

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 1999
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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles
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COST (\$ In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	13,437	188,423	70,835	26,788	10,698	19,098	19,346	19,902	Continuing	Continuing
4755 Predator	13,437	4,295	4,003	3,729	3,805	3,874	3,955	4,037	Continuing	Continuing
4799 Global Hawk	0	102,261	47,999	11,799	4,760	6,681	6,721	6,958	Continuing	Continuing
4815 DarkStar*	0	33,904	6,035	3,422	0	3,396	3,473	3,553	Continuing	Continuing
4816 Common Ground Segment	0	47,963	12,798	7,838	2,133	5,147	5,197	5,354	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

Note: FY98 funds for Global Hawk, DarkStar, and Common Ground Segment are in PE 0305205D, Endurance Unmanned Aerial Vehicles (EUAV). Funding for Global Hawk, DarkStar and Common Ground Segment for FY99-05 was transferred to the Air Force (PE 0305205F) from Defense-wide (PE 0305205D) as part of the DARO divestiture.
 * DarkStar portion of HAE ACTD canceled 29 Jan 99. OSD intention is to apply remaining DarkStar funds, less contract close-out costs and potential liability, to Global Hawk.

(U) A. Mission Description

Endurance Unmanned Aerial Vehicles (UAVs) are a family of unmanned vehicles developed under two separate Advanced Concept Technology Demonstrations (ACTD) that will provide all-weather, day/night, reconnaissance and surveillance in direct support of the Joint Forces Commander. They integrate existing airborne reconnaissance architectures for mission planning, data processing, exploitation and dissemination. The RQ-1A Predator UAV is a medium altitude endurance UAV which completed its ACTD in FY96. OSD decided to continue production in Aug 97. The RQ-4A Global Hawk is a high altitude endurance (HAE) UAV. The Global Hawk, along with its associated ground station, the Common Ground Segment, is currently in an ACTD, scheduled for completion in Dec 99. The HAE ACTD enters the military utility demonstration phase in Apr 99.

(U) B. Budget Activity Justification This program is in budget activity 7, Operational Systems Development, because it involves Air Force R&D to either field a viable system or develop additional operational capabilities.

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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles
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(U) C. Program Change Summary (\$ in Thousands)

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 1999 PB)	14,147	4,307	4,076	3,800	continuing
(U) Appropriated Value	14,990	188,957			
(U) Adjustments to Appropriated Value					
a. Cong Reductions	-489	-534			
b. SBIR	-356				
c. Omnibus or Other Above Threshold Reprogram	-96				
d. Below Threshold Reprogramming	-612				
(U) Adjustments to Budget Years Since FY 1999 PB			+66,759	+22,988	
(U) Current Budget Submit/FY 2000 PB	13,437	188,423	70,835	26,788	continuing

(U) Significant Program Changes:

FY00 and FY01 funds added in Air Force POM and HAE funds transferred from Defense-wide PE0305205D to Air Force PE0305205F as part of the DARO divestiture.

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BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles				PROJECT 4755		
COST (\$ In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
4755 Predator	13,437	4,295	4,003	3,729	3,805	3,874	3,955	4,037	Continuing	Continuing
<p>(U) A. <u>Mission Description</u> The Predator unmanned aerial vehicle (UAV) was an Advanced Concept Technology Demonstration (ACTD) project for the development of an endurance UAV capable of sustained (long dwell) surveillance of critical targets, under most weather conditions, at a range of 500 nm from the launch area. The Predator is equipped with Electro-Optical/Infrared (EO/IR) and Synthetic Aperture Radar (SAR) sensors. The system also incorporates line-of-sight(LOS), narrow-band UHF SATCOM and wide-band Ku-band SATCOM datalinks capable of providing near-real-time (NRT) transmission of high resolution imagery throughout the operational envelope. The system supports the theater commander and interfaces with the Command, Control, Communication, Computer and Intelligence (C4I) architecture. The Predator is integral to the search and destruction of Critical Mobile Targets (CMT). The success of the Predator in a number of exercises and operational deployments in Bosnia prompted the Joint Requirements Oversight Council (JROC) to request an additional quantity of systems and sensors. The JROC has identified a number of P3I upgrades (de-icing, UHF/VHF voice relay, and IFF Mode IV) to be included with production systems. IR sensor improvements and growth payloads are being considered. UAV Common Automated Recovery System (UCARS) has been added by Congress.</p> <p>(U) <u>FY 1998 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$ 1,070 Completed VOX/IFF/De-ice - (U) \$ 1,000 Conducted operational tests/operational assessment - (U) \$ 8,290 Reliability and maintainability improvements and synthetic aperture radar non-recurring productionization - (U) \$ 1,160 Improved operational capabilities of Ku SATCOM - (U) \$ 1,500 Integrated UAV Common Automatic Recovery System (UCARS) - (U) \$ 417 Field Support - (U) \$13,437 Total 										
Project 4755			Page 3 of 22 Pages				Exhibit R-2A (PE 0305205F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 1999
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles	PROJECT 4755
<p>(U) <u>FY 1999 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$ 650 Conduct operational tests/operational assessment - (U) \$ 940 Block 1 improvements (accuracy, acoustics, NBC assessment) - (U) \$ 588 Improve system R&M to meet ORD requirements - (U) \$1,700 Integrate UAV Common Automatic Recovery System (UCARS) - (U) \$ 417 Field Support - (U) \$4,295 Total <p>(U) <u>FY 2000 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$ 700 Conduct operational tests/operational assessment - (U) \$1,000 Develop interfaces to Theater Deployable Comms (TDC) - (U) \$1,877 Block 1 improvements (accuracy, acoustics, NBC assessment) - (U) \$ 426 Field Support - (U) \$4,003 Total <p>(U) <u>FY 2001 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$2,179 Air vehicle operational improvements - (U) \$1,125 Ground station operational improvements - (U) \$ 425 Field Support - (U) \$3,729 Total <p>(U) B. <u>Project Change Summary - Description of Significant Changes:</u> Program management transferred from Navy Joint Program Office for Cruise Missiles and Joint UAVs to Air Force Aeronautical Systems Center on 31 Aug 98. Cost overrun on Tactical Endurance Synthetic Aperture Radar caused restructure of Block 1.</p>		
Project 4755	Page 4 of 22 Pages	Exhibit R-2A (PE 0305205F)

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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles	PROJECT 4755
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(U) C. Other Program Funding Summary (\$ in Thousands)

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>Total Cost</u>
(U) Aircraft Procurement, AF (PE 35205F), Predator	135,753	117,626	38,003	22,648	20,024	27,171	27,884	28,453	continues
(U) MILCON, AF (PE 27245F)		15,013							

(U) D. Acquisition Strategy:

Predator is in full scale production. Twelve systems plus attrition air vehicles are being acquired with the prime contractor, General Atomics Aeronautical Systems Inc., assigned total system performance responsibility (TSPR). With the exceptions of the Tactical Endurance Synthetic Aperture Radar and the Ku-band satellite link (Trojan Spirit II), which are being procured through the Army as GFE, all procurement of baseline Predator systems will be through General Atomics. Program will transition from interim contractor logistics support (ICS) to contractor logistics support (CLS) in FY99.

(U) E. Schedule Profile

	<u>FY 1998</u>			<u>FY 1999</u>			<u>FY 2000</u>			<u>FY 2001</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) TEMP approval				*								
(U) Delivery of first Baseline system					X							
(U) OT&E								X				
(U) Retrofit of ACTD Systems complete									X			
(U) Delivery of final Predator System												X

* denotes completed event

X denotes planned event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE February 1999				
BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles				PROJECT 4755		
(U) A. <u>Project Cost Breakdown (\$ in Thousands)</u>										
				<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>			
(U)	Hardware/Software			4,254	1,620	1,217	1,174			
(U)	Demonstrations and test			4,656	1,140	1,180	1,135			
(U)	System integration and engineering support			4,110	978	1,030	995			
(U)	Other technical/engineering			417	557	576	425			
(U)	Total			13,437	4,295	4,003	3,729			
(U) B. <u>Budget Acquisition History and Planning Information (\$ in Thousands)</u>										
Performing Organizations:										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 1998</u>	<u>Budget FY 1998</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
General Atomics	SS/CPFF	Apr 98	N/A	N/A	0	9,692	3,038	3,017	3,304	continuing
PM TESAR			N/A	N/A	0	2,300	0	0	0	2,300
<u>Support and Management Organizations</u>										
ASC					0	0	417	426	425	continuing
AD/NAVAIR					0	320	0	0	0	320
<u>Test and Evaluation Organizations</u>										
AFOTEC					0	795	840	560	0	2,195
Misc					0	330	0	0	0	330
Project 4755				Page 6 of 22 Pages				Exhibit R-3 (PE 0305205F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 1999			
BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles				PROJECT 4755		
(U) B. Budget Acquisition History and Planning Information Continued (\$ in Thousands)										
Government Furnished Property:										
<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>	<u>Total Prior to FY 1998</u>	<u>Budget FY 1998</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Total Program</u>	
<u>Product Development Property</u>										
N/A										
<u>Support and Management Property</u>										
N/A										
<u>Test and Evaluation Property</u>										
N/A										
Subtotal Product Development				0	11,992	3,038	3,017	3,304	continuing	
Subtotal Support and Management				0	320	417	426	425	continuing	
Subtotal Test and Evaluation				0	1,125	840	560	0	2,525	
Total Project				0	13,437	4,295	4,003	3,729	continuing	

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BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles				PROJECT 4799		
<i>COST (\$ In Thousands)</i>	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
4799 Global Hawk	0	102,261	47,999	11,799	4,760	6,681	6,721	6,958	Continuing	Continuing
<p>Note: FY98 funds for Global Hawk are in PE 0305205D, Endurance Unmanned Aerial Vehicles (EUAV). Funding for Global Hawk for FY99-05 was transferred to the Air Force (PE 0305205F) from Defense-wide (PE 0305205D) as part of the DARO divestiture.</p> <p>(U) A. <u>Mission Description</u> The Global Hawk will provide continuous, all-weather, day/night, wide area communications and interfaces to theater systems to support tactical warfighters at various levels of command. The Global Hawk will be a fully automatic, high-altitude, long endurance unmanned aircraft that is directly responsive to Theater force tasking. The Global Hawk will integrate with the existing tactical airborne reconnaissance architectures for mission planning, data processing, exploitation, and dissemination. It will provide both wide area search radar and either Electro-Optical (EO) or Infrared Radar (IR) imagery (40,000 sq nm per mission) at 1m resolution and up to 1900 spot images per mission at 0.3m resolution, and will support targeting accuracy of at least 20m CEP. It will be designed for long endurance, high altitude, standoff, image collection capabilities. The Global Hawk will operate in low-to-moderate air defense threat environments with the ability to fly above, standoff, and look into high threat areas. The High Altitude Endurance (HAE) UAV Advanced Concept Technology Demonstration (ACTD) program consists of Global Hawk and a Common Ground Segment (CGS). The HAE UAV Common Ground Segment project is documented separately. The objective of the ACTD is to place the assets in the hands of the warfighter as quickly as possible so as to assess the utility of the system in the context of military exercises with other service/theater systems. The execution of the Global Hawk is directly related to funding of the HAE UAV Common Ground Segment which contains the ground segment RDT&E, and government developmental and demonstration support funding.</p> <p>(U) <u>FY 1998 (\$ in Thousands):</u> FY98 funds for Global Hawk are in PE 0305205D, Endurance Unmanned Aerial Vehicles (EUAV). - (U) \$ 0 Total</p> <p>(U) <u>FY 1999 (\$ in Thousands):</u> - (U) \$ 8,800 Product development and testing - (U) \$ 48,120 Fabrication and integration of air vehicles #3, #4, and #5 - (U) \$ 28,001 Provide contractor demonstration and evaluation support necessary to accomplish military utility assessment - (U) \$ 5,130 Integrated logistics support, Agile Support - (U) \$ 7,000 System Integration Lab - (U) \$ 5,210 Airframe reliability and Maintainability improvements - (U) \$102,261 Total</p>										
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BUDGET ACTIVITY
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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles	PROJECT 4799
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(U) FY 2000 (\$ in Thousands):

- (U) \$41,898 Provide contractor demonstration and evaluation support necessary to accomplish military utility assessment
- (U) \$ 2,101 Integrated logistic support, Agile Support
- (U) \$ 4,000 Development of training programs and tech order documentation
- (U) \$47,999 Total

(U) FY 2001 (\$ in Thousands):

- (U) \$ 4,799 Investigate and implement improvements to the HAE UAV system identified in the demonstration period
- (U) \$ 5,000 Operational demonstration in Australia
- (U) \$ 1,000 Development of training programs
- (U) \$ 1,000 Develop tech order documentation
- (U) \$11,799 Total

(U) B. Project Change Summary - Description of Significant Changes:

Program transferred from Defense Advanced Research Projects Agency to Air Force in FY99. Funds to prepare for transition from ACTD to production (O&M and RDT&E) added in Air Force POM.

(U) C. Other Program Funding Summary (\$ in Thousands)

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>To</u> <u>Compl</u>	<u>Total</u> <u>Cost</u>
(U) Aircraft Procurement, AF (HAE UAV)				31,466	51,346	81,178	83,308	85,006	TBD	TBD

Funds are associated with HAE UAV ACTD preparation for and transition to production.

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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles	PROJECT 4799
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(U) D. Acquisition Strategy

The HAE system will be procured as a design-to-cost program to acquire maximum reconnaissance capability for a firm unit flyaway price (UFP) of \$10M (FY 94\$) per vehicle (including payload). Global Hawk was selected at the end of a competition involving multiple contractor teams. Streamlined procurement, using DARPA's Other Transaction Authority, is being used to delete all non value-added tasks and documentation from the program. Under the Development Phase agreement, the contractor will build and test two Global Hawk air vehicles. As part of this agreement, the contractor will also build a developmental ground segment. During the Demonstration Phase, program management responsibility transitioned to the Air Force on 1 Oct 98. Funding for the ACTD program ends in the third quarter of FY 2000. Funding for the post ACTD RDT&E and production begins in FY 2001. Acquisition decision will occur in 2001 after the Military Utility Assessment is delivered from USACOM.

(U) E. Schedule Profile

	<u>FY 1998</u>				<u>FY 1999</u>				<u>FY 2000</u>				<u>FY 2001</u>			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(U) Flight Readiness Review		*														
(U) Start development flight tests		*														
(U) Demonstration support award						X										
(U) User field demos with warfighters							X									
(U) ACTD ends										X						
(U) Military Utility Assessment											X					
(U) Acquisition decision													X			
(U) Australian Demonstration														X		
(U) Investigate & implement improvements													X			

* denotes completed event
X denotes planned event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 1999				
BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles			PROJECT 4799				
(U) A. <u>Project Cost Breakdown (\$ in Thousands)</u>											
				<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>				
(U)	A/V development, fabrication, testing				63,920						
(U)	Integrated logistics support				5,130	2,101					
(U)	Demonstration and evaluation support				28,001	41,898	5,000				
(U)	System engineering and integration support				5,210		4,799				
(U)	Develop training programs					2,000	1,000				
(U)	Develop tech orders					2,000	1,000				
(U)	Total				102,261	47,999	11,799				
Note: Program management funded in BPAC 4816, Common Ground Segment.											
(U) B. <u>Budget Acquisition History and Planning Information (\$ in Thousands)</u>											
Performing Organizations:											
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 1998</u>	<u>Budget FY 1998</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
Teledyne Ryan	SS/CPFF/IF		N/A	N/A			69,130	4,000	3,500	Continuing	Continuing
<u>Support and Management Organizations</u>											
Teledyne Ryan	SS/CPFF/IF		N/A	N/A			5,130	2,101	8,299	Continuing	Continuing
<u>Test and Evaluation Organizations</u>											
Teledyne Ryan	SS/CPFF/IF		N/A	N/A			28,001	41,898	0	Continuing	Continuing
Project 4799				Page 11 of 22 Pages				Exhibit R-3 (PE 0305205F)			

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BUDGET ACTIVITY								PROJECT			
7 - Operational System Development								0305205F Endurance Unmanned Aerial Vehicles			4799
(U) B. Budget Acquisition History and Planning Information Continued (\$ in Thousands)											
Government Furnished Property:											
<u>Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>	<u>Total Prior to FY 1998</u>	<u>Budget FY 1998</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget to Complete</u>	<u>Total Program</u>	
<u>Product Development Property</u>											
N/A											
<u>Support and Management Property</u>											
N/A											
<u>Test and Evaluation Property</u>											
N/A											
Subtotal Product Development						69,130	4,000	3,500	Continuing	Continuing	
Subtotal Support and Management						5,130	2,101	8,299	Continuing	Continuing	
Subtotal Test and Evaluation						28,001	41,898	0	Continuing	Continuing	
Total Project						102,261	47,999	11,799	Continuing	Continuing	

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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles	PROJECT 4815
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COST (\$ In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
4815 DarkStar*	0	33,904	6,035	3,422	0	3,396	3,473	3,553	Continuing	Continuing

FY98 funds for DarkStar are in PE 0305205D, Endurance Unmanned Aerial Vehicles (EUAV). Funding for DarkStar for FY99-05 was transferred to the Air Force (PE 0305205F) from Defense-wide (PE 0305205D).

* DarkStar portion of HAE ACTD canceled 29 Jan 99. OSD intention is to apply remaining DarkStar funds, less contract close-out costs and potential liability, to Global Hawk.

(U) A. Mission Description

DarkStar project terminated 29 Jan 99.

(U) FY 1998 (\$ in Thousands):

FY98 funds for DarkStar are in PE 0305205D, Endurance Unmanned Aerial Vehicles (EUAV).

- (U) \$ 0 Total

(U) FY 1999 (\$ in Thousands):

- (U) \$ 33,904 Contract/program close-out
- (U) \$ 33,904 Total

(U) FY 2000 (\$ in Thousands):

- (U) \$6,035 Transfer to Global Hawk
- (U) \$6,035 Total

(U) FY 2001 (\$ in Thousands):

- (U) \$3,422 Transfer to Global Hawk
- (U) \$3,422 Total

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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles	PROJECT 4815
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(U) B. Project Change Summary - Description of Significant Changes:

Program transferred from Defense Advanced Research Projects Agency to Air Force in FY99.

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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles	PROJECT 4815
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(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>To Compl</u>	<u>Total Cost</u>
(U) Aircraft Procurement, AF (HAE UAV)				31,466	51,346	81,178	83,308	85,006	TBD	TBD

Funds are associated with preparation for and transition of HAE UAV ACTD to production.

(U) **D. Acquisition Strategy**

Program terminated on Jan 29, 1999.

(U) **E. Schedule Profile**

	<u>FY 1998</u>			<u>FY 1999</u>			<u>FY 2000</u>			<u>FY 2001</u>		
(U) Resume development flight test	1	2	3	4	1	2	3	4	1	2	3	4
(U) Program terminated			*									

* denotes completed event

X denotes planned event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 1999				
BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles				PROJECT 4815			
(U) A. <u>Project Cost Breakdown (\$ in Thousands)</u>											
				<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>				
(U)	Contract/program close-out				33,904						
(U)	Transfer to Global Hawk					6,035	3,422				
(U)	Total				33,904	6,035	3,422				
Note: Program management funded in BPAC 4816, Common Ground Segment.											
(U) B. <u>Budget Acquisition History and Planning Information (\$ in Thousands)</u>											
Performing Organizations:											
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 1998</u>	<u>Budget FY 1998</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
LMSW	SS/CPIF						33,904	0	0	0	33,904
<u>Support and Management Organizations</u>											
LMSW	SS/CPIF		N/A	N/A			0	0	0	0	0
<u>Test and Evaluation Organizations</u>											
LMSW	SS/CPIF		N/A	N/A			0	0	0	0	0
Project 4815				Page 16 of 22 Pages				Exhibit R-3 (PE 0305205F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 1999			
BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles				PROJECT 4815		
(U) B. <u>Budget Acquisition History and Planning Information Continued (\$ in Thousands)</u>										
Government Furnished Property:										
<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>	<u>Total Prior to FY 1998</u>	<u>Budget FY 1998</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u>										
N/A										
<u>Support and Management Property</u>										
N/A										
<u>Test and Evaluation Property</u>										
N/A										
Subtotal Product Development						33,904	0	0	0	33,904
Subtotal Support and Management						0	0	0	0	0
Subtotal Test and Evaluation						0	0	0	0	0
Total Project						33,904	0	0	0	33,904

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 1999		
BUDGET ACTIVITY 7 - Operational System Development					PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles				PROJECT 4816	
<i>COST (\$ In Thousands)</i>	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
4816 Common Ground Segment	0	47,963	12,798	7,838	2,133	5,147	5,197	5,354	Continuing	Continuing
<p>FY98 funds for Common Ground Segment are in PE 0305205D, Endurance Unmanned Aerial Vehicles (EUAV). Funding for Common Ground Segment for FY99-05 was transferred to the Air Force (PE 0305205F) from Defense-wide (PE 0305205D).</p> <p>(U) A. <u>Mission Description</u> The Common Ground Segment (CGS) supports tactical warfighters at various levels of command with digital, near real-time, high quality imagery in exploitable form. The High Altitude Endurance (HAE) UAV Advanced Concept Technology Demonstration (ACTD) program consists of the Conventional HAE (CONV HAE) – Global Hawk, and the CGS. The HAE UAV CGS is comprised of a Launch Recovery Element (LRE), a Mission Control Element (MCE), and associated logistics support activities. The HAE UAV Common Ground Segment integrates many technologies for communications between the Global Hawk and exploitation centers/users. Without the HAE UAV Common Ground Segment, Global Hawk cannot be executed. The LRE prepares, launches, and recovers the air vehicles. The MCE plans and executes the mission, dynamically re-tasks the air vehicles (including the sensors), and processes, stores and/or disseminates the data as required. Prior to the fielding of an integrated CGS, an Interim Ground Segment (IGS) composed of the Global Hawk LRE #1, MCE #1, and Data Processing Element (DPE) will be used to conduct flight test and CGS development. The HAE UAV CGS directly supports evaluations of military utility, GFE, and field demonstrations for the Global Hawk system.</p> <p>(U) <u>FY 1998 (\$ in Thousands):</u> FY98 funds for Common Ground Segment are in PE 0305205D, Endurance Unmanned Aerial Vehicles (EUAV). – (U) \$ 0 Total</p> <p>(U) <u>FY 1999 (\$ in Thousands):</u> – (U) \$ 3,350 Development and test of demonstration CGS – (U) \$ 13,763 Contractor participation in military utility assessment – (U) \$ 11,860 Government participation in military utility assessment – (U) \$ 10,350 Government support, studies, and related tasks – (U) \$ 5,840 Repair support and improvements – (U) \$ 2,800 Exploitation system interface development – (U) \$ 47,963 Total</p>										
Project 4816			Page 18 of 22 Pages				Exhibit R-2A (PE 0305205F)			

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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles	PROJECT 4816
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(U) FY 2000 (\$ in Thousands):

- (U) \$ 6,992 Provide contractor evaluation and demonstration support
- (U) \$ 1,806 Perform CGS and Global Hawk government support, studies, and related tasks
- (U) \$ 4,000 Development of training programs and tech order documentation
- (U) \$12,798 Total

(U) FY 2001 (\$ in Thousands):

- (U) \$ 838 Investigate and implement improvements to the HAE UAV system identified in the demonstration period
- (U) \$5,000 Operational demonstration in Australia
- (U) \$1,000 Development of training programs
- (U) \$1,000 Develop tech order documentation
- (U) \$7,838 Total

(U) **B. Project Change Summary - Description of Significant Changes:**

Program transferred from Defense Advanced Research Projects Agency to Air Force in FY99.

(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>To</u> <u>Compl</u>	<u>Total</u> <u>Cost</u>
(U) Aircraft Procurement, AF (HAE UAV)				31,466	51,346	81,178	83,308	85,006	TBD	TBD

Funds are associated with preparation for and transition of HAE UAV ACTD to production.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE February 1999
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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles	PROJECT 4816
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(U) D. Acquisition Strategy

The HAE UAV Common program provides the ground segment and support items common to the Global Hawk demonstration. Addition of this capability defines the Common Ground Segment (CGS) configuration. One (1) developmental and one (1) demonstration CGS are planned to be fabricated during the ACTD. Streamlined procurement, using DARPA's Other Transaction Authority, is being used to delete all non value-added tasks and documentation from the program. During the Demonstration Phase, program management responsibility transitioned to the Air Force on 1 Oct 98. Funding for the ACTD program ends in the third quarter of FY 2000. Funding for post ACTD RDT&E begins in FY 2001. Acquisition decision follows delivery of Military Utility Assessment from USACOM.

(U) E. Schedule Profile

	<u>FY 1998</u>				<u>FY 1999</u>				<u>FY 2000</u>				<u>FY 2001</u>			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(U) Flight readiness review		*														
(U) Start developmental flight test with Global Hawk		*														
(U) Demonstration support award						X										
(U) Fabricate demo CGS						X										
(U) User field demos with warfighter							X									
(U) ACTD ends										X						
(U) Military Utility Assessment											X					
(U) Acquisition decision														X		
(U) Investigate and implement improvements														X		
(U) Australian Demonstration															X	

* denotes completed event
X denotes planned event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE February 1999	
BUDGET ACTIVITY 7 - Operational System Development					PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles					PROJECT 4816	
(U) A. <u>Project Cost Breakdown (\$ in Thousands)</u>											
					<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>			
(U) Development and test of demonstration CGS						9,963					
(U) Evaluation support						24,000	6,992				
(U) System integration and engineering support						11,000	806	4,838			
(U) Develop training programs						1,000	2,000	1,000			
(U) Develop tech orders						1,000	2,000	1,000			
(U) Program Management						1,000	1,000	1,000			
(U) Total						47,963	12,798	7,838			
(U) B. <u>Budget Acquisition History and Planning Information (\$ in Thousands)</u>											
Performing Organizations:											
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 1998</u>	<u>Budget FY 1998</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
Raytheon			N/A	N/A			24,000	4,000	2,000	Continuing	Continuing
<u>Support and Management Organizations</u>											
ASC			N/A	N/A		1,000	1,000	1,000		Continuing	Continuing
Raytheon			N/A	N/A		3,000	806	4,838		Continuing	Continuing
<u>Test and Evaluation Organizations</u>											
AFFTC			N/A	N/A		6,000	1,000		0	Continuing	Continuing
AFOTEC			N/A	N/A		3,000	2,000		0	Continuing	Continuing
Raytheon			N/A	N/A		10,963	3,992		0	Continuing	Continuing
Project 4816					Page 21 of 22 Pages				Exhibit R-3 (PE 0305205F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 1999		
BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles				PROJECT 4816		
(U) B. <u>Budget Acquisition History and Planning Information Continued (\$ in Thousands)</u>										
Government Furnished Property:										
<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>	<u>Total Prior to FY 1998</u>	<u>Budget FY 1998</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u>										
N/A										
<u>Support and Management Property</u>										
N/A										
<u>Test and Evaluation Property</u>										
N/A										
Subtotal Product Development						24,000	4,000	2,000	Continuing	Continuing
Subtotal Support and Management						4,000	1,806	5,838	Continuing	Continuing
Subtotal Test and Evaluation						19,963	6,992		Continuing	Continuing
Total Project						47,963	12,798	7,838	Continuing	Continuing
Project 4816				Page 22 of 22 Pages			Exhibit R-3 (PE 0305205F)			