

UNCLASSIFIED

PE NUMBER: 0305207F

PE TITLE: Manned Reconnaissance System

Exhibit R-2, RDT&E Budget Item Justification

DATE

February 2006

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0305207F Manned Reconnaissance System

| Cost (\$ in Millions) | FY 2005 Actual | FY 2006 Estimate | FY 2007 Estimate | FY 2008 Estimate | FY 2009 Estimate | FY 2010 Estimate | FY 2011 Estimate | Cost to Complete | Total |
|---------------------------------|-------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-------|
| Total Program Element (PE) Cost | 23.364 | 18.074 | 10.132 | 12.864 | 13.100 | 13.404 | 13.630 | Continuing | TBD |
| 4754 COBRA BALL | 23.364 | 18.074 | 10.132 | 12.864 | 13.100 | 13.404 | 13.630 | Continuing | TBD |

(U) **A. Mission Description and Budget Item Justification**

(U) 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 and its 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 vanishing-vendor logistics mitigation efforts.

(U) 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.

(U) These activities are managed by the Air Force through the BIG SAFARI Systems Group, Reconnaissance System Wing, Aeronautical Systems Center, Air Force Materiel Command. 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 FY06-FY11 include support for three distinct RIVET JOINT configurations [Baselines 8, 9 & 10], two distinct COMBAT SENT configurations [Baselines 3 & 4] and three distinct COBRA BALL configurations [Baselines 2, 3 & 4]. SEE CLASSIFIED Congressional budget exhibits.

(U) 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 and find affordable solutions.

(U) This program will participate in the development, testing, and implementation of international standards (to include NATO standardization agreements) to pursue joint, allied, and coalition interoperability.

(U) Budget Activity Justification

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

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(U) **B. Program Change Summary (\$ in Millions)**

| | <u>FY 2005</u> | <u>FY 2006</u> | <u>FY 2007</u> |
|--------------------------------------|----------------|----------------|----------------|
| (U) Previous President's Budget | 13.283 | 8.101 | 12.379 |
| (U) Current PBR/President's Budget | 23.364 | 18.074 | 10.132 |
| (U) Total Adjustments | 10.081 | 9.973 | |
| (U) Congressional Program Reductions | | -0.064 | |
| Congressional Rescissions | -0.209 | -0.263 | |
| Congressional Increases | 8.500 | 10.300 | |
| Reprogrammings | 1.790 | | |
| SBIR/STTR Transfer | | | |

(U) **Significant Program Changes:**

FY05 Congressional Adds include: \$2M for a Light Weight SIGINT System (LITES) technology demonstration; \$1M for a COMBAT SENT Tactical ELINT System Modernization improvement risk reduction study; \$2.1M for COBRA BALL Long Wave Infrared Mid-Course Data Collection Capability study; \$1.1M for a COBRA BALL Hi-Res E/O Signature Analysis Study, and \$2.3M for Collaborative Information Operations technology demonstration.

FY06 Congressional Adds include: \$1.7M for a COMBAT SENT Tactical ELINT System Modernization study; \$3.0M for RIVET JOINT Reachback; \$3.1M for Apertures for Modern Threat Environments; \$2.5M for RC-135 Processing Forward Network (transferred from Title IX, RDT&E, D-W)

In FY06, \$8.4M was transferred from PE 0305207F, Project 4754 (COBRA BALL) to PE 0303601F (MILSATCOM terminals), Project 2487 (MILSATCOM terminals) for RC-135 communications terminal development for FAB-T (long-haul communications).

In FY07 \$2.4M was transferred from PE 0305207F, Project 4754 (COBRA BALL) for the same purposes as in FY06.

| Exhibit R-2a, RDT&E Project Justification | | | | | | | | DATE February 2006 | | | | | | | | | | | | | |
|--|-------------------|---------------------|---------------------|---|---------------------|---------------------|--|------------------------------|-------|---|----------------|----------------|----------------|--|-------|--|--|---|-------|-------|--------|
| BUDGET ACTIVITY 07 Operational System Development | | | | PE NUMBER AND TITLE 0305207F Manned Reconnaissance System | | | PROJECT NUMBER AND TITLE 4754 COBRA BALL | | | | | | | | | | | | | | |
| Cost (\$ in Millions) | FY 2005 Actual | FY 2006 Estimate | FY 2007 Estimate | FY 2008 Estimate | FY 2009 Estimate | FY 2010 Estimate | FY 2011 Estimate | Cost to Complete | Total | | | | | | | | | | | | |
| 4754 COBRA BALL | 23.364 | 18.074 | 10.132 | 12.864 | 13.100 | 13.404 | 13.630 | Continuing | TBD | | | | | | | | | | | | |
| Quantity of RDT&E Articles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| <p>(U) <u>A. Mission Description and Budget Item Justification</u></p> <p>(U) 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 and its 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 vanishing-vendor logistics mitigation efforts.</p> <p>(U) 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.</p> <p>(U) These activities are managed by the Air Force through the BIG SAFARI Systems Group, Reconnaissance System Wing, Aeronautical Systems Center, Air Force Materiel Command. 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 FY06-FY11 include support for three distinct RIVET JOINT configurations [Baselines 8, 9 & 10], two distinct COMBAT SENT configurations [Baselines 3 & 4] and three distinct COBRA BALL configurations [Baselines 2, 3 & 4]. SEE CLASSIFIED Congressional budget exhibits.</p> <p>(U) 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 and find affordable solutions.</p> <p>(U) This program will participate in the development, testing, and implementation of international standards (to include NATO standardization agreements) to pursue joint, allied, and coalition interoperability.</p> <p>(U) Budget Activity Justification This program effort is equivalent to RDT&E budget activity 7, Operational Systems Development, because it involves Air Force R&D necessary to field essential operational capabilities.</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%; vertical-align: top;">(U) <u>B. Accomplishments/Planned Program (\$ in Millions)</u></td> <td style="width: 10%; text-align: center; vertical-align: bottom;"><u>FY 2005</u></td> <td style="width: 10%; text-align: center; vertical-align: bottom;"><u>FY 2006</u></td> <td style="width: 10%; text-align: center; vertical-align: bottom;"><u>FY 2007</u></td> </tr> <tr> <td style="vertical-align: top;">(U) Continues Non-Recurring Engineering (NRE) for the Airborne Extremely High Frequency Communications system to be added to the RC-135 fleet.</td> <td style="text-align: center; vertical-align: bottom;">5.000</td> <td></td> <td></td> </tr> <tr> <td style="vertical-align: top;">(U) Continues Non-Recurring Engineering (NRE) for the development and installation of improved mission sensor elements - see classified submission.</td> <td style="text-align: center; vertical-align: bottom;">9.864</td> <td style="text-align: center; vertical-align: bottom;">7.774</td> <td style="text-align: center; vertical-align: bottom;">10.132</td> </tr> </table> | | | | | | | | | | (U) <u>B. Accomplishments/Planned Program (\$ in Millions)</u> | <u>FY 2005</u> | <u>FY 2006</u> | <u>FY 2007</u> | (U) Continues Non-Recurring Engineering (NRE) for the Airborne Extremely High Frequency Communications system to be added to the RC-135 fleet. | 5.000 | | | (U) Continues Non-Recurring Engineering (NRE) for the development and installation of improved mission sensor elements - see classified submission. | 9.864 | 7.774 | 10.132 |
| (U) <u>B. Accomplishments/Planned Program (\$ in Millions)</u> | <u>FY 2005</u> | <u>FY 2006</u> | <u>FY 2007</u> | | | | | | | | | | | | | | | | | | |
| (U) Continues Non-Recurring Engineering (NRE) for the Airborne Extremely High Frequency Communications system to be added to the RC-135 fleet. | 5.000 | | | | | | | | | | | | | | | | | | | | |
| (U) Continues Non-Recurring Engineering (NRE) for the development and installation of improved mission sensor elements - see classified submission. | 9.864 | 7.774 | 10.132 | | | | | | | | | | | | | | | | | | |
| <div style="display: flex; justify-content: space-between;"> Project 4754 R-1 Shopping List - Item No. 201-3 of 201-7 Exhibit R-2a (PE 0305207F) </div> | | | | | | | | | | | | | | | | | | | | | |

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Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY

07 Operational System Development

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0305207F Manned Reconnaissance
System

PROJECT NUMBER AND TITLE

4754 COBRA BALL

| (U) <u>B. Accomplishments/Planned Program (\$ in Millions)</u> | | <u>FY 2005</u> | <u>FY 2006</u> | <u>FY 2007</u> | | | | | | |
|---|--|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|
| (U) | Congressional Add: Lightweight SIGINT System demonstration | 2.000 | | | | | | | | |
| (U) | Congressional Add: COMBAT SENT Tactical ELINT System modernization study | 1.000 | 1.700 | | | | | | | |
| (U) | Congressional Add: COBRA BALL Long Wave IR Mid-course data collection capability study | 2.100 | | | | | | | | |
| (U) | Congressional Add: COBRA BALL Hi-res E/O signature analysis study | 1.100 | | | | | | | | |
| (U) | Congressional Add: Collaborative information operations technology demonstration | 2.300 | | | | | | | | |
| (U) | Congressional Add: RIVET JOINT Reachback | | 3.000 | | | | | | | |
| (U) | Congressional Add: Apertures for Modern Threat Environments | | 3.100 | | | | | | | |
| (U) | Congressional Add: RC-135 Processing Forward Network | | 2.500 | | | | | | | |
| (U) | Total Cost | 23.364 | 18.074 | 10.132 | | | | | | |
| (U) <u>C. Other Program Funding Summary (\$ in Millions)</u> | | | | | | | | | | |
| | | <u>FY 2005</u> | <u>FY 2006</u> | <u>FY 2007</u> | <u>FY 2008</u> | <u>FY 2009</u> | <u>FY 2010</u> | <u>FY 2011</u> | <u>Cost to</u> | <u>Total Cost</u> |
| | | <u>Actual</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Estimate</u> | <u>Complete</u> | |
| (U) | PE 0305207F, APAF | 118.702 | 118.454 | 134.831 | 270.673 | 154.665 | 158.596 | 281.458 | Continuing | TBD |
| (U) | PE 0305207F, OPAF | 21.139 | 20.931 | 20.401 | 22.546 | 23.086 | 23.666 | 24.053 | Continuing | TBD |
| (U) | PE 0305207F, O&M | 204.977 | 234.157 | 239.941 | 246.936 | 252.335 | 256.055 | 262.081 | Continuing | TBD |

(U) **D. Acquisition Strategy**

The RC-135 RIVET JOINT, COBRA BALL, and COMBAT SENT aircraft are maintained and upgraded by the BIG SAFARI Program Office through an evolutionary acquisition strategy.

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Exhibit R-3, RDT&E Project Cost Analysis

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07 Operational System Development

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PROJECT NUMBER AND TITLE

4754 COBRA BALL

| (U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions) | <u>Contract</u> <u>Method &</u> <u>Type</u> | <u>Performing</u> <u>Activity &</u> <u>Location</u> | <u>Total</u> <u>Prior to FY</u> <u>2005</u> <u>Cost</u> | <u>FY 2005</u> <u>Cost</u> | <u>FY 2005</u> <u>Award</u> <u>Date</u> | <u>FY 2006</u> <u>Cost</u> | <u>FY 2006</u> <u>Award</u> <u>Date</u> | <u>FY 2007</u> <u>Cost</u> | <u>FY 2007</u> <u>Award</u> <u>Date</u> | <u>Cost to</u> <u>Complete</u> | <u>Total Cost</u> | <u>Target Value</u> <u>of Contract</u> |
|--|---|---|--|-------------------------------|---|-------------------------------|---|-------------------------------|---|-----------------------------------|-------------------|---|
| (U) <u>Product Development</u> L-3 Communications | CPFF/CPIF /FFP | L-3 Com, Greenville TX | | 23.364 | Nov-04 | 18.074 | Nov-05 | 10.132 | Nov-06 | Continuing | TBD | TBD |
| Subtotal Product Development | | | 0.000 | 23.364 | | 18.074 | | 10.132 | | Continuing | TBD | TBD |
| 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. | | | | | | | | | | | |
| (U) Total Cost | | | 0.000 | 23.364 | | 18.074 | | 10.132 | | Continuing | TBD | TBD |

Exhibit R-4, RDT&E Schedule Profile

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BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0305207F Manned Reconnaissance
System

PROJECT NUMBER AND TITLE

4754 COBRA BALL

Manned Reconnaissance Program

PB 07

| FY05 | FY06 | FY07 | FY08 | FY09 | FY10 | FY11 |
|----------------------------|--|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| *Cobra Ball Hi Res EO | *Combat Sent TAC ELINT Modernization | | | | | |
| *Cobra Ball LWIR | *Rivet Joint Reachback | | | | | |
| *Combat Sent TAC ELINT | *Apertures for Modern Threats | | | | | |
| *Collaborative Info Ops | *Processing Forward Network | | | | | |
| AEHF NRE | AEHF NRE | | | | | |
| Mission Sensors | Mission Sensors | Mission Sensors | Mission Sensors | Mission Sensors | Mission Sensors | Mission Sensors |
| \$23.37M | \$18.07M | \$10.13M | \$12.86M | \$13.10M | \$13.40M | \$13.63M |

* Congressional Adds

** See CLASSIFIED for detailed breakout

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Exhibit R-4a, RDT&E Schedule Detail

DATE

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BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0305207F Manned Reconnaissance
System

PROJECT NUMBER AND TITLE

4754 COBRA BALL

| (U) <u>Schedule Profile</u> | <u>FY 2005</u> | <u>FY 2006</u> | <u>FY 2007</u> |
|--|----------------|----------------|----------------|
| (U) COBRA BALL Hi Res E/O | 1-4Q | | |
| (U) COBRA BALL LWIR Study | 1-4Q | | |
| (U) COMBAT SENT TAC ELINT Modernization study | 1-4Q | 1-4Q | |
| (U) Collaborative INFO Operations | 1-4Q | 1-4Q | 1-4Q |
| (U) AEHF FAB-T terminal NRE development | 1-4Q | | |
| (U) Transfer AEHF FAB-T terminal development effort to ESC | | 4Q | |
| (U) Transfer mission sensor efforts* to PE-0304260 | | 4Q | |
| (U) Initiate mission support systems efforts | | | 1Q |
| (U) * Classified Mission Systems Development | 1-4Q | 1-4Q | 1-4Q |
| * See Classified Budget Submission for further breakout | | | |