

**Annual Aviation  
Inventory and Funding Plan  
Fiscal Years (FY) 2015-2044**

April 2014

Preparation of this study/report cost the  
Department of Defense (DoD) a total of  
Approximately \$1,080,487 in Fiscal Years  
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# **Annual Aviation Inventory and Funding Plan**

## **Part I – Executive Summary**

### **Introduction**

Section 231a of title 10, United States Code, as amended by section 1069 of the National Defense Authorization Act (NDAA) for Fiscal Year 2012, Public Law 112-81, requires the Secretary of Defense to submit an annual, long-term aviation plan for fixed wing and rotary wing aircraft, to include unmanned systems, for all Services and for combatant commanders that have aircraft assigned to them. This report responds to that requirement.

Guided by the current strategic guidance, Sustaining U.S. Global Leadership: Priorities for 21<sup>st</sup> Century Defense, updated by the 2014 Quadrennial Review, this plan represents the Department's commitment to balance the force while adjusting to a changing fiscal environment: one that is able to meet the unique demands of current conflicts, while providing the flexibility to respond to a broad spectrum of future challenges.

The FY15-19 future years defense program (FYDP) and the long-term aviation force structure and funding plans presented in this document are shaped by the following primary missions defined in the strategic guidance:

- Counter Terrorism and Irregular Warfare;
- Deter and Defeat Aggression;
- Project Power Despite Anti-Access/Area Denial Challenges;
- Counter Weapons of Mass Destruction;
- Operate Effectively in Cyberspace;
- Operate Effectively in Space;
- Maintain a Safe, Secure, and Effective Nuclear Deterrent;
- Defend the Homeland and Provide Support to Civil Authorities;
- Provide a Stabilizing Presence;
- Conduct Stability and Counterinsurgency Operations; and
- Conduct Humanitarian, Disaster Relief, and Other Operations;

## **Summary of the Annual Plan and Certification**

This plan was developed based on the FY15 President's Budget submission. It includes the effects of sequestration and the Budget Control Act (BCA), as amended by the Bipartisan Budget Act of 2013. As a result, the Department has had to reduce force structure and modernization efforts, which are reflected in this report. Additional cuts are possible, particularly if the funding limits in the BCA remain in effect.

Changes in technology and organizational structure make categorizing aircraft into bins of like capability increasingly difficult. However, this aviation force structure plan provides the diverse mix of aircraft needed to carry out the eleven missions identified above. The capabilities provided by aircraft identified in this plan reflect five principal investment objectives identified below.

- Meet the demand for persistent, multirole intelligence, surveillance, and reconnaissance (ISR) capabilities;
- Provide sufficient enabler capability and capacity;
- Acquire fifth-generation fighter/attack aircraft while maintaining sufficient inventory capacity;
- Modernize long-range strike (LRS) capabilities; and
- Emphasize modernization and readiness.

The FY15-44 aviation plan is consistent with the tenets of the January 2012 Defense Strategic Guidance and the three strategic pillars of the 2014 Quadrennial Defense Review; it meets the national security requirements of the United States. The Department's FY15 budget request and the associated FY15-19 FYDP provide the requisite funding to implement the aviation investment plan through FY19 for all programs of record.

# Annual Aviation Inventory and Funding Plan

## Part II – FY 2014 Report

The report presents:

- A current year description of the aviation force structure, including active mission, training, and test aircraft.
- A detailed aviation plan for the Departments of the Air Force, Navy, Army, and United States Special Operations Command for both fixed wing and rotary wing assets necessary to meet the national military strategy of the United States. The plan includes legacy aircraft, aircraft in procurement or development, and aircraft projected to begin development in the next few years.
- Estimates of the annual research and development (RDT&E), procurement, operation and maintenance (O&M), military personnel (MILPERS), and military construction (MILCON) funding necessary to achieve the planned aviation inventory and to operate, maintain, sustain, and support this aviation inventory.

The majority of modern platforms have the ability to perform across many traditional mission sets (e.g., the surveillance and light-strike capability of the MQ-9 in uncontested environments, and the cargo and aerial refueling capability of the KC-130J Super Hercules). The multirole nature of our assets makes them adaptive, fostering mission flexibility for the joint force.

### Force Structure Requirements

The Department's FY15-44 aviation plan provides the mix of capability and capacity to meet the broad range of security challenges facing the nation. The plan represents the Department's ongoing commitment to support the Joint Force in dynamic operational environments, with diverse mission requirements from current operations in Afghanistan, to humanitarian relief efforts at home and abroad, to preparations for military action against possible adversary nations and non-state actors. Accordingly, the aviation plan provides the aircraft needed to cover the full complement of operations that U.S. military forces could undertake in the decades ahead, and it will evolve as security needs change.

Consistent with this vision, the FY15-44 aviation plan provides the capabilities needed to meet current and projected national security objectives, while prudently balancing security risks over time and against fiscal realities. These efforts will ensure the Department procures the right aircraft at the right time to manage risk against existing and emerging anti-access-area denial (A2/AD) threats. In planning for an uncertain future, the United States must possess the aviation capability and capacity to protect the homeland, build security globally, project power and to win decisively.

## Investment Objectives

In keeping with the Department's desire to provide a flexible and balanced force, the aviation plan provides a diverse mix of aircraft. The capabilities provided by these aircraft correspond with five principal investment objectives:

- Meet the demand for persistent, multirole ISR capabilities;
- Provide sufficient enabler capability and capacity;
- Acquire fifth-generation fighter/attack aircraft while maintaining sufficient inventory capacity;
- Modernize long-range strike capabilities; and
- Emphasize modernization and readiness.

These objectives are discussed in more detail in the sections below

**Meet the demand for persistent, multirole intelligence, surveillance, and reconnaissance (ISR) capabilities.** The aviation plan's emphasis on long-endurance, unmanned ISR assets—many with light-strike capabilities—is a direct reflection of recent operational experience in permissive environments and combatant commander (CCDR) demand.

- Air Force RQ-4 Global Hawk, MQ-9 Reaper, Remotely Piloted Aircraft (RPA) will receive capability improvements to improve sensors and overall reliability and utility. MQ-1s will be phased out over time and replaced with more capable MQ-9 and MQ-9ers (extended range). The Air Force will continue to increase overall capacity and provide 55 steady state MQ-9 CAPS by FY19. Prior to FY19 the Air Force will maintain today's existing surge capability using MQ-1's and MQ-9's. The Air Force will divest the U-2 Dragon Lady starting in FY16 and rely on Global Hawk for High-Altitude ISR requirements. The Air Force will transfer the MC-12W Liberty Project Aircraft to USSOCOM and the Army. The Air Force is recapitalizing its fleet of 16 E-8C JSTARS aircraft with a fleet of more affordable, capable, modern aircraft. By the end of FY16, 5 of the 16 aircraft will retire. The Air Force plans to retire the legacy E-8C by FY25.
- The Navy is developing a portfolio of manned and unmanned systems to meet a variety of maritime and expeditionary reconnaissance requirements, including the land-based MQ-4C Triton, the carrier-based Unmanned Carrier-Launched Airborne Surveillance and Strike (UCLASS), and the Littoral Combat Ship-based MQ-8 Fire Scout Vertical Take-off and Landing Unmanned Aerial Vehicle (VTUAV). MQ-8C procurement is being delayed to better align with LCS deliveries. As this portfolio of aircraft is phased into the force, the EP-3E and P-3 Special Projects Aircraft will be retired.
- The Army's aerial ISR strategy will maintain a modernized version of the RC-12 and Airborne Reconnaissance Low (ARL) aircraft while fielding the Enhanced Medium Altitude Reconnaissance Surveillance System (EMARSS).

**Provide sufficient enabler capability and capacity.** A second key priority involves investing in aviation enablers, including assets and capabilities related to air mobility (aircraft performing airlift or aerial-refueling missions, or both), command and control, and electronic warfare.

- Mobility enablers consist of airlift and aerial refueling aircraft. In the near term, the Air Force will divest 26 legacy C-5A aircraft beginning in FY14 to maintain a fleet of 275 strategic airlift aircraft. The Air Force will also reduce excess capacity in its intra-theater airlift fleet by divesting 47 legacy C-130H aircraft, bringing the inventory down to 318 in FY15. C-130J deliveries will increase the inventory to 328 aircraft by FY19. The Air Force will continue procurement of 128 KC-46As by FY23 with planned procurement of 179 aircraft by FY27. Recapitalization of the entire tanker fleet will require additional procurement beyond FY27 that is not part of the current contract. The Navy is identifying options to recapitalize the C-2A COD aircraft and its capacity for the inter-theater sea-based air connector capability.
- Electronic attack aircraft, such as the Navy's EA-18G, deny and disrupt enemy radars and communications systems to decrease battlespace awareness. With the last deliveries in FY17, the Navy's 18 EA-18G squadrons will provide crucial support to fighters and bombers in multiple theaters. Aiding the electronic attack mission will also be the EC-130 Compass Call, although the Air Force will retire roughly half of its fleet after FY15. Legacy upgrades such as the Eagle Passive/Active Warning Survivability System will significantly improve the ability of all F-15s to detect, deny, deceive, disrupt, and destroy threats in most modern tactical environments.
- The Air Force inventory retains a fleet of 24 E-3 AWACS aircraft, while retiring 7 aircraft in FY15 due to budget limitations. The Navy is recapitalizing its fleet of E-2C airborne early warning aircraft with the E-2D.
- The Navy is recapitalizing its aged fleet of P-3C maritime patrol aircraft with the modern P-8A, equipped with an improved sensor suite.
- The Army completes modernization of the Chinook and Light Utility Helicopter fleets, and continues to modernize and recapitalize their Black Hawk and Apache helicopters. The Navy and Marine Corps are participating in Joint Future Vertical Lift efforts to identify leverage points for future rotorcraft investment. The Marine Corps continues to modernize vertical lift capability and capacity with the procurement of AH-1Z, CH-53K, UH-1Y and MV-22B. The Navy completes the procurement of its MH-60R/S fleet in the FYDP. The Air Force initiates the procurement of the Combat Rescue Helicopter in FY20 in order to recapitalize HH-60G combat search and rescue helicopters.

**Acquire 5th generation fighter/attack aircraft while maintaining sufficient capability and capacity.** Procurement of 5<sup>th</sup> generation aircraft is approached differently by each service based on the timing required of legacy recapitalization.

- Generally, the Air Force and Marine Corps are flying aircraft with average ages of 25 years or older while the Navy has recently recapitalized most of its legacy F/A-18 inventory. Thus, the Air Force and Marine Corps are introducing the 5<sup>th</sup> generation F-35 to their fleets at a quicker pace, reaching an initial operating capability in the early part of the FYDP. While all variants are still in low rate initial production during the FYDP, production will gradually increase to reach their peak by 2021 and enter full rate production that is expected to continue through to the 2030s.

- During this time, legacy aircraft will continue to provide capacity and capabilities that are vital to combatant commanders. Various service life extensions, modernization efforts, and defensive system upgrades are funded for the F-16, F-15C/E and F/A-18A-F to maintain warfighting relevance.
- In order to afford these important modernization efforts, the Air Force will retire some aircraft earlier than originally planned, such as all A-10s and a number of F-15Cs.
- Initial development of the F/A-18E/F replacement will begin in the latter part of the FYDP with planned procurement in the late 2020s. The Air Force's Next Generation Air Dominance program will begin its development in the mid to late 2020s. Next generation aircraft may be provided by a family of systems using mixes of manned and unmanned aircraft with varying levels of stealth, advanced standoff weapons, sensors, and networks.

**Modernize long-range strike capabilities.** The enduring need for long-range attack capabilities will be met by a combination of current and future aircraft and weapons systems.

- The current fleet of Air Force bombers continues to be modernized so that it can retain long range strike capabilities through the 2030s. To deter and defeat A2/AD threats, DoD is creating a long-range strike family of systems, including a program to develop a new penetrating, nuclear capable bomber. The current goal is to achieve an initial capability in the mid-2020s, while holding down the unit cost to ensure sufficient production (80 to 100 aircraft) over the long term.

**Emphasize modernization and readiness.** The FY15 President's Budget continues emphasis on modernization and readiness, while adjusting to fiscal realities.

- The Air Force program reflects the difficult decisions made to remain aligned with Defense Strategic Guidance and QDR priorities while meeting budgetary goals -- for example, the Air Force divesting all A-10 squadrons and recapitalizing special operations aircraft to resource future modernization and readiness. Similar adjustments will retire older, limited role tactical aircraft while upgrading and extending the service life of newer F-16 aircraft and continuing to modernize the F-22 and the F-15C/D/E fleet; however, some of the upgrades and modernization programs for the F-15 and F-16 were reduced or eliminated in the FY15 President's Budget.
- The Navy will modernize its inventory by investing in development of advanced targeting systems and sensors to replace existing infrared and radar systems; positional, navigation and timing systems that operate independently of global positioning systems; systems that synthesize targeting information across multiple platforms to increase lethality and survivability; and propulsion technologies (which is also a particular area of investment by the Air Force).

### **Aircraft Investment Plan**

**Force-Wide Perspective.** The Department's aviation inventory, broken out by category, is shown in the table below for each fiscal year through FY24. Inventory levels are subject to change in response to operational needs, industrial base considerations, and fiscal constraints.



**Aviation Inventory  
FY 2015-2024**

Inventory	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24
Fighter / Attack	3209	3145	3109	3065	3015	2937	2935	2917	2932	2932
Attack Helicopter	952	933	958	939	946	940	989	989	985	981
Airlift / Cargo / Utility	4129	4187	4303	4391	4418	4372	4358	4336	4308	4300
Combat Search and Rescue	148	155	155	154	153	152	158	158	158	158
Air Refueling	535	545	556	559	564	563	562	563	563	567
Long Range Strike	158	158	158	158	158	158	158	155	152	147
Anti-Surface / Submarine Warfare	633	649	644	634	639	648	625	630	630	629
Trainers	2374	2325	2200	2103	2035	2036	2037	2005	1998	1949
ISR / Scout / C4	1527	1324	1277	1285	1274	1330	1323	1322	1329	1330
Special Operations Forces	445	457	460	466	465	464	464	466	461	464
<b>Total</b>	<b>14110</b>	<b>13878</b>	<b>13820</b>	<b>13754</b>	<b>13667</b>	<b>13600</b>	<b>13609</b>	<b>13541</b>	<b>13516</b>	<b>13457</b>

**Fighter/Attack Aircraft**

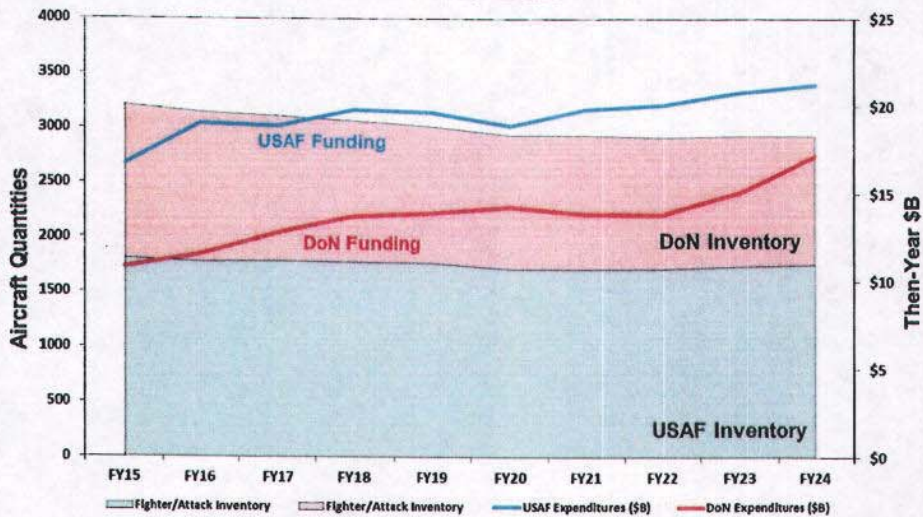
The following tables show Fighter/Attack aviation assets and the FY14 inventory by category for all active aircraft consistently tracked by the Department.

Fighter/Attack	Air Force	DoN
	A-10, F-15C/D, F-15E, F-16, F-22, F-35A, F-X	AV-8, EA-18, EA-6B, F-16, F-5, F-35B/C, FA-18, FA-XX

**2014 Fighter/Attack Aircraft Inventory**

Category	Inventory		
	Air Force	Army	DoN
<b>Total Aircraft</b>	1959	0	1402
<b>Mission</b>	1134	0	728
<b>Training</b>	426	0	318
<b>RDT&amp;E</b>	117	0	55
Backup, Attrition Reserve and Other Primary Aircraft	282	0	301
<b>Active Component</b>	1266	0	1321
<b>Reserve Component</b>	693	0	81

## Fighter/Attack Inventories & Funding FY 2015-2024



Department of the Air Force. The Air Force will retain and maintain the capability and capacity to meet the demands of the new defense strategy. In the next ten years, the Air Force will continue to modernize the F-22 to address advances in threat systems and technologies to ensure the F-22 remains fully effective against the most challenging air-to-air and surface-to-air threats. The Air Force will procure 238 F-35As from FY15 to FY19 and will divest the A-10 fleet over the next 5 years. In the meantime, the Air Force will maintain and improve legacy fighter platforms while procuring preferred munitions. Future research and development efforts beyond the FYDP will focus on improvements to 5th generation aircraft and initial RDT&E for an F-22 replacement.

Department of the Navy. Due to fiscal constraints, the Navy reduced F-35C procurement from 69 to 36 aircraft. F-35B procurement plans remained unchanged as the Marine Corps procures 69 F-35Bs in the FYDP. The DoN is addressing F-35C procurement delays with several management and investment measures: adding to the service life of 150 of its F/A-18A-Ds through the Service Life Extension Program and accelerating the transition of seven Navy F/A-18C squadrons to F/A-18 E/Fs utilizing attrition reserve aircraft. Reduction in utilization rates of F/A-18 E/F aircraft by Service Life Management Program efforts and the extension of these aircraft to 9,000 hours (from 6,000), will allow the Navy to manage strike fighters to meet future defense requirements. Procurement of the EA-18G Growler will be completed in FY 2014 with FY17 deliveries. Navy squadrons will complete transition from EA-6B to EA-18G in FY16 while the Marine Corps will stand down their last EA-6B squadron in FY19. The Navy is also funding analysis efforts in this FYDP in planning for its future requirement to replace its F/A-18E/F fleet starting in the 2030 timeframe.

### Attack Helicopter

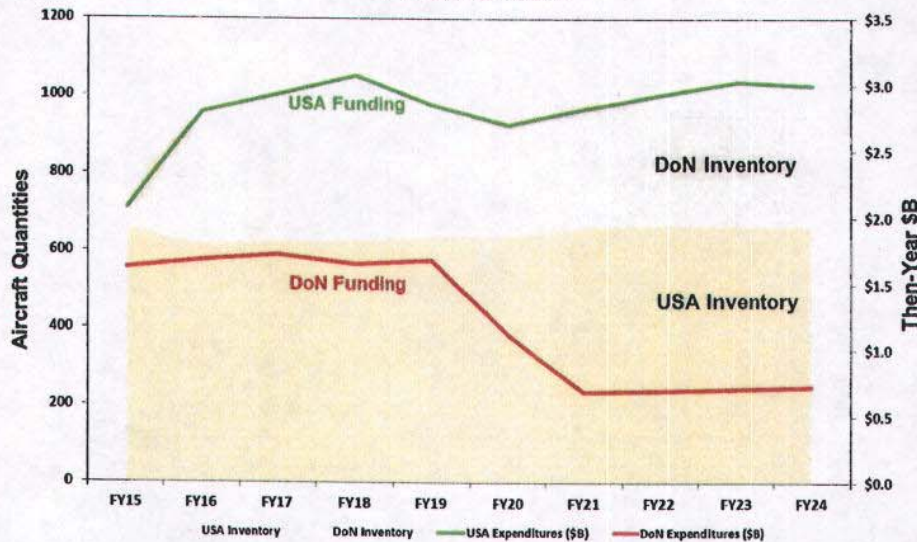
The following tables show the DoD Attack Helicopter aviation assets and the 2014 current inventory by category for all active aircraft consistently tracked by the Department.

Attack Helicopter	Army	DoN
	AH-64	AH-1, UH-1, HH-1

### 2014 Attack Helicopter Inventory

Category	Inventory (as of Sep 2014)		
	Air Force	Army	DoN
Total Aircraft	0	684	269
Mission	0	577	221
Training	0	91	36
RDT&E	0	16	12
Backup, Attrition Reserve and Other Primary Aircraft	0	0	0
Active Component	0	467	246
Reserve Component	0	217	23

### Attack Helicopter Inventories & Funding FY 2015-2024



The above chart depicts annual attack helicopter inventory and funding projections over FY15 – 2024 broken out by military department. Details on Army and DoN attack helicopter plans are outlined in the following paragraphs.

Department of the Army. The Army is fielding the AH-64E, which is a modernized variant of the AH-64D, Longbow Apache. The Army’s objective is to replace all AH-64D airframes with modernized AH-64E aircraft and field them to units by the end of FY 2027. The AH-64E offers additional capabilities and will sustain the fleet for 20 or more additional years. The Army’s plan replaces aging OH-58D Kiowa helicopters with Apaches in Attack Reconnaissance Squadrons.

Department of the Navy. The H-1 program includes both the Marine Corps attack and utility helicopters (the AH-1Z and UH-1Y respectively). Eighty-five percent of the major components are identical, enhancing deployability and maintainability while reducing training requirements and logistical footprint. In the near term, production has begun on the AH-1Z "Build New" configuration, ending the remanufacture process of the AH-1W and preventing a significant attack helicopter shortfall. The Navy inventory includes the Marine Corps' HH-1N, performing search and rescue for MCAS Yuma. As these assets reach the end of their service life, the search and rescue mission will be fulfilled by DoN multi-mission aircraft, including USMC UH-1Y and MV-22B and Navy MH-60S.

**Airlift / Cargo / Utility**

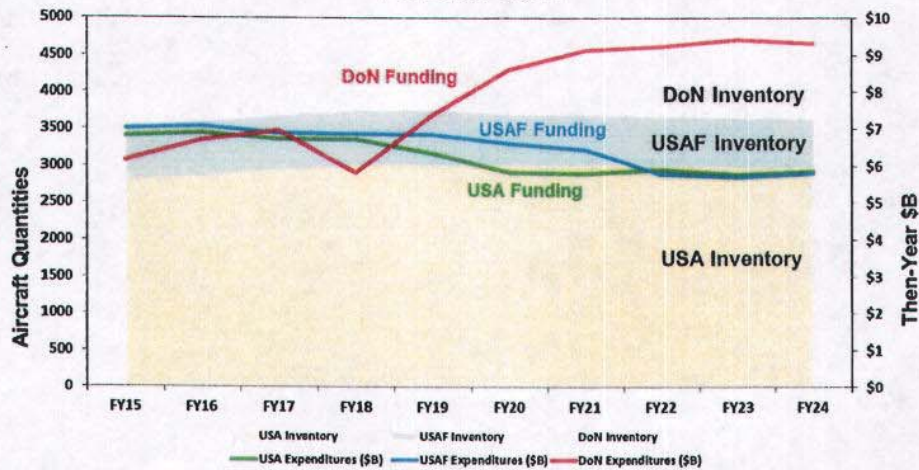
The following tables show DoD Airlift / Cargo / Utility aviation assets and the 2014 current inventory by category for all active aircraft consistently tracked by the Departments. This category includes operational support airlift, tilt rotor assets, helicopters, and fixed wing airlift to include intra-theater and inter-theater airlift.

	Army	Air Force	DoN
<b>Airlift / Cargo / Utility</b>	CH-47, UH-60, LUH-72, C-12, C-23, C-26, C-31, C-37, C-20, CE-182, C-20B, O-2A, T-34, TG-14, U-21, UV-18, UV-20, UC-35, T-6	UH-1, C-130, C-17, C-5, WC-130, C-12, C-20, C-21, C-32, C-37, C-38, C-40, VC-25	CH/MH-53, CH-46, C-130, C-20, C-26, C-2, C-37, C-40, C-9, UC-12, UC-35, MV-22, VH-3, TH/VH-3, TH/VH-60, VXX, UH-1, C-2RPL

**2014 Airlift / Cargo / Utility Inventory**

Category	Inventory (as of Sep 2014)		
	Air Force	Army	DoN
<b>Total Aircraft</b>	840	3025	597
<b>Mission</b>	571	2539	487
<b>Training</b>	87	326	66
<b>RDT&amp;E</b>	7	57	18
Backup, Attrition Reserve and Other Primary Aircraft	175	103	26
<b>Active Component</b>	480	1606	516
<b>Reserve Component</b>	360	1419	81

### Airlift / Cargo / Utility Inventories & Funding FY 2015-2024



The above chart depicts annual Airlift / Cargo / Utility aviation inventory and funding projections over FY15 –24 broken out by military department. Details on Army, Air Force, and DoN Airlift / Cargo / Utility aviation plans are outlined in the following paragraphs.

Department of the Army. The bulk of Army aviation assets reside in the Army’s utility and cargo aviation fleets. The Army is fielding modernized variants of existing utility and cargo aircraft (UH-60M and CH-47F) that will sustain the fleet by introducing new or remanufactured airframes while increasing the aircraft’s overall capabilities. These new and remanufactured aircraft should be viable for 20 or more additional years of service. The Army will modernize its utility and cargo helicopter fleets by divesting selected legacy aircraft (CH-47D and UH-60A variants), which have reached the end of their economic useful lives. The Army will deliver a portion of the legacy airframes to industry for remanufacture as a measure to offset new airframe costs. The Army will continue to procure the UH-72A Light Utility Helicopter until 2017. Additionally, the Army is fielding a limited number of fixed wing support aircraft and is developing plans to replace the C-12 with a similar type aircraft in 2018 and later as the C-12 is nearing the end of its economic useful life.

The Army’s current modernization efforts are largely focused on sustaining and improving the current generation of aircraft through FY 2022 and beyond. However, by that time, the first of these modernized rotary wing aircraft will have begun to reach the end of their economic useful lives. As a result, the Army foresees the following:

- UH/HH-60: The final UH/HH-60 fleet will consist of 1375 UH/HH-60M and 760 UH-60L Digital helicopters. The Army began the process of divesting its legacy UH-60A models with the retirement of 47 airframes in FY 2014 and 64 in FY 2015. To extend the life of the L model, it will undergo recapitalization (RECAP) and modernization to the L Digital model in FYs 2018 through 2034. The Digital L conversion will address network interoperability, cockpit management/situational awareness, and obsolescence issues with the UH-60L. These efforts will continue for the next 20 years with 48 UH-60L undergoing RECAP and digitization per year.

The M model will start reaching its 20 year life at FY 2027; therefore, the Army will begin a RECAP program in FY 2025 to extend its life beyond FY 2040.

- CH-47: CH-47F procurement completion is planned for FY 2017. With no follow-on Future Vertical Lift/Joint Multi-Role-Heavy variant in the Army's Aviation Modernization Plan, the Army is planning a recapitalization program, for FY 2018 and beyond, to extend the CH-47F's service life beyond FY 2040.

- Utility/OSA Fixed Wing: Utility Fixed Wing consists of all Army operational support airlift aircraft as well as the Army's training fleet, research and development fleet and special mission aircraft. This fleet consists of older aircraft that require replacement between FY 2020-2026. The special mission aircraft and R&D aircraft will be validated and replaced on a one for one basis in FY 2022 and beyond.

- UH-72A: This is the newest fleet and will be fully fielded by FY 2017. A replacement or upgraded capability may be procured beyond FY 2027 should operational or sustainability requirements dictate a necessity for airframe sustainment/improvement.

Department of the Air Force. The Air Force continues to focus on balancing aircraft recapitalization with key modernization and sustainment across the airlift fleet. Through FY15, the Air Force will retain a fleet of 318 C-130 aircraft, growing back to 328 in FY19. In the near term, the Air Force will continue procurement of the versatile C-130J Hercules, which is capable of performing intra-theater lift missions in austere locations. The C-130 fleet is fully capable of meeting time-sensitive, mission-critical direct airlift support and Homeland Defense requirements. Additionally, to ensure compatibility with worldwide Communication, Navigation, Surveillance (CNS)/Air Traffic Management (ATM) standards and to maintain global access, the Air Force plans to update the legacy C-130 fleet to ensure continued compliance with international airspace mandates.

Air Force inter-theater airlift, whether transporting humanitarian-relief supplies or wartime materiel, is unrivaled in its ability to project American forces and power around the world. In combination with commercial aircraft available for airlift missions, the Air Force's inter-theater airlift aircraft—the C-17 Globemaster III and C-5 Galaxy—form the foundation of the Nation's strategic mobility and global sustainment capabilities. The Air Force will retain a fleet of 275 strategic airlifters in accordance with FY14 NDAA, while the Department reviews its future airlift requirements. Fleet upgrades remain the most cost-effective means of sustaining these capabilities through FY40.

With cancellation of the Common Vertical Lift Support Platform (CVLSP) program, the Air Force will continue to fly the UH-1N. The Air Force operates 62 UH-1N helicopters at six major commands. The majority of the Air Force UH-1N fleet is focused on critical national security missions: nuclear asset security for Air Force Global Strike Command and National Capital Region mission support. Anticipating that the Air Force will fly the UH-1N for the foreseeable future, the Air Force will selectively modernize the UH-1N to minimize existing capability gaps and avoid increased sustainment costs brought on by obsolescence.

Operational Support Airlift/Executive Airlift (OSA/EA) delivers highly responsive and reliable executive airlift to senior US civil and military officials and foreign dignitaries as well as high-priority cargo with time, place or mission sensitive requirements. Special communications equipment allows these passengers to conduct highly sensitive business en route, even globally, without compromising their efficiency or effectiveness. To maintain critical support of the President into the future, the Air Force plans to begin recapitalizing the VC-25 with a modified commercial aircraft. Current plans support a procurement schedule that would allow modification to begin in FY19 and an initial operational capability in FY23.

Department of the Navy. Over the next ten years, the Department of the Navy will procure KC-130J and C-40 lift aircraft to meet Navy and Marine Corps unique intra-theater logistics support. These aircraft respond to immediate demands for movement of essential fleet personnel and cargo to mobile sea-based forces worldwide. The KC-130J is a multi-role platform, serving as an airlift asset; however, for the categorization of this report, the KC-130J inventory numbers are included in the aerial refueling category.

The C-2A fleet, which provides long-range logistical support to carrier strike groups, will reach the end of its service life in the mid-2020s with continued sustainment investment. COD operations beyond the 2028 timeframe will require recapitalization. The sundown of the MH-53E Mine Countermeasures (MCM) mission aircraft is dependent upon the Littoral Combat Ship MCM Mission Package reaching full operational capability (forecast to begin in 2024). Studies to determine the best options to recapitalize the COD capability provided by the C-2A and the vertical onboard delivery capability by the MH-53E were completed in a program currently referred to as the Airborne Resupply/Logistics for the Sea Base. The Navy is developing acquisition strategies to recapitalize the COD capability. C-40A aircraft will begin reaching the end of their service lives prior to 2041 and will need to be replaced.

The MV-22B Osprey provides the Marine Air Ground Task Force (MAGTF) Commander medium lift assault support. The tiltrotor capability provides an unparalleled advantage to warfighters, allowing current missions to be executed more effectively, and new missions to be accomplished that were previously unachievable using rotary wing platforms.

MH-60 R/S multi-mission combat helicopters are the pillars of the Navy Helicopter Master Plan. These two variants share 85 percent commonality to facilitate maintenance and logistics support. While a multi-mission aircraft, the MH-60R is the only organic anti-submarine warfare asset within a carrier strike group and is critical to ensuring access to the global commons. MH-60R procurement objective will be fulfilled within the FYDP. The MH-60S is a multi-mission aircraft that conducts anti-surface warfare, combat search and rescue, mine countermeasures, and logistics support among many other missions.

MH-XX is envisioned to be a replacement for MH-60R/S and HH-60H that will begin to retire in the late 2020s. MH-XX will leverage Joint and US Army Future Vertical Lift rotorcraft development while meeting maritime mission requirements and operating constraints. Marine Corps participation in the Future Vertical Lift studies will inform the replacement for the UH-1Y and the midlife upgrade of the MV-22B to the MV-22C.

The CH-53K will achieve initial operating capability for the Marine Corps in FY19 and begin incrementally replacing the aging CH-53Es. The new CH-53K will have heavy-lift capabilities not possessed by any of today's DoD rotary wing platforms. Maintainability and reliability enhancements of the CH-53K are designed to limit recurring operating costs and greatly improve operational effectiveness.

VXX represents the replacement aircraft under development for the 40-year old VH-3D and the 25-year old VH-60N helicopters, currently providing transportation for the President of the United States, foreign heads of states, and other dignitaries as directed by the White House Military Office. The Replacement Presidential Helicopter will provide a hardened, mobile command and control transportation capability necessary to meet current and future presidential transport mission requirements. VXX will begin operating in the 2020 timeframe.

The Navy inventory includes the Marine Corps' HH-46E, performing search and rescue for MCAS Cherry Point. As these assets reach the end of their service life, the search and rescue mission will be fulfilled by DoN multi-mission aircraft, including Marine Corps UH-1Y, MV-22B and Navy MH-60S.

### Combat Search and Rescue

The following tables show the DoD combat search and rescue aviation assets and the 2014 current inventory by category for all active aircraft consistently tracked by the Military Departments.

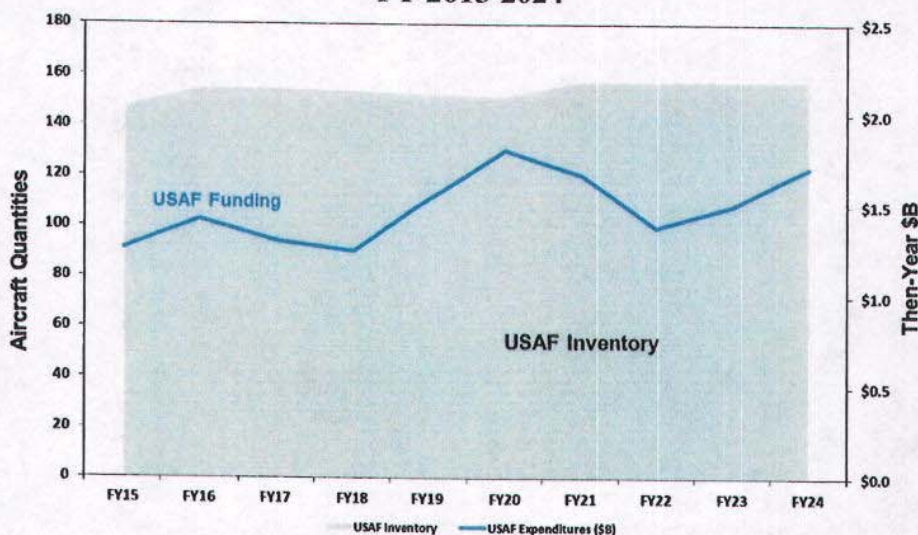
Combat Search and Rescue	Air Force	DoN
	HC-130P/N/J, HH-60	HH-1, HH-46

### 2014 Combat Search and Rescue Inventory

Category	Inventory (as of Sep 2014)		
	Air Force	Army	DoN
Total Aircraft	141	0	0
Mission	100	0	0
Training	19	0	0
RDT&E	5	0	0
Backup, Attrition Reserve and Other Primary Aircraft	17	0	0
Active Component	95	0	0
Reserve Component	46	0	0



### Combat Search and Rescue Inventories & Funding FY 2015-2024



The above chart depicts annual dedicated combat search and rescue aviation inventory and funding projections over FY15 – 24 broken out by military department; almost all forces and expenditures reside in the Air Force. Details on Air Force and DoN combat search and rescue aviation plans are outlined in the following paragraphs.

Department of the Air Force. For FY15, the Air Force continued its progress towards recapitalizing legacy HC-130P/N aircraft with 37 HC-130Js. In April 2011, the Air Force reached an acquisition decision on recapitalizing the legacy HH-60G and subsequently introduced a “full and open competition” approach that will replace the Personnel Recovery rotary wing fleet with the Combat Rescue Helicopter (CRH). Research and development funding for the CRH effort will peak in FY18 on the current timeline.

#### Air Refueling

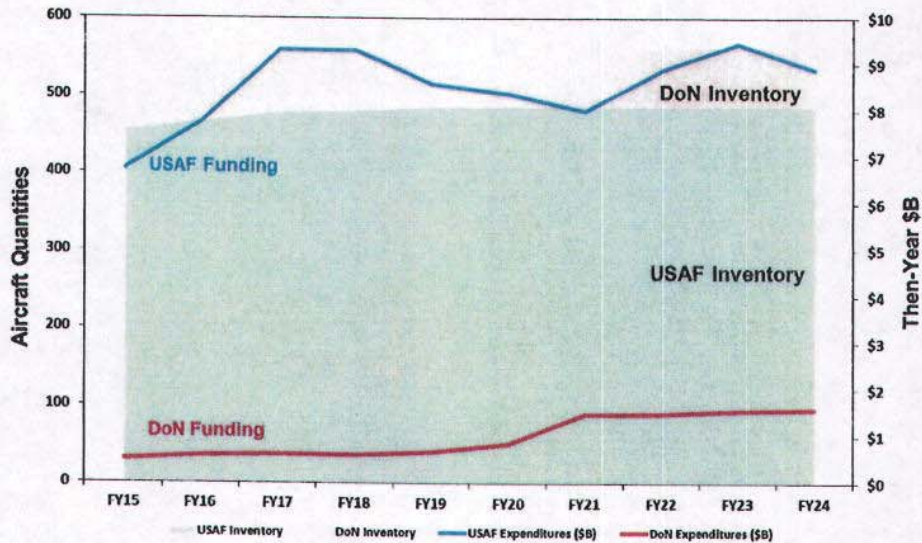
The following tables show the DoD Air Refueling aviation assets and the 2014 current inventory by category for all active aircraft consistently tracked by the Departments.

Air Refueling	Air Force	DoN
	KC-10, KC-135, KC-46	KC-130

### 2014 Air Refueling Aviation Inventory

Category	Inventory (as of Sep 2014)		
	Air Force	Army	DoN
Total Aircraft	458	0	82
Mission	404	0	69
Training	19	0	0
RDT&E	2	0	7
Backup, Attrition Reserve and Other Primary Aircraft	33	0	6
Active Component	220	0	54
Reserve Component	238	0	28

### Air Refueling Aviation Inventories & Funding FY 15-2024



Department of the Air Force. The Air Force remains committed to re-capitalizing the legacy tanker fleets by fully funding the acquisition of the new KC-46A tanker and resourcing critical modernization programs, assuring crucial air refueling capacity and capability.

The Air Force has begun recapitalizing its aging tanker fleet with fully funded plans to develop and procure 128 KC-46A tankers by FY23 with the full program providing a total of 179 KC-46As by FY27. The new KC-46A will provide greater operational capability and flexibility than the legacy KC-135s. In addition to being capable of refueling both receptacle and probe-equipped receivers on the same sortie, the KC-46A will be able to receive fuel from other tankers in flight, allowing for continuous and flexible fuel management over the battlespace. Additionally, the KC-46A will have three times the cargo and passenger capability as the KC-135. Recapitalizing the entire tanker fleet will require additional procurement beyond FY27.

Department of the Navy. The Marine Corps will continue procuring the KC-130J in the near term, expanding its inventory of this aircraft which has proven its combat effectiveness and reliability in multiple Areas of Responsibility (AOR). Capable of employment in intra-theater lift, assault support, persistent ISR, offensive air support, and aerial refueling missions, the KC-130J will replace aging KC-130T models.

The Super Hornet fills the critical organic tanking missions for carrier air wings. Although the F/A-18E/F performs this mission, it is categorized as a fighter aircraft and included in those inventory numbers. The Navy will incorporate carrier based organic tanking capability requirements into future aircraft studies to include the possibility of tanking capability with the recapitalization of C-2A, existing strike fighters, and future manned or unmanned aircraft.

**Long-Range Strike**

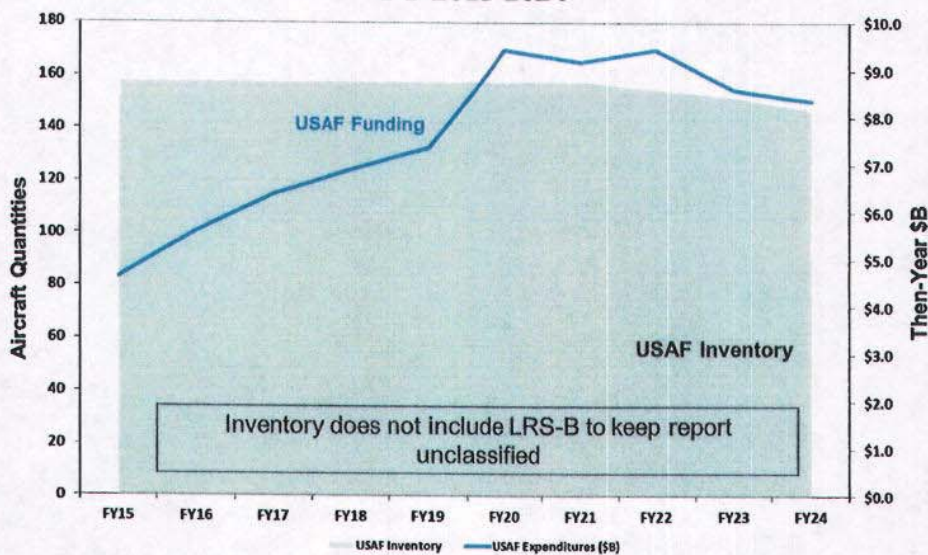
The following tables show the DoD Long-Range Strike aviation assets and the 2014 current inventory by category for all active aircraft consistently tracked by the Military Departments.

<b>Long Range Strike</b>	<b>Air Force</b>
	B-1, B-2, B-52, LRS-B

**2014 Long Range Strike Aviation Inventory**

Category	Inventory (as of Sep 2014)		
	Air Force	Army	DoN
<b>Total Aircraft</b>	159	0	0
<b>Mission</b>	96	0	0
<b>Training</b>	29	0	0
<b>RDT&amp;E</b>	7	0	0
Backup, Attrition Reserve and Other Primary Aircraft	27	0	0
<b>Active Component</b>	141	0	0
<b>Reserve Component</b>	18	0	0

### Long Range Strike Inventories & Funding FY 2015-2024



Department of the Air Force. The Air Force continues funding the Long Range Strike Bomber (LRS-B), a key component of the LRS Family of Systems. The current goal is to achieve an initial capability in the mid-2020s, and to hold down the unit cost to ensure sufficient production (80 to 100 aircraft) and a sustainable bomber inventory over the far-term. This report includes estimated annual funding for LRS-B in the five years beyond the FYDP. Meanwhile, the Air Force will invest in upgrades to the B-2 bomber to enhance its effectiveness and survivability as well as modernize the B-52 fleet with machine-to-machine retargeting, beyond line of sight communications capability, and an increased weapons carriage capacity. The Air Force also continues to modernize and maintain the B-1 aircraft and to address sustainability issues for ensuring the overall health and continued viability of the B-1 fleet.

#### Anti-Surface/Submarine Warfare

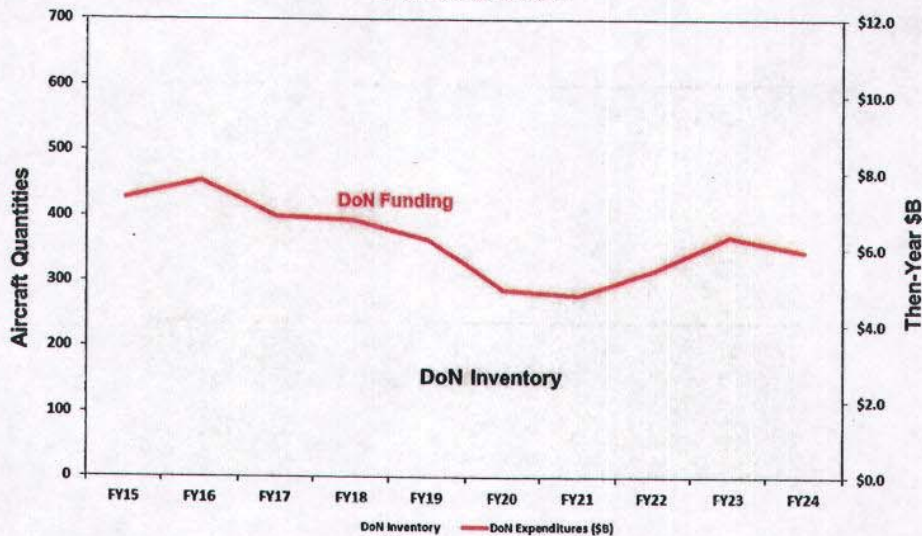
The following tables show the DoD Anti-Surface/Submarine Warfare aviation assets and the 2014 current inventory by category for all active aircraft consistently tracked by the Military Departments.

<b>Anti-Surface/Submarine Warfare</b>	<b>DoN</b>
	P-3, P-8, MH/SH-60

### 2014 Anti-Surface/Submarine Warfare Aviation Inventory

Category	Inventory (as of Sep 2014)		
	Air Force	Army	DoN
Total Aircraft	0	0	636
Mission	0	0	416
Training	0	0	103
RDT&E	0	0	24
Backup, Attrition Reserve and Other Primary Aircraft	0	0	93
Active Component	0	0	618
Reserve Component	0	0	18

### Anti-Surface/Submarine Warfare Aviation Inventories & Funding FY 2015-2024



Department of the Navy. The MH-60R and MH-60S multi-mission combat helicopters are integral to carrier air wings and individual surface combatants to meet requirements for defensive Anti-surface warfare (ASUW) and Antisubmarine Warfare (ASW). Both will complete their procurement objective within the FYDP.

The P-8A Poseidon will replace the P-3C maritime patrol aircraft, first introduced in 1962. With its proven propulsion system and avionics, modern sensors and robust communication suite, the P-8A will provide persistent ASW, ASUW, and ISR capabilities to keep pace with emerging threats. Increment 1 deliveries are currently replacing the aging P-3C fleet with a modern platform and similar ASW mission system capability. Increment 2 to be fielded not later than FY16 provides enhanced broad area ASW and weapon capabilities. Increment 3 is expected to be fielded in FY20 and will deliver network enabled ASUW weapon capabilities, ASW sensor and targeting enhancements, and improved communications. The Department was compelled by fiscal constraints to lower the final P-8A inventory objective from 117 to 109 aircraft. Procurement will be completed within the FYDP.

## Trainers

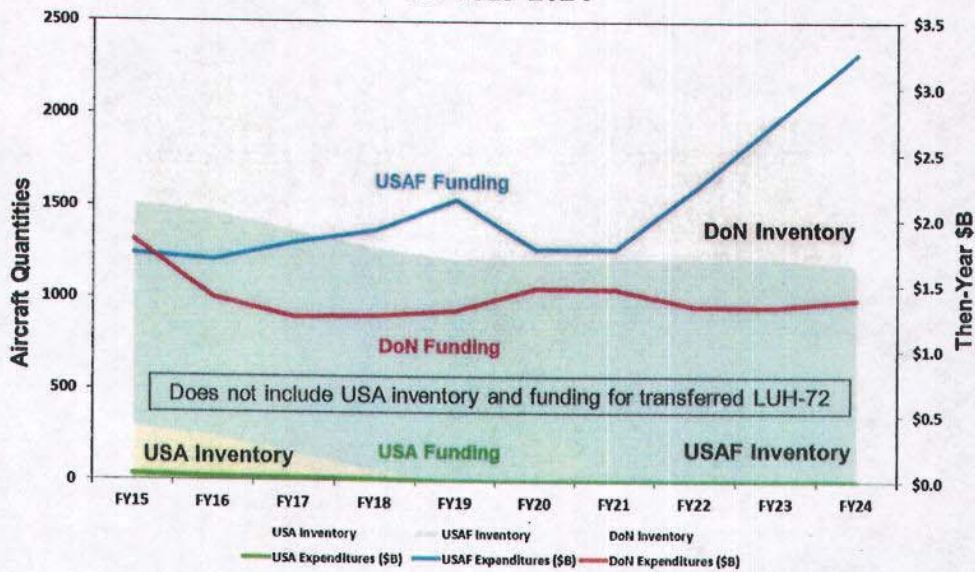
The following tables show the DoD Trainer aviation assets and the 2014 current inventory by category for all active aircraft consistently tracked by the Military Departments.

Trainers	Army	Air Force	DoN
	TH-67, OH-58A/C	T-1, T-38, T-6, T-X	T-34, T-39, T-44, T-45, T-6, TAV-8B, TH-57, TC-12, U-6, X-26

### 2014 Trainers Aviation Inventory

Category	Inventory (as of Sep 2014)		
	Air Force	Army	DoN
<b>Total Aircraft</b>	1129	396	765
<b>Mission</b>	0	117	0
<b>Training</b>	889	275	682
<b>RDT&amp;E</b>	15	4	6
Backup, Attrition Reserve and Other Primary Aircraft	225	0	77
<b>Active Component</b>	1129	340	765
<b>Reserve Component</b>	0	56	0

### Trainer Aviation Inventories & Funding FY 2015-2024



The above chart depicts annual trainer aircraft inventory and funding projections over FY15 – 24 broken out by military departments. Details on Army, Air Force and DoN training aircraft investment plans are outlined in the following paragraphs.

Department of the Army. The Army will replace its current training helicopter fleet (TH-67 and OH-58A/C) with the Light Utility Helicopter, UH-72A. Consequently, newly assessed aviators will begin training on dual engine aircraft earlier in the training process. This will facilitate a more effective transition to an advanced aircraft upon graduation from initial rotary wing training.

Department of the Air Force. Currently, the T-6 forms the backbone of the Air Force primary flight training program and will remain so through the 2040 timeframe. Additionally, the T-1A fleet provides advanced flight training for multi-engine/multi-crew tankers and mobility aircraft. The T-38C is a proven, but aging, advanced combat trainer aircraft originally developed as a trainer for second generation fighters. The T-38C faces increasing sustainment costs and is limited in its ability to fulfill training requirements for the F-22 and F-35. The Air Force has initiated a replacement program, the T-X, envisioned to begin procurement in FY20 with a planned initial capability in FY23.

Department of the Navy. The Navy is transitioning to the T-6B Texan II Joint Primary Trainer as the T-34C TurboMentor retires. The T-45C Goshawk will become the single advanced strike trainer for carrier based pilots and naval flight officers as the T-39G/N Sabreliner is retired. The T-45C is undergoing a SLAP/SLEP program to extend the airframe and aircraft systems through 2035. A replacement will need to be identified in the 2020s to meet the projected retirement of the T-45C. The T-44A/C Pegasus and TC-12B Huron serve as the multiengine trainers for the DoN. The TC-12 will be retired by 2016 and a T-44 replacement will need to be identified in order to begin service in the mid to late 2020s. The TH-57B/C continues to be used as a training aircraft for both the rotary wing and tilt-rotor pipelines.

**ISR / Scout / C4**

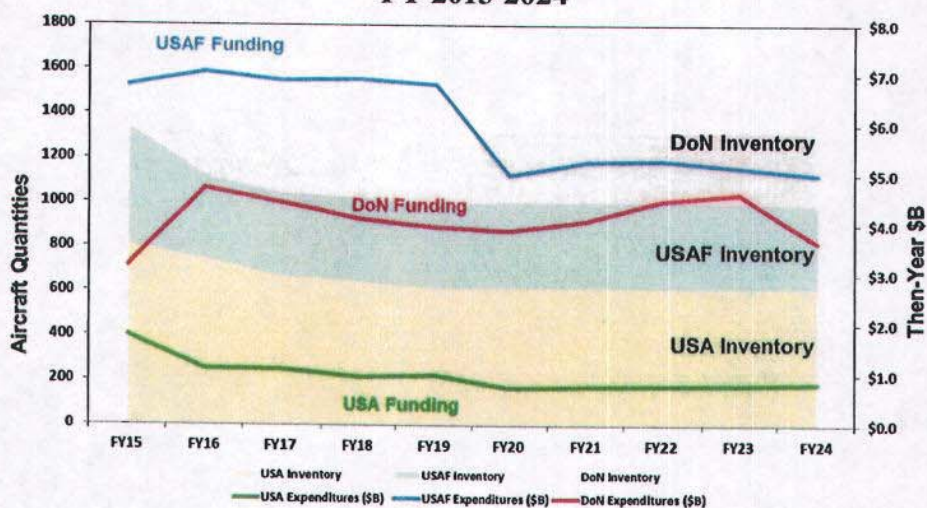
The following tables list DoD ISR / Scout / C4 aviation assets and the 2014 current inventory by category for all active aircraft consistently tracked by the Military Departments.

	Army	Air Force	DoN
<b>ISR / Scout / C4</b>	OH-58, RC-12, RC-7, B-300, C-12, MQ-1	OC-135, E-3, E-4, E-8, EC-130, MC-12, MQ-1, MQ-9, RC-135, RC-26, RQ-4, U-2, WC-135	E-2, E-6, EP-3, MQ-4, MQ-8, UCLASS

### 2014 ISR / Scout / C4 Aviation Inventory

Category	Inventory (as of Sep 2014)		
	Air Force	Army	DoN
Total Aircraft	522	957	174
Mission	393	863	138
Training	62	86	15
RDT&E	26	5	20
Backup, Attrition Reserve and Other Primary Aircraft	41	3	1
Active Component	451	781	174
Reserve Component	71	176	0

### ISR / Scout / C4 Inventories & Funding FY 2015-2024



The above chart depicts annual ISR / Scout / C4 aircraft inventory and funding projections over FY15 – 24 broken out by Military Department (small UAS, less than Group 4, are not included in the data). Details on the Army, Air Force, and DoN ISR / Scout / C4 aviation plans are outlined in the following paragraphs.

Department of the Army. As part of the Army Aviation Restructure Initiative, the Army will divest the aged fleet of OH-58D scout helicopters and replace them with Manned/Unmanned teams of AH-64E and RQ-7 Shadow UAS aircraft. Adopting the AH-64E and RQ-7 team as the Army’s Aerial Scout capability leverages existing systems and provides a superior solution to the Army’s requirement for an aerial scout platform. The Army has a UAS fleet that is comprised of small (Raven), medium (Shadow), and large (Gray Eagle) aircraft. All UAS(s) are existing programs of record and are under active acquisition programs to meet fleet size objectives over the next five years. The Gray Eagle UAS is being fielded to Combat Aviation Brigades in order to provide direct support capabilities to deployed Divisions, subordinate Brigade Combat Teams, and the National Training Center. Eighteen Gray Eagle UAS will be assigned to Intelligence and Security Command (INSCOM). Two Gray Eagle companies will also be fielded to support the



Army Special Operations Aviation Regiment. Gray Eagle fielding will be complete by the end of FY 2018.

- The OH-58D Kiowa Warrior (KW) fleet will be replaced by manned/unmanned teams of AH-64E Apache helicopters and RQ-7B Shadow Unmanned Aerial Systems.
- Army Military Intelligence (MI) Fixed Wing: The MI Fixed Wing fleet consists of RC-12 Guardrail Common Sensor, RC-7/EO-5C Airborne Reconnaissance Low (ARL), Medium Altitude Reconnaissance Surveillance System, and Quick Reaction Capabilities within Task Force ODIN. The Army's Aerial ISR strategy will maintain a modernized version of the RC-12 and ARL while fielding the Enhanced Medium Altitude Reconnaissance Surveillance System (EMARSS). The Army will divest 30 GRCS and field 24 EMARSS (including 12 Quick Reaction Capability Systems). Proven technology and sensors developed during OEF/OIF will be incorporated into both the ARL and EMARSS programs of record. Ultimately, the MI Fixed Wing fleet will consist of 52 platforms (14 GRCS, 9 ARL, 24 EMARSS and 5 training aircraft).
- MQ-1C (Gray Eagle): Gray Eagle is a dedicated, multi-mission UAS that provides self-contained, deployable ISR capability to all ten Army Divisions, the Army Special Operations Aviation Command, and Army's Aerial Exploitation Battalion. Army will complete procurement of 152 aircraft and associated ground support equipment in the FYDP for full fielding throughout the force.
- RQ-7B (Shadow): The Shadow UAS provides the Army brigade commanders with dedicated reconnaissance, surveillance and target acquisition; intelligence; and manned-unmanned teaming capability. The Army will complete system upgrades for the entire Shadow fleet to ensure manned-unmanned interoperability/teaming and to resolve ground control equipment obsolescence issues.

Department of the Air Force. The Air Force is maintaining the right mix of capability and capacity to ensure we meet joint requirements for ISR. The Global Hawk Block 30 and U-2 provide intelligence, surveillance and reconnaissance (ISR) to the warfighter in peacetime and war. The Global Hawk offers greater range and endurance for accessing areas far from operating bases. Furthermore, FY15 PB provides funding to enhance Block 30 capabilities and improve operations. The Air Force will divest the U2 starting in FY16.

The MC-12 was designed as a quick response capability (QRC) to satisfy ISR requirements in Afghanistan and Iraq. The Air Force is planning to transfer the MC-12 to the US Army and USSOCOM.

The Air Force is committed to continue developing and managing its RPA crews and fleet to provide the right mix of capability to meet CCMD demands now and into the future. The Air Force will begin divesting the MQ-1 and transition to an all MQ-9 medium altitude RPA fleet. The Air Force is modernizing its legacy ISR and C4 fleet and is assessing alternatives with regard to procuring new platforms in the future. In the near-term the Air Force is committed to modernization of E-3B/C AWACS to the E-3G configuration involving advanced mission computing and avionics that ensure the long-term viability of joint airborne tactical command

and control. The Air Force is completing an effort to address obsolescence issues with prime mission equipment onboard the E-8C JSTARS and has funded a program to recapitalize the E-8C JSTARS fleet. The Air Force will divest one E-8C JSTARS test aircraft in FY15 and five operational E-8C JSTARS aircraft in FY16. As the recapitalized JSTARS aircraft are added to the Air Force inventory (projected IOC is FY22), additional E-8Cs will be retired. The Air Force is also committed to modernization of mission communications on the E-4 National Airborne Operations Center. Far-term efforts will include the potential recapitalization of the Air Force's ISR and C4 fleets. Near term, this year's aviation plan reflects some EC-130 Compass Call recapitalization investment outside the FYDP.

Department of the Navy. In 2013, the unmanned X-47B successfully conducted a carrier arrested landing aboard USS George H.W. Bush. Lessons from the successful landing demonstration will be integrated into the UCLASS program which will provide persistent, sea-based ISR with precision strike capabilities to the Joint Force with an initial capability by 2020. In the long term, the Department of the Navy will capitalize on unmanned demonstrations, initial UCLASS capability, and the analysis of future, sea-based unmanned systems in an effort to identify the appropriate mix of manned and unmanned assets in the future air-wing structure.

Leveraging Global Hawk technology, the Navy will procure the MQ-4C Triton to provide persistent maritime ISR to the fleet and Combatant Commanders to enhance situational awareness and shorten the sensor-to-shooter kill chain, providing intelligence preparation of the environment and a persistent source of information to maintain the common operational and tactical picture of the maritime battle space. MQ-4C will receive upgraded electronics intelligence capabilities and communications intelligence capabilities for fielding in 2020, which are crucial to complying with the FY11 National Defense Authorization Act.

Future MQ-8 missions will involve modular payloads supporting LCS class ship deployments. MQ-8C air vehicle procurements align to the LCS schedule and are deferred outside the FYDP; however, investment continues with subsystems tactical ground control station, launch and recovery systems, ancillary equipment and trainers. Various Rapid Deployment Capability initiatives including radar, weapons, and the MQ-8C endurance upgrade will provide persistent ISR capabilities for Joint and Navy requirements.

Pending a new UAS, the Marine Corps will rely on the RQ-21A for enhanced ISR, cyber/electronic warfare and limited strike capability.

The E-2D Advanced Hawkeye will achieve initial operational capability in FY15 and will replace the E-2C with the last squadron transition by 2025. The E-2D will provide improved surveillance and integrated air and missile defense capabilities in high clutter environments. Congressional action in FY14 approved a 32-aircraft multiyear procurement during FY14-18, but extreme fiscal pressures necessitated a deferral of seven aircraft from that procurement.

The E-6B Mercury derived from the Boeing 707 aircraft supports a flexible nuclear deterrent posture. Programmed mission system upgrades ensure the fleet remains on the cutting edge of full-spectrum communications supporting Nuclear Command, Control and Communications. The E-6B aircraft are expected to reach their 45,000 hours end of life January 2040. A

replacement aircraft will be identified to meet anticipated requirements within the 30 years encompassed by this report. The final inventory objective is projected to be 17 aircraft.

The Navy is developing a System of Systems construct to recapitalize the Airborne ISR&T capabilities currently resident in the EP-3 and SPA by the end of the decade. The focus is on developing common, scalable sensor payloads that can be delivered by a wide range of manned and unmanned programs including MQ-4C Triton Multi-INT, MQ-8, UCLASS, E-2C/D, H-60 and P-8. All of these programs of record will be able to leverage common sensor developments to avoid expensive “one-off” solutions thereby reducing the Navy’s integration and interoperability costs.

Over the long-term, the Navy will examine alternatives for recapitalizing the E-2D, P-8A, E-6B and MQ-4C fleets in the mid 2030’s.

### Special Operations Forces

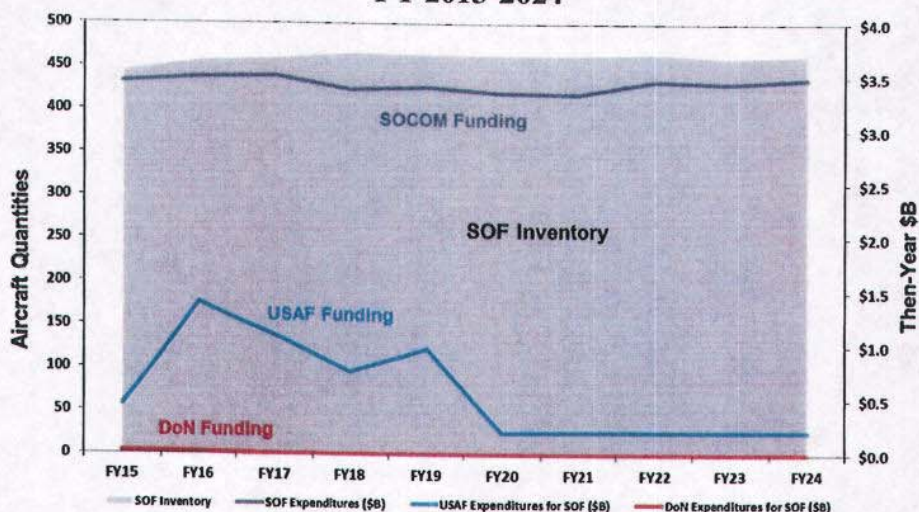
The following tables list DoD Special Operations Forces aviation assets and the 2014 current inventory by category for all active aircraft consistently tracked by the Departments.

<b>Special Operations Forces</b>	<b>SOCOM</b>
	AC-130, BC/C-130, C-32, C-146A, C-145A, MC-12, MC-130, PC-12, U-28, UH-1, C-12, CASA-212, UV-20, CV-22, A/MH-6, MH-47, MH-60, MQ-1, MQ-9

### 2014 Special Operations Forces Aviation Inventory

Category	Inventory (as of Sep 2014)
	<b>SOCOM</b>
<b>Total Aircraft</b>	484
<b>Mission</b>	363
<b>Training</b>	65
<b>RDT&amp;E</b>	0
Backup, Attrition Reserve, and Other Primary aircraft	56
<b>Active Component</b>	468
<b>Reserve Component</b>	16

## Special Operations Inventories & Funding FY 2015-2024



The above chart depicts annual Special Operations Forces Aviation inventory and funding projections over FY 2015-2024, to include Army, Air Force, and DoN contributions. Specific details on Special Operations Forces Aviation are outlined in the following paragraphs.

Special Operations Forces Aviation. Air Force Special Operations is on track to replace the legacy 37 AC-130 gunship fleet with 32 AC-130Js with completion by FY21. The Air Force also continues MC-130J acquisition to recapitalize the legacy MC-130 with 47 MC-130J aircraft by FY23. These aircraft will all be modified, with USSOCOM funds, to a penetrating tanker common configuration.

The Air Force's SOF vertical lift capability expansion remains on track with the CV-22 fleet growing to 43 by FY14. The final CV-22 was procured in FY14 and will be delivered in FY17, completing the planned fielding of 50 aircraft.

Air Force Special Operations manned ISR capability is on track to transition from the U-28A to 43 MC-12s by FY18 and will complement their MQ-9 CAPS to provide persistent coverage.

SOF rotary wing aviation platforms include the MH-47, MH-60 and A/MH-6. The inventory of these aircraft will remain constant throughout this reporting period. The MH-47 and MH-60 fleets will receive improvements and upgrades to peripheral systems, and the MH-60 will be replaced with new MH-60M airframes. The MH-47 fleet is reaching an average of over 44 years old. This requires the start of a renewal/renovation/replacement program to extend the life of these aircraft until the Joint Heavy lift program is initiated in the FY40 timeframe. MH-60 will leverage the Future Vertical Lift program to determine the future of medium assault platforms. The A/MH-6 aircraft will begin a block upgrade to aircraft systems and components.

Concerning the DoN, the HH-60H is currently serving as the Navy's primary special operations support helicopter. Dedicated Navy HH-60H support to Special Operations beyond FY15 will be a POM16 Navy budget decision.

With respect to the Army, the Army's Special Operations Aviation Command (ARSOAC) helicopter fleets are all undergoing modernization efforts focused on countering obsolescence and affordable performance and survivability improvements. However, the ARSOAC multipurpose armed reconnaissance helicopter (A/MH-6), and the Heavy Assault helicopter (MH-47G) are significantly older than the equivalent aircraft in the Army and will pose service life and life-cycle sustainment challenges. Particular attention to service programs will be required during this time period to ensure the service life of these aircraft can align with the larger service's efforts.

### **Budget Certification**

The Department's FY15 budget request and the associated FY15-19 FYDP provide the funding needed to implement the aviation investment plan through FY19 for all programs of record.

### **Sufficiency of Forces Assessment**

The FY15-44 aviation plan meets the national military strategy of the United States.

## Appendix I – Inactive Aircraft

Data for inactive aircraft is available for the Army and Air Force. The Navy does not track aircraft once they are stricken from the active inventory.

### USAF Inactive Aviation Inventory

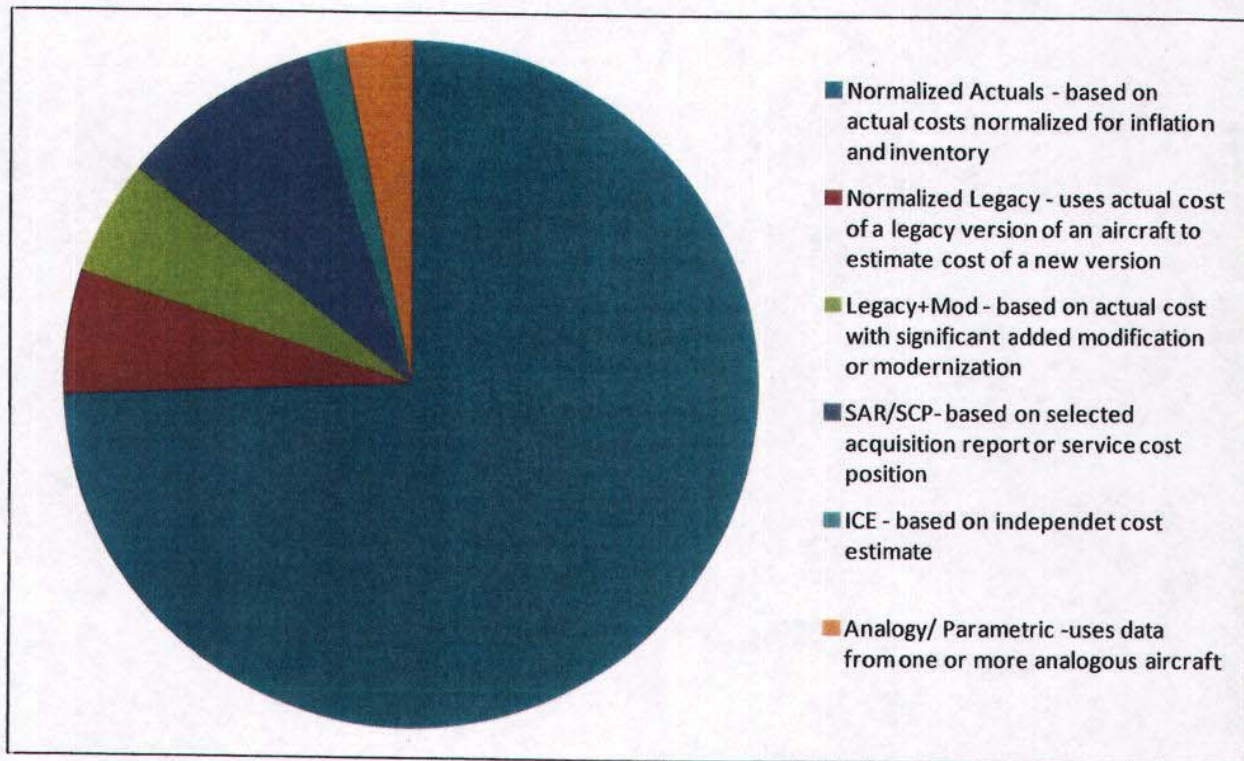
Inactive USAF Inventory	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24
<b>Fighter / Attack</b>	877	931	952	1005	1058	655	655	655	655	655
<b>Airlift / Cargo / Utility</b>	255	266	277	281	281	341	357	376	392	397
<b>Air Refueling</b>	159	159	159	174	189	233	247	259	275	293
<b>Trainers</b>	59	59	66	66	66	68	68	68	68	116
<b>Total</b>	<b>1350</b>	<b>1415</b>	<b>1454</b>	<b>1526</b>	<b>1594</b>	<b>1297</b>	<b>1327</b>	<b>1358</b>	<b>1390</b>	<b>1461</b>

### Army Inactive Aviation Inventory

Inactive Army Inventory	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24
<b>Attack Helicopter</b>	61	105	92	88	74	71	51	48	48	48
<b>Airlift / Cargo / Utility</b>	251	236	173	109	98	98	94	96	102	108
<b>ISR Scout</b>	101	98	101	32	31	1	1	0	0	0
<b>Total</b>	<b>413</b>	<b>439</b>	<b>366</b>	<b>229</b>	<b>203</b>	<b>170</b>	<b>146</b>	<b>144</b>	<b>150</b>	<b>156</b>

## Appendix II – Sources of Cost/Funding Information

The Budget Certification above is based on a number of cost sources identified in the chart below. Most of the aircraft types dealt with in this report have entered service, and many types are out of production. For these types of aircraft, the funding data is based on actual experience with procuring and operating the aircraft. For types of aircraft that are in development or low-rate initial production, the funding information comes from a CAPE Independent Cost Estimate (ICE) or the Service Cost Position (SCP). For programs that do not yet have an ICE or SCP, the funding information is based on historical analogy with similar programs (e.g., future fighters with F-22 and F-35, future bombers with the B-2).



CAPE prepares an ICE for aviation programs at major milestones, in response to Nunn-McCurdy breaches, and when requested to do so by the Under Secretary of Defense for Acquisition, Technology, and Logistics. For most programs, the latest SCP is newer than the CAPE ICE and incorporates the ICE plus developments that occurred after the ICE was prepared. The CAPE ICE almost always differs from the last SCP conducted before the ICE by more than 0.5%.

The table below lists programs currently having both an up-to-date SCP and an up-to-date CAPE ICE and shows the percentage difference between these positions. These are the only cases where the difference between the ICE and the SCP is relevant to the funding data presented in this report. For all other aircraft types, the funding data used in this report is based on historical procurement/sustainment costs, an SCP that is much newer than the ICE, an SCP that has not yet been followed by an ICE, or analogies with other programs. In each case of relevance to the funding data in this report, the CAPE ICE projects greater costs than the SCP. Each program

ICE explains, in detail, the reasons for differences from the SCP. A shorter and simplified explanation for the differences appears below the table.

KC-46 tanker	2%
F-35 Joint Strike Fighter	5%
P-8A Poseidon	2%
AH-64 Apache Block 3A	1%
AH-64 Apache Block 3B	4%
E-2D Advanced Hawkeye	6%
MQ-1C Gray Eagle	6%
F-22A Modernization	8%
Delta = (ICE - SCP)/SCP	

***KC-46 Tanker.*** The CAPE and SCP cost estimates for the KC-46 are about two percent different in total. The difference is primarily driven by procurement. Procurement differences can be attributed to expectations of the concession rates that can be achieved when procuring the commercial ("green") aircraft to be modified. Differences can also be attributed to the estimated costs of procuring and installing mission systems on this "green" aircraft

***F-35 Joint Strike Fighter.*** The difference between the CAPE and SCP cost estimates for the F-35 is primarily attributed to the areas of procurement (2%), MILCON (86%), and O&S (6%). The largest difference between CAPE and SCP estimates of procurement costs is attributable to the assumed future levels of commonality between F-35 variants. The CAPE estimate reflects less commonality among the three F-35 variants than the SCP estimate and, as a result, the CAPE estimates of variant unit costs are higher because of the inherent procurement inefficiencies associated with reduced commonality. The SCP estimate for MILCON uses previously-generated, narrowly defined service estimates that did not include all MILCON efforts required to support the entire F-35 fleet. The CAPE estimate is based on the facilities and infrastructure required for the joint training center planned for Elgin Air Force Base, and service-specific requirements for the Air Force, the Marine Corps, and the Navy. To estimate O&S costs, the SCP reflects a derived manning structure applied to the MER. The CAPE estimate applies average composite rates to the MER consistent with the actual staffing of the F-16 and F-22. Also, the CAPE estimate of unit-level consumption costs is higher than the SCP, primarily because the CAPE estimate uses an F-22 analogy for government-provided consumables while the SCP uses legacy Navy data. The CAPE estimate also applies cost growth to both the air vehicle and engine, while the SCP applies cost growth only to the air vehicle.

***P-8A POSEIDON.*** The CAPE and SCP cost estimates for the P-8A are nearly identical, with small differences in procurement (2%) and O&S (2%). The CAPE estimate for procurement is higher primarily due to differences in assumed cost escalation for both the base aircraft and P-8A- unique modifications over time. For the base aircraft, the SCP uses a contractor proposed Producer Price Index (PPI) while CAPE uses slightly higher escalation factors based on the historical difference between the aircraft procurement budget escalation indices and the aircraft



PPI for the past ten years. For the P-8A-unique modifications, the SCP assumes a contractor estimated level of reasonable changes, while CAPE assumes that modifications costs will grow over time, due to more typical engineering changes in early production. For O&S the largest difference in the estimates is in unit personnel, where CAPE assumes manning numbers as identified in the MER while the SCP adjusts the enlisted military personnel numbers down to reflect predicted authorizations.

AH-64 Apache Block 3A/3B. The differences between the CAPE and SCP cost estimates for the Apache Block 3A and Block 3B programs are primarily attributed to RDT&E for Block 3A (11% ) and procurement for Block 3A and 3B (11% and 7% respectively). The difference in RDT&E is driven primarily by software development activities. The CAPE cost estimates for these activities were developed by first estimating the cost of the remaining development based on Phase 1 software productivity, and then constraining program execution over time to the currently available software engineering staff. In contrast, the SCP did not constrain program execution to the available software development staff, so the RDT&E effort requires more resources up front than the CAPE estimate and finishes earlier. This approach would require the contractor to temporarily increase its software engineering staff; an action CAPE maintains is counterproductive and inefficient. The CAPE estimates for both Block 3A and 3B procurement are moderately higher than the SCP due to differing assumptions for labor and material learning curves, material escalation rates, and the production break impact resulting from the transition from the Apache Block 2 production line to the new Block 3 line.

E-2D Advanced Hawkeye (AHE). The difference between the CAPE and SCP cost estimates for the E-2D are primarily attributed to the area of O&S (6%), with the estimates for development and procurement being nearly identical, within 1% for both. The CAPE O&S estimate is higher due to the estimate of resources required for software support. CAPE forecasts that 100 full-time equivalent (FTE) employees are required to support the software maintenance activity, while the Navy assumed 65 FTE employees, based on historical maintenance activity for the E-2C. CAPE forecasts the need for additional employees due to the increase in size and complexity of E-2D software.

MQ-1C Gray Eagle Unmanned Aircraft System (UAS). The difference between the CAPE and SCP cost estimates for the MQ-1C are primarily attributed to the area of O&S (6%), with the estimates for development and procurement being within 1% and 2%, respectively. The CAPE O&S estimate is higher due to assumptions about cost growth above inflation (CGAI) for contractor and material costs. The CAPE estimate is based on negotiated Forward Pricing Rate Agreements (FPRAs) for contract labor resulting in higher labor costs relative to the SCP.

F-22A Modernization Increment 3.2B. The difference between the CAPE and SCP cost estimates for the F-22A modernization are primarily attributed to the area of O&S (7.9%), with the estimates for development and procurement being within 2% and 4%, respectively. The CAPE O&S estimate is higher, because it includes operation and sustainment of the entire fleet of F-22A aircraft, while the SCP includes only the marginal O&S costs of Increment 3.2B, not the full F-22A fleet O&S costs.

Confidence Levels. CAPE cost estimates are built upon a product-oriented work breakdown structure, based on historical actual cost information to the maximum extent possible, and most importantly, based on conservative assumptions that are consistent with actual demonstrated contractor and government performance for a series of acquisition programs in which the Department has been successful. It is difficult to calculate mathematically the precise confidence levels associated with CAPE life-cycle cost estimates prepared for MDAP programs. Based on the rigor in methods used in building CAPE estimates, the strong adherence to the collection and use of historical cost information, and the review of applied assumptions, it is equally likely that the CAPE estimate will prove too low or too high for execution of the described program.