



## Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-252



### **RQ-4A/B UAS GLOBAL HAWK**

As of December 31, 2010

Defense Acquisition Management  
Information Retrieval  
(DAMIR)

---

**UNCLASSIFIED**

**Table of Contents**

Program Information	3
Responsible Office	3
References	3
Mission and Description	3
Executive Summary	4
Threshold Breaches	6
Schedule	7
Performance	10
Track To Budget	15
Cost and Funding	16
Low Rate Initial Production	27
Foreign Military Sales	27
Nuclear Cost	28
Unit Cost	29
Cost Variance	34
Contracts	38
Deliveries and Expenditures	44
Operating and Support Cost	45

## Program Information

### Designation And Nomenclature (Popular Name)

Global Hawk (RQ-4 A/B)

### DoD Component

Air Force

## Responsible Office

### Responsible Office

Col Karl Rozelsky  
2640 Loop Road West  
Room 213  
WPAFB, OH 45433-7106  
[karl.rozelsky@wpafb.af.mil](mailto:karl.rozelsky@wpafb.af.mil)

**Phone** 937-255-7764  
**Fax** --  
**DSN Phone** 785-7764  
**DSN Fax** --  
**Date Assigned** May 17, 2010

## References

### SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated March 6, 2001

### Approved APB

DAE Approved Acquisition Program Baseline (APB) dated March 23, 2007

## Mission and Description

The RQ-4A/B Unmanned Aircraft System (UAS) Global Hawk is a high altitude, long endurance UAS with an integrated sensor suite and ground segment that provides Intelligence, Surveillance, and Reconnaissance (ISR) capabilities to joint warfighters. The system provides high-resolution, high-quality, digital Synthetic Aperture Radar (SAR) to include Ground Moving Target Indicator, plus Electro-Optical (EO), and medium wave Infrared (IR) imagery of targets and other critical areas of interest. The current program profile consists of: Block 10 which carries up to a 2,000-lb payload featuring a basic Integrated Sensor Suite with EO/IR and SAR and the Block 20, 30, and 40 aircraft which are larger and capable of carrying up to a 3,000-lb payload. The Block 20 is designed to be Image Intelligence only and carries an Enhanced Integrated Sensor Suite (EISS) that is designed for increased performance range and location accuracy over the Block 10 payload. Block 30 adds the Airborne Signals Intelligence Payload that brings Signals Intelligence capability. Block 40 incorporates the Multi-Platform Radar Technology Insertion Program Radar as its only sensor.

## Executive Summary

RQ-4A/B Unmanned Aircraft System (UAS) Global Hawk (GH) made several accomplishments over the last year. RQ-4A/B UAS GH surpassed 51,000 flight hours while accumulating over 39,000 combat hours in support of Overseas Contingency Operations (OCO). Additionally, there were eight GH aircraft delivered during 2010: one Block 20 aircraft in support of Battlefield Airborne Communications Node (BACN) (a second Block 20 BACN aircraft was delivered under a previous lot), and seven Block 30 aircraft. RQ-4A/B UAS GH missions were successfully completed in support of Haitian relief efforts. On May 17, 2010 Col Karl M. Rozelsky assumed directorship of the RQ-4A/B UAS GH program with Col Robert K. Barry performing the duties of Deputy Director. In order to begin familiarization and training missions, Air Combat Command (ACC) deployed aircraft to Anderson Air Force Base (AFB), Guam and Naval Air Station (NAS) Sigonella, Italy in September 2010. Air Mobility Command completed its Environmental Impact Study at Grand Forks AFB, North Dakota paving the way for the start of GH site activation activities which began in December 2010. Block 20/30 Initial Operational Test and Evaluation (IOT&E) completed December 2010, with the IOT&E report expected in April 2011. The RQ-4A/B UAS GH program observed a relatively high failure rate of the Block 20/30/40 25 kilo Volt Amperes (kVA) generator which provides power to on-board air vehicle and sensor systems; however, the program developed an interim (repaired) and permanent solution to correct the problem. RQ-4A/B UAS GH Program Office was proactive in managing constrained test resources and expanded flight test capacity at Palmdale, California, for production acceptance. The first Block 40 Multi-Platform Radar Technology Insertion Program (MP-RTIP) sensor was delivered and is in Development Testing (DT).

Nunn-McCurdy (NM) Cost Breach: The Program Manager submitted a Program Deviation Report (PDR) on February 17, 2011 notifying Air Force of a RQ-4A/B UAS GH Average Procurement Unit Cost (APUC) Nunn-McCurdy Breach. Based on the FY 2012 President's Budget (PB), Global Hawk APUC is 23% (constituting a significant NM Breach) and Program Acquisition Unit Cost (PAUC) is 14%. The cost and budget data in this Selected Acquisition Report (SAR) reflect the 23%/14% breaches; however, the current draft Program Office Estimate (POE) in work is signaling increased cost above the 25% threshold (constituting a critical NM Breach). For this reason, the PDR reflects our request to signal a critical versus significant NM Breach. The primary causes of cost growth include fluctuations in aircraft quantity and mix between Block 30 and Block 40, increased Combat Air Patrols (requiring increases to support), and resolution of diminishing manufacturing source issues via ground station and communications rearchitecture efforts. Based on initial indications early in the FY 2012 PB, the Department proactively conducted a comprehensive internal review during June - August 2010 to investigate root causes of cost growth and potential solutions. Based on the outcome and recommendations of the review, the Under Secretary of Defense for Acquisition, Technology and Logistics directed the Air Force to begin restructuring the RQ-4A/B UAS GH program into subprograms. When approved, the new structure will be implemented and represented in an out-of-cycle SAR, post Nunn-McCurdy certification.

Acquisition Program Baseline (APB) Performance Breach: There are five performance requirements in the APB that will not be available in the required timeline. These include: 12 Hour Mission Planning, which will not be available until Ground Segment Re-architecture (GSRA) phase 2; 85% Effective Time on Station (ETOS), which will be incorporated with GSRA phase 1; MP-RTIP Synthetic Aperture Radar (SAR) Gold processing, which is presently unfunded; Block 20/30 Infrared (IR) National Imagery Interpretability Rating Scale (NIIRS) 5 quality, which was already briefed as a shortfall to the Joint Requirements Oversight Council (JROC) in 2009; and Block 20/30 Electro-Optical (EO) NIIRs 5, which has ranged from 4.75 - 5.5 during development testing.

APB Schedule Breach: As previously reported in the December 2009 SAR, on February 2, 2009, the Program Manager submitted a PDR notifying Air Force of a RQ-4A/B UAS GH APB schedule breach.

Battlefield Airborne Communications Node (BACN): On May 28, 2009, the Deputy Secretary of Defense directed the acceleration of two BACN payloads onto RQ-4A/B UAS GH Block 20 aircraft to support Joint Urgent Operational

Need 336. BACN is an airborne communications relay and gateway that allows real-time information exchanges between different tactical data link systems and provides decision-makers with critical information. Aeronautical Systems Center (ASC) and Electronic Systems Center (ESC), under a Memorandum of Agreement (MOA) with other support agencies, worked with Northrop Grumman to integrate, test, and field two BACN RQ-4A/B UAS GH Block 20 systems to theater October-November 2010. From employment and through January 31, 2011, BACN RQ-4A/B UAS GH has flown over 600 combat hours.

MQ-4C Unmanned Aircraft System (UAS) Broad Area Maritime Surveillance (BAMS) Synergy: The Navy and the Air Force (AF) are moving forward on a Common Ground Station as the key enabler to support AF and Navy operations and basing. The business and technical activities are underway; the statement of work and budget are being refined. Ongoing efforts are analyzing decomposed requirements to establish a viable roadmap for implementation. The Program Managers review details on candidate activities monthly to enable timely decisions and lead the team through the evolving synergy activities.

Airworthiness Certification: The RQ-4A/B UAS GH Program Manager signed the Airworthiness Certificate for the Block 30M production aircraft on September 30, 2010.

Software: There are no significant software issues with this program at this time.

## Threshold Breaches

### APB Breaches

<b>Schedule</b>		<input checked="" type="checkbox"/>
<b>Performance</b>		<input checked="" type="checkbox"/>
<b>Cost</b>	RDT&E	<input checked="" type="checkbox"/>
	Procurement	<input checked="" type="checkbox"/>
	MILCON	<input type="checkbox"/>
	Acq O&M	<input type="checkbox"/>
<b>Unit Cost</b>	PAUC	<input checked="" type="checkbox"/>
	APUC	<input checked="" type="checkbox"/>

### Explanation of Breach

**Acquisition Program Baseline (APB)/Nunn-McCurdy Cost Breach:** The program breached the RDT&E and Procurement appropriation APB thresholds (>10%); RDT&E increased 12.7% and Procurement increased 36.6% over the current APB. The RDT&E breach was driven primarily by ground station and communications re-architectures that resolve diminishing manufacturing source (DMS) issues and provide critical added capabilities for the Warfighter. The Procurement breach was driven by adding 12 aircraft to the current APB fleet of 54 aircraft, as well as increased Combat Air Patrols (CAPS) requiring additional critical support. The program breached Program Acquisition Unit Cost (PAUC) at 14% against the current APB. This breach was driven primarily by the combination of RDT&E and Procurement factors outlined earlier in the paragraph. The program's Average Procurement Unit Cost (APUC) breached the Nunn-McCurdy (>15%/>25%) and APB (>10%) thresholds at 23%. The primary causes of the increase in APUC include fluctuations in aircraft quantity/mix between Blocks 30 and 40, and an increase in Combat Air Patrols (CAPS) requiring additional critical support. In addition, APUC increase is due to both ground station and communications re-architectures that resolve DMS issues and provide critical added capabilities for the Warfighter. The cost and budget data in this Selected Acquisition Report reflect 23%/14% breaches; however, the current draft Program Office Estimate in work is signaling increased cost above the 25% threshold. For that reason, the Program Manager submitted a Program Deviation Report signaling a critical versus significant Nunn-McCurdy Breach in the GH APUC.

### Nunn-McCurdy Breaches

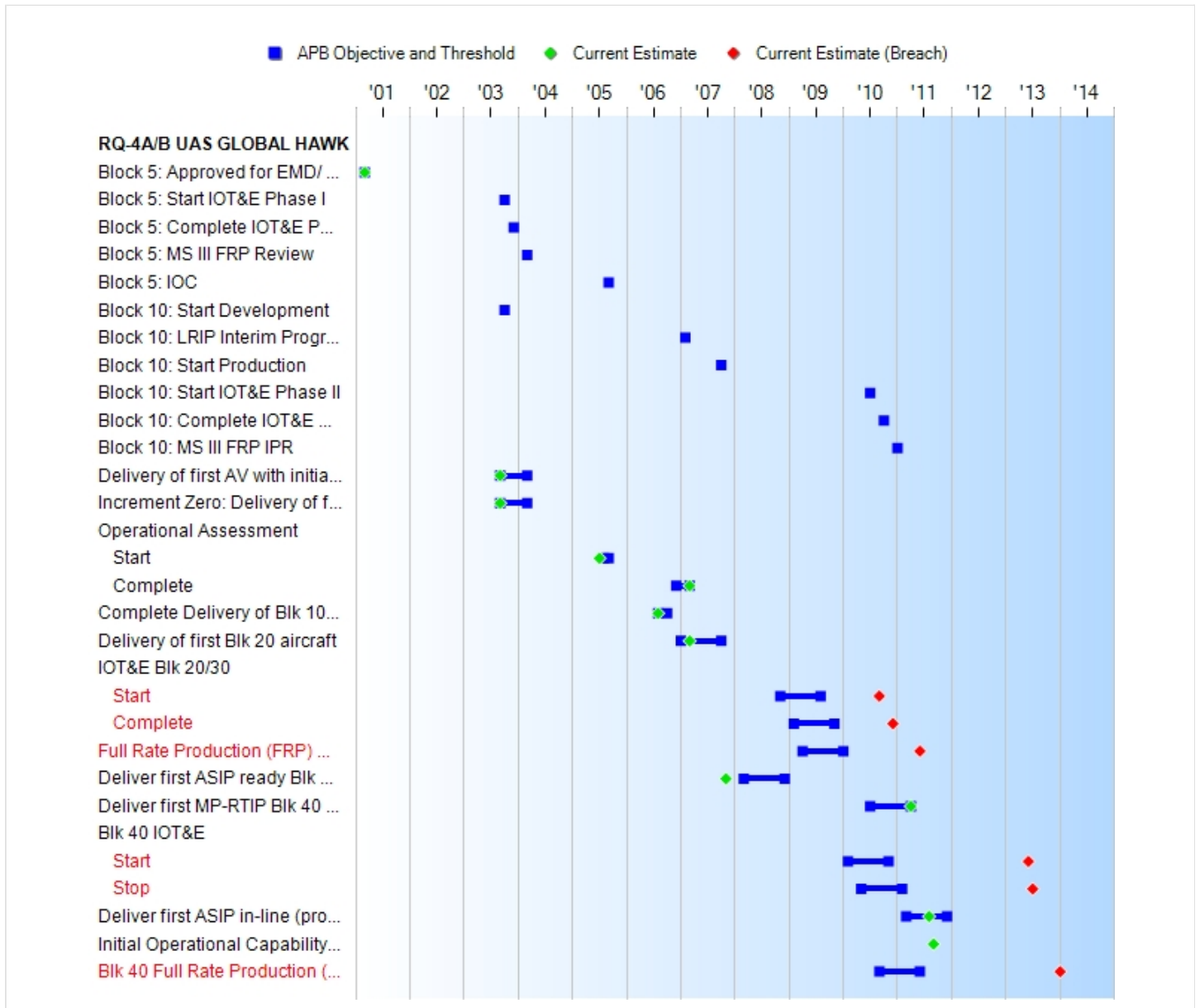
<b>Current UCR Baseline</b>		
PAUC	None	
APUC	Significant	
<b>Original UCR Baseline</b>		
PAUC	None	
APUC	None	

**APB Performance Breach:** There are five performance requirements in the APB that will not be available in the required timeline. These include: 12 Hour Mission Planning which will not be available until Ground Segment Re-architecture (GSRA) phase 2; 85% Effective Time on Station (ETOS) which will be incorporated with GSRA phase 1; Mult Platform Radar Technology Insertion Program (MP-RTIP) Synthetic Aperture Radar (SAR) Gold processing that is presently unfunded; Block 20/30 Infrared (IR) National Imagery Interpretability Rating Scale (NIIRS) 5 quality that was already briefed as a shortfall to the Joint Requirements Oversight Council in 2009; and Block 20/30 Electro-Optical (EO) NIIRs 5 that has ranged from 4.75 - 5.5 during development testing.

**APB Schedule Breach:** As previously reported in the 2009 SAR, on February 2, 2009, the Program Manager submitted a Program Deviation Report (PDR) notifying Air Force of a RQ-4A/B UAS GH APB schedule breach.

Classified Threshold Breaches information is provided in the classified annex to this submission.

### Schedule



Milestones	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Current Estimate
Block 5: Approved for EMD/ LRIP	FEB 2001	MAR 2001	MAR 2001	MAR 2001
Block 5: Start IOT&E Phase I	OCT 2003	N/A	N/A	N/A
Block 5: Complete IOT&E Phase I	DEC 2003	N/A	N/A	N/A
Block 5: MS III FRP Review	MAR 2004	N/A	N/A	N/A
Block 5: IOC	SEP 2005	N/A	N/A	N/A
Block 10: Start Development	OCT 2003	N/A	N/A	N/A
Block 10: LRIP Interim Program Review (IPR)	FEB 2007	N/A	N/A	N/A
Block 10: Start Production	OCT 2007	N/A	N/A	N/A
Block 10: Start IOT&E Phase II	JUL 2010	N/A	N/A	N/A
Block 10: Complete IOT&E Phase II	OCT 2010	N/A	N/A	N/A
Block 10: MS III FRP IPR	JAN 2011	N/A	N/A	N/A
Delivery of first AV with initial Spiral 1 capability	N/A	SEP 2003	MAR 2004	SEP 2003
Increment Zero: Delivery of first AV with initial Spiral 1 capability	N/A	SEP 2003	MAR 2004	SEP 2003
Operational Assessment				
Start	N/A	AUG 2005	SEP 2005	JUL 2005
Complete	N/A	DEC 2006	MAR 2007	MAR 2007
Complete Delivery of Blk 10 aircraft	N/A	AUG 2006	OCT 2006	AUG 2006
Delivery of first Blk 20 aircraft	N/A	JAN 2007	OCT 2007	MAR 2007
IOT&E Blk 20/30				
Start	N/A	NOV 2008	AUG 2009	SEP 2010 <sup>1</sup>
Complete	N/A	FEB 2009	NOV 2009	DEC 2010 <sup>1</sup> (Ch-1)
Full Rate Production (FRP) Decision Review (DR)	N/A	APR 2009	JAN 2010	JUN 2011 <sup>1</sup> (Ch-2)
Deliver first ASIP ready Blk 30 aircraft	N/A	MAR 2008	DEC 2008	NOV 2007
Deliver first MP-RTIP Blk 40 aircraft	N/A	JUL 2010	APR 2011	APR 2011 (Ch-3)
Blk 40 IOT&E				
Start	N/A	FEB 2010	NOV 2010	JUN 2013 <sup>1</sup> (Ch-4)
Stop	N/A	MAY 2010	FEB 2011	JUL 2013 <sup>1</sup> (Ch-5)
Deliver first ASIP in-line (production) Blk 30 aircraft	N/A	MAR 2011	DEC 2011	AUG 2011 (Ch-6)
Initial Operational Capability (IOC)	N/A	TBD	TBD	SEP 2011 (Ch-7)
Blk 40 Full Rate Production (FRP) Decision Review	N/A	SEP 2010	JUN 2011	JAN 2014 <sup>1</sup> (Ch-8)

**<sup>1</sup>APB Breach****Acronyms**

ASIP - Airborne Signals Intelligence Payload

AV - Air Vehicle (same as aircraft)

DR - Decision Review



EMD - Engineering and Manufacturing Development  
FOC - Full Operational Capability  
FRP - Full Rate Production  
IOC - Initial Operational Capability  
IOT&E - Initial Operational Test & Evaluation  
IPR - Interim Program Review  
LRIP - Low Rate Initial Production  
MP-RTIP - Multi Platform Radar Technology Insertion Program  
MS - Milestone  
TBD - To Be Determined

### Change Explanations

(Ch-1) IOT&E Block 20/30 Complete changed from November 2010 to December 2010 since four additional test flights were added to the schedule. This breach reported previously in 2009 Selected Acquisition Report (SAR.)

(Ch-2) FRP DR changed from April 2011 to June 2011 due to the IOT&E Block 20/30 Complete slip date, subsequently pushing IOT&E report and Beyond-LRIP report. This breach reported previously in 2009 SAR.

(Ch-3) Deliver first MP-RTIP Block 40 aircraft changed from July 2010 to April 2011 due to completion and integration of Combined Test Force Block 40 schedule with Program Office Integrated Master Schedule (IMS).

(Ch-4) Block 40 IOT&E Start changed from February 2013 to June 2013 due to late delivery of MP-RTIP Block 40 aircraft and schedule slips to execute Joint Urgent Operational Need 336, to incorporate Battlefield Airborne Communications Node (BACN) payload onto Global Hawk. This breach reported previously in 2009 SAR.

(Ch-5) Block 40 IOT&E Stop changed from March 2013 to July 2013 due to delay of Block 40 IOT&E Start. This breach reported previously in 2009 SAR.

(Ch-6) Deliver first ASIP in-line (production) Block 30 aircraft changed from March 2011 to August 2011 due to limited production capacity.

(Ch-7) IOC changed from TBD to September 2011 because IOC was defined as the completion of IOT&E Block 20/30 and support.

(Ch-8) Block 40 FRP DR changed from July 2013 to January 2014 due to delay of Block 40 IOT&E. This breach reported previously in 2009 SAR.

## Performance

Characteristics	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Demonstrated Performance	Current Estimate
Block 5: Endurance - Air Vehicle (AV)	Should be capable of flying an enroute distance of 3000 NM, remaining on-station 24 hours, and recover at the launch base.	N/A	N/A	N/A	N/A
Block 5: Airspace Coordination - Global Hawk System	The Global Hawk system must be sufficiently robust to allow world wide system employment in all classes of airspace.	N/A	N/A	N/A	N/A
Block 5: Mission Execution - Ground Station	The ground station will allow UAV operators to perform NRT mission control, mission monitoring, and mission updates/modifications to include dynamic platform and payload control and retasking.	N/A	N/A	N/A	N/A
Block 5: Information Exchange Requirements (IERs)	100% of all top-level IERs.	N/A	N/A	N/A	N/A
Block 10: System Survivability - Air	The AV must be equipped	N/A	N/A	N/A	N/A

Vehicle (AV)	to employ active counter measures against radar and IR-guided threats to the system as identified in the STAR.				
Block 10: Mean Time Between Critical Failure (MTBCF)	System MTBCF of 160 hours.	N/A	N/A	N/A	N/A
Block 10: Signal Intelligence (SIGINT)	TBD	N/A	N/A	N/A	N/A
Endurance -- Aircraft (all Lots) KPP	N/A	40 hours	The Global Hawk aircraft, in mission capable configuration, must have a minimum total endurance of 28 hours plus appropriate fuel reserves IAW Air Force Instructions.	TBD	31 hrs
Airspace Coordination -- Global Hawk System (All Lots) KPP	N/A	The Global Hawk system must be sufficiently robust to allow world wide system employment in all classes of airspace	The Global Hawk system must be sufficiently robust to allow world wide system employment in all classes of airspace	TBD	Sufficiently robust to allow world wide system employment in all classes of airspace
Mission Execution -- Ground Station KPP	N/A	The Global Hawk ground station must allow operators to perform NRT mission control,	The Global Hawk ground station must allow operators to perform NRT mission control,	TBD	Currently working software to enhance the processes

		mission monitoring, and mission updates/modifications to include dynamic platform and payload control and re-tasking.	mission monitoring, and mission updates/modifications to include dynamic platform and payload control and re-tasking.		
Net Ready -- All activity interfaces, services, policy-enforcement controls, and data-sharing of the NCOW-RM and GIG-KIPs will be satisfied to the requirements of the specific Joint integrated architecture products (in	N/A	100 % of interfaces; services ; policy-enforcement controls ; and data correctness, availability and processing requirements in the Joint integrated architecture.	100% of interfaces; services ; policy-enforcement controls ; and data correctness, availability and processing requirements designated as enterprise-level or critical in the Joint integrated architecture.	TBD	Software in work to enhance time-lines
FY08 Information Exchange Requirements (IERs) KPP	N/A	Satisfy 100% of all top-level IERs	Satisfy 100% of all top-level IERs designated critical.	TBD	Development work ongoing to improve useability and timeliness
Baseline SAR Spot Mode Capability (NIIRS X @ Km) KPP	N/A	160 km at NIIRS 5	120 km at NIIRS 5	TBD	120 km at NIIRS 5
Baseline EO Spot Mode (NIIRS X @ Km)	N/A	80 km at NIIRS 5	40 km at NIIRS 5	TBD	40 km at NIIRS 5
Baseline IR Sport Mode (NIIRS X @ Km)	N/A	40 km at NIIRS 5	30 km at NIIRS 5	TBD	30 km at NIIRS 5
Mission Planning /FY10	N/A	8 hours	12 hours	TBD	<b>16 hours + 6 weeks of 6-DOF</b> <sup>1</sup>
Delivery of first aircraft with a multi-	N/A	Aircraft multi-Int capable	Aircraft multi-Int capable	TBD	Aircraft multi-Int capable.

(Ch-1)

Intelligence (multi-Int) Capability						
Improved SAR Spot Mode Capability (NIIRS X @Km)	N/A	185 km at NIIRS 5	160 km at NIIRS 5	TBD	160 km at NIIRS 5	
Improved EO Spot Mode (NIIRS X @ Km)KPP	N/A	170 km at NIIRS 5	80 km at NIIRS 5	TBD	<b>50 km at NIIRS 4.75-5.5<sup>1</sup></b>	(Ch-2)
Improved IR Spot Mode (NIIRS x @ Km)KPP	N/A	80 km at NIIRS 5	50 km at NIIRS 5	TBD	<b>50 km at NIIRS 4.5<sup>1</sup></b>	(Ch-3)
Effective Time on Station (ETOS)	N/A	90%	85%	TBD	<b>47%<sup>1</sup></b>	(Ch-4)

**<sup>1</sup>APB Breach**

**Requirements Source:** Capability Development Document (CDD) for the Global Hawk Remotely Piloted Aircraft (RPA) System Blocks 10/20/30/40 CAF 353-92-C, dated July 28, 2006

**Acronyms**

AV - Air Vehicle  
 DOF - Degrees of Freedom  
 EO - Electro-Optic  
 GIG-KIP - Global Information Grid Key Interface Profile  
 IAW - In Accordance With  
 IER - Information Exchange Requirement  
 IR - Infrared  
 JROC - Joint Requirements Oversight Council  
 Km - Kilometer  
 KPP - Key Performance Parameter  
 MTBCF - Mean Time Between Critical Failure  
 N/A - Not Applicable  
 NCOW-RM - Net-Centric Operation and Warfare Reference Model  
 NIIRS - National Image Interpretability Rating Scale  
 NM - Nautical Mile  
 NRT - Near Real Time  
 SAR - Synthetic Aperture Radar  
 SIGINT - Signals Intelligence  
 STAR - System Threat Assessment Report  
 TBD - To Be Determined  
 UAV - Unmanned Air Vehicle

**Change Explanations**

(Ch-1) 12 Hour Mission Planning will not be available until Ground Segment Re-architecture (GSRA) Phase 2

(Ch-2) Development Testing of Block 20/30 EO Spot Mode has ranged from NIIRS 4.75 - 5.5 compared to the NIIRS 5 threshold

(Ch-3) Block 20/30 IR NIIRS 5 quality was briefed as a shortfall to the Joint Requirements Oversight Council in 2009

(Ch-4) 85% ETOS will be incorporated with GSRA Phase 1

Classified Performance information is provided in the classified annex to this submission.

**Track To Budget****RDT&E**

APPN 3600 BA 07 PE 0305205F (Air Force) Project 4755 (Shared) (Sunk)  
 Global Hawk HAEUAV/Predator  
 APPN 3600 BA 07 PE 0305220F (Air Force) Project 5144  
 Global Hawk HAEUAV

**Procurement**

APPN 3010 BA 06 PE 0305220F (Air Force) ICN 000999 (Shared)  
 (Air Force)  
 APPN 3010 BA 04 PE 0305220F (Air Force) ICN HAEUAV  
 (Air Force)  
 APPN 3010 BA 04 PE 0305205F (Air Force) ICN HAEUAV (Shared) (Sunk)  
 (Air Force)  
 APPN 3010 BA 05 PE 0305220F (Air Force) ICN HAWK00  
 (Air Force)  
 APPN 3080 BA 02 PE 0305220F (Air Force) ICN 821800 (Shared) (Sunk)  
 (Air Force)  
 APPN 3080 BA 03 PE 0305220F (Air Force) ICN 837300 (Shared) (Sunk)  
 (Air Force)

**MILCON**

APPN 3300 BA 01 PE 0305205F (Air Force) (Shared) (Sunk)  
 (Air Force)  
 APPN 3300 BA 01 PE 0305220F (Air Force)  
 (Air Force)

## Cost and Funding

### Cost Summary

#### Total Acquisition Cost and Quantity

Appropriation	BY2000 \$M			BY2000 \$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	840.4	3076.8	3384.5	<b>3816.0</b> <sup>1</sup>	906.2	3572.0	4514.1
Procurement	3484.4	4904.9	5395.4	<b>7366.4</b> <sup>1</sup>	4459.8	6022.6	9297.8
Flyaway	3086.5	--	--	5961.5	3972.9	--	7554.9
Recurring	3072.8	--	--	5892.6	3957.0	--	7471.3
Non Recurring	13.7	--	--	68.9	15.9	--	83.6
Support	397.9	--	--	1404.9	486.9	--	1742.9
Other Support	173.4	--	--	648.8	216.7	--	817.1
Initial Spares	224.5	--	--	756.1	270.2	--	925.8
MILCON	25.5	121.9	134.1	106.2	28.0	139.8	122.9
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	4350.3	8103.6	N/A	11288.6	5394.0	9734.4	13934.8

#### <sup>1</sup> APB Breach

Quantity	SAR Baseline Dev Est	Current APB Development	Current Estimate
RDT&E	0	0	0
Procurement	63	54	66
Total	63	54	66

Unit of measure is number of aircraft.



## Funding Summary

### Appropriation and Quantity Summary FY2012 President's Budget / December 2010 SAR (TY\$ M)

Appropriation	Prior	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	To Complete	Total
RDT&E	2624.0	224.1	300.3	264.2	255.5	307.9	307.3	230.8	4514.1
Procurement	3883.4	859.2	690.0	603.8	551.8	456.6	351.7	1901.3	9297.8
MILCON	122.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	122.9
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2012 Total	6630.3	1083.3	990.3	868.0	807.3	764.5	659.0	2132.1	13934.8
PB 2011 Total	6755.3	1077.2	1100.0	893.6	790.8	719.4	748.3	1623.7	13708.3
Delta	-125.0	6.1	-109.7	-25.6	16.5	45.1	-89.3	508.4	226.5

Quantity	Undistributed	Prior	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	To Complete	Total
Development	0	0	0	0	0	0	0	0	0	0
Production	0	38	4	3	3	3	1	1	13	66
PB 2012 Total	0	38	4	3	3	3	1	1	13	66
PB 2011 Total	0	38	4	5	5	5	4	5	11	77
Delta	0	0	0	-2	-2	-2	-3	-4	2	-11

## 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
2001	--	--	--	--	--	--	129.7
2002	--	--	--	--	--	--	213.0
2003	--	--	--	--	--	--	334.9
2004	--	--	--	--	--	--	356.2
2005	--	--	--	--	--	--	377.0
2006	--	--	--	--	--	--	257.7
2007	--	--	--	--	--	--	224.1
2008	--	--	--	--	--	--	265.5
2009	--	--	--	--	--	--	228.6
2010	--	--	--	--	--	--	237.3
2011	--	--	--	--	--	--	224.1
2012	--	--	--	--	--	--	300.3
2013	--	--	--	--	--	--	264.2
2014	--	--	--	--	--	--	255.5
2015	--	--	--	--	--	--	307.9
2016	--	--	--	--	--	--	307.3
2017	--	--	--	--	--	--	230.8
<b>Subtotal</b>	--	--	--	--	--	--	<b>4514.1</b>

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

<b>Fiscal Year</b>	<b>Quantity</b>	<b>End Item Recurring Flyaway BY 2000 \$M</b>	<b>Non End Item Recurring Flyaway BY 2000 \$M</b>	<b>Non Recurring Flyaway BY 2000 \$M</b>	<b>Total Flyaway BY 2000 \$M</b>	<b>Total Support BY 2000 \$M</b>	<b>Total Program BY 2000 \$M</b>
2001	--	--	--	--	--	--	126.8
2002	--	--	--	--	--	--	206.0
2003	--	--	--	--	--	--	319.6
2004	--	--	--	--	--	--	331.6
2005	--	--	--	--	--	--	342.2
2006	--	--	--	--	--	--	227.1
2007	--	--	--	--	--	--	192.4
2008	--	--	--	--	--	--	223.5
2009	--	--	--	--	--	--	190.0
2010	--	--	--	--	--	--	195.2
2011	--	--	--	--	--	--	181.9
2012	--	--	--	--	--	--	240.2
2013	--	--	--	--	--	--	207.9
2014	--	--	--	--	--	--	197.7
2015	--	--	--	--	--	--	234.2
2016	--	--	--	--	--	--	229.9
2017	--	--	--	--	--	--	169.8
<b>Subtotal</b>	--	--	--	--	--	--	<b>3816.0</b>

## 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
2001	--	21.0	--	--	21.0	--	21.0
2002	3	153.8	--	--	153.8	9.5	163.3
2003	3	143.9	--	5.3	149.2	31.9	181.1
2004	4	220.2	--	0.7	220.9	32.7	253.6
2005	4	302.6	--	--	302.6	56.5	359.1
2006	5	290.7	--	--	290.7	68.9	359.6
2007	5	343.3	7.5	--	350.8	98.8	449.6
2008	5	374.0	25.8	50.0	449.8	78.9	528.7
2009	5	494.7	103.7	10.0	608.4	156.3	764.7
2010	4	452.2	134.4	2.5	589.1	211.1	800.2
2011	4	429.0	119.4	2.5	550.9	308.3	859.2
2012	3	290.0	89.2	2.6	381.8	308.2	690.0
2013	3	352.8	55.5	2.6	410.9	192.9	603.8
2014	3	434.2	23.4	2.6	460.2	91.6	551.8
2015	1	288.5	107.2	2.7	398.4	58.2	456.6
2016	1	202.2	113.8	0.7	316.7	35.0	351.7
2017	6	984.5	64.2	0.7	1049.4	0.8	1050.2
2018	7	529.7	61.7	0.7	592.1	0.8	592.9
2019	--	--	86.7	--	86.7	--	86.7
2020	--	--	66.2	--	66.2	--	66.2
2021	--	--	43.9	--	43.9	--	43.9
2022	--	--	38.3	--	38.3	--	38.3
2023	--	--	23.1	--	23.1	--	23.1
<b>Subtotal</b>	<b>66</b>	<b>6307.3</b>	<b>1164.0</b>	<b>83.6</b>	<b>7554.9</b>	<b>1740.4</b>	<b>9295.3</b>

## Annual Funding BY\$

## 3010 | Procurement | Aircraft Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2000 \$M	Non End Item Recurring Flyaway BY 2000 \$M	Non Recurring Flyaway BY 2000 \$M	Total Flyaway BY 2000 \$M	Total Support BY 2000 \$M	Total Program BY 2000 \$M
2001	--	20.3	--	--	20.3	--	20.3
2002	3	147.0	--	--	147.0	9.1	156.1
2003	3	135.3	--	5.0	140.3	30.0	170.3
2004	4	201.8	--	0.6	202.4	30.0	232.4
2005	4	269.4	--	--	269.4	50.3	319.7
2006	5	252.2	--	--	252.2	59.7	311.9
2007	5	290.2	6.3	--	296.5	83.5	380.0
2008	5	311.4	21.5	41.6	374.5	65.7	440.2
2009	5	406.0	85.1	8.2	499.3	128.4	627.7
2010	4	365.6	108.7	2.0	476.3	170.7	647.0
2011	4	341.7	95.1	2.0	438.8	245.5	684.3
2012	3	227.3	69.9	2.0	299.2	241.5	540.7
2013	3	271.9	42.8	2.0	316.7	148.6	465.3
2014	3	329.0	17.7	2.0	348.7	69.4	418.1
2015	1	214.9	79.9	2.0	296.8	43.4	340.2
2016	1	148.1	83.5	0.5	232.1	25.6	257.7
2017	6	709.2	46.2	0.5	755.9	0.6	756.5
2018	7	375.2	43.7	0.5	419.4	0.6	420.0
2019	--	--	60.4	--	60.4	--	60.4
2020	--	--	45.3	--	45.3	--	45.3
2021	--	--	29.6	--	29.6	--	29.6
2022	--	--	25.4	--	25.4	--	25.4
2023	--	--	15.0	--	15.0	--	15.0
<b>Subtotal</b>	<b>66</b>	<b>5016.5</b>	<b>876.1</b>	<b>68.9</b>	<b>5961.5</b>	<b>1402.6</b>	<b>7364.1</b>

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

<b>Fiscal Year</b>	<b>Quantity</b>	<b>End Item Recurring Flyaway (Aligned with Quantity) BY 2000 \$M</b>
2001	--	--
2002	3	137.2
2003	3	128.8
2004	4	191.9
2005	4	262.3
2006	5	253.2
2007	5	287.6
2008	5	297.1
2009	5	431.4
2010	4	318.5
2011	4	361.0
2012	3	243.1
2013	3	270.2
2014	3	357.0
2015	1	214.4
2016	1	157.8
2017	6	612.7
2018	7	492.3
2019	--	--
2020	--	--
2021	--	--
2022	--	--
2023	--	--
<b>Subtotal</b>	<b>66</b>	<b>5016.5</b>

## Annual Funding TY\$

## 3080 | Procurement | Other 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
2003	--	--	--	--	--	0.6	0.6
2004	--	--	--	--	--	0.2	0.2
2005	--	--	--	--	--	0.3	0.3
2006	--	--	--	--	--	0.3	0.3
2007	--	--	--	--	--	--	--
2008	--	--	--	--	--	0.8	0.8
2009	--	--	--	--	--	0.3	0.3
<b>Subtotal</b>	--	--	--	--	--	<b>2.5</b>	<b>2.5</b>

**Annual Funding BY\$****3080 | Procurement | Other Procurement, Air Force**

<b>Fiscal Year</b>	<b>Quantity</b>	<b>End Item Recurring Flyaway BY 2000 \$M</b>	<b>Non End Item Recurring Flyaway BY 2000 \$M</b>	<b>Non Recurring Flyaway BY 2000 \$M</b>	<b>Total Flyaway BY 2000 \$M</b>	<b>Total Support BY 2000 \$M</b>	<b>Total Program BY 2000 \$M</b>
2003	--	--	--	--	--	0.6	0.6
2004	--	--	--	--	--	0.2	0.2
2005	--	--	--	--	--	0.3	0.3
2006	--	--	--	--	--	0.3	0.3
2007	--	--	--	--	--	--	--
2008	--	--	--	--	--	0.7	0.7
2009	--	--	--	--	--	0.2	0.2
<b>Subtotal</b>	--	--	--	--	--	<b>2.3</b>	<b>2.3</b>



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

<b>Fiscal Year</b>	<b>Total Program TY \$M</b>
2003	11.7
2004	22.2
2005	9.8
2006	14.1
2007	48.6
2008	--
2009	--
2010	16.5
<b>Subtotal</b>	<b>122.9</b>

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

<b>Fiscal Year</b>	<b>Total Program BY 2000 \$M</b>
2003	10.9
2004	20.2
2005	8.6
2006	12.1
2007	41.0
2008	--
2009	--
2010	13.4
<b>Subtotal</b>	<b>106.2</b>

## Low Rate Initial Production

	Initial LRIP Decision	Current Total LRIP
Approval Date	3/6/2001	7/6/2010
Approved Quantity	6	38
Reference	ADM	ADM
Start Year	2001	2001
End Year	2004	2013

The FY 2012 President's Budget changed the RQ-4A/B UAS Global Hawk (GH) procurement baseline to include 66 aircraft and associated Ground Stations (ten Launch & Recovery Elements (LRE) and ten Mission Control Elements (MCE)). The March 2001 Acquisition Decision Memorandum (ADM) established Low Rate Initial Production (LRIP) quantities of six aircraft and two MCE/LRE. The LRIP aircraft quantity was limited to five per year in the June 2006 ADM. LRIP will continue until completion of Block 20/30 Initial Operational Test & Evaluation and a Full Rate Production Decision. With the July 2010 ADM approving the Lot 9 buy, the LRIP quantity now stands at 38 aircraft. Release of the remaining \$117M of advance procurement funding for RQ-4A/B UAS GH Lot 10 Long Lead items was approved in the January 2011 ADM, subject to funding availability. The total LRIP quantity exceeds 10% of the expected program buy. The small RQ-4A/B UAS GH fleet size (66) exaggerates the effects of the 10% boundary.

## Foreign Military Sales

Country	Date of Sale	Quantity	Total Cost \$M	Memo
Germany	1/31/2007	0	30.3	This case does not include aircraft or ground stations which are being procured by direct sales from Northrop Grumman. This case includes Government Furnished Equipment (GFE), support equipment, Joint Mission Planning software (JMPS), technical data, Time Compliance Technical Orders, technical support, flight testing, GFE repair and training.

The German Government requested to purchase a Euro Hawk system as a Direct Commercial Sale to replace their current signals intelligence (SIGINT) system. This system is a modified RQ-4A/B UAS Global Hawk to accommodate a European Aeronautic Defence and Space Company (EADS) developed SIGINT payload. The Letter of Offer & Acceptance (LOA) was implemented on January 30, 2007. The LOA provides support for Government Furnished Equipment (GFE) items, training, flight testing, and JMPS from the US Government through a Foreign Military Sales case. The German Government will not be purchasing any US sensors for integration on the aircraft. Basic development testing (envelope expansion) was completed on November 3, 2010. The ferry flight from Edwards Air Force Base to Manching, Germany, is scheduled for Spring 2011.

## **Nuclear Cost**

None

## Unit Cost

### Unit Cost Report

	BY2000 \$M	BY2000 \$M	
Unit Cost	Current UCR Baseline (MAR 2007 APB)	Current Estimate (DEC 2010 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	8103.6	11288.6	
Quantity	54	66	
Unit Cost	150.067	171.039	+13.98
Average Procurement Unit Cost (APUC)			
Cost	4904.9	7366.4	
Quantity	54	66	
Unit Cost	90.831	111.612	+22.88 <sup>1</sup>

	BY2000 \$M	BY2000 \$M	
Unit Cost	Revised Original UCR Baseline (MAR 2007 APB)	Current Estimate (DEC 2010 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	8103.6	11288.6	
Quantity	54	66	
Unit Cost	150.067	171.039	+13.98
Average Procurement Unit Cost (APUC)			
Cost	4904.9	7366.4	
Quantity	54	66	
Unit Cost	90.831	111.612	+22.88

	TY \$M		
Unit Cost	Current UCR Baseline (MAR 2007 APB)	Current Estimate (DEC 2010 SAR)	TY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	9734.4	13934.8	
Unit Cost	180.267	211.133	+17.12
Average Procurement Unit Cost (APUC)			
Cost	6022.6	9297.8	
Unit Cost	111.530	140.876	+26.31

Unit Cost	TY \$M		
	Revised Original UCR Baseline (MAR 2007 APB)	Current Estimate (DEC 2010 SAR)	TY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	9734.4	13934.8	
Unit Cost	180.267	211.133	+17.12
Average Procurement Unit Cost (APUC)			
Cost	6022.6	9297.8	
Unit Cost	111.530	140.876	+26.31

### <sup>1</sup> Nunn-McCurdy Breach

This report reflects a significant Nunn-McCurdy breach to the revised original acquisition program baseline and the current acquisition program baseline in APUC. The above breach of 22.89% in APUC (Base Year 2000 dollars) is due to both historical increases previously reported and current increases detailed below. The cost and budget data in this Selected Acquisition Report reflect 23%/14% breaches; however, the current draft Program Office Estimate in work is signaling increased cost above the 25% threshold. For that reason, the Program Manager submitted a Program Deviation Report signaling a critical versus significant Nunn-McCurdy Breach in the RQ-4A/B UAS Global Hawk (GH) APUC.

### Unit Cost Breach Data

Changes from Previous SAR	\$M/Qty.	Percent
PAUC (BY \$M)	171.039	+18.47
APUC (BY \$M)	111.612	+10.68
PAUC Quantity	66	0.00
PAUC (TY \$M)	211.133	+18.59
APUC (TY \$M)	140.876	+10.51

Initial SAR Information SEP 2001	BY2000 \$M	TY \$M
Program Acquisition Cost	4350.3	5394.0

### Unit Cost PAUC Changes

- Increased costs as a result of a one year slip in Initial Operational Test & Evaluation (IOT&E);
- Increased risk funding to improve program estimate confidence interval;
- Fluctuations in aircraft quantity and mix between Blocks 30 and 40;
- Increases due to reduced annual buy quantities;
- Increased Combat Air Patrols (CAPs) driving increases to support (e.g., additional initial spares and peculiar support equipment);
- Increased estimates for Diminishing Manufacturing Sources;
- Increased estimates for Ground Station Re-architecture;
- New scope/technical definition for Communications Re-Architecture;
- Added scope for calibration support for the Airborne Signals Intelligence Payload (ASIP);
- Added scope for Sense and Avoid integration;
- Added scope to resolve aircraft icing deficiencies;
- Added scope for ASIP and Multi-Platform Radar Technology Insertion Program (MP-RTIP) sensor depots;
- Increased estimates for retrofit/modification facility equipment to include special tooling and special

test/software integration equipment;

- Increased estimates for Systems Engineering to include Information Assurance and Reliability and Maintainability.

#### **Unit Cost APUC Changes**

- Fluctuations in aircraft quantity and mix between Blocks 30 and 40;
- Increases due to reduced annual buy quantities;
- Increased CAPs driving increases to support (e.g., additional initial spares and peculiar support equipment);
- Increased risk funding to improve program estimate confidence interval;
- Increased estimates for Diminishing Manufacturing Sources;
- New scope/technical definition for Communications Re-architecture;
- Added scope for calibration support for the ASIP;
- Added scope to resolve aircraft icing deficiencies;
- Added scope for ASIP and MP-RTIP sensor depots;
- Increased estimates for retrofit/modification facility equipment to include special tooling and special test/software integration equipment;

#### **Impact of Performance or Schedule Changes**

Schedule changes that impacted unit cost include:

- One year delay to Block 30 IOT&E;
- Two and one-half year delay to Block 40 IOT&E;
- Extended procurement schedule driven by overall additional quantities and reduced annual buy quantities.

#### **Program Management or Control**

Col Karl M. Rozelsky assigned as Program Director effective May 17, 2010.

The Milestone Decision Authority directed the Global Hawk program to restructure into subprograms to allow better insight and management control of the program.

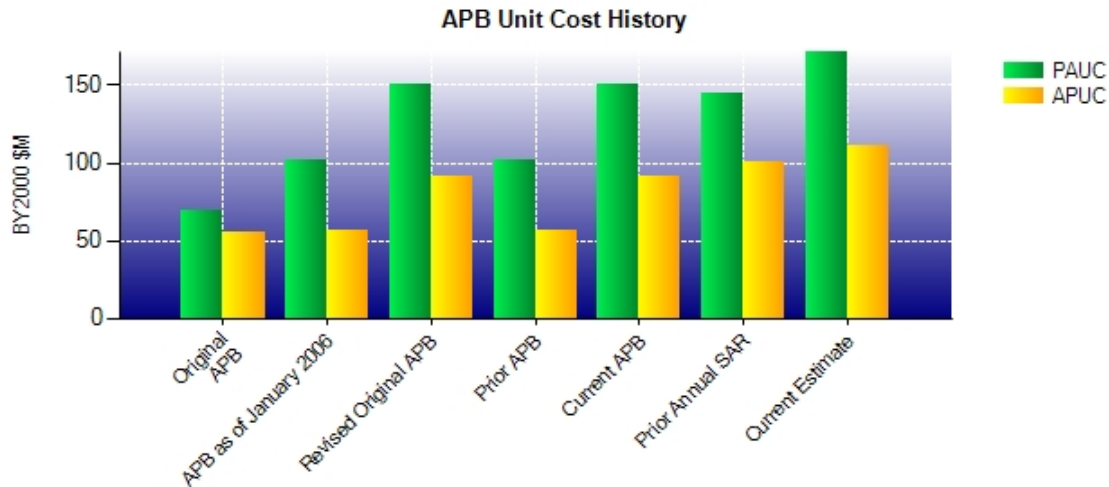
#### **Cost Control Actions**

Based on initial indications early in the FY 2012 President's Budget (PB), the Department proactively engaged in a comprehensive internal review during June - August 2010 to investigate root causes of cost growth and potential solutions to structure the program effectively for the future. Based on the outcome and recommendations of the review, the RQ-4A/B UAS GH program is being restructured into subprograms. When approved, the new structure will be implemented and represented in an out-of-cycle SAR, post Nunn-McCurdy Certification.

#### **Nunn-McCurdy Comments**

An updated Program Office Estimate (POE) and an Independent Cost Estimate (ICE) are in process to support both the restructure of GH into sub-programs and planned Production Milestone decisions scheduled for the June 2011. The cost and budget data in this Selected Acquisition Report reflect 23%/14% breaches; however, the current draft POE in work is signaling increased cost above the 25% threshold. For that reason, the Program Manager submitted a Program Deviation Report signaling a critical versus significant Nunn-McCurdy Breach in the GH APUC.

### Unit Cost History



	Date	BY2000 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	MAR 2001	69.052	55.308	85.619	70.790
APB as of January 2006	DEC 2002	101.896	56.953	115.459	65.673
Revised Original APB	MAR 2007	150.067	90.831	180.267	111.530
Prior APB	DEC 2002	101.896	56.953	115.459	65.673
Current APB	MAR 2007	150.067	90.831	180.267	111.530
Prior Annual SAR	DEC 2009	144.378	100.838	178.030	127.482
Current Estimate	DEC 2010	171.039	111.612	211.133	140.876

### 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	
85.619	-1.235	0.115	-5.174	72.259	37.158	0.000	22.391	125.514	211.133

#### Current SAR Baseline to Current Estimate (TY \$M)

Initial APUC Dev Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
70.790	-1.292	0.790	-13.470	38.320	26.182	0.000	19.556	70.086	140.876



**SAR Baseline History**

<b>Item/Event</b>	<b>SAR Planning Estimate (PE)</b>	<b>SAR Development Estimate (DE)</b>	<b>SAR Production Estimate (PdE)</b>	<b>Current Estimate</b>
Milestone I	N/A	N/A	N/A	N/A
Milestone II	N/A	FEB 2001	N/A	MAR 2001
Milestone III	N/A	N/A	N/A	JUN 2011
IOC	N/A	N/A	N/A	SEP 2011
Total Cost (TY \$M)	N/A	5394.0	N/A	13934.8
Total Quantity	N/A	63	N/A	66
Prog. Acq. Unit Cost (PAUC)	N/A	85.619	N/A	211.133

The Global Hawk Full Rate Production Decision Review, previously a Milestone III decision, is currently projected to occur in June 2011.

**Cost Variance**

<b>Summary Then Year \$M</b>				
	<b>RDT&amp;E</b>	<b>Proc</b>	<b>MILCON</b>	<b>Total</b>
SAR Baseline (Dev Est)	906.2	4459.8	28.0	5394.0
Previous Changes				
Economic	+1.9	-72.6	+3.3	-67.4
Quantity	--	+1035.9	--	+1035.9
Schedule	+555.6	-1660.5	-8.1	-1113.0
Engineering	+1613.8	+2941.5	+117.0	+4672.3
Estimating	+491.8	+2015.3	-4.4	+2502.7
Other	--	--	--	--
Support	+184.1	+1096.7	+3.0	+1283.8
Subtotal	+2847.2	+5356.3	+110.8	+8314.3
Current Changes				
Economic	-1.5	-12.7	+0.1	-14.1
Quantity	--	-771.4	--	-771.4
Schedule	--	+771.5	--	+771.5
Engineering	+509.2	-412.4	--	+96.8
Estimating	+253.0	-287.3	-16.0	-50.3
Other	--	--	--	--
Support	--	+194.0	--	+194.0
Subtotal	+760.7	-518.3	-15.9	+226.5
Total Changes	+3607.9	+4838.0	+94.9	+8540.8
CE - Cost Variance	4514.1	9297.8	122.9	13934.8
CE - Cost & Funding	4514.1	9297.8	122.9	13934.8

<b>Summary Base Year 2000 \$M</b>				
	<b>RDT&amp;E</b>	<b>Proc</b>	<b>MILCON</b>	<b>Total</b>
SAR Baseline (Dev Est)	840.4	3484.4	25.5	4350.3
Previous Changes				
Economic	--	--	--	--
Quantity	--	+785.5	--	+785.5
Schedule	+414.4	-1205.7	-2.1	-793.4
Engineering	+1444.8	+2298.1	+98.3	+3841.2
Estimating	+379.2	+1538.0	-5.2	+1912.0
Other	--	--	--	--
Support	+154.8	+864.2	+2.5	+1021.5
<b>Subtotal</b>	<b>+2393.2</b>	<b>+4280.1</b>	<b>+93.5</b>	<b>+6766.8</b>
Current Changes				
Economic	--	--	--	--
Quantity	--	-549.7	--	-549.7
Schedule	--	+549.8	--	+549.8
Engineering	+388.9	-291.8	--	+97.1
Estimating	+193.5	-249.2	-12.8	-68.5
Other	--	--	--	--
Support	--	+142.8	--	+142.8
<b>Subtotal</b>	<b>+582.4</b>	<b>-398.1</b>	<b>-12.8</b>	<b>+171.5</b>
<b>Total Changes</b>	<b>+2975.6</b>	<b>+3882.0</b>	<b>+80.7</b>	<b>+6938.3</b>
CE - Cost Variance	3816.0	7366.4	106.2	11288.6
CE - Cost & Funding	3816.0	7366.4	106.2	11288.6

Previous Estimate: December 2009

RDT&E	\$M	
	Base Year	Then Year
<b>Current Change Explanations</b>		
Revised escalation indices. (Economic)	N/A	-1.5
Program funding profile changes due to revised schedules for Synthetic Aperture Radar (SAR) Complex Imagery and Diminishing Manufacturing Sources (DMS) for the Enhanced Integrated Sensor Suite (EISS) development efforts (Estimating)	+7.1	+9.1
Increase for new scope/technical definition of Ground Station Re-architecture (added Phase 2). (Engineering)	+99.6	+132.6
Increase for new scope for Communications Re-architecture to include Wideband Communications and High Data Rate Terminals (Engineering)	+209.6	+274.3
Increase for new scope for Sense and Avoid (Engineering)	+10.5	+14.0
Increase for new scope to resolve aircraft icing deficiencies (Engineering)	+32.3	+42.0
Increase for new scope for Multi-Platform Radar Technology Insertion Program (MP-RTIP) Sensor Depot Activation Requirements Analysis/Planning (Engineering)	+36.9	+46.3
Increased estimates for Systems Engineering to include Information Assurance and Reliability and Maintainability (Estimating)	+158.8	+207.4
Increased estimates for additional development flight test support (Estimating)	+27.6	+36.5
<b>RDT&amp;E Subtotal</b>	<b>+582.4</b>	<b>+760.7</b>

Procurement	\$M	
	Base Year	Then Year
<b>Current Change Explanations</b>		
Revised escalation indices. (Economic)	N/A	-12.7
Total Quantity variance resulting from a decrease of 11 Global Hawk aircraft from the previous estimate of 77 to the current estimate of 66. (Subtotal)	-940.5	-1317.8
Quantity variance resulting from a decrease of 11 Global Hawk aircraft from the previous estimate of 77 to the current estimate of 66. (Quantity)	(-531.3)	(-744.4)
Allocation to Schedule resulting from Quantity change. (Schedule) (QR)	(+204.6)	(+286.7)
Allocation to Engineering resulting from Quantity change. (Engineering) (QR)	(-364.2)	(-510.4)
Allocation to Estimating resulting from Quantity change. (Estimating) (QR)	(-249.6)	(-349.7)
Additional Quantity Variance due to fewer retrofits as a result of reduced procurement quantity (Quantity)	-18.4	-27.0
Stretch-out of procurement buy profile. Quantities in FY 2012-FY 2014 reduced from five aircraft per year to three aircraft per year. Quantities in FY 2015-FY 2016 reduced from five aircraft per year to one aircraft per year. (Schedule)	0.0	+75.0
Additional Schedule Variance (penalties for reduced/different lot quantities for FY 2012 - FY 2018) (Schedule)	+345.2	+465.8
Additional Schedule Variance due to fewer retrofits as a result of reduced procurement quantity (Schedule)	0.0	-56.0
Increase to resolve aircraft icing deficiencies (Engineering)	+72.4	+98.0
Adjustment for current and prior escalation. (Estimating)	+1.3	+1.4
Decrease due to revised estimate driven by changes to Ground Station Re-architecture procurement schedule and updated technical definition (Estimating)	-87.1	-66.3
Increased estimate for Diminishing Manufacturing Sources (Estimating)	+166.1	+226.2
Decrease due to revised estimated costs for Airborne Signals Intelligence Payload (ASIP) and Enhanced Integrated Sensor System (EISS) sensors based on prior negotiated lot prices and projected upgrades (Estimating)	-8.7	-10.7

Reduction due to revised estimates for spiral upgrades cut into the production line (Estimating)	-1.4	-1.8
Decrease due to reductions for higher Air Force priorities (Estimating)	-69.8	-86.4
Adjustment for current and prior escalation. (Support)	+0.5	+0.9
Increase in Other Support. Addition of depot activation costs for ASIP and MP-RTIP sensors and special test equipment for retrofit facility. (Support)	+231.7	+304.8
Decrease in Initial Spares due to quantity reduction. (Subtotal)	-89.4	-111.7
Reduction for higher Air Force priorities (Support)	(-34.6)	(-41.8)
Reduced MP-RTIP spares due to reduction of one Combat Air Patrol (CAP) from nine in the previous estimate to eight in the current estimate. (Support)	(-54.8)	(-69.9)
Procurement Subtotal	-398.1	-518.3

(QR) Quantity Related

MILCON	\$M	
	Base Year	Then Year
<b>Current Change Explanations</b>		
Revised escalation indices. (Economic)	N/A	+0.1
Adjustment for current and prior escalation. (Estimating)	-0.1	-0.1
Fact of life update to reflect prior year actuals. (Estimating)	-12.7	-15.9
MILCON Subtotal	-12.8	-15.9

## Contracts

### Appropriation: RDT&E

Contract Name	<b>Global Hawk EMD</b>
Contractor	Northrop Grumman
Contractor Location	San Diego, CA 92150-9066
Contract Number, Type	F33657-01-C-4600, CPAF
Award Date	March 15, 2001
Definitization Date	December 15, 2010

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
41.5	N/A	0	1771.4	N/A	0	1775.1	1777.2

	Cost Variance	Schedule Variance
Report Date	-20.4	-14.9
Previous Cumulative Variances	-21.2	-15.3
Net Change	+0.8	+0.4
Percent Variance		
Percent Complete		

### Cost And Schedule Variance Explanations

The net favorable changes in cost and schedule variance are primarily attributed to recovering schedule as Block 20/30 Initial Operational Test and Evaluation (IOT&E) was completed.

### Contract Comments

The difference between the initial contract price and current contract price is the addition of Spirals 2, 3 and 4, as well as Multi-Platform Radar Technology Insertion Program integration and other modernization efforts. This contract is greater than 90% complete and will no longer be reported.

<b>Appropriation: Procurement</b>
-----------------------------------

Contract Name	<b>LRIP Lot 6</b>
Contractor	Northrop Grumman Integrated Systems
Contractor Location	San Diego, CA 92150-9066
Contract Number, Type	FA8620-06-C-3002, FPIF
Award Date	May 24, 2006
Definitization Date	December 01, 2010

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
60.6	60.6	5	332.6	362.2	5	332.0	332.6

	Cost Variance	Schedule Variance
Report Date	+9.6	-1.1
Previous Cumulative Variances	+9.5	-10.4
Net Change	+0.1	+9.3
Percent Variance		
Percent Complete		

<b>Cost And Schedule Variance Explanations</b>
--

The net favorable change in cost variance is primarily due to less than planned subcontractor administrator support over the past year. The net favorable change in schedule variance is primarily due to getting back on schedule as a result of resolving both flight test capacity constraints and actuator development issues.

<b>Contract Comments</b>
--------------------------

The initial contract target and ceiling price reflects award of only long lead items. The current contract price reflects the total buy. This contract procures five aircraft (all Block 30), three Mission Control Elements, three Launch and Recovery Elements, and five Enhanced Integrated Sensor Suites. This is the last time this contract will be reported as it is now more than 90% complete.

<b>Appropriation: Procurement</b>
-----------------------------------

Contract Name	LRIP Lot 7
Contractor	Northrop Grumman Integrated Systems
Contractor Location	San Diego, CA 92150-9066
Contract Number, Type	FA8620-07-C-4015, FPIF
Award Date	February 22, 2007
Definitization Date	November 05, 2010

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
5.0	N/A	5	371.4	406.4	5	381.8	379.8

	Cost Variance	Schedule Variance
Report Date	+0.1	-6.9
Previous Cumulative Variances	-1.1	-9.6
Net Change	+1.2	+2.7
Percent Variance		
Percent Complete		

<b>Cost And Schedule Variance Explanations</b>
--

The favorable net changes in cost and schedule variance are the result of resolving Block 40 development delays.

<b>Contract Comments</b>
--------------------------

The initial contract target price reflects award of only selected long lead items capped at \$5M. The current contract target and ceiling prices reflect the total buy. This contract procures five aircraft (two Block 30 and three Block 40), one Mission Control Element, one Launch & Recovery Element, four Enhanced Integrated Sensor Suites and three Multi-Platform Radar Technology Insertion Program sensors.



<b>Appropriation: Procurement</b>
-----------------------------------

Contract Name	<b>LRIP Lot 8 Air Vehicle and EISS</b>
Contractor	Northrop Grumman
Contractor Location	San Diego, CA 92150-9066
Contract Number, Type	FA8620-08-C-3001, FFP
Award Date	April 02, 2008
Definitization Date	February 04, 2011

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
288.7	N/A	5	288.7	N/A	5		288.7

<b>Cost And Schedule Variance Explanations</b>
--

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

<b>Contract Comments</b>
--------------------------

This is the initial report for this contract. This contract procures five air vehicles (two Block 30 and three Block 40), two Enhanced Integrated Sensor Suite (EISS) sensors, and two ground stations.

<b>Appropriation: Procurement</b>
-----------------------------------

Contract Name	<b>LRIP Lot 9 Air Vehicle and EISS</b>
Contractor	Northrop Grumman
Contractor Location	San Diego, CA 92150-9066
Contract Number, Type	FA8620-09-C-4001, FFP
Award Date	April 22, 2009
Definitization Date	February 04, 2011

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
188.2	N/A	4	188.2	N/A	4		188.2

<b>Cost And Schedule Variance Explanations</b>
--

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

<b>Contract Comments</b>
--------------------------

This is the initial report for this contract. This contract procures four air vehicles (two Block 30 and two Block 40) and two Enhanced Integrated Sensor Suite (EISS) sensors.

<b>Appropriation: Procurement</b>
-----------------------------------

Contract Name	<b>LRIP Lot 10</b>
Contractor	Northrop Grumman
Contractor Location	San Diego, CA 92150-9066
Contract Number, Type	FA8620-10-C-4000, FFP
Award Date	May 05, 2010
Definitization Date	May 05, 2010

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
138.6	N/A	N/A	138.6	N/A	N/A		138.6

<b>Cost And Schedule Variance Explanations</b>
--

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

<b>Contract Comments</b>
--------------------------

This is the initial report for this contract. At this time, this contract only includes advanced procurement.

**Deliveries and Expenditures**

<b>Deliveries To Date</b>	<b>Plan To Date</b>	<b>Actual To Date</b>	<b>Total Quantity</b>	<b>Percent Delivered</b>
Development	0	0	0	--
Production	26	26	66	39.39%
<b>Total Program Quantities Delivered</b>	<b>26</b>	<b>26</b>	<b>66</b>	<b>39.39%</b>

<b>Expenditures and Appropriations (TY \$M)</b>			
Total Acquisition Cost	13934.8	Years Appropriated	11
Expenditures To Date	5030.0	Percent Years Appropriated	47.83%
Percent Expended	36.10%	Appropriated to Date	7713.6
Total Funding Years	23	Percent Appropriated	55.35%

Total expenditures per Global Hawk program office records as of December 30, 2010.

## Operating and Support Cost

### Assumptions and Ground Rules

Estimated Operating and Support (O&S) Costs are shown below. The annual planned flying hours for the Global Hawk (GH) fleet at steady state remains at approximately 38K per year.

GH is designed to be forward-based at three operating locations around the world and home-based at two main operating bases - Beale Air Force Base (AFB) and Grand Forks AFB.

The support planning concept is 2-level maintenance. Organizational maintenance will be performed by a mix of contractor and military personnel. Initial depot maintenance is being performed by the contractor (i.e., Contractor Logistics Support (CLS)). The GH system has been designated as a core candidate and efforts to establish organic depot repair capability as determined by the Source of Repair Assignment Process (SORAP) and Depot Maintenance Activation Working Group (DMAWG) are continuing. SORAPs have been performed on all GH commodities to help determine the long term depot maintenance strategy. The completed SORAPs include a mix of both organic and CLS recommendations. Partnering will be utilized to support items with an organic recommendation as determined by the DMAWG.

The program office estimate includes costs for leasing commercial Ku Satellite Communication (SATCOM) time.

Operations & Maintenance costs will be incurred during a twelve-year phase-in period (2003-2014) and a four-year phase-out period (2033-2036). Steady state for the eight Combat Air Patrols is planned to begin in 2015 and continue through 2032 for a total planned steady state period of 18 years.

There is no antecedent system for the GH.

### Costs BY2000 \$K

Cost Element	RQ-4A/B UAS GLOBAL HAWK Avg Annual \$ per FH @ Steady State (SS)	No Global Hawk Antecedent
Unit-Level Manpower	4.7	--
Unit Operations	0.9	--
Maintenance	10.2	--
Sustaining Support	11.0	--
Continuing System Improvements	1.0	--
Indirect Support	1.0	--
Other	0.0	--
Total Unitized Cost (Base Year 2000 \$)	28.8	--

Total O&S Costs \$M	RQ-4A/B UAS GLOBAL HAWK	No Global Hawk Antecedent
Base Year	17920.0	--
Then Year	29169.0	--