Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-387

KC-46A Tanker Modernization (KC-46A)

As of December 31, 2012

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Program Information

Program Name

KC-46A Tanker Modernization (KC-46A)

DoD Component

Air Force

Responsible Office

Responsible Office

Maj Gen John F. Thompson
2590 Loop Road West
Wright Patterson AFB, OH 45433

john.thompson@wpafb.af.mil

Phone 937-255-9734
Fax 937-255-6350
DSN Phone 785-9734
DSN Fax 785-6350
Date Assigned August 1, 2012

References

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated August 24, 2011

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated August 24, 2011

Mission and Description

The KC-46A will replace the U.S. Air Force's aging fleet of KC-135 Stratotankers which have been the primary refueling aircraft for more than 50 years.

With more refueling capacity and enhanced capabilities, improved efficiency and increased capabilities for cargo and aeromedical evacuation, the KC-46A will provide aerial refueling support to the Air Force, Navy, and Marine Corps as well as allied nation coalition force aircraft.

The KC-46A will be able to refuel any fixed-wing receiver capable aircraft on any mission. This aircraft is equipped with a modernized KC-10 refueling boom integrated with a proven fly-by-wire control system and capable of delivering a fuel offload rate required for large aircraft. Furthermore, the hose and drogue system adds additional mission capability that is independently operable from the refueling boom system.

Two high-bypass turbofans, mounted under 34-degree swept wings, power the KC-46A to take off at gross weights up to 415,000 pounds. The centerline drogue and wing aerial refueling pods are used to refuel aircraft fitted with probes. All aircraft will be configured for the installation of a Multi-Point Refueling System.

Multi-Point Refueling System configured aircraft will be capable of refueling two receiver aircraft simultaneously from special "pods" mounted under the wing. One Aerial Refueling Operator controls the boom, centerline drogue, and wing refueling pods during refueling operations. This new tanker utilizes an advanced KC-10 boom, a center mounted drogue and wing aerial refueling pods allowing it to refuel multiple types of receiver aircraft as well as foreign national aircraft on the same mission.

A cargo deck above the refueling system can accommodate a mixed load of passengers, patients, and cargo. The KC-46A can carry up to eighteen 463L cargo pallets. Seat tracks and the onboard cargo handling system make it possible to simultaneously carry palletized cargo, seats, and patient support pallets in a variety of combinations. The KC-46A offers significantly increased cargo and aeromedical evacuation capabilities compared to the KC-135R.

The aircrew compartment includes 15 permanent seats for aircrew which includes permanent seating for the Aerial Refueling Operator and an Aerial Refueling Instructor. Panoramic displays provide the Aerial Refueling Operator wing-tip to wing-tip situational awareness.

Executive Summary

This SAR reflects cost and funding data based on the FY 2014 President's Budget (PB). In accordance with the KC-46A Acquisition Decision Memorandum (ADM) dated February 24, 2011, the KC-46A budget in the FY 2014 PB fully funds the program to the Air Force Milestone B Service Cost Position (SCP) and fact-of-life changes that include an on-going assessment and re-phasing of the Military Construction (MILCON) budget.

On February 23, 2011, the Under Secretary of Defense for Acquisition, Technology and Logistics (USD(AT&L)) conducted a successful Milestone B Defense Acquisition Board (DAB). The USD (AT&L) certified (with waivers) the provisions set forth at section 2366b of Title 10, United States Code. The USD(AT&L) waived certification provisions (a)(1)(B), (a)(1)(D), and (a)(2) of that section, in accordance with subsection (d). The USD(AT&L) will continue periodic reviews, in accordance with subsection (d)(2)(B), until a determination can be made for any of the three waived provisions. For Provisions (a)(1)(B) and (a)(1)(D), the Air Force has committed to work in the out-year budgeting process to realign program funding in accordance with the SCP. For provision (a)(2), a Preliminary Design Review (PDR) occurred in April 2012.

In April 2012, the Milestone Decision Authority (MDA) approved release the final KC-46A Aircrew Training System (ATS) Request for Proposal (RFP) and authorized the Air Force to execute the ATS contract. The Secretary of the Air Force signed the KC-46A ATS Life Cycle Management Plan (LCMP) on April 4, 2012. KC-46A ATS proposals were received from industry in June 2012, which marked the start of Source Selection. Contract award is projected to occur in the second quarter of calendar year 2013.

The KC-46A PDR was successfully completed on April 27, 2012. The Government and Boeing successfully completed the first step of a two-step PDR process on March 21- 22, 2012, which consisted of a detailed review of the 89 contractual entrance criteria to PDR. The second step, conducted April 23-27, 2012, consisted of a detailed review of the eight exit criteria and completion of all subsystem PDRs to Government satisfaction. The Post PDR Report was signed by the Program Executive Officer (PEO) on May 28, 2012. Deputy Assistant Secretary of Defense, Systems Engineering (DASD/SE) validated successful completion on June 20, 2012.

On June 29, 2012, the Financial Management Regulation (FMR) language that previously required 20 percent withhold in each FY on Fixed Price Incentive Firm (FPIF) contracts was changed. The revised FMR language allows for payments on the KC-46A FPIF development contract from oldest funds first, withholding 20 percent at the contract level versus at the Accounting Classification Reference Number (ACRN) level in each FY. This change eliminated a potential current for canceled bill of approximately $150M in Research, Development, Test and Evaluation (RDT&E) funds. The Defense Finance and Accounting Service (DFAS) processed the necessary adjustments to reflect the revised language effective in September 2012.

Boeing and the KC-46 Division conducted a Joint Schedule Risk Assessment (JSRA) Exercise in October 2012. The Division conducted analysis to evaluate the Integrated Master Schedule (IMS) quality, the assumptions used, and the validity of the results. The JSRA analysis concluded on November 1, 2012, and the comparative analysis suggested there is a less than 1 percent chance of Boeing meeting its internally set date of March 30, 2017 for Required Asset Availability (RAA) and a better than 80 percent chance of meeting the contracted date of August 24, 2017.

Defense Contract Management Agency (DCMA) issued a Level II Corrective Action Report (CAR) in November 2012, citing an inappropriate application of Management Reserve (MR). Boeing provided DCMA a Corrective Action Plan (CAP) in January 2013 and DCMA accepted Boeing's Earned Value Management-related CAP on April 23, 2013. In January 2013, Boeing returned $72M to MR. A majority, $48M, of the return was due to correcting the identified misapplication of MR as reported in the DCMA audit. The remaining $24M was attributed to favorable

rate impacts and Statement of Work (SOW) changes. As of end of month February 2013, Boeing has expended 60.1% percent of its MR. At the current rate, the remaining MR will be exhausted by April 2014. The Cost Performance Index (CPI) has been reduced by 0.017 from December 2012 (.972) to February 2013 (.955) – partially due to the return of MR from the performance measurement baseline and partially due to performance.

On December 14, 2012, the KC-46 Division completed its annual life cycle cost estimate, also referred to as the Program Office Estimate (POE). The POE encompassed the RDT&E, Procurement, MILCON, and Operating and Support (O&S) phases. The POE resulted in an approximately 6.3 percent increase ($5,284M to $5,615M) to the Estimate at Completion (EAC) on the Engineering, Manufacturing, and Development (EMD) FPIF contract. This estimate incorporated an assessment of contract cost and schedule performance, as well as cost risks from the June 2012 Integrated Risk Assessment (IRA) conducted between the KC-46 Division and Boeing. Despite the increased EMD contract EAC in the POE, no additional funding is required, as the Government's liability for the EMD contract is limited to the ceiling price.

To maximize the benefits of KC-46A capabilities, Air Mobility Command (AMC) has initiated operational and basing strategies to exploit its full capability and to leverage that capability across the total force. KC-46A delivers an increased capability (fuel offload, multi-role, survivability, etc.) that will allow the Air Force to better support joint and coalition warfighter/humanitarian requirements. In order to maximize KC-46A effectiveness and efficiency, an improved basing strategy with increased Total Force Associations (TFA) and an increased flying hour program will be required to meet the KC-46A aircrew readiness requirements of 3.5 crew ratio and receiver aircraft mission needs. This flying hour program is now estimated at 670 hours per aircraft per year beginning in FY 2020. These operational changes result in an increase to the KC-46A O&S costs of 11 percent above the original plan put in place at Milestone B. This cost increase is not due to aircraft design performance, which remains unchanged. The Air Force is not projecting any increase to its top line budget; the increased KC-46A manpower and flying hours will be addressed by repurposing KC-135 personnel and flying hours. While the Air Force expects to gain efficiencies, the magnitude of those efficiencies is affected by numerous factors to include: the rate at which KC-135 aircraft are replaced by the KC-46A, Concept of Operations (CONOPS), training requirements, and basing strategy/crew ratio. The effects will be better known with future definition of these factors. The Air Force is committed to staying within its Total Obligation Authority (TOA) in the transition from the KC-135 to the KC-46A.

The KC-46A Tanker Modernization Program Test and Evaluation Master Plan (TEMP) was approved by the Director, Operational Test and Evaluation (DOT&E) on January 18, 2013. DOT&E and Assistant Secretary of Defense (ASD) Developmental Test and Evaluation (DT&E) expressed concern that there may be insufficient time planned to correct potential deficiencies before Initial Operational Test and Evaluation (IOT&E); however, the KC-46 Division will monitor and ensure that Boeing satisfies all test-related reviews so that risks are mitigated and do not travel downstream.

The KC-46 Division's attention will continue to focus on successful program execution and stability. Program execution will be carefully managed to ensure Boeing meets all contract requirements, and the Government maintains the competitively negotiated program cost, schedule, and performance baselines. The PEO’s number one priority is successful execution of a comprehensive Critical Design Review in fourth quarter FY 2013.

The KC-46 Division is closely tracking software as a program risk, but there are no significant software-related issues with the program at this time.

Threshold Breaches

APB Breaches		
Schedule		☐
Performance		☐
Cost	RDT&E	☐
	Procurement	☐
	MILCON	☐
	Acq O&M	☐
O&S Cost		☑
Unit Cost	PAUC	☐
	APUC	☐

Nunn-McCurdy Breaches		
Current UCR Baseline		
	PAUC	None
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

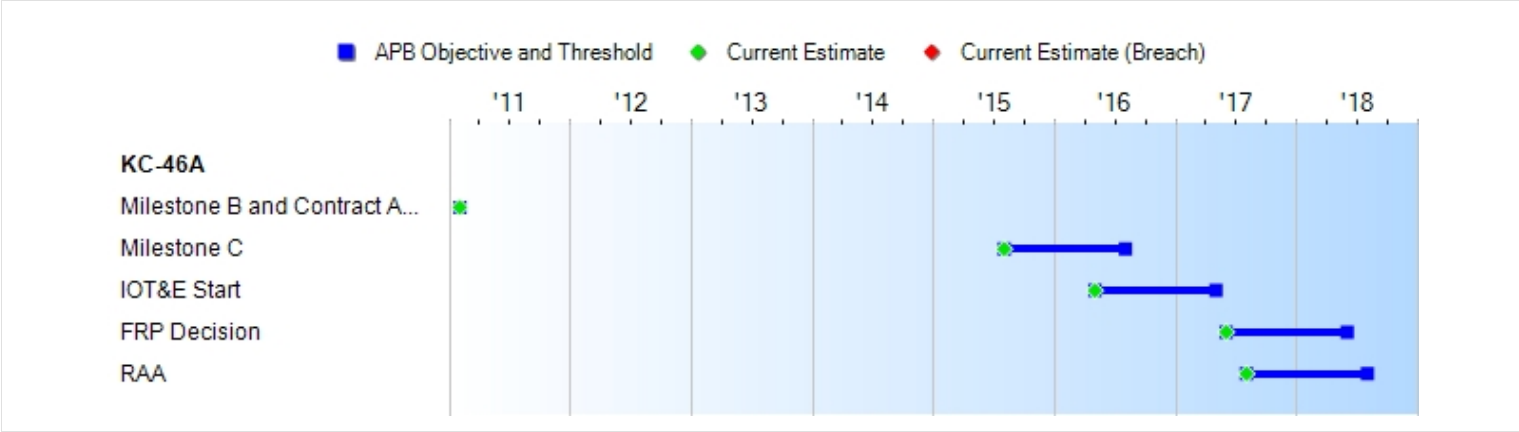
Explanation of Breach

Operating and Support (O&S) Cost Growth:

To maximize the benefits of KC-46A capabilities, Air Mobility Command (AMC) has initiated operational and basing strategies to exploit its full capability and to leverage that capability across the total force. KC-46A delivers an increased capability (fuel offload, multi-role, survivability, etc.) that will allow the Air Force to better support joint and coalition warfighter/humanitarian requirements. In order to maximize KC-46A effectiveness and efficiency, an increased flying hour program will be required to meet KC-46A aircrew readiness requirements of 3.5 crew ratio and receiver aircraft mission needs. This flying hour program is now estimated at 670 hours per aircraft per year beginning in fiscal year 2020. These operational changes result in an increase to KC-46A O&S Costs of 11 percent above the original plan put in place at Milestone B. This cost increase is not due to aircraft design performance, which remains unchanged.

The official notification of the O&S Cost Growth has been reported to the Milestone Decision Authority (MDA).

Schedule



Milestones	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Current Estimate
Milestone B and Contract Award	FEB 2011	FEB 2011	FEB 2011	FEB 2011
Milestone C	AUG 2015	AUG 2015	AUG 2016	AUG 2015
IOT&E Start	MAY 2016	MAY 2016	MAY 2017	MAY 2016
FRP Decision	JUN 2017	JUN 2017	JUN 2018	JUN 2017
RAA	AUG 2017	AUG 2017	AUG 2018	AUG 2017

Acronyms And Abbreviations

FRP - Full Rate Production
IOT&E - Initial Operational Test and Evaluation
RAA - Required Assets Available

Change Explanations

None

Memo

IOT&E Start represents the beginning of Dedicated IOT&E, which will commence upon Office of the Secretary of Defense approval of the Operational Test Readiness Review.

The RAA date is directed to be no later than 78 months after contract award. RAA is defined as 18 aircraft meeting final production configuration with all required training equipment, support equipment, and sustainment support in place to support Initial Operational Capability.

Performance

Characteristics	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Demonstrated Performance	Current Estimate
Tanker Air Refueling Capability	The aircraft should be capable of accomplish-ing air refueling of all current and programmed tilt rotor receiver aircraft in accordance with technical guidance and STANAGs using current procedures and refueling airspeeds with no modification to existing receiver air refueling equipment and no restrictions to the refueling envelope at its maximum inflight gross weight. While engaged, the KC-X should be capable of maneuvering throughout the entire	The aircraft should be capable of accomplish-ing air refueling of all current and programmed tilt rotor receiver aircraft in accordance with technical guidance and STANAGs using current procedures and refueling airspeeds with no modification to existing receiver air refueling equipment and no restrictions to the refueling envelope at its maximum inflight gross weight. While engaged, the KC-X should be capable of maneuvering throughout the entire	The aircraft shall be capable of accomplish-ing air refueling of all current and programmed fixed-wing receiver aircraft in accordance with technical guidance and STANAGs using current procedures and refueling airspeeds with no modification to existing receiver air refueling equipment and no restrictions to the refueling envelope. The aircraft shall be able to effectively conduct (non-simultan-eously) both boom and drogue air refuelings on the same mission.	TBD	Will meet or exceed Current APB Threshold. The aircraft shall be capable of accomplish-ing air refueling of all current and programmed fixed-wing receiver aircraft in accordance with technical guidance and STANAGs using current procedures and refueling airspeeds with no modification to existing receiver air refueling equipment and no restrictions to the refueling envelope. The aircraft shall be able to effectively conduct (non-simultan-eously) both boom and

	refueling envelope, in accordance with applicable air refueling manuals and standard agreements, of any compatible current and programmed tilt rotor receiver aircraft.	refueling envelope, in accordance with applicable air refueling manuals and standard agreements, of any compatible current and programmed tilt rotor receiver aircraft.	While engaged, the KC-X shall be capable of maneuvering throughout the entire refueling envelope, in accordance with applicable air refueling manuals and standard agreements, of any compatible current and programmed fixed wing receiver aircraft.		drogue air refuelings on the same mission. While engaged, the KC-X shall be capable of maneuvering throughout the entire refueling envelope, in accordance with applicable air refueling manuals and standard agreements, of any compatible current and programmed fixed wing receiver aircraft.
Fuel Offload versus Radius	The aircraft should be capable of exceeding the offload versus radius as depicted in Figure 6.1.	The aircraft should be capable of exceeding the offload versus radius as depicted in Figure 6.1.	The aircraft shall be capable, as a minimum, of an offload versus radius as depicted in Figure 6.1.	TBD	Will meet or exceed Current APB Objective. The aircraft should be capable of exceeding the offload versus radius as depicted in Figure 6.1.
Civil/Military CNS/ATM	Aircraft shall be capable of worldwide flight operations at all times in all civil and military airspace at time of	Aircraft shall be capable of worldwide flight operations at all times in all civil and military airspace at time of	Aircraft shall be capable of worldwide flight operations at all times in all civil and military airspace at time of	TBD	Will meet or exceed Current APB Objective. Aircraft shall be capable of worldwide flight operations at all times in

	aircraft delivery, including known future CNS/ATM require-ments, with redundant systems. Capability to inhibit CNS/ATM emissions and prohibit transmission of CNS/ATM-related data accumulated during the inhibited portion of the mission. Civil ATC data link media for LOS and BLOS communicat-ions.	aircraft delivery, including known future CNS/ATM require-ments, with redundant systems. Capability to inhibit CNS/ATM emissions and prohibit transmission of CNS/ATM-related data accumulated during the inhibited portion of the mission. Civil ATC data link media for LOS and BLOS communicat-ions.	aircraft delivery, including known future CNS/ATM require-ments, with redundant systems. Capability to inhibit CNS/ATM emissions and prohibit transmission of CNS/ATM-related data accumulated during the inhibited portion of the mission. Civil ATC data link media for LOS and BLOS communicat-ions.		all civil and military airspace at time of aircraft delivery, including known future CNS/ATM require-ments, with redundant systems. Capability to inhibit CNS/ATM emissions and prohibit transmission of CNS/ATM-related data accumulated during the inhibited portion of the mission. Civil ATC data link media for LOS and BLOS communicat-ions.
Airlift Capability	The aircraft shall be capable of efficiently transporting equipment and personnel and fit seamlessly into the Defense Transporta-tion System. The aircraft's entire main cargo deck must be	The aircraft shall be capable of efficiently transport-ing equipment and personnel and fit seamlessly into the Defense Transporta-tion System. The aircraft's entire main cargo deck must be	The aircraft shall be capable of efficiently transport-ing equipment and personnel and fit seamlessly into the Defense Transporta-tion System. The aircraft's entire main cargo deck must be	TBD	Will meet or exceed Current APB Objective. The aircraft shall be capable of efficiently transporting equipment and personnel and fit seamlessly into the Defense Transporta-tion System.

	convertible to an all cargo configuration that accommo-dates 463L pallets, an all passenger configuration (plus baggage) (or equivalent AE capability to include ambulatory and/or patient support pallets), and must optimize a full range of palletized cargo, passengers, and AE configurat-ions that fully and efficiently utilize all available main deck space.	convertible to an all cargo configurat-ion that accommo-dates 463L pallets, an all passenger configuration (plus baggage) (or equivalent AE capability to include ambulatory and/or patient support pallets), and must optimize a full range of palletized cargo, passengers, and AE configurat-ions that fully and efficiently utilize all available main deck space.	convertible to an all cargo configurat-ion that accommo-dates 463L pallets, an all passenger configuration (plus baggage) (or equivalent AE capability to include ambulatory and/or patient support pallets), and must optimize a full range of palletized cargo, passengers, and AE configurat-ions that fully and efficiently utilize all available main deck space.		The aircraft's entire main cargo deck must be convertible to an all cargo configurat-ion that accommo-dates 463L pallets, an all passenger configuration (plus baggage) (or equivalent AE capability to include ambulatory and /or patient support pallets), and must optimize a full range of palletized cargo, passengers, and AE configurat-ions that fully and efficiently utilize all available main deck space.
Receiver Air Refueling Capability	The aircraft must be capable of receiver air refueling (IAW current technical directives) to its maximum inflight gross	The aircraft must be capable of receiver air refueling (IAW current technical directives) to its maximum inflight gross	The aircraft must be capable of receiver air refueling (IAW current technical directives) from any compatible	TBD	Will meet or exceed Current APB Objective. The aircraft must be capable of receiver air refueling (IAW current

	weight from any compatible tanker aircraft using current air refueling procedures.	weight from any compatible tanker aircraft using current air refueling procedures.	tanker aircraft using current air refueling procedures.		technical directives) to its maximum inflight gross weight from any compatible tanker aircraft using current air refueling procedures.
Force Protection	Aircraft shall be able to operate in chemical and biological environments	Aircraft shall be able to operate in chemical and biological environments	Aircraft shall be able to operate in chemical and biological environments	TBD	Will meet or exceed Current APB Objective. Aircraft shall be able to operate in chemical and biological environments .
Net-Ready	The system must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net-Centric military operations to include: 1) DISR-mandated GIG IT	The system must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net-Centric military operations to include: 1) DISR-mandated GIG IT	The system must fully support execution of joint critical operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for transition to Net-Centric military operations to include: 1) DISR-mandated	TBD	Will meet or exceed Current APB Objective. The system must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net-Centric military operations

	standards and profiles identified in the TV-1, 2) DISR-mandated GIG KIPs identified in the KIP declaration table, 3) NCOW RM Enterprise Services, 4) IA requirements including availability, integrity, authenticat-ion, confidential-ity, and non-repudiation, and issuance of an ATO by the DAA, and 5) Operationally effective information exchanges; and mission critical performance and IA attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system	standards and profiles identified in the TV-1, 2) DISR-mandated GIG KIPs identified in the KIP declaration table, 3) NCOW RM Enterprise Services, 4) IA requirements including availability, integrity, authenticat-ion, confidential-ity, and non-repudiation, and issuance of an ATO by the DAA, and 5) Operationally effective information exchanges; and mission critical performance and IA attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system	GIG IT standards and profiles identified in the TV-1, 2) DISR mandated GIG KIPs identified in the KIP declaration table, 3) NCOW RM Enterprise Services, 4) IA requirements including availability, integrity, authenticat-ion, confidential-ity, and non-repudiation, and issuance of an IATO by the DAA, and 5) Operationally effective information exchanges; and mission critical performance and IA attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and		to include: 1) DISR-mandated GIG IT standards and profiles identified in the TV-1, 2) DISR-mandated GIG KIPs identified in the KIP declaration table, 3) NCOW RM Enterprise Services, 4) IA requirements including availability, integrity, authenticat-ion, confidential-ity, and non-repudiation, and issuance of an ATO by the DAA, and 5) Operationally effective information exchanges; and mission critical performance and IA attributes, data correctness, data availability, and consistent data processing specified in

	integrated architecture views.	integrated architecture views.	system integrated architecture views.		the applicable joint and system integrated architecture views.
Survivability	Aircraft SPM. Tanker aircraft shall be able to operate in hostile environments as discussed in Section 4 and AFTTP 3-3.22B. SPM shall provide automated protection against IR threats as described in AMC Annex to LAIRCM ORD 314-92 dated 25 Jan 2001. SPM shall provide automated protection against RF threats as described in the ASACM CDD, May 22, 2006, with the exception of Reduction in Lethality values in Table 28. The aircraft system shall support use	Aircraft SPM. Tanker aircraft shall be able to operate in hostile environments as discussed in Section 4 and AFTTP 3-3.22B. SPM shall provide automated protection against IR threats as described in AMC Annex to LAIRCM ORD 314-92 dated 25 Jan 2001. SPM shall provide automated protection against RF threats as described in the ASACM CDD, May 22, 2006, with the exception of Reduction in Lethality values in Table 28. The aircraft system shall support use	Aircraft SPM. Tanker aircraft shall be able to operate in hostile environments as discussed in Section 4 and AFTTP 3-3.22B. SPM shall provide automated protection against IR threats as described in AMC Annex to LAIRCM ORD 314-92 dated 25 Jan 2001. SPM shall provide automated protection against RF threats as described in the ASACM CDD, May 22, 2006, with the exception of Reduction in Lethality values in Table 28. The aircraft system shall support use	TBD	Will meet or exceed Current APB Threshold. Aircraft SPM. Tanker aircraft shall be able to operate in hostile environments as discussed in Section 4 and AFTTP 3-3.22B. SPM shall provide automated protection against IR threats as described in AMC Annex to LAIRCM ORD 314-92 dated 25 Jan 2001. SPM shall provide automated protection against RF threats as described in the ASACM CDD, May 22, 2006, with the exception of Reduction in Lethality values in

	of existing night vision devices and laser eye protection devices. The aircraft shall be capable of takeoff, landing, and air refueling, as a tanker and receiver in an NVIS environment. KC-X must be capable of flying tanker tactical profiles as specified in MCM 3-1, Vol 22, AF Tactics, Training, Procedures, Jun 03. Aircraft shall have the capability to receive off-board situational awareness data, correlate this data with on-board sensor data, display battle-space information to provide situational awareness, and assist in using counter-measures and	of existing night vision devices and laser eye protection devices. The aircraft shall be capable of takeoff, landing, and air refueling, as a tanker and receiver in an NVIS environment. KC-X must be capable of flying tanker tactical profiles as specified in MCM 3-1, Vol 22, AF Tactics, Training, Procedures, Jun 03. Aircraft shall have the capability to receive off-board situational awareness data, correlate this data with on-board sensor data, display battle-space information to provide situational awareness, and assist in using counter-measures and	of existing night vision devices and laser eye protection devices. The aircraft shall be capable of takeoff, landing, and air refueling, as a tanker and receiver in an NVIS environment. KC-X must be capable of flying tanker tactical profiles as specified in MCM 3-1, Vol 22, AF Tactics, Training, Procedures, Jun 03. Aircraft shall have the capability to receive off-board situational awareness data, correlate this data with on-board sensor data, display battle-space information to provide situational awareness, and assist in using counter-measures and		Table 28. The aircraft system shall support use of existing night vision devices and laser eye protection devices. The aircraft shall be capable of takeoff, landing, and air refueling, as a tanker and receiver in an NVIS environment. KC-X must be capable of flying tanker tactical profiles as specified in MCM 3-1, Vol 22, AF Tactics, Training, Procedures, Jun 03. Aircraft shall have the capability to receive off-board situational awareness data, correlate this data with on-board sensor data, display battle-space information to provide situational awareness, and assist in

	defensive systems to avoid potential threats as discussed in the ASACM CDD. EMP protection for all mission components.	defensive systems to avoid potential threats as discussed in the ASACM CDD. EMP protection for all mission components.	defensive systems to avoid potential threats as discussed in the ASACM CDD. The KC-X fleet shall have EMP protection for flight-critical aircraft systems.		using counter-measures and defensive systems to avoid potential threats as discussed in the ASACM CDD. The KC-X fleet shall have EMP protection for flight-critical aircraft systems.
Simultaneous Multi-Point Refuelings	The aircraft shall be provisioned (including structural modificat-ions, plumbing, electrical, etc.) for simultaneous multi-point drogue refueling.	The aircraft shall be provisioned (including structural modificat-ions, plumbing, electrical, etc.) for simultaneous multi-point drogue refueling.	The aircraft shall be provisioned (including structural modificat-ions, plumbing, electrical, etc.) for simultaneous multi-point drogue refueling.	TBD	Will meet or exceed Current APB Objective. The aircraft shall be provisioned (including structural modificat-ions, plumbing, electrical, etc.) for simultaneous multi-point drogue refueling.
Operational Availability	Operational availability shall be not less than 89%.	Operational availability shall be not less than 89%.	Operational availability shall be not less than 80%.	TBD	Will meet or exceed APB Objective. Operational availability shall be not less than 89%.
Mission Reliability	Break Rate shall be equal to or better than the 2006 KC-	Break Rate shall be equal to or better than the 2006 KC-	Break Rate shall be equal to or better than the 2006 KC-	TBD	Will meet or exceed Current APB Objective. Break Rate

	10 Six Sigma mean BR of 1.3 (breaks per 100 sorties).	10 Six Sigma mean BR of 1.3 (breaks per 100 sorties).	10 Six Sigma mean BR of 1.3 (breaks per 100 sorties).		shall be equal to or better than the 2006 KC-10 Six Sigma mean BR of 1.3 (breaks per 100 sorties).

Requirements Source: Capability Development Document (CDD) Version 7.0 dated December 27, 2006

Acronyms And Abbreviations

AE - Aeromedical Evacuation
AF - Air Force
AFTTP - Air Force Tactics, Techniques, and Procedures
AMC - Air Mobility Command
APB - Acquistion Program Baseline
ASACM - Advanced Situational Awareness and Countermeasures
ATC - Air Traffic Control
ATO - Approval to Operate
BLOS - Beyond Line of Sight
BR - Break Rate
CDD - Capability Development Document
CNS/ATM - Communication Navigation Surveillance/Air Traffic Management
DAA - Designated Approval Authority
DISR - DoD IT Standards Registry
EMP - Electromagnetic Pulse
GIG - Global Information Grid
IA - Information Assurance
IATO - Interim Authority to Operate
IAW - In Accordance With
IR - Infared
IT - Information Technology
KIP - Key Interface Profile
LAIRCM - Large Aircraft Infrared Countermeasures
LOS - Line of Sight
MCM - Multi-Command Manual
NCOW RM - Net Centric Operations Warfare Reference Model
NVIS - Night Vision and Imaging Systems
ORD - Operational Requirements Document
RF - Radio Frequency
SPM - Self-Protection Measures
STANAGs - Standard Agreements
TBD - To Be Determined
TV - Technical View
Vol - Volume

Change Explanations

None

Memo

Tanker Air Refueling Capability: The Key Performance Parameter (KPP) objective includes the KPP threshold requirement. Therefore, the KPP objective requires air refueling of all current and programmed fixed-wing receiver aircraft and air refueling of all current and programmed tilt rotor receiver aircraft. The ability to refuel at maximum inflight gross weight portion of this KPP objective was not included as one of the contractually-required 372 mandatory requirements. Therefore, the KC-46A Engineering and Manufacturing Development (EMD) contract does not require the contractor to meet this portion of the objective.

Fuel Offload versus Radius: Figure 6.1, as referenced in the objective and threshold values, is located in the KC-X CDD.

Survivability: Section 4, as referenced in the objective and threshold values, is located in the KC-X CDD. The Electromagnetic Pulse protection for all mission components portion of this KPP objective was not included as one of the contractually-required 372 mandatory requirements. Therefore, the KC-46A EMD contract does not require the contractor to meet this portion of the objective.

Operational Availability (OA): OA equals the Total Aircraft in the Inventory (TAI) less the number of depot possessed aircraft (including programmed depot maintenance and unscheduled depot maintenance) less the number of aircraft that are not mission capable divided by TAI. OA as stated in the CDD is equivalent to and meets the requirement for Materiel Availability as required by the Manual for the Operation of the Joint Capabilities Integration and Development System (JCIDS).

Mission Reliability: BR is defined in Air Force Instruction 21-101 and is the percentage of aircraft that land in “Code-3”, or “Alpha-3” for Mobility AF, status. BR (%) equals number of sorties that land in “Code-3” divided by total sorties flown times 100. Mission Reliability as stated in the CDD meets the requirement for Materiel Reliability as required by the Manual for the Operation of JCIDS.

Track To Budget

RDT&E				
APPN 3600	BA 07	PE 0401221F	(Air Force)	
	Project 674927	KC-135 Replacement Tanker		(Sunk)
APPN 3600	BA 05	PE 0605221F	(Air Force)	
	Project 655271	KC-46		
Procurement				
APPN 3010	BA 02	PE 0401221F	(Air Force)	
	ICN KC046A	KC-46A Tanker		
MILCON				
APPN 3300	BA 01	PE 0401221F	(Air Force)	
	Project VARIOUS	KC-46, MILCON		
APPN 3830	BA 01	PE 0501413F	(Air Force)	
	Project PAYZ1590	KC-46A CORROSION CONTROL/FUEL C		
	Project ID is PAYZ159001. Field is character limited and dropped the last two digits.			
	Project PAYZ1590	KC-46 APRON/FUEL MOB#2		
	Project ID is PAYZ159002. Field is character limited and dropped the last two digits.			

In the Fiscal Year 2014 President's Budget , Military Construction (MILCON) funds were allocated to Appropriation 3830 - Air National Guard MILCON. A new Program Element (PE# 0501413F) was added to the MILCON Track to Budget.

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

Appropriation	BY2011 $M			BY2011 $M	TY $M		
	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Dev Est	Current APB Development Objective	Current Estimate
RDT&E	6804.2	6804.2	7484.6	6652.4	7149.6	7149.6	7069.8
Procurement	33040.3	33040.3	36344.3	31959.8	40236.0	40236.0	40321.4
Flyaway	27690.4	--	--	26808.5	33776.5	--	33907.9
Recurring	27690.4	--	--	26808.5	33776.5	--	33907.9
Non Recurring	0.0	--	--	0.0	0.0	--	0.0
Support	5349.9	--	--	5151.3	6459.5	--	6413.5
Other Support	2840.7	--	--	2732.3	3397.9	--	3351.9
Initial Spares	2509.2	--	--	2419.0	3061.6	--	3061.6
MILCON	3673.7	3673.7	4041.1	3422.8	4314.6	4314.6	4250.9
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	43518.2	43518.2	N/A	42035.0	51700.2	51700.2	51642.1

Confidence Level for Current APB Cost 55% - The Air Force Service Cost Position (SCP) for the KC-46A is at the mean of the cost estimate distribution (in this case the 55 percent confidence level. It takes into consideration all relevant program risks, providing sufficient resources to execute the program under normal conditions encountering average levels of technical, schedule, and programmatic risk and external influence.

In accordance with the KC-46A Acquisition Decision Memorandum dated February 24, 2011, the KC-46A FY 2014 President's Budget, as submitted, continues to fund the Air Force Service Cost Position (SCP) updated for fact-of-life program execution and funding changes.

Quantity	SAR Baseline Dev Est	Current APB Development	Current Estimate
RDT&E	4	4	4
Procurement	175	175	175
Total	179	179	179

Cost and Funding

Funding Summary

Appropriation and Quantity Summary
FY2014 President's Budget / December 2012 SAR (TY$ M)

Appropriation	Prior	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	To Complete	Total
RDT&E	1785.5	1815.6	1558.6	911.6	613.4	320.0	60.7	4.4	7069.8
Procurement	0.0	0.0	0.0	1777.8	2777.4	3228.7	3382.3	29155.2	40321.4
MILCON	0.0	0.0	264.3	244.4	306.2	261.2	275.0	2899.8	4250.9
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2014 Total	1785.5	1815.6	1822.9	2933.8	3697.0	3809.9	3718.0	32059.4	51642.1
PB 2013 Total	1845.0	1815.6	1831.8	3018.8	3533.5	3941.5	3646.9	32343.9	51977.0
Delta	-59.5	0.0	-8.9	-85.0	163.5	-131.6	71.1	-284.5	-334.9

Program funding and production quantities listed in this SAR are consistent with the FY 2014 President's Budget (PB). The FY 2014 PB did not reflect the enacted DoD appropriation for FY 2013, nor sequestration; it reflected the President's requested amounts for FY 2013.

Quantity	Undistributed	Prior	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	To Complete	Total
Development	4	0	0	0	0	0	0	0	0	4
Production	0	0	0	0	7	12	15	15	126	175
PB 2014 Total	4	0	0	0	7	12	15	15	126	179
PB 2013 Total	4	0	0	0	7	12	15	15	126	179
Delta	0	0	0	0	0	0	0	0	0	0

Cost and Funding

Annual Funding By Appropriation

Annual Funding TY$
3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway TY $M	Non End Item Recurring Flyaway TY $M	Non Recurring Flyaway TY $M	Total Flyaway TY $M	Total Support TY $M	Total Program TY $M
2005	--	--	--	--	--	--	10.2
2006	--	--	--	--	--	--	10.1
2007	--	--	--	--	--	--	67.8
2008	--	--	--	--	--	--	16.7
2009	--	--	--	--	--	--	17.8
2010	--	--	--	--	--	--	305.1
2011	--	--	--	--	--	--	538.9
2012	--	--	--	--	--	--	818.9
2013	--	--	--	--	--	--	1815.6
2014	--	--	--	--	--	--	1558.6
2015	--	--	--	--	--	--	911.6
2016	--	--	--	--	--	--	613.4
2017	--	--	--	--	--	--	320.0
2018	--	--	--	--	--	--	60.7
2019	--	--	--	--	--	--	4.4
Subtotal	**4**	**--**	**--**	**--**	**--**	**--**	**7069.8**

Annual Funding BY$
3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2011 $M	Non End Item Recurring Flyaway BY 2011 $M	Non Recurring Flyaway BY 2011 $M	Total Flyaway BY 2011 $M	Total Support BY 2011 $M	Total Program BY 2011 $M
2005	--	--	--	--	--	--	11.4
2006	--	--	--	--	--	--	10.9
2007	--	--	--	--	--	--	71.6
2008	--	--	--	--	--	--	17.3
2009	--	--	--	--	--	--	18.2
2010	--	--	--	--	--	--	307.6
2011	--	--	--	--	--	--	532.8
2012	--	--	--	--	--	--	793.5
2013	--	--	--	--	--	--	1720.7
2014	--	--	--	--	--	--	1449.6
2015	--	--	--	--	--	--	832.0
2016	--	--	--	--	--	--	549.4
2017	--	--	--	--	--	--	281.3
2018	--	--	--	--	--	--	52.4
2019	--	--	--	--	--	--	3.7
Subtotal	**4**	**--**	**--**	**--**	**--**	**--**	**6652.4**

Annual Funding TY$
3010 | Procurement | Aircraft Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway TY $M	Non End Item Recurring Flyaway TY $M	Non Recurring Flyaway TY $M	Total Flyaway TY $M	Total Support TY $M	Total Program TY $M
2015	7	1416.1	--	--	1416.1	361.7	1777.8
2016	12	2274.7	--	--	2274.7	502.7	2777.4
2017	15	2526.9	--	--	2526.9	701.8	3228.7
2018	15	2725.4	--	--	2725.4	656.9	3382.3
2019	15	2716.6	--	--	2716.6	620.7	3337.3
2020	15	2769.0	--	--	2769.0	619.8	3388.8
2021	15	2828.1	--	--	2828.1	490.2	3318.3
2022	15	2900.1	--	--	2900.1	471.6	3371.7
2023	15	2961.3	--	--	2961.3	535.3	3496.6
2024	15	3024.8	--	--	3024.8	515.9	3540.7
2025	15	3096.9	--	--	3096.9	393.6	3490.5
2026	15	3193.8	--	--	3193.8	367.8	3561.6
2027	6	1474.2	--	--	1474.2	175.5	1649.7
Subtotal	**175**	**33907.9**	**--**	**--**	**33907.9**	**6413.5**	**40321.4**

Annual Funding BY$
3010 | Procurement | Aircraft Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2011 $M	Non End Item Recurring Flyaway BY 2011 $M	Non Recurring Flyaway BY 2011 $M	Total Flyaway BY 2011 $M	Total Support BY 2011 $M	Total Program BY 2011 $M
2015	7	1256.9	--	--	1256.9	321.0	1577.9
2016	12	1981.3	--	--	1981.3	437.8	2419.1
2017	15	2159.9	--	--	2159.9	599.9	2759.8
2018	15	2286.1	--	--	2286.1	551.1	2837.2
2019	15	2236.3	--	--	2236.3	510.9	2747.2
2020	15	2236.9	--	--	2236.9	500.7	2737.6
2021	15	2242.0	--	--	2242.0	388.7	2630.7
2022	15	2256.3	--	--	2256.3	366.9	2623.2
2023	15	2260.9	--	--	2260.9	408.7	2669.6
2024	15	2266.3	--	--	2266.3	386.6	2652.9
2025	15	2277.1	--	--	2277.1	289.4	2566.5
2026	15	2304.6	--	--	2304.6	265.3	2569.9
2027	6	1043.9	--	--	1043.9	124.3	1168.2
Subtotal	**175**	**26808.5**	**--**	**--**	**26808.5**	**5151.3**	**31959.8**

Annual Funding TY$
3300 | MILCON | Military Construction, Air Force

Fiscal Year	Total Program TY $M
2014	264.3
2015	150.4
2016	306.2
2017	261.2
2018	275.0
2019	632.1
2020	444.2
2021	204.1
2022	342.1
2023	361.4
2024	432.4
2025	411.0
2026	72.5
Subtotal	**4156.9**

Annual Funding BY$
3300 | MILCON | Military Construction, Air Force

Fiscal Year	Total Program BY 2011 $M
2014	238.0
2015	132.9
2016	265.5
2017	222.3
2018	229.6
2019	518.0
2020	357.2
2021	161.1
2022	265.0
2023	274.7
2024	322.5
2025	300.8
2026	52.1
Subtotal	**3339.7**

The KC-46A 3300 appropriation TY$ was reduced to $4,156.9M from $4,250.9M in the December 2012 Selected Acquisition Report as a result of funds being directed to the Air National Guard Military Construction (MILCON) appropriation in the Fiscal Year 2014 President's Budget.

Annual Funding TY$
3830 | MILCON | Military Construction, Air National Guard

Fiscal Year	Total Program TY $M
2015	94.0
Subtotal	**94.0**

Annual Funding BY$
3830 | MILCON | Military Construction, Air National Guard

Fiscal Year	Total Program BY 2011 $M
2015	83.1
Subtotal	**83.1**

Low Rate Initial Production

	Initial LRIP Decision	Current Total LRIP
Approval Date	2/24/2011	2/24/2011
Approved Quantity	19	19
Reference	Milestone B Acquisition Decision Memorandum (ADM)	Milestone B ADM
Start Year	2015	2015
End Year	2016	2016

The Current Total LRIP Quantity is more than 10% of the total production quantity due to the fact that KC-46A Milestone B ADM approves a LRIP quantity of 19 aircraft as being necessary to develop an incremental quantity increase to Full Rate Production (FRP).

Foreign Military Sales

None

Nuclear Cost

None

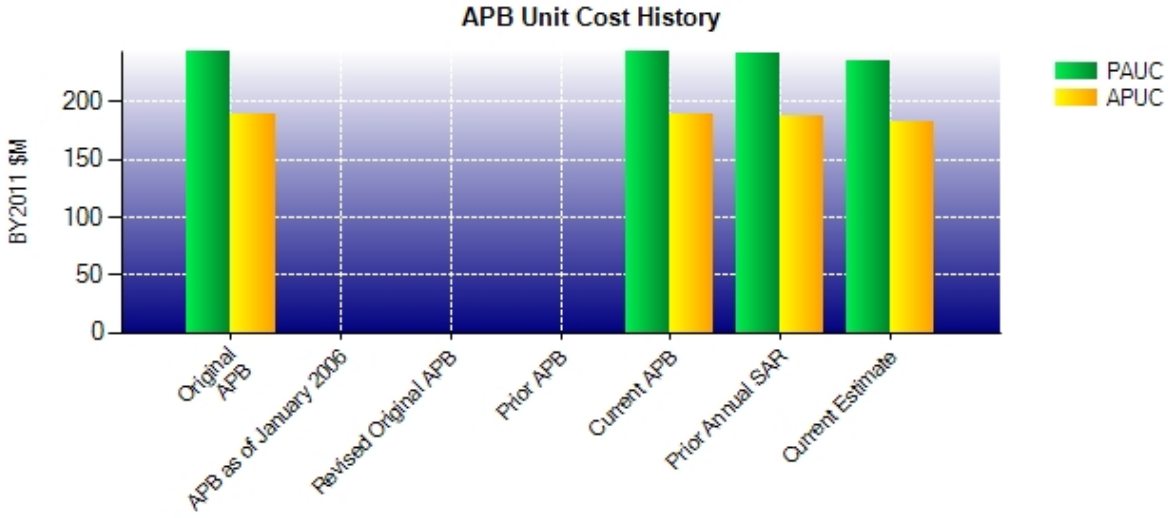
Unit Cost

Unit Cost Report

	BY2011 $M	BY2011 $M	
Unit Cost	**Current UCR Baseline (AUG 2011 APB)**	**Current Estimate (DEC 2012 SAR)**	**BY % Change**
Program Acquisition Unit Cost (PAUC)			
Cost	43518.2	42035.0	
Quantity	179	179	
Unit Cost	243.118	234.832	-3.41
Average Procurement Unit Cost (APUC)			
Cost	33040.3	31959.8	
Quantity	175	175	
Unit Cost	188.802	182.627	-3.27

	BY2011 $M	BY2011 $M	
Unit Cost	**Original UCR Baseline (AUG 2011 APB)**	**Current Estimate (DEC 2012 SAR)**	**BY % Change**
Program Acquisition Unit Cost (PAUC)			
Cost	43518.2	42035.0	
Quantity	179	179	
Unit Cost	243.118	234.832	-3.41
Average Procurement Unit Cost (APUC)			
Cost	33040.3	31959.8	
Quantity	175	175	
Unit Cost	188.802	182.627	-3.27

Unit Cost History



		BY2011 $M		TY $M	
	Date	PAUC	APUC	PAUC	APUC
Original APB	AUG 2011	243.118	188.802	288.828	229.920
APB as of January 2006	N/A	N/A	N/A	N/A	N/A
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	N/A	N/A	N/A	N/A	N/A
Current APB	AUG 2011	243.118	188.802	288.828	229.920
Prior Annual SAR	DEC 2011	241.406	186.996	290.374	230.647
Current Estimate	DEC 2012	234.832	182.627	288.503	230.408

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY $M)

Initial PAUC Dev Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
288.828	9.909	0.000	0.000	0.000	-8.497	0.000	-1.737	-0.325	288.503

Current SAR Baseline to Current Estimate (TY $M)

Initial APUC Dev Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
229.920	8.597	0.000	0.000	0.000	-6.505	0.000	-1.605	0.487	230.408

SAR Baseline History

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	Current Estimate
Milestone A	N/A	N/A	N/A	N/A
Milestone B	N/A	FEB 2011	N/A	FEB 2011
Milestone C	N/A	AUG 2015	N/A	AUG 2015
RAA	N/A	AUG 2017	N/A	AUG 2017
Total Cost (TY $M)	N/A	51700.2	N/A	51642.1
Total Quantity	N/A	179	N/A	179
Prog. Acq. Unit Cost (PAUC)	N/A	288.828	N/A	288.503

Cost Variance

Summary Then Year $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	7149.6	40236.0	4314.6	51700.2
Previous Changes				
Economic	+44.0	+537.3	+58.6	+639.9
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+152.2	-326.0	-58.6	-232.4
Other	--	--	--	--
Support	-46.7	-84.0	--	-130.7
Subtotal	+149.5	+127.3	--	+276.8
Current Changes				
Economic	+53.4	+967.2	+113.2	+1133.8
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-299.3	-812.3	-176.9	-1288.5
Other	--	--	--	--
Support	+16.6	-196.8	--	-180.2
Subtotal	-229.3	-41.9	-63.7	-334.9
Total Changes	-79.8	+85.4	-63.7	-58.1
CE - Cost Variance	7069.8	40321.4	4250.9	51642.1
CE - Cost & Funding	7069.8	40321.4	4250.9	51642.1

Summary Base Year 2011 $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	6804.2	33040.3	3673.7	43518.2
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	+0.3	--	-53.4	-53.1
Engineering	--	--	--	--
Estimating	+156.2	-248.8	-48.3	-140.9
Other	--	--	--	--
Support	-45.4	-67.2	--	-112.6
Subtotal	+111.1	-316.0	-101.7	-306.6
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-277.9	-633.1	-149.2	-1060.2
Other	--	--	--	--
Support	+15.0	-131.4	--	-116.4
Subtotal	-262.9	-764.5	-149.2	-1176.6
Total Changes	-151.8	-1080.5	-250.9	-1483.2
CE - Cost Variance	6652.4	31959.8	3422.8	42035.0
CE - Cost & Funding	6652.4	31959.8	3422.8	42035.0

Previous Estimate: December 2011

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+53.4
Increase Aircrew Training Systems (ATS) funding due to rephase and alignment with anticipated contract award schedule. (Estimating)	+0.5	+3.4
Increase Maintenance Training Systems (MTS) to align with current approved acquisition strategy. (Estimating)	0.0	+3.8
Decrease Test and Evaluation to align with current contract schedule. (Estimating)	-1.5	-1.3
Decrease in Fiscal Year (FY) 2012 funding due to Congressional cut. (Estimating)	-9.7	-10.0
Decrease in FY 2009, 2010, and 2014 - 2018 as a result of DoD budget adjustments. (Estimating)	-14.9	-16.6
Decrease in FY 2012 funding due to Small Business Innovation Research (SIBR). (Estimating)	-46.4	-47.9
Increase in Firm Fixed Price (FFP) Engineering, Manufacturing and Development (EMD) contract for approved studies, FY 2013. (Estimating)	+2.0	+2.1
Net funding reductions due to FY 2013 funding in excess of February 2011 Milestone B Service Cost Position (SCP). (Estimating)	-142.1	-154.4
Revise Program Office Estimate to reflect program realignments resulting from execution changes. (Estimating)	-16.0	-24.4
Revised estimate to reflect application of new escalation indices. (Estimating)	-35.4	-38.8
Adjustment for current and prior escalation. (Estimating)	-14.4	-15.2
Increase in Direct Mission Support cost due to execution changes. (Support)	+15.0	+16.6
RDT&E Subtotal	-262.9	-229.3

Procurement	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+967.2
Decrease in Other Support. (1) Decrease in funding from FY 2015 - FY 2018 due to DoD Budget adjustments. (2) Decrease ATS funding due to rephase and alignment to anticipated contract award. (3) Decrease in MTS funding to align with current approved acquisition strategy. (4) Revising estimate to reflect the application of new escalation indices. (Support)	-74.0	-122.8
Decrease in Initial Spares as a result of revising the estimate to reflect application of new escalation indices. (Support)	-57.4	-74.0
Revised Program Office estimate to reflect program realignments. (Estimating)	+5.4	+3.1
Revised estimate to reflect application on new inflation indices. (Estimating)	-638.5	-815.4
Procurement Subtotal	-764.5	-41.9

MILCON	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+113.2
Decrease due to rephasing of Military Construction (MILCON). (Estimating)	-58.6	-64.0

Revised estimate to reflect application of new escalation indices. (Estimating)	-90.5	-112.9
Decrease 3300 MILCON appropriation in FY 2015, to transfer to Air National Guard MILCON appropriation. (Estimating)	-83.2	-94.0
Increase 3830 MILCON appropriation in FY 2015 funding, transfer from Air Force MILCON appropriation. (Estimating)	+83.1	+94.0
MILCON Subtotal	-149.2	-63.7

Contracts

Appropriation: RDT&E	
Contract Name	**KC-46 Engineering and Manufacturing Development**
Contractor	The Boeing Company
Contractor Location	7755 E Marginal Way S Seattle, WA 98108-4002
Contract Number, Type	FA8625-11-C-6600, FPIF
Award Date	February 24, 2011
Definitization Date	February 24, 2011

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
4327.3	4831.0	4	4327.3	4831.0	4	4831.0	4831.0

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (3/21/2013)	-73.3	-18.2
Previous Cumulative Variances	+1.5	-9.3
Net Change	-74.8	-8.9

Cost And Schedule Variance Explanations

The unfavorable net change in the cost variance is due to a number of delays with regards to the development, analysis and structure layouts, integration complexities and interface development of systems associated with the Aerial Refueling systems.

The unfavorable net change in the schedule variance is due to schedule delays in the test area as planning efforts are moving slower than anticipated due to complexities in the installation and instrumentation design efforts. Delayed shipment by sub-contracted suppliers for Systems Integration Labs (SILs) has also impacted the schedule.

General Contract Variance Explanation

Earned value data is as of February 28, 2013 and was reported to the KC-46 Division on March 21, 2013.

Contract Comments

The Contractor's current Estimated Price at Completion reflects the existing contract scope.

The Program Manager's Estimated Price at Completion for Engineering, Manufacturing, and Development (EMD) remains at the contract ceiling price of $4,831M. The Contractor's Estimated Price at Completion for EMD is set at the ceiling price of $4,831M. The Contractor's current Estimated Cost at Completion is $5,096.9M. The Government's liability is limited to the contract ceiling price of $4,831M.

While the Government's liability is limited to the contract ceiling price of $4,831M, the KC-46 Division accomplished their annual life cycle cost estimate in December 2012. The KC-46 Division's Estimate at Completion (EAC), (not shown in the above table), has increased from a most likely of $5,284M to a most likely of $5,615M. This increase in EAC is the result of incorporating cost risks from the June 2012 Integrated Risk Assessment (IRA) conducted between the KC-46 Division and Boeing and the contractors performance to date. Again, this KC-46 Division EAC has no impact to the Government's liability and does not create a need for additional funding to the EMD efforts.

Appropriation: RDT&E

Contract Name	**KC-46 Engineering and Manufacturing Development**
Contractor	The Boeing Company
Contractor Location	7755 E Marginal Way S Seattle, WA 98108-4002
Contract Number, Type	FA8625-11-C-6600/1, FFP
Award Date	February 24, 2011
Definitization Date	February 24, 2011

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
66.6	N/A	N/A	68.7	N/A	N/A	68.7	68.7

Cost And Schedule Variance Explanations

Cost and Schedule variance reporting is not required on this FFP contract.

Contract Comments

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to a contract modification, accomplished on January 14, 2013 adding $2.1M to the Firm Fixed Price (FFP) contract. The modification was processed for Contract Line Item Number (CLIN) 0003 (Studies). This modification increased the target and negotiated price of the FFP contract from $66.6M to $68.7M.

Cost and schedule variance reporting is not required on this FFP contract. However, an estimate of the FFP contract was included in the December 19, 2012 approved Program Office Estimate (POE).

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Deliveries and Expenditures

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	0	0	4	0.00%
Production	0	0	175	0.00%
Total Program Quantities Delivered	0	0	179	0.00%

Expenditures and Appropriations (TY $M)			
Total Acquisition Cost	51642.1	Years Appropriated	9
Expenditures To Date	1927.9	Percent Years Appropriated	39.13%
Percent Expended	3.73%	Appropriated to Date	3601.1
Total Funding Years	23	Percent Appropriated	6.97%

The above data is current as of 3/31/2013.

Operating and Support Cost

KC-46A

Assumptions and Ground Rules

Cost Estimate Reference:

In support of the Milestone B decision in February 2011, the Air Force developed a Service Cost Position (SCP). The Milestone Decision Authority (MDA) approved baselining the KC-46A program to this SCP. In December 2012, the KC-46 Division accomplished an update to this SCP in its annual Program Office Estimate (POE). Total Operating and Support (O&S) costs reported in this Selected Acquisition Report (SAR) reflect this POE update.

Sustainment Strategy:

The KC-46A product support strategy supports 168 Primary Aircraft Authorized (PAA) for a 40 year service life and will use logistics support concepts that emphasize increased availability and a reduced logistics footprint, supported by the current United States Air Force (USAF) maintenance and logistics support structure. The product support strategy will use a Contractor Supported Weapons System (CSWS) concept during Engineering, Manufacturing, and Development (EMD) transitioning to 100 percent organically managed/performance-based logistics posture as soon as viable during production. The KC-46A will be maintained as a Federal Aviation Administration (FAA) certified aircraft at least during Interim Contractor Support (ICS). A Sustainment Strategy Decision at Milestone C, based upon a business case analysis, will determine the long-term sustainment strategy. The USAF has identified the three Air Logistics Complexes (ALCs), as the location for the organic depots.

Antecedent Information:

KC-135R&T is the antecedent system.

Unitized O&S Costs BY2011 $M		
Cost Element	**KC-46A Average Annual Cost per Aircraft**	**KC-135R&T (Antecedent) Average Annual Cost per Aircraft**
Unit-Level Manpower	4.4	3.2
Unit Operations	4.0	4.1
Maintenance	3.2	3.1
Sustaining Support	0.5	0.2
Continuing System Improvements	0.9	0.1
Indirect Support	0.0	0.0
Other	0.0	0.0
Total	13.0	10.7

Unitized Cost Comments:

KC-46A costs shown in comparison with actual costs for the antecedent system, KC-135R&T, reflect estimated average annual cost per aircraft. KC-46A costs are from the December 2012 Program Office Estimate (POE). KC-135R&T costs have been developed in a joint effort with the Air Force Cost Analysis Agency (AFCAA) and have been normalized to reflect the average of 670 annual flying hours per aircraft in the KC-46A POE. The KC-46A average annual cost per aircraft assumes full funding of the program's requirements (unconstrained); whereas the KC-135R&T average annual cost per aircraft reflects actual FY 2012 costs reported in the Air Force Total Ownership Cost (AFTOC) system (budget constrained). Most FY 2012 costs reflect the current state of KC-135R&T; however, there are a few exceptions, such as modification costs in Continuing System Improvements, where the FY 2012 KC-135R&T costs are currently lower than in previous years. While this comparison is to FY 2012 actual KC-135R&T costs, the Air Force projects KC-135R&T Operating and Support (O&S) costs will continue to increase, surpassing projected KC-46 O&S costs by FY 2020. This projected increase is not reflected in the "Unitized O&S Costs BY2011 $M" table above. This comparison is also not adjusted for the capability differences that exist between the two systems nor does it recognize the cost savings that may be realized due to the commerciality of the KC-46A aircraft (the KC-46A is derived from a commercial Boeing 767 variant). Because the 767 was designed to be cost competitive in the commercial marketplace, it is anticipated that the aircraft's commercial efficiencies will facilitate improvement in the military operational costs for the KC-46A. In addition the KC-46A has significantly more aerial refueling offload capability per aircraft compared to the KC-135R&T and is a multi-role aircraft with significant secondary missions associated with airlift and aeromedical evacuation. The KC-46A can also provide boom/drogue refueling on the same sortie, and has enhanced net ready and survivability capabilities.

	Total O&S Cost $M			
	Current Development APB Objective/Threshold		Current Estimate	
	KC-46A		KC-46A	KC-135R&T (Antecedent)
Base Year	92720.6	101992.7	**103090.5** [1]	N/A
Then Year	182877.7	N/A	153189.4	N/A

[1] **APB O&S Cost Breach**

Total O&S Costs Comments:

KC-46A total Operating and Support (O&S) cost ($ in Millions) in the “Total O&S Cost $M” table above reflects the December 2012 Program Office Estimate (POE) total O&S costs for Fiscal Year (FY) 2016 to FY 2069. This total O&S cost is not a simple extrapolation of the KC-46A average annual cost per aircraft shown in the preceding “Unitized O&S Costs BY2011 $M” table. The KC-46A POE reflects the following assumptions: 168 Primary Aircraft Authorized (PAA), 40-year service life, steady state beginning in FY 2029, and peacetime operations tempo with average annual flying hours of 489 hours per PAA through FY 2019, and 670 hours per PAA from FY 2020 and beyond. The KC-46A POE is based on legacy fleet history when KC-46A specific data is not available. A comparable total O&S cost for the antecedent system, KC-135R&T, is not available.

To maximize the benefits of KC-46A capabilities, Air Mobility Command has initiated operational and basing strategies to exploit its full capability and to leverage that capability across the total force. KC-46A delivers an increased capability (fuel offload, multi-role, survivability, etc.) that will allow the Air Force to better support joint and coalition warfighter/humanitarian requirements. In order to maximize KC-46A effectiveness and efficiency, an improved basing strategy with increased Total Force Associations and an increased flying hour program will be required to meet KC-46A aircrew readiness requirements of 3.5 crew ratio and receiver aircraft mission needs. This flying hour program is now estimated at 670 hours per aircraft per year beginning in FY 2020. These operational changes result in an increase to KC-46A O&S costs of 11 percent above the original plan put in place at Milestone B. This cost increase is not due to aircraft design performance, which remains unchanged. The Air Force is not projecting any increase to its top line budget; the increased KC-46A manpower and flying hours will be addressed by repurposing KC-135 personnel and flying hours. While the Air Force expects to gain efficiencies, the magnitude of those efficiencies is affected by numerous factors to include: the rate at which KC-135 aircraft are replaced by the KC-46A, Concept of Operations (CONOPS), training requirements, and basing strategy/crew ratio. The effects will be better known with future definition of these factors. The Air Force is committed to staying within its Total Obligation Authority (TOA) in the transition from the KC-135 to the KC-46A.

Disposal Costs

Neither the KC-46A Milestone B Service Cost Position nor the December 2012 Program Office Estimate (POE) included an estimate for demilitarization or disposal costs.

KC-46A disposal costs will be estimated and reported in the December 2013 Selected Acquisition Report.