

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305207F: <i>Manned Reconnaissance System</i>
--	--

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	17.811	14.846	15.337	0.000	15.337	13.092	13.350	13.554	13.753	Continuing	Continuing
674754: <i>COBRA BALL</i>	17.811	14.846	15.337	0.000	15.337	13.092	13.350	13.554	13.753	Continuing	Continuing

A. Mission Description and Budget Item Justification

The RC-135 Operational Systems Development and enhancement activities project supports design studies, engineering analysis, non-recurring engineering, and other efforts associated with the integration and modification of the RC-135 programs and their specialized mission systems - both air and ground. Extensive utilization of commercial-off the-shelf (COTS) based solutions allows rapid fielding of needed capabilities through continuous technology refresh cycles and diminishing manufacturing sources (DMS)/vanishing vendor items (VVI) logistics mitigation efforts. The results of these efforts provide for preliminary assessments of technical feasibility, operability, or military utility as well as specific engineering implementations for integration into the various systems baseline configurations.

These activities are managed by the Air Force through the 645th Aeronautical System Group (645th AESG, a.k.a. BIG SAFARI Program Office), 303rd Reconnaissance System Wing, Aeronautical Systems Center, Air Force Materiel Command, Wright Patterson AFB, OH. BIG SAFARI manages engineering, ground and support system modifications, integration, flight testing, product assurance, acceptance testing, logistics, and training activities. Aircraft, aircraft sensor systems, and associated ground support system modifications planned for FY10-FY15 include support for three distinct RC-135V/W RIVET JOINT configurations [Baselines 8, 9 & 10], two distinct RC-135U COMBAT SENT configurations [Baselines 3 & 4] and three distinct RC-135S COBRA BALL configurations [Baselines 2, 3 & 4].

The world-wide challenge of keeping pace against technologically agile targets used by both nation and non-nation-state adversaries and the rapid evolution of COTS technologies demands a responsive and adaptive acquisition strategy for fielding 'baseline capabilities' that are logistically supportable at all locations. The BIG SAFARI program office uses an incremental 'baseline' strategy to mitigate risk, find affordable solutions and field needed capabilities. Obsolescence and DMS/VVI are addressed with each baseline upgrade as well as annually as part of the sustainment responsibilities. Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program effort is categorized as RDT&E budget activity 7, Operational Systems Development, because it involves Air Force R&D for technologies necessary to field essential operational capabilities.

UNCLASSIFIED

R-1 Line Item #207

Page 1 of 9

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305207F: <i>Manned Reconnaissance System</i>
--	--

B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	17.811	12.846	0.000	0.000	0.000
Current President's Budget	17.811	14.846	15.337	0.000	15.337
Total Adjustments	0.000	2.000	15.337	0.000	15.337
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		2.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	15.337	0.000	15.337

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 674754: COBRA BALL

Congressional Add: *Wideband Sensor Upgrade and ISR Network Integration*

Congressional Add: *In FY 2009: N/A*

Congressional Add Subtotals for Project: 674754

Congressional Add Totals for all Projects

	<u>FY 2009</u>	<u>FY 2010</u>
	4.992	0.000
	0.000	2.000
	4.992	2.000
	4.992	2.000

Change Summary Explanation

FY 2010 funding includes \$2.0M Congressional Add for Service Oriented Architectures development

UNCLASSIFIED

R-1 Line Item #207

Page 2 of 9

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305207F: <i>Manned Reconnaissance System</i>	PROJECT 674754: <i>COBRA BALL</i>
--	--	---

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
674754: <i>COBRA BALL</i>	17.811	14.846	15.337	0.000	15.337	13.092	13.350	13.554	13.753	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The RC-135 Operational Systems Development and enhancement activities project supports design studies, engineering analysis, non-recurring engineering, and other efforts associated with the integration and modification of the RC-135 programs and their specialized mission systems - both air and ground. Extensive utilization of commercial-off the-shelf (COTS) based solutions allows rapid fielding of needed capabilities through continuous technology refresh cycles and diminishing manufacturing sources (DMS)/vanishing vendor items (VVI) logistics mitigation efforts. The results of these efforts provide for preliminary assessments of technical feasibility, operability, or military utility as well as specific engineering implementations for integration into the various systems baseline configurations.

These activities are managed by the Air Force through the 645th Aeronautical System Group (645th AESG, a.k.a. BIG SAFARI Program Office), 303rd Reconnaissance System Wing, Aeronautical Systems Center, Air Force Materiel Command, Wright Patterson AFB, OH. BIG SAFARI manages engineering, ground and support system modifications, integration, flight testing, product assurance, acceptance testing, logistics, and training activities. Aircraft, aircraft sensor systems, and associated ground support system modifications planned for FY10-FY15 include support for three distinct RC-135V/W RIVET JOINT configurations [Baselines 8, 9 & 10], two distinct RC-135U COMBAT SENT configurations [Baselines 3 & 4] and three distinct RC-135S COBRA BALL configurations [Baselines 2, 3 & 4].

The world-wide challenge of keeping pace against technologically agile targets used by both nation and non-nation-state adversaries and the rapid evolution of COTS technologies demands a responsive and adaptive acquisition strategy for fielding 'baseline capabilities' that are logistically supportable at all locations. The BIG SAFARI program office uses an incremental 'baseline' strategy to mitigate risk, find affordable solutions and field needed capabilities. Obsolescence and DMS/VVI are addressed with each baseline upgrade as well as annually as part of the sustainment responsibilities. Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program effort is categorized as RDT&E budget activity 7, Operational Systems Development, because it involves Air Force R&D for technologies necessary to field essential operational capabilities.

B. Accomplishments/Planned Program (\$ in Millions)

UNCLASSIFIED

R-1 Line Item #207

Page 3 of 9

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force			DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305207F: <i>Manned Reconnaissance System</i>	PROJECT 674754: <i>COBRA BALL</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Non-recurring engineering (NRE) for Baseline system developments and enhancements to improve mission capabilities <i>FY 2009 Accomplishments:</i> In FY 2009: Continued NRE for all modification necessary for the navigation (LN-120) and communication, navigation, surveillance-air traffic management (CNS/ATM) compliance, and those avionics and communications sub-systems requiring diminishing manufacturing sources (DMS)/vanishing vendor item (VVI) mitigations as a result of the modification (MOD)/programmed depot maintenance (PDM) efforts <i>FY 2010 Plans:</i> In FY 2010: Supports design studies, engineering analysis, NRE and other efforts associated with the development and integration of electronic signals collection/processing (CORVUS) and suite of core communications exploitation applications (Digital Multi-thread Collection Architecture or DMCA), and those avionics and communication subsystems requiring DMS/VVI mitigations as a result of MOD/PDM efforts <i>FY 2011 Base Plans:</i> In FY 2011: Will support design studies, engineering analysis, NRE and other efforts associated with the integration and modification of the RC-135 programs and their specialized mission systems for the collection of both air and ground signals <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not Applicable.		12.819	12.846	15.337	0.000	15.337
Accomplishments/Planned Programs Subtotals		12.819	12.846	15.337	0.000	15.337
		FY 2009	FY 2010			
		4.992	0.000			

UNCLASSIFIED

R-1 Line Item #207

Page 4 of 9

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force										DATE: February 2010	
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0305207F: <i>Manned Reconnaissance System</i>				PROJECT 674754: <i>COBRA BALL</i>				
B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010				
Congressional Add: Wideband Sensor Upgrade and ISR Network Integration <i>FY 2009 Accomplishments:</i> In FY 2009: Wideband Sensor Upgrade and ISR Network Integration <i>FY 2010 Plans:</i> In FY 2010: N/A											
Congressional Add: In FY 2009: N/A <i>FY 2009 Accomplishments:</i> In FY 2010: Service Oriented Architectures <i>FY 2010 Plans:</i> In FY 2011: N/A						0.000	2.000				
Congressional Adds Subtotals						4.992	2.000				
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0305207F: <i>Manned Reconnaissance Systems, (APAF)</i>	149.042	161.982	149.582	0.000	149.582	209.910	214.139	221.674	225.877	0.000	0.000
• PE 0305207F (1): <i>Manned Reconnaissance Systems, (OPAF)</i>	22.857	23.062	23.296	0.000	23.296	23.775	24.222	24.578	24.979	0.000	0.000
	465.627	233.859	259.158	114.767	373.925	325.228	307.858	339.401	355.651	0.000	0.000

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force	DATE: February 2010
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305207F: <i>Manned Reconnaissance System</i>	PROJECT 674754: <i>COBRA BALL</i>
--	--	---

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0305207F (2): <i>Manned Reconnaissance Systems, (O&M)</i>											

D. Acquisition Strategy

The RC-135 RIVET JOINT, COBRA BALL, and COMBAT SENT aircraft are maintained and baseline / incremental upgrades and quick reaction capabilities (QRC) developments are acquired through the 645th Aeronautical Systems Group (BIG SAFARI Program Office) in accordance with the BIG SAFARI Program Management Directive (PMD), and the BIG SAFARI Class Justification and Approval (J&A) document for acquisition of supplies and services using other than full and open competition criteria. The supplies and services procured by 645th AESG under their J&A to satisfy National Security (FAR 6.302-6) or Unusual and Compelling Urgency (FAR 6.302-2) requirements are supported by the BIG SAFARI Life Cycle Management Plan (LCMP) across the full spectrum of system life cycle management from developmental engineering to system retirement ("cradle to grave" support). Due to the rapidly changing threat environment encountered during our prolonged commitment to Overseas Contingency Operations (OCO), the acquisition program manager has the authority to redirect funding as necessary to meet current stated and emerging Combatant Commander requirements.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

R-1 Line Item #207

Page 6 of 9

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305207F: <i>Manned Reconnaissance System</i>	PROJECT 674754: <i>COBRA BALL</i>
--	--	---

Product Development (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
L-3 Communications	SS/Various	L-3 Com Greenville, TX	17.811	14.846	Dec 2009	15.337	Dec 2010	0.000		15.337	Continuing	Continuing	Continuing
Subtotal			17.811	14.846		15.337		0.000		15.337			

Remarks
All activity is based around the Programmed Depot Maintenance (PDM) airframe schedule which includes multiple contracts and organizations with overlapping and continuous periods of performance. Due to the rapidly changing threat environment encountered during our prolonged commitment to Overseas Contingency Operations (OCO), the acquisition program manager has the authority to redirect funding as necessary to meet current stated and emerging Combatant Commander requirements.

	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	17.811	14.846		15.337		0.000		15.337			

Remarks
Total Prior Years Cost may include only FY 2009 data.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

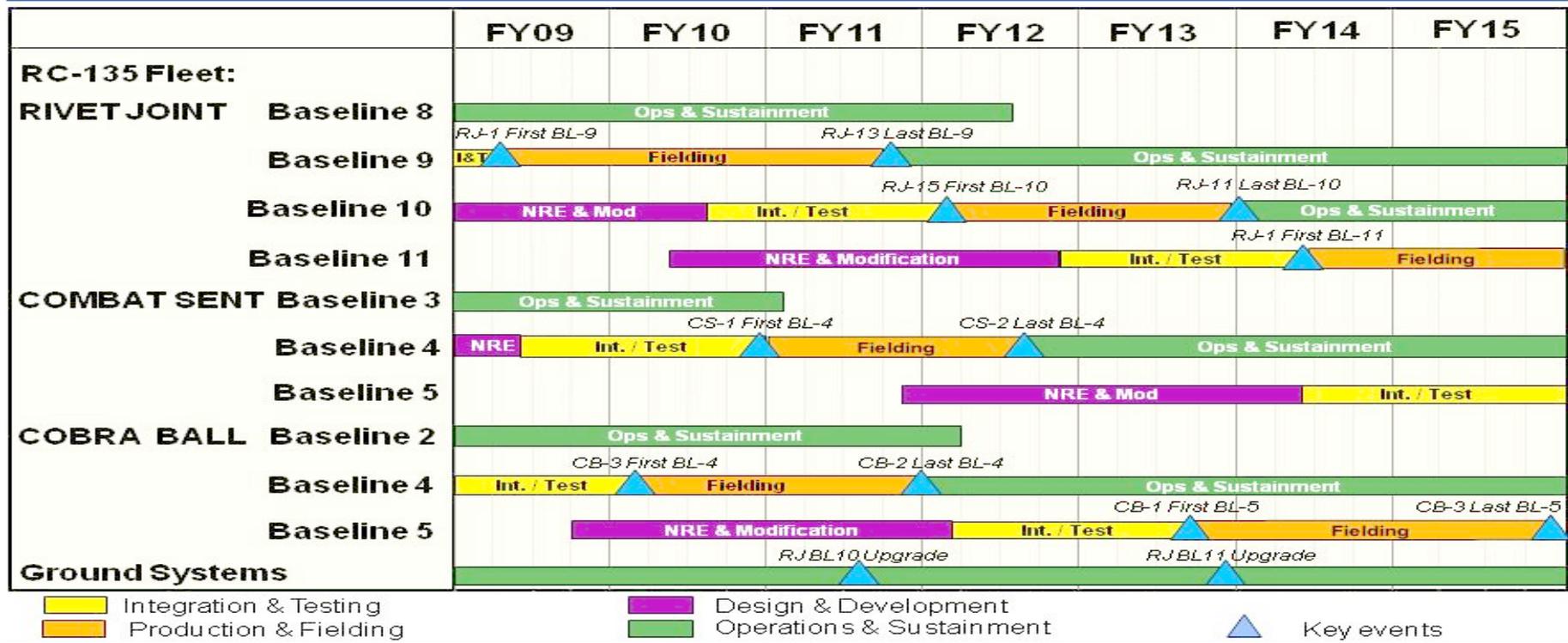
PE 0305207F: Manned Reconnaissance System

PROJECT

674754: COBRA BALL



Manned Reconnaissance (RC-135) Schedule



UNCLASSIFIED

R-1 Line Item #207

Page 8 of 9

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305207F: <i>Manned Reconnaissance System</i>	PROJECT 674754: <i>COBRA BALL</i>
--	--	---

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Integration and test of RIVET JOINT Baseline 9	1	2009	1	2009
Development, integration and test of RIVET JOINT Baseline 10	1	2009	4	2011
Development, integration and test of RIVET JOINT Baseline 11	2	2010	4	2011
Development, integration and test of COMBAT SENT Baseline 4	1	2009	4	2010
Development, integration and test of COMBAT SENT Baseline 5	4	2011	4	2011
Development, integration and test of COBRA BALL Baseline 4	1	2009	1	2010
Development, integration and test of COBRA BALL Baseline 5	4	2009	4	2011

UNCLASSIFIED