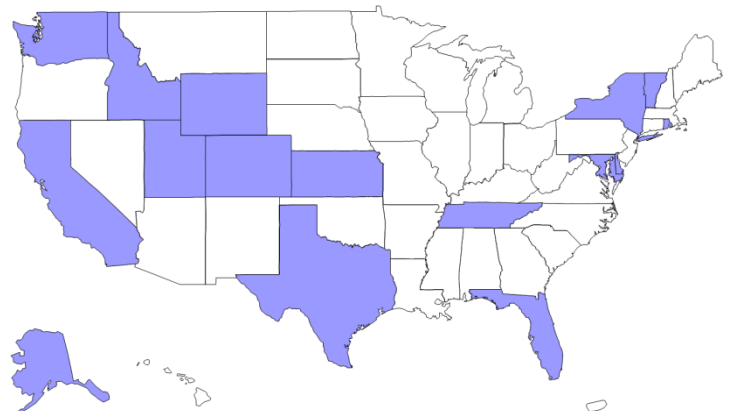
Space Operations - The Air National Guard's (ANG) contribution to Air Force Space Command (AFSPC) space missions includes over 1,100 personnel within eight squadrons operating six distinct weapons systems. These units support three of the four AFSPC functional mission areas. From the 137 SWS, CO, which is the nation's sole provider of mobile, survivable and endurable ballistic missile warning for the defense of North America, to the 148 SOPS, CA, which is responsible for Command and Control of 40 percent of the Military Strategic and Tactical Relay (MILSTAR) satellite constellation.



Cyber Warfare and Information Operations (CW/IO) - The ANG CW/IO force is made up of nine units in CA, DE, KS, MD, RI, TX, VT and WA. Together, they provide CW/IO capabilities supporting Federal and State agencies, the Air Force, and Combatant Commands (COCOM), by conducting cyberspace force application, cyberspace defense, cyberspace support, testing and Tactics, Techniques and Procedures (TTP) development, cyber training and related planning activities. Guardsmen participating in these missions draw upon synergies with their related civilian careers, leveraging skills and experience developed by high-tech companies. Specific missions assigned to ANG units range from network vulnerability assessments to digital media / network analysis to full-spectrum cyber warfare support in both exercises and operations. Execution of these activities occurs from home station, Air Force locations and national facilities.



In 2013, ANG CW/IO units will develop capabilities for integrated training and testing, and TTP development. The remaining requirements include individual training, infrastructure connectivity and updated software tools for normalizing cyber units to support the Air Force and US Cyber Command (USCYBERCOM).



Space Operations, Cyber Warfare & Information Operations

2013 Weapons and Tactics Conference

Critical Capabilities List

Space Operations:

- Counter Communications System

Cyber Warfare and Information Operations:

- Garrison Interceptor Platform
- Virtual Interconnected Training Environment
- Secure Infrastructure Collaborative Capability
- Remote Access Toolkit

Essential Capabilities List

Space Operations:

- Water Purification Unit
- Joint Collaboration Cell Enterprise
- OMAR upgrades

Cyber Warfare and Information Operations:

- Tactical Transportable

Desired Capabilities List

Space Operations:

- None

Cyber Warfare and Information Operations:

- None

SPACE OPERATIONS COUNTER COMMUNICATIONS SYSTEM

1. Background. The 114th Range Operations Squadron (ROPS) and 216th Operational Support Squadron (OSS) are being re-designated as Unit Equipped Space Control Squadrons (SPCS). Converting the 114 ROPS and 216 OSS to SPCS is aligned with Air National Guard (ANG) CAPSTONE principles. The new mission for both units is to conduct Space Superiority operations in support of global and theater campaigns. In order to fulfill mission requirements and to assure our ANG space units modernize concurrently it is critical the 114 SPCS and 216 SPCS acquire Block 10.2 Counter Communications System (CCS) suites. The space control mission area within Air Force Space Command (AFSPC) leverages high-demand and low-density assets. The delivery of modernized equipment enhances ANG Space Superiority within a premier space control mission area, and presents a surge-to-war, deployable capability to the Combatant Commander and Combined Force Air Component Commander.

2. Source of Need. AFSPC Commander's Annual Prioritized Air Reserve Component (ARC) Initiatives, 8 Nov 2013, Attachment 1, Priority #1; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

114 ROPS Patrick AFB, FL 216 OSS Vandenberg AFB, CA

4. Program Details. PEC: 53116F

Remaining Quantity Required	Unit Cost	Program Cost
2 CCS (3080)	\$22,500,000	\$45,000,000
Total		\$45,000,000

CYBER WARFARE AND INFORMATION OPERATIONS GARRISON INTERCEPTOR PLATFORM

1. Background. The first US Air Force Cyber Weapon System developed and approved for use is the CVA / Hunt (Interceptor) Weapon System (WS). The WS includes three breakout components: Mobile Interceptor Platform (MIP), Deployable Interceptor Platform (DIP), and Garrison Interceptor Platform (GIP). Air Force Space Command (AFSPC) provides a way ahead for procurement of MIP and DIP. GIP is not programmed for Air National Guard (ANG) units due to cost and rapid growth in the mission area. GIP provides the capability in cyber hunt to detect and mitigate advanced persistent threats within the Department of Defense (DOD) Information Networks. GIP capability is not achievable with only the MIP and DIP components. GIP integration at ANG gained units is critical to Combat Mission Ready (CMR) mission capability and sustainment. The GIP provides a substantial “dual-use” opportunity within respective regions to meet DOD cyberspace requirements as well as in support of State domestic operations capabilities.

2. Source of Need. US Cyber Command (USCYBERCOM) CYBER FORCE Concept of Employment (CONEMP), Mar 2013; AFSPC Cyber Mission Force Concept of Operations (CONOPS), Nov 2013; Headquarters Air Force (HAF) Cyber Mission Force Program Action Directive (PAD), Dec 2013; OTE MAJCOM (AFSPC) Priority; Specified as priority for Air Reserve Component in Program Objective Memorandum (POM); Acceleration requested by Component-Numbered Air Force (C-NAF) / Air Force Component Commander, Feb 2013; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

143 IOS Camp Murray, WA 261 NWS Sepulveda ANGB, CA 262 NWS McChord AFB, WA

4. Program Details. PEC: 28088F

Remaining Quantity Required	Unit Cost	Program Cost
3 GIP (3080)	\$2,930,000	\$8,790,000
Total		\$8,790,000

CYBER WARFARE AND INFORMATION OPERATIONS VIRTUAL INTERCONNECTED TRAINING ENVIRONMENT

1. Background. Air National Guard (ANG) Cyberspace Operations (CO) units require a virtual interconnected training environment to conduct training, support Tier 1, 2 and 3 exercises and maintain Combat Mission Ready (CMR) proficiency as required by 24th Air Force. This capability supports implementation of the Cyber Mission Force (CMF) construct and ensures distributed training for integrated warfighter operations in kinetics and non-kinetics. The Virtual Interconnected Training Environment (VITE) is a scalable capability configurable to virtually simulate the World Wide Web (WWW). The VITE interconnects to commercial and government networks (i.e., NIPR, SIPR and JWICS) representing a wide variety of DOD Information Network (DODIN) environments. The VITE operates as a stand-alone training environment and connects to the Distributed Training Operations Center (DTOC) to provide more realistic threats, targets and cyberspace terrain. The VITE hosts a wide variety of systems and integrates with other weapon system training environments without additional licensing costs.

2. Source of Need. Air Force Space Command (AFSPC) Guidance Memorandum 10-1, 2 and 3; Air Force Cyber Command (AFCYBER) Cyberspace Requirement Number (CRN), Jul 2011; 10th Air Force 2013 Prioritized Requirements, Aug 2013; 2010-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

102 NWS	Quonset IAP, RI	175 NWS	Martin State AP, MD	262 NWS	McChord AFB, WA
143 IOS	Camp Murray, WA	177 IAS	McConnell AFB, KS	273 IOS	San Antonio, TX
166 NWS	New Castle IAP, DE	261 NWS	Sepulveda ANGB, CA	DTOC	Des Moines, IA

4. Program Details. **PEC: 28087F**

Remaining Quantity Required	Unit Cost	Program Cost
2 VITE RGI Hubs (3080)	\$393,000	\$786,000
8 VITE HOTSIM Systems (3080)	\$340,000	\$2,720,000
8 JIOR PICO Nodes (3080)	\$60,000	\$480,000
8 Interconnection Installation (3080)	\$50,000	\$400,000
9 Interconnection Annual (3840)	\$42,000	\$378,000
Total		\$4,764,000

**CYBER WARFARE AND INFORMATION OPERATIONS SECURE
INFRASTRUCTURE COLLABORATIVE CAPABILITY**

1. Background. Air National Guard (ANG) Information Operations (IO) and Network Warfare (NW) squadrons lack the capability to access secure, classified, real-time communications and networks used by the Air Force and US Cyber Command (USCYBERCOM) for collaboration, as well as threat and unique cyber situational awareness. ANG units operate from squadron spaces that are distant from service and national cyber locations. The majority of planning, operations activities and cyber warfare information sharing, occur in classified, collaborative environments, primarily through the Joint Worldwide Intelligence Communication System (JWICS) and National Security Agency-Network (NSA-Net) infrastructure. The Secure Infrastructure Collaborative Capability (SIC2) provides a secure collaborative environment and common operations picture to support near real-time full spectrum cyberspace operations.

2. Source of Need. USCYBERCOM Cyberspace Operations Capabilities, Dec 2013; Air Force Cyber Command (AFCYBER) Cyberspace Requirement Need (CRN), Aug 2011; Enabling Concept for Cyberspace Common Operations Picture, Aug 2011; 2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

102 NWS	Quonset IAP, RI	175 NWS	Martin State AP, MD	262 NWS	McChord AFB, WA
132 NWS	Des Moines, IA	177 IAS	McConnell AFB, KS	273 IOS	San Antonio, TX
143 IOS	Camp Murray, WA	229 IOS	Burlington ANGB, VT	DTOC	Des Moines, IA
166 NWS	New Castle IAP, DE	261 NWS	Sepulveda ANGB, CA		

4. Program Details. **PEC: 27277F**

Remaining Quantity Required	Unit Cost	Program Cost
11 SIC2 (3080)	\$300,000	\$3,300,000
Total		\$3,300,000

CYBER WARFARE AND INFORMATION OPERATIONS REMOTE ACCESS TOOLSET

1. Background. The Air National Guard (ANG), as the AF Cyber Red Team, employs cyber threat tactics to operationally assess both cyber defense systems and sensors, and conducts training for cyber defense operators and maintainers. The existing software platform lacks the agility to employ updated malware and signatures required to replicate advanced threat behaviors. Remote Access Toolset (RAT) is commercial software that enables the control and behavior of cyber threat techniques presented to targeted networks and computers.

2. Source of Need. Executive Order to Incorporate Realistic Cyberspace Conditions into Major Department of Defense Exercises; Chief of the Joint Chiefs of Staff Instruction (CJCSI) 6510.01F, 9 Feb 2011; 2011-2013 ARC WEPTAC Critical Capability.

3. Units Impacted.

177 IAS McConnell AFB, KS 262 NWS McChord AFB, WA

4. Program Details. **PEC: 53056F**

Remaining Quantity Required	Unit Cost	Program Cost
2 RAT (3080)	\$400,000	\$800,000
Total		\$800,000

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Security Forces



- **Mobilize and Deploy**
- **Integrated Base Defense**
- **Homeland / Fulltime Security**

Air National Guard (ANG) Security Forces (SF) personnel from the 54 states and territories prepare and train for their dual mission of supporting worldwide contingency deployments as well as responding to State emergencies.



With more than 7,000 assigned members, SF provide security to personnel and priority resources at home station and deployed locations through law enforcement patrols, integrated base defense and anti-terrorism / force protection initiatives. By using Integrated Base Defense principles, SF control terrain both inside and

outside the base perimeter. As the battlefield dictates, SF train to encounter hostile threats while conducting Military Operations in Urban Terrain, Area Security Operations, Close Precision Engagement, Raven Missions, Fly-Away Security, Detainee Movement



Operations, Agricultural Development missions, Personal Security Details, Mounted / Dismounted Individual and Team Patrols, Convoy Operations, High-Risk Vehicle Inspections, Suspect

Apprehension / Detention, Installation Access Control, and Heavy Weapons Support. Security Forces professionals also provide nuclear, information, industrial and physical security, as well as combat arms training.



Security Forces 2013 Weapons and Tactics Conference

Critical Combat Capabilities List

- Professional Bag Expansion and Modernization
- Active Shooter Response Suite
- Surveillance, Target Acquisition and Night Observation Equipment
- Close Combat Mission Capability Kits
- Small Arms Range Solutions

Essential Capabilities List

- Fulfill Weapons Shortfalls
- Next Generation Intra-Squad Personal Wireless Communication System
- Security Forces Helmet
- Ballistic Mobile Defense Fighting Position

Desired Capabilities List

- Next Generation Lightweight Level 4 Small Arms Protective Insert
- Interactive Law Enforcement Simulator
- Modular Advanced Base Defense Operations Center
- Mobile, Ruggedized, Real-Time Command and Control and Situational Awareness Suite
- Small Form Factor, Squad-Level Remotely Piloted Aircraft with Video Surveillance

SECURITY FORCES PROFESSIONAL BAG EXPANSION AND MODERNIZATION

1. Background. Security Forces (SF) deploy more frequently and for longer durations than most other airmen, causing SF professional bag equipment to degrade at a higher rate. The content of the SF professional bag includes specialized equipment specific to SF duties and is utilized both in deployed Areas of Responsibility (AOR) as well as in normal, daily operational use at home station. Professional bag items include Personal Protective Equipment (PPE) and SF mission specific duty gear. The current inventory of SF clothing does not meet current AOR requirements for fire-retardant clothing, placing SF members at a greater risk of severe injuries when exposed to indirect fire or improvised explosive devices. Ballistic eye protection is another equipment item used by SF members to combat environmental and wartime hazards inherent to force protection missions. SF units are currently unable to fill the number of professional bags necessary to meet mission requirements. Professional bag expansion and modernization brings improved capabilities to ensure mission success.

2. Source of Need. Lessons Learned from Domestic Operations and Operations ENDURING FREEDOM (OEF), IRAQI FREEDOM (OIF) and NEW DAWN (OND); 2012 ARC WEPTAC Critical Capability.

3. Units Impacted. All 96 SF squadrons within the 54 states and territories require the professional bags.

4. Program Details. **PEC: 52625F**

Remaining Quantity Required	Unit Cost	Program Cost
7649 Professional Bags (3080)	\$1,129	\$8,635,721
Total		\$8,635,721

SECURITY FORCES ACTIVE SHOOTER RESPONSE SUITE

1. Background. The inability for the Air National Guard (ANG) Security Forces (SF) to effectively respond to an active shooter scenario creates a liability and places the safety of our airmen at risk. Recent events at Fort Hood and the Washington Navy Yard, as well as in-theater events in Kabul, continue to highlight the need for specialized, active shooter response. Effective response requires the presence of specific equipment for tense, rapidly evolving scenarios. Protection of the responding officer is paramount, and a standard level of individual protective personal equipment is needed. Both the Department of Defense standard Enhanced Small Arms Protective Insert ballistic plate and soft ballistic inserts that meet Level IIIA or higher protection must be readily available due to the varying environments that will be encountered by responding personnel. Body armor provides the protection capability to respond to an all-hazards physical threat environment. Maxillofacial mandible with ballistic visors provides protection to the head and face of the responding officer. In many active shooter scenarios, the responding officer is confronted with a subject inside of a locked room. As a mitigating tool, the acquisition of a breaching kit ensures that officers can respond to any situation. This active shooter response suite seamlessly integrates with the Less-Than-Lethal Kits and gear established in the Security Forces Professional Bags.

2. Source of Need. Air Force Instruction (AFI) 31-101 Integrated Defense; AFI 31-117 Arming and Use of Forces; Lessons Learned from Domestic Operations and Operations ENDURING FREEDOM (OEF), IRAQI FREEDOM (OIF) and NEW DAWN (OND); 2012-2013 ARC WEPTAC Critical Capability.

3. Units Impacted. All 96 SF squadrons will be impacted within the 54 states and territories.

4. Program Details. **PEC: 52625F**

Remaining Quantity Required	Unit Cost	Program Cost
96 Active Shooter Suites (3080)	\$151,000	\$14,496,000
Total		\$14,496,000

SECURITY FORCES SURVEILLANCE, TARGET ACQUISITION AND NIGHT OBSERVATION EQUIPMENT

1. Background. Air National Guard (ANG) Security Forces (SF) personnel require crucial thermal and infrared detection devices that will provide usable imagery in both daytime and nighttime operations through the use of active or passive Surveillance, Target Acquisition and Night Observation (STANO) equipment. This equipment will enhance SF combat capability to navigate, identify targets, distinguish friend or foe, and effectively engage targets in low signature environments. Active STANO equipment projects some form of energy, is generally limited to infrared (IR) illumination devices, and can be detected by the enemy using passive STANO devices. There are two categories of passive STANO equipment: image-intensification devices and thermal imaging devices. Image-intensification devices amplify existing or ambient light at night and are viewed through a viewing scope. Those images can be adversely affected by environmental or artificial conditions such as fog, rain, falling snow, smoke, camouflage, light vegetation, or a combination of these factors. Thermal imaging devices can penetrate those adverse conditions whether in daytime or nighttime operations. SF personnel lack an effective thermal imaging capability as mandated in the SF Mission Capability (MISCAP) Statement. Lacking this capability significantly degrades their ability to gain tactical battlefield advantage when environmental obscurants reduce target identification.

2. Source of Need. Air Force Instruction (AFI) 31-101 Integrated Defense; Security Forces Logistics Detail; MISCAP Statement; Lessons Learned from Operations ENDURING FREEDOM (OEF), IRAQI FREEDOM (OIF) and NEW DAWN (OND); 2011-2012 ARC WEPTAC Critical Requirement.

3. Units Impacted. All 96 ANG SF squadrons within the 54 states and territories.

5. Program Details. **PEC: 52625F**

Remaining Quantity Required	Unit Cost	Program Cost
522 Detection Enhancement Devices (3080)	\$5,103	\$2,663,766
Total		\$2,663,766

SECURITY FORCES CLOSE COMBAT MISSION CAPABILITY KITS

1. Background. The recent change to Air Force Instruction (AFI) 36-2646 “Security Forces (SF) Training and Standardization Evaluation Programs” implemented the requirement for SF Shoot Move Communicate (SMC) training and evaluation. The SMC course standardizes basic individual and team firearms tactical skills necessary to engage hostile threats. The Close Combat Mission Capability Kit (CCMCK) provides the ability to conduct critical Tactics, Techniques and Procedures (TTP) effectively across the threat spectrum. The CCMCK allows a simulated, controlled and safe force-on-force training environment utilizing standard weapons systems carried by SF personnel. These weapons systems include the M-4 carbine, M-9 pistol and the M-249 light machine gun. The CCMCK munitions do not require a specific range, and the US Air Force has certified them as safe for use inside facilities. In addition, these kits significantly improve combat skills that directly result in a more secure area of operations.

2. Source of Need. AFI 36-2646 Security Forces Training and Standardization Evaluation Program, as amended by Air Force Guidance Memorandum (AFGM) 2, 21 Mar 2013; AFI 31-101 Integrated Defense; AFI 31-201 Security Forces Standards and Procedures; Department of Homeland Security Active Shooter Guidelines; National Summit on Multiple Casualty Shootings; Lessons Learned from Domestic Operations and Operations ENDURING FREEDOM (OEF), IRAQI FREEDOM (OIF) and NEW DAWN (OND); 2011-2013 ARC WEPTAC Critical Capability.

3. Units Impacted. All 96 SF squadrons will be impacted within the 54 states and territories.

4. Program Details. **PEC: 52625F**

Remaining Quantity Required	Unit Cost	Program Cost
5380 M-4 CCMC Kits (3080)	\$531	\$2,856,780
5380 M-9 CCMC Kits(3080)	\$390	\$2,098,200
744 M-249 CCMC Kits (3080)	\$835	\$621,240
Total		\$6,334,800

SECURITY FORCES SMALL ARMS RANGE SOLUTIONS

1. Background. The Air National Guard (ANG) owns 12 small arms ranges costing in excess of \$1,000,000 per year for maintenance and sustainment. Four of these have been closed due to non-compliance with the surface and vertical danger zones as outlined in the Air Force Policy Directive (AFPD) Engineering Technical Letter (ETL) 11-18, “Small Arms Range Design and Construction.” The conditions of these small arms ranges continue to deteriorate over time due to their age and frequent use and are in constant need of repair. The costs to maintain the current ranges outweigh the benefits of sustaining these ranges. Additionally, the ETL states that if major range or component repairs of an existing range will cost more than 50 percent of an estimated range replacement cost, the entire facility must be upgraded to comply with this ETL. With only eight ranges in operation within the ANG, Security Forces (SF) personnel rely heavily upon other agencies to utilize small arms range space in order to prepare SF personnel for their wartime mission. This drives scheduling conflicts and expenses for the use of other small arms ranges, both civilian and military. Every ANG airman is required to meet small arms training requirements prior to deployment in support of overseas contingency operations, as well as maintain small arms proficiency in support of the homeland defense mission. The limited number of training ranges affects all ANG warfighters. As the Office of Primary Responsibility (OPR) for small arms ranges, ANG SF Combat Arms Training and Maintenance (CATM) personnel are tasked with the small arms training of all members of the ANG at every installation. The procurement of a modular small arms range at select ANG installations increases the number of ANG warfighters able to complete the required small arms training to meet mission requirements.

2. Source of Need. AFPD 32-10 Installations and Facilities ETL 11-18 Small Arms Range Design and Construction in accordance with Air Force Instruction (AFI) 32-1023 Designing and Constructing Military Construction Projects; AFI 36-2226 Combat Arms Program; Lessons Learned from Domestic Operations and Operations ENDURING FREEDOM (OEF), IRAQI FREEDOM (OIF) and NEW DAWN (OND); 2012 ARC WEPTAC Critical Requirement.

3. Units Impacted.

105 AW	Fort Stewart, NY	142 FW	Portland IAP, OR	154 WG	Hickam AFB, HI
114 FW	Sioux Falls RAP, SD	147 RW	Ellington IAP, TX	156 AW	Luis Munoz IAP, PR
118 WG	Nashville IAP, TN	148 FW	Duluth IAP, MN	183 FW	Lincoln Capital IAP, IL
123 AW	Louisville IAP, KY	152AW	Reno-Tahoe IAP, NV	CRTC	Alpena, MI

4. Program Details. **PEC: 52625F**

Remaining Quantity Required	Unit Cost	Program Cost
12 Modular Small Arms Ranges (3080)	\$4,510,000	\$54,120,000
Total		\$54,120,000