Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-327

C-5 Reliability Enhancement and Re-engining Program (C-5 RERP)

As of December 31, 2012

Defense Acquisition Management
Information Retrieval
(DAMIR)

Table of Contents

Program Information

Program Name

C-5 Reliability Enhancement and Re-engining Program (C-5 RERP)

DoD Component

Air Force

Responsible Office

Responsible Office

Ms. Kathryn Sowers
C-5 Division
Mobility Directorate
2275 D Street, Bldg 16, Room 127
Wright Patterson, OH 45433-7222
kathryn.sowers@wpafb.af.mil

Phone 937-656-9475
Fax 937-656-5020
DSN Phone 986-9475
DSN Fax 986-5020

Date Assigned February 1, 2010

References

SAR Baseline (Production Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated June 24, 2008

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated October 7, 2010

Mission and Description

The C-5 Reliability Enhancement and Reengining Program (RERP) is the second phase of a two-phase modernization program for the C-5. The Avionics Modernization Program (AMP) was Phase I and is the baseline for RERP. Following completion of Phase II, the aircraft is designated a C-5M. RERP is a comprehensive modernization effort that will improve aircraft reliability, maintainability, and availability. RERP will enable the C-5M to achieve wartime mission requirements by increasing fleet availability (mission capable rates and departure reliability), reducing Total Ownership Costs (TOC), and improving aircraft performance. This effort centers on replacing the current TF-39 engine with a more reliable, Commercial Off-the-Shelf (COTS) General Electric (GE) CF6-80C2 (F138-GE-100 military designation) turbofan engine with increased takeoff thrust, stage-3 noise compliance, and Federal Aviation Regulation pollution compliance. In addition to new engines/pylons, C-5 RERP will provide upgrades to wing attachment fittings; new thrust reversers and Auxiliary Power Units (APUs); upgrades to the electrical, hydraulic, fuel, fire suppression, landing gear, and pressurization/air conditioning systems; and airframe structural modifications. These aircraft improvements increase payload capability and access to Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) airspace. C-5 RERP also decreases aircraft time to climb, increases engine-out climb gradient for takeoff, improves transportation system throughput, and decreases engine removals.

The procurement tempo to deliver a C-5 RERP aircraft is a three year process. The first year is advance procurement of material with longer than 12 months duration to buy and deliver, the second year involves material procurement and fabrication, while the third and final year is installation on the aircraft.

Executive Summary

FY 2012 was the last year of Research, Development, Test & Evaluation (RDT&E) funding, Congressional marks of approximately 50% created a $12M funding challenge. Air Force (AF) will source any remaining requirements on an as needed basis for any critical safety of flight issues that may arise.

Lockheed Martin Aeronautics (LM Aero) has delivered four C-5M aircraft to the Air Force in 2012 bringing the total number of C-5Ms delivered to ten. All aircraft were ferried to Stewart Air National Guard (ANG) Base, NY for Minor Isochronal Inspections and aircraft refurbishment.

Six C-5B aircraft were inducted into the RERP modification line at LM Aero during 2012.

LM Aero is experiencing production delivery delays of 2-4 months due to workmanship issues, supplier escapes, and legacy aircraft issues and manning issues. LM Aero has identified numerous initiatives to improve delivery times and the program has recognized reductions in span times. However, all actions (planned and to date) may not be enough to get all deliveries back on schedule. The government and LM Aero are conducting a line of balance on the schedule to assist in the establishment of a new delivery schedule.

Of significant note, the C-5 Enterprise Team (AF, Defense Contract Management Agency (DCMA) and LM Aero) instituted joint C-5M Acceptance Flight Testing. The first C-5M Joint Acceptance Flight was accomplished on aircraft 85-0001 on October 17, 2012 and the second one with aircraft 87-0045 completed on December 19, 2012. This was a testament to the teamwork of Air Mobility Command (AMC), Air Force Life Cycle Management Center (AFLCMC), DCMA and LM Aero to shorten span times and delivering warfighter capability.

Resolution of Thrust Reverser (TR) Operation Issues was confirmed through Operational Test and Evaluation (OT&E) during February 24-28, 2012. Flight/ground testing of the TR software and hardware fixes entered OT&E in conjunction with Operational Flight Program (OFP) 3.5 testing. The final report, received from Air Mobility Command Test and Evaluation Squadron (AMCTES) on May 18, 2012, concluded that the C-5M with Operational Flight Program 3.5 is operationally effective. The C-5M OFP 3.5 and the thrust reverser Center Drive Unit (CDU) with heater blanket is operationally suitable. Operational Flight Program 3.5 and Thrust Reverser corrections will be “cut into” the production line with the first aircraft of Production Lot 4 and previous lots will be retro-fitted commencing October 2013 and will be completed by Novemeber 2014.

Three Weapon Systems Trainers (WSTs)/Aircrew Training Devices (ATDs) are on contract. Two Weapon Systems Trainers are in-place for aircrew training at Dover Air Force Base (AFB), DE as of October 1, 2012. The third WST is under modification at Travis AFB, CA. All RERP Maintenance Training Devices (MTDs) have been delivered and are operational.

FY 2013 Production Contracts were awarded on October 19, 2012. The Production Contracts included: Production Advanced Procurement (Lot 7); Production Material/Fabrication (Lot 6); Production (Lot 6) Initial Spares; RERP Peculiar Support equipment (Lot 6); and Production Installs (Lot 5).

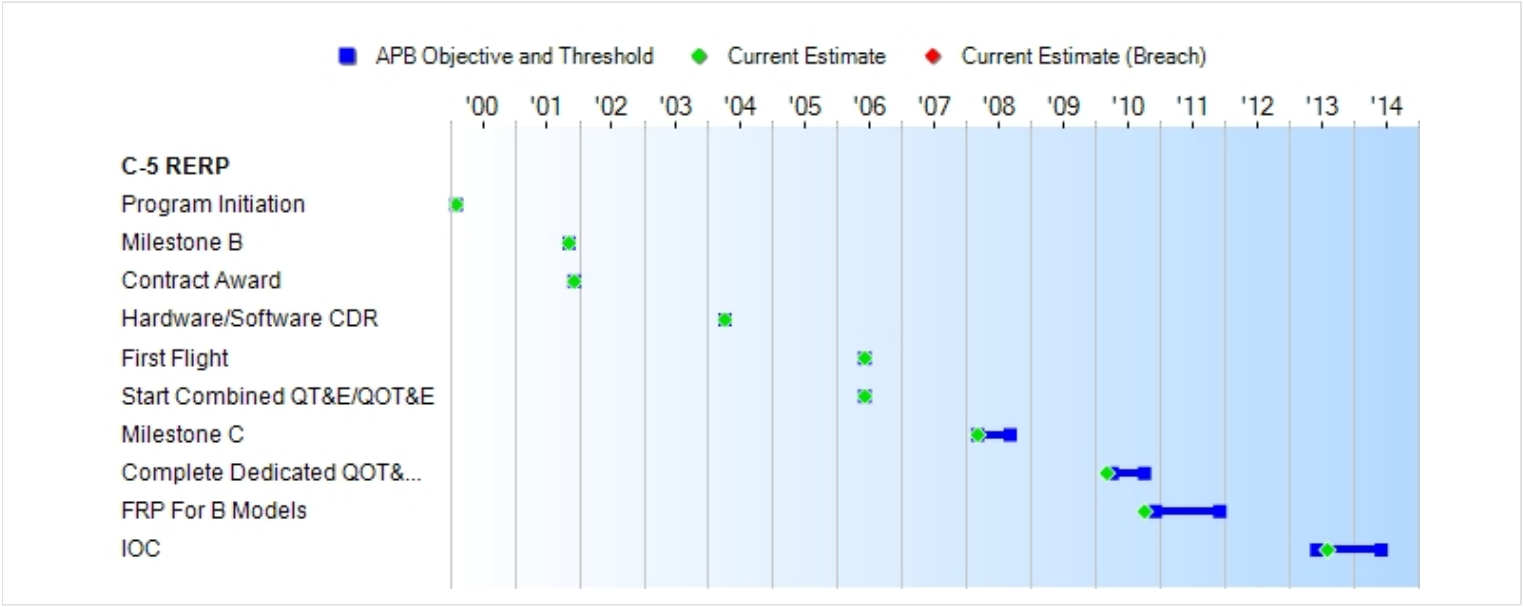
There are no significant software-related issues with this program at this time.

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

Schedule



Milestones	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate	
Program Initiation	FEB 2000	FEB 2000	FEB 2000	FEB 2000	
Milestone B	NOV 2001	NOV 2001	NOV 2001	NOV 2001	
Contract Award	DEC 2001	DEC 2001	DEC 2001	DEC 2001	
Hardware/Software CDR	APR 2004	APR 2004	APR 2004	APR 2004	
First Flight	JUN 2006	JUN 2006	JUN 2006	JUN 2006	
Start Combined QT&E/QOT&E	JUN 2006	JUN 2006	JUN 2006	JUN 2006	
Milestone C	MAR 2008	MAR 2008	SEP 2008	MAR 2008	
Complete Dedicated QOT&E (AFOTEC Report complete)	APR 2010	APR 2010	OCT 2010	MAR 2010	
FRP For B Models	DEC 2010	DEC 2010	DEC 2011	OCT 2010	
IOC	JUN 2013	JUN 2013	JUN 2014	AUG 2013	(Ch-1)

Acronyms And Abbreviations

AFOTEC - Air Force Operational Test and Evaluation Center
CDR - Critical Design Review
FRP - Full Rate Production
IOC - Initial Operational Capability
QOT&E - Qualification Operational Test and Evaluation
QT&E - Qualification Test and Evaluation

Change Explanations

(Ch-1) IOC current estimate changed from March 2013 to August 2013 based on the award of the Production Contract Schedule Re-Baseline modification on November 6, 2012.

Performance

Characteristics	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Demonstrated Performance	Current Estimate
Time To Climb/Initial Level Off	837,000 lbs take-off gross weight; RCR 23; climb condition: 77 deg F; SL to 31,000 ft in less than 25 min	837,000 lbs take-off gross weight; RCR 23; climb condition: 77 deg F; SL to 31,000 ft in less than 25 min	769,000 lbs take-off gross weight; RCR 23; climb condition: 77 deg F; SL to 31,000 ft in less than 25 min	837,000 lbs take-off gross weight; RCR 23; climb condition: 77 deg F; SL to 31,000 ft in less than 25 min.	Will meet or exceed Current APB Threshold. 769,000 lbs take-off gross weight; RCR 23; climb condition: 77 deg F; SL to 31,000 ft in less than 25 min
Aircraft Take-off Climb Gradient	One engine out climb gradient >=3.3% beginning at departure end of runway / 837,000 lbs take-off weight / hot day (103 deg F) / 10,000 ft runway / SL / RCR 23	One engine out climb gradient >=3.3% beginning at departure end of runway / 837,000 lbs take-off weight / hot day (103 deg F) / 10,000 ft runway / SL / RCR 23	One engine out climb gradient >=2.5% beginning at departure end of runway / 837,000 lbs take-off weight / hot day (103 deg F) / 10,000 ft runway / SL / RCR 23	One engine out climb gradient >= 3.3% beginning at departure end of runway/ 837,000 lbs takeoff weight; hot day (103 deg F)/ 10,000 ft runway/ SL/ RCR 23.	Will meet or exceed Current APB Threshold. One engine out climb gradient >=2.5% beginning at departure end of runway / 837,000 lbs take-off weight / hot day (103 deg F) / 10,000 ft runway / SL / RCR 23
Mission Capable Rate (MCR)	Wartime >= 82% and Peacetime >= 75%	Wartime >= 82% and Peacetime >= 75%	Wartime >= 75%	SDD (81.6%)/ QOT&E (66% & 76%)/ CONOPS I Surge (78%)	Will meet or exceed Current APB Threshold. Wartime >= 75%

				& CONOPS II Surge (89%)/ AMC/ AFTRANS Surge (90%); Wartime >= 75% & Peace time >= 82%.	
Noise Compliance	Certifiable under FAR Part 36 Stage 4 noise standards	Certifiable under FAR Part 36 Stage 4 noise standards	Certifiable under FAR part 36 Stage 3 noise standards	Certifiable under FAR Part 36 Stage 4 noise standards	Will meet or exceed Current APB Threshold. Certifiable under FAR part 36 Stage 3 noise standards
Emission Compliance	Certifiable under FAR Part 34 emission requirements	Certifiable under FAR Part 34 emission requirements	Certifiable under FAR Part 34 emission requirements	Certifiable under FAR Part 34 emission requirements	Will meet or exceed Current APB Threshold. Certifiable under FAR Part 34 emission requirements

Requirements Source: Capability Production Document (CPD) Change 1 dated December 1, 2009

Acronyms And Abbreviations

AFTRANS - Air Forces Transportation
AMC - Air Mobility Command
APB - Acquisition Program Baseline
CONOPS - Concept of Operations
deg - degrees
F - Fahrenheit
FAR - Federal Aviation Regulation
ft - feet
lbs - pounds
min - minutes
QOT&E - Qualification Operational Test and Evaluation
RCR - Runway Condition Reading
SDD - System Design and Development
SL - Sea Level

Change Explanations

None

Memo

Demonstrated performance reflects the outcome of Flight Test completed during SDD on August 18, 2008; QOT&E completed on March 8, 2010; and Post-QOT&E Real-World Surge Exercises.

Track To Budget

RDT&E				
APPN 3600	BA 07	PE 0401119F	(Air Force)	
	Project 4835	C-5 Airlift Squadrons/C-5 Reliability Enhancement & Reengining Program (RERP)		(Sunk)
Procurement				
APPN 3010	BA 07	PE 0401119F	(Air Force)	
	ICN 000075	C-5 Reliability Enhancement and Reengining Program (RERP)	(Shared)	(Sunk)
APPN 3010	BA 06	PE 0401119F	(Air Force)	
	ICN 000999	C-5 Reliability Enhancement and Reengining Program (RERP)	(Shared)	
APPN 3010	BA 05	PE 0401119F	(Air Force)	
	ICN C00500	C-5 Reliability Enhancement and Reengining Program (RERP)		(Sunk)
	ICN C005M0	C-5 Reliability Enhancement and Reengining Program (RERP)		
MILCON				
APPN 3300	BA 01	PE 0401896F	(Air Force)	
	Project 103003	C-5 Reliability Enhancement and Reengining Program (RERP)		(Sunk)
	Dover AFB			

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

	BY2008 $M			BY2008 $M	TY $M		
Appropriation	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Prod Est	Current APB Production Objective	Current Estimate
RDT&E	1722.9	1734.3	1907.7	1691.9	1643.5	1645.0	1602.1
Procurement	5415.9	5396.3	5935.9	5234.3	6042.1	5860.4	5793.4
Flyaway	4441.7	--	--	4340.9	4961.8	--	4809.4
Recurring	4441.7	--	--	4340.9	4961.8	--	4809.4
Non Recurring	0.0	--	--	0.0	0.0	--	0.0
Support	974.2	--	--	893.4	1080.3	--	984.0
Other Support	433.8	--	--	343.0	480.5	--	378.1
Initial Spares	540.4	--	--	550.4	599.8	--	605.9
MILCON	7.8	5.1	5.6	5.0	8.5	5.3	5.3
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	7146.6	7135.7	N/A	6931.2	7694.1	7510.7	7400.8

Confidence Level for Current APB Cost 50% - Confidence Level for current Acquisition Program Baseline (APB) cost is 50%. The Independent Cost Estimate (ICE) to support C-5 RERP Full Rate Production decision, like all life-cycle cost estimates previously performed by the Cost Assessment and Program Evaluation (CAPE), is 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 life-cycle cost estimates prepared for Major Defense Acquisition Program (MDAPs) programs. Based on the rigor in methods used in building estimates, the strong adherence to the collection and use of historical cost information, and the review of applied assumptions, we project that it is about equally likely that the estimate will prove too low or too high for execution of the program described.

Quantity	SAR Baseline Prod Est	Current APB Production	Current Estimate
RDT&E	3	3	3
Procurement	49	49	49
Total	52	52	52

Unit of measure is number of aircraft being modified.

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	1602.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1602.1
Procurement	3066.0	1238.8	1153.9	334.7	0.0	0.0	0.0	0.0	5793.4
MILCON	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.3
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2014 Total	4673.4	1238.8	1153.9	334.7	0.0	0.0	0.0	0.0	7400.8
PB 2013 Total	4699.6	1238.8	1155.3	342.5	0.0	0.0	0.0	0.0	7436.2
Delta	-26.2	0.0	-1.4	-7.8	0.0	0.0	0.0	0.0	-35.4

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	3	0	0	0	0	0	0	0	0	3
Production	0	27	11	11	0	0	0	0	0	49
PB 2014 Total	3	27	11	11	0	0	0	0	0	52
PB 2013 Total	3	27	11	11	0	0	0	0	0	52
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
2000	--	--	--	--	--	--	16.3
2001	--	--	--	--	--	--	39.6
2002	--	--	--	--	--	--	83.7
2003	--	--	--	--	--	--	191.4
2004	--	--	--	--	--	--	260.2
2005	--	--	--	--	--	--	278.2
2006	--	--	--	--	--	--	222.9
2007	--	--	--	--	--	--	137.6
2008	--	--	--	--	--	--	161.6
2009	--	--	--	--	--	--	80.9
2010	--	--	--	--	--	--	62.4
2011	--	--	--	--	--	--	54.4
2012	--	--	--	--	--	--	12.9
Subtotal	**3**	**--**	**--**	**--**	**--**	**--**	**1602.1**

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

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2008 $M	Non End Item Recurring Flyaway BY 2008 $M	Non Recurring Flyaway BY 2008 $M	Total Flyaway BY 2008 $M	Total Support BY 2008 $M	Total Program BY 2008 $M
2000	--	--	--	--	--	--	19.0
2001	--	--	--	--	--	--	45.6
2002	--	--	--	--	--	--	95.4
2003	--	--	--	--	--	--	215.2
2004	--	--	--	--	--	--	285.4
2005	--	--	--	--	--	--	297.5
2006	--	--	--	--	--	--	231.4
2007	--	--	--	--	--	--	139.2
2008	--	--	--	--	--	--	160.2
2009	--	--	--	--	--	--	79.2
2010	--	--	--	--	--	--	60.3
2011	--	--	--	--	--	--	51.5
2012	--	--	--	--	--	--	12.0
Subtotal	**3**	**--**	**--**	**--**	**--**	**--**	**1691.9**

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
2007	--	52.5	--	--	52.5	9.0	61.5
2008	1	132.6	--	--	132.6	61.3	193.9
2009	3	289.9	--	--	289.9	46.7	336.6
2010	5	482.9	--	--	482.9	72.3	555.2
2011	7	660.4	--	--	660.4	185.6	846.0
2012	11	851.8	--	--	851.8	221.0	1072.8
2013	11	1064.1	--	--	1064.1	174.7	1238.8
2014	11	961.7	--	--	961.7	192.2	1153.9
2015	--	313.5	--	--	313.5	21.2	334.7
Subtotal	**49**	**4809.4**	**--**	**--**	**4809.4**	**984.0**	**5793.4**

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

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2008 $M	Non End Item Recurring Flyaway BY 2008 $M	Non Recurring Flyaway BY 2008 $M	Total Flyaway BY 2008 $M	Total Support BY 2008 $M	Total Program BY 2008 $M
2007	--	52.3	--	--	52.3	8.9	61.2
2008	1	129.9	--	--	129.9	60.0	189.9
2009	3	279.0	--	--	279.0	45.0	324.0
2010	5	455.4	--	--	455.4	68.2	523.6
2011	7	611.3	--	--	611.3	171.8	783.1
2012	11	773.2	--	--	773.2	200.6	973.8
2013	11	939.7	--	--	939.7	154.3	1094.0
2014	11	833.5	--	--	833.5	166.5	1000.0
2015	--	266.6	--	--	266.6	18.1	284.7
Subtotal	**49**	**4340.9**	**--**	**--**	**4340.9**	**893.4**	**5234.3**

Cost Quantity Information
3010 | Procurement | Aircraft Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned with Quantity) BY 2008 $M
2007	--	--
2008	1	176.1
2009	3	294.1
2010	5	469.9
2011	7	633.6
2012	11	893.3
2013	11	930.2
2014	11	943.7
2015	--	--
Subtotal	**49**	**4340.9**

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

Fiscal Year	Total Program TY $M
2010	5.3
Subtotal	**5.3**

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

Fiscal Year	Total Program BY 2008 $M
2010	5.0
Subtotal	**5.0**

Low Rate Initial Production

	Initial LRIP Decision	Current Total LRIP
Approval Date	11/5/2001	3/25/2008
Approved Quantity	12	16
Reference	Milestone B ADM	Milestone C ADM
Start Year	2006	2007
End Year	2010	2012

The Current Total LRIP Quantity is more than 10% of the total production quantity due to the C-5 RERP Milestone C Acquisition Decision Memorandum (ADM) approving an LRIP quantity of 16 systems as being necessary to maintain a steady ramp to Full Rate Production (FRP). The start year changed from the Initial LRIP Decision to the Current Total LRIP during the Nunn-McCurdy restructure.

The procurement tempo to deliver a C-5 RERP aircraft is a three-year process. The first year is advance procurement of material with longer than 12 months duration to buy and deliver, the second year involves material procurement and fabrication, while the third and final year is installation on the aircraft.

Foreign Military Sales

None

Nuclear Cost

None

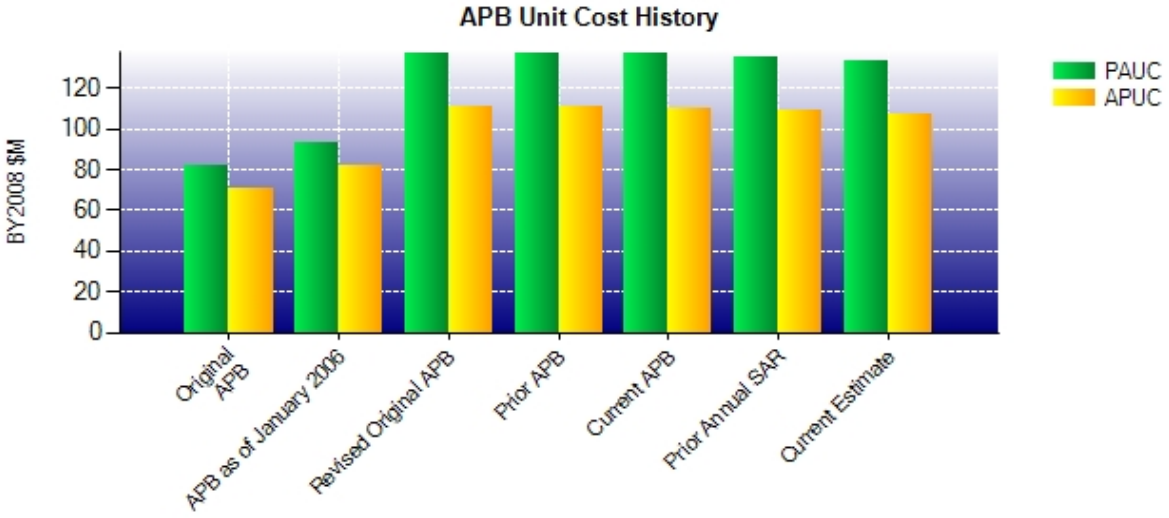
Unit Cost

Unit Cost Report

	BY2008 $M	BY2008 $M	
Unit Cost	**Current UCR Baseline (OCT 2010 APB)**	**Current Estimate (DEC 2012 SAR)**	**BY % Change**
Program Acquisition Unit Cost (PAUC)			
Cost	7135.7	6931.2	
Quantity	52	52	
Unit Cost	137.225	133.292	-2.87
Average Procurement Unit Cost (APUC)			
Cost	5396.3	5234.3	
Quantity	49	49	
Unit Cost	110.129	106.822	-3.00

	BY2008 $M	BY2008 $M	
Unit Cost	**Revised Original UCR Baseline (JUN 2008 APB)**	**Current Estimate (DEC 2012 SAR)**	**BY % Change**
Program Acquisition Unit Cost (PAUC)			
Cost	7146.6	6931.2	
Quantity	52	52	
Unit Cost	137.435	133.292	-3.01
Average Procurement Unit Cost (APUC)			
Cost	5415.9	5234.3	
Quantity	49	49	
Unit Cost	110.529	106.822	-3.35

Unit Cost History



		BY2008 $M		TY $M	
	Date	PAUC	APUC	PAUC	APUC
Original APB	NOV 2001	81.955	71.010	88.047	78.293
APB as of January 2006	FEB 2005	92.829	81.564	98.252	88.355
Revised Original APB	JUN 2008	137.435	110.529	147.963	123.308
Prior APB	JUN 2008	137.435	110.529	147.963	123.308
Current APB	OCT 2010	137.225	110.129	144.437	119.600
Prior Annual SAR	DEC 2011	134.800	108.782	143.004	119.335
Current Estimate	DEC 2012	133.292	106.822	142.323	118.233

SAR Unit Cost History

Initial SAR Baseline to Current SAR Baseline (TY $M)

Initial PAUC Dev Est	Changes								PAUC Prod Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
88.047	0.635	55.435	10.863	-1.056	-6.673	0.000	0.712	59.916	147.963

Current SAR Baseline to Current Estimate (TY $M)

PAUC Prod Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
147.963	-1.173	0.000	0.000	0.000	-2.861	0.000	-1.606	-5.640	142.323

Initial SAR Baseline to Current SAR Baseline (TY $M)

Initial APUC Dev Est	Changes								APUC Prod Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
78.293	0.640	32.062	7.029	0.000	-4.756	0.000	10.040	45.015	123.308

Current SAR Baseline to Current Estimate (TY $M)

APUC Prod Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
123.308	-1.051	0.000	0.000	0.000	-2.320	0.000	-1.704	-5.075	118.233

SAR Baseline History

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	Current Estimate
Milestone I	N/A	FEB 2000	FEB 2000	FEB 2000
Milestone B	N/A	NOV 2001	NOV 2001	NOV 2001
Milestone C	N/A	DEC 2006	MAR 2008	MAR 2008
IOC	N/A	MAR 2010	JUN 2013	AUG 2013
Total Cost (TY $M)	N/A	11093.9	7694.1	7400.8
Total Quantity	N/A	126	52	52
Prog. Acq. Unit Cost (PAUC)	N/A	88.047	147.963	142.323

Cost Variance

Summary Then Year $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	1643.5	6042.1	8.5	7694.1
Previous Changes				
Economic	-9.3	-104.5	-0.2	-114.0
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-50.7	+88.6	-3.0	+34.9
Other	--	--	--	--
Support	--	-178.8	--	-178.8
Subtotal	-60.0	-194.7	-3.2	-257.9
Current Changes				
Economic	--	+53.0	--	+53.0
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+18.6	-202.3	--	-183.7
Other	--	--	--	--
Support	--	+95.3	--	+95.3
Subtotal	+18.6	-54.0	--	-35.4
Total Changes	-41.4	-248.7	-3.2	-293.3
CE - Cost Variance	1602.1	5793.4	5.3	7400.8
CE - Cost & Funding	1602.1	5793.4	5.3	7400.8

Summary Base Year 2008 $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	1722.9	5415.9	7.8	7146.6
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-48.6	+79.8	-2.8	+28.4
Other	--	--	--	--
Support	--	-165.4	--	-165.4
Subtotal	-48.6	-85.6	-2.8	-137.0
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+17.6	-180.6	--	-163.0
Other	--	--	--	--
Support	--	+84.6	--	+84.6
Subtotal	+17.6	-96.0	--	-78.4
Total Changes	-31.0	-181.6	-2.8	-215.4
CE - Cost Variance	1691.9	5234.3	5.0	6931.2
CE - Cost & Funding	1691.9	5234.3	5.0	6931.2

Previous Estimate: December 2011

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Increase due to reprogramming of FY 2012 funds for support of Interactive Multimedia Instruction (IMI), Full Qualification Testing (FQT), software upgrades, and tests at Edwards Air Force Base. (Estimating)	+17.6	+18.6
RDT&E Subtotal	+17.6	+18.6

Procurement	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+53.0
Adjustment for current and prior escalation. (Estimating)	-21.0	-23.4
Decrease due to realignment of requirement from Other Government Costs (OGC). (Estimating)	-1.1	-1.2
Decrease due to Air Force withholds for higher priority programs. (Estimating)	-45.4	-49.8
Decrease due to revisions of estimate to reflect contract actuals. (Estimating)	-113.1	-127.9
Adjustment for current and prior escalation. (Support)	-3.7	-4.2
Increase in Other Support due to realignment of funds for Depot Activation, Interim Contractor Support (ICS), and trainers. (Support)	+68.1	+77.5
Increase in Initial Spares due to refinement of estimate. (Support)	+20.2	+22.0
Procurement Subtotal	-96.0	-54.0

Contracts

General Contract Memo

Requirements for Earned Value reporting on the C-5 RERP production contract were removed in accordance with the Full Rate Production (FRP) Acquisition Decision Memorandum dated October 7, 2010.

Appropriation: Procurement

Contract Name	**C-5 RERP LRIP Lot 3**
Contractor	Lockheed Martin
Contractor Location	86 South Cobb Drive Marietta, GA 39963-0290
Contract Number, Type	FA8625-07-C-6471/3, FPEPA
Award Date	February 06, 2009
Definitization Date	February 06, 2009

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
79.1	N/A	5	468.3	N/A	5	468.3	468.3

Cost And Schedule Variance Explanations

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

Contract Comments

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract modification adding the following to Lot 3: Material/fabrication, installation, initial spares, rapid repair and response, support equipment, environmental control system improved duct retention, starter air valve duct drain, contractor acquired property, serialized tracking, peculiar loose equipment, trainer parts, and battery charger electronic module.

Appropriation: Procurement

Contract Name	**C-5 RERP LRIP Lot 4**
Contractor	Lockheed Martin
Contractor Location	86 South Cobb Drive Marietta, GA 39963-0290
Contract Number, Type	FA8625-07-C-6471/4, FPEPA
Award Date	December 21, 2009
Definitization Date	December 21, 2009

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
77.0	N/A	7	697.7	N/A	7	697.7	697.7

Cost And Schedule Variance Explanations

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

Contract Comments

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract modification adding the following to Lot 4: Material/fabrication, installation, initial spares, rapid repair and response, support equipment, environmental control system improved duct retention, starter air valve duct drain, serialized tracking, peculiar loose equipment, loose equipment spares, item unique identification, ready-for-installation engine kits, three spare engines, and battery charger electronic module.

Appropriation: Procurement

Contract Name	**C-5 RERP FRP Lot 5**
Contractor	Lockheed Martin
Contractor Location	86 South Cobb Drive Marietta, GA 39963-0290
Contract Number, Type	FA8625-07-C-6471/5, FPEPA
Award Date	October 20, 2010
Definitization Date	October 20, 2010

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
162.9	N/A	11	1020.3	N/A	11	1020.3	1020.3

Cost And Schedule Variance Explanations

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

Contract Comments

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract modification adding the following to Lot 5: Material/fabrication, installation, initial spares, rapid repair and response, support equipment, environmental control system improved duct retention, starter air valve duct drain, peculiar loose equipment, loose equipment spares, item unique identification, ready-for-installation engine kits, one spare engines, and battery charger electronic module.

Appropriation: Procurement

Contract Name	**C-5 RERP FRP Lot 6**
Contractor	Lockheed Martin
Contractor Location	86 South Cobb Drive Marietta, GA 39963-0290
Contract Number, Type	FA8625-07-C-6471/6, FPEPA
Award Date	October 21, 2011
Definitization Date	October 21, 2011

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
160.1	N/A	11	738.2	N/A	11	738.2	738.2

Cost And Schedule Variance Explanations

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

Contract Comments

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract modification adding the following to Lot 6: Material/fabrication, initial spares, rapid repair and response, support equipment, environmental control system improved duct retention, starter air valve duct drain, peculiar loose equipment, loose equipment spares, item unique identification, ready-for-installation engine kits, and battery charger electronic module.

Appropriation: Procurement

Contract Name	**C-5 RERP FRP Lot 7**
Contractor	Lockheed Martin
Contractor Location	86 Cobb Drive Marietta, GA 39963-0290
Contract Number, Type	FA8625-07-C-6471/7, FPEPA
Award Date	October 19, 2012
Definitization Date	October 19, 2012

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
155.5	N/A	11	155.5	N/A	11	155.5	155.5

Cost And Schedule Variance Explanations

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

Contract Comments

This is the first time this contract is being reported.

Initial Contract Price of $155.5M reflects the first year of the three-year process for Lot 7 (11 aircraft) long lead.

Deliveries and Expenditures

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	3	3	3	100.00%
Production	7	7	49	14.29%
Total Program Quantities Delivered	10	10	52	19.23%

Expenditures and Appropriations (TY $M)			
Total Acquisition Cost	7400.8	Years Appropriated	14
Expenditures To Date	3164.7	Percent Years Appropriated	87.50%
Percent Expended	42.76%	Appropriated to Date	5912.2
Total Funding Years	16	Percent Appropriated	79.89%

The above data is current as of 4/8/2013.

Operating and Support Cost

C-5 RERP

Assumptions and Ground Rules

Cost Estimate Reference:
N/A

Sustainment Strategy:
N/A

Antecedent Information:
There is no antecedent system for this program.

Unitized O&S Costs BY2008 $M		
Cost Element	**C-5 RERP N/A**	**N/A (Antecedent) N/A**
Unit-Level Manpower	0	0
Unit Operations	0	0
Maintenance	0	0
Sustaining Support	0	0
Continuing System Improvements	0	0
Indirect Support	0	0
Other	0	0
Total	--	--

Unitized Cost Comments:
N/A

	Total O&S Cost $M			
	Current Production APB Objective/Threshold		**Current Estimate**	
	C-5 RERP		**C-5 RERP**	**N/A (Antecedent)**
Base Year	0.0	0.0	N/A	N/A
Then Year	0.0	N/A	N/A	N/A

Total O&S Costs Comments:
Operating and Support (O&S) costs are not tracked seperately for C-5 RERP. O&S costs are included in the overall operational costs for the existing C-5 fleet managed by the program office at Robins Air Force Base.

Disposal Costs

N/A