

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification							DATE:	
APPROPRIATION/BUDGET ACTIVITY							February 2008	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-4							R-1 ITEM NOMENCLATURE	
							0603216N, AVIATION SURVIVABILITY	
COST (\$ in Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	
Total PE Cost	28.861	21.625	5.917	6.576	6.720	6.859	7.000	
0584 ACFT PROTECTIVE CLOTHING	2.348	2.373	1.981	2.537	2.594	2.649	2.705	
0591 ACFT SURVIVABILITY, VULNERABILITY & SAFETY	1.520	1.547	1.608	1.639	1.677	1.710	1.747	
0592 ACFT & ORDNANCE SAFETY	1.519	1.509	1.594	1.644	1.677	1.713	1.746	
1819 CV ACFT FIRE SUPPRESSION	.698	.696	.734	.756	.772	.787	.802	
9999 CONGRESSIONAL ADDS	22.776	15.5						

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Aviation Survivability addresses the issues of aircrew and platform survivability, focusing on enhancing overall opportunity for aircrew and platform protection and enhanced performance. The capabilities addressed under this program element counter emerging threats of next generation operational weapons systems and enhance combat effectiveness in future operational mission scenarios.

B. PROGRAM CHANGE SUMMARY

Funding:	FY 2007	FY 2008	FY 2009
Previous President's Budget:	29.513	6.252	5.985
Current President's Budget:	28.861	21.625	5.917
Total Adjustments	-0.652	15.373	-0.068

Summary of Adjustments

Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.637	-0.139	
Congressional Increases		15.600	
Economic Assumptions			-0.023
Miscellaneous Adjustments	-0.015	-0.088	-0.045
Subtotal	-0.652	15.373	-0.068

Schedule: Not Applicable

Technical: Not Applicable

EXHIBIT R-2a, RDT&E Project Justification

DATE: February 2008

APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0603216N, AVIATION SURVIVABILITY	PROJECT NUMBER AND NAME 0584, ACFT PROTECTIVE CLOTHING						
COST (\$ in Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	
0584 ACFT PROTECTIVE CLOTHING	2.348	2.373	1.981	2.537	2.594	2.649	2.705	
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Project 0584 develops, demonstrates, and validates technology options for integrated aircrew emergency and life support systems designed to enhance mission effectiveness, in-flight protection and survivability. The project covers fixed and rotary wing life support equipment, advanced helmet vision systems, escape systems technology, crew centered cockpit design, and cockpit integration programs. It responds to a number of operational requirements documents, including OR# 210-05-88 for Chemical and Biological (CB) protection, OR# 099-05-087 for Laser Eye Protection, and the joint Air Force/Navy (CAF-208-93) for an Aerospace Control Helmet Mounted Cueing System.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

Advanced Technology Crew Station	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	1.206	1.254	1.170
RDT&E Articles Qty			

Advanced Technology Crew Station (ATCS) program: System integration and flight testing of Advanced Helmet Vision System enhanced resolution Crusader. I2/Thermal mode control studies. Pilot Vehicle Interface (PVI) on-board/off board data correlation on test aircraft and began flight testing. Advanced Technology Escape System (ATES) ejection seat trajectory and crashworthy seat stroke models with biodynamic models exploring various integrated aircrew head/neck protection configurations for ejection safe helmet mounted systems. Incorporate computational fluid dynamics and parachute models. Preliminary ergonomic seating design, validated BioRID performance and mature final version. Incorporate models of helmet mounted displays into the PVI to support testing and validation of on board/off board data correlation. Horizontal accelerator/vibrating platform assessment of ergonomics, posture, and crashworthiness. Development of Charge Coupled Device (CCD) based, high resolution Advanced Helmet Vision System (follow on to the low resolution Crusader HMD). Integrate results of injury prevention research into protective equipment to include helmet mounted devices and into ejection seat design for improved seal performance, retention, and safety. Development and testing of side facing seat and improved restraint system. Focus on shock and vibration work.

Advanced Integrated Life Support System	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	1.142	1.119	.811
RDT&E Articles Qty			

Advanced Integrated Life Support System (AILSS) program: Exercise option to begin the development of frequency Agile flight worthy unity magnification goggles (laser eye protection). Laboratory and field testing of Agile flight worthy goggles prototypes. Focus on alternative materials and optical design to maximize performance. Finalize unity magnification frequency Agile flight worthy goggles and ready for EMD transition. Integrate Smart Advanced Integrated Life Support System (SAILSS) with on-board oxygen and personal air conditioning systems. Integration of SAILSS with focus on imbedded microsensors and personal air conditioning system. Tactical variant of AILSS (TAILSS), move SAILSS into final phases of laboratory testing. Crewstation technology laboratory demonstration of Active Network Guidance Emergency Logic (ANGEL). System integration laboratory demonstration of ANGEL. Combine flight testing of on board/off board data correlation and ANGEL.

EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2008

APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0603216N, AVIATION SURVIVABILITY	PROJECT NUMBER AND NAME 0584, ACFT PROTECTIVE CLOTHING
---	---	---

C. OTHER PROGRAM FUNDING SUMMARY:	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
Not Applicable									

D. ACQUISITION STRATEGY: Not Applicable

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2008		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-4		PROGRAM ELEMENT 0603216N, AVIATION SURVIVABILITY				PROJECT NUMBER AND NAME 0584, ACFT PROTECTIVE CLOTHING						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Licenses	VARIOUS	VARIOUS	.180	.180	DEC 06	.180	DEC 07	.180	DEC 08	CONTINUING	CONTINUING	
Primary Hdw Development	VARIOUS	VARIOUS	1.097	1.023	JAN 07	1.100	JAN 08	.656	JAN 09	CONTINUING	CONTINUING	
Systems Eng	WR	NAWCAD, PATUXENT RIVER MD	25.890	.515	DEC 06	.463	DEC 07	.515	DEC 08	CONTINUING	CONTINUING	
Systems Eng	VARIOUS	VARIOUS	13.900								13.900	
SUBTOTAL PRODUCT DEVELOPMENT			41.067	1.718		1.743		1.351		CONTINUING	CONTINUING	

Remarks:

SUPPORT												
CONFIGURATION MGMT	WR	NAWCAD, PATUXENT RIVER MD	.532								.532	
CONFIGURATION MGMT	VARIOUS	VARIOUS	3.232								3.232	
SUBTOTAL SUPPORT			3.764								3.764	

Remarks:

TEST & EVALUATION												
Dev Test & Eval	WR	NAWCAD, PATUXENT RIVER MD	1.018	.200	DEC 06	.200	DEC 07	.200	DEC 08	CONTINUING	CONTINUING	
Dev Test & Eval	VARIOUS	VARIOUS	18.240								18.240	
SUBTOTAL TEST & EVALUATION			19.258	.200		.200		.200		CONTINUING	CONTINUING	

Remarks:

MANAGEMENT												
Program Mgmt Sup	WR	NAWCAD, PATUXENT RIVER MD	.410	.410	DEC 06	.380	DEC 07	.380	DEC 08	CONTINUING	CONTINUING	
Travel	TO	NAVAIR, PAXTUXENT RIVER MD	.165	.020	OCT 06	.050	DEC 07	.050	DEC 08	CONTINUING	CONTINUING	
SUBTOTAL MANAGEMENT			.575	.430		.430		.430		CONTINUING	CONTINUING	

Remarks:

Total Cost			64.664	2.348		2.373		1.981		CONTINUING	CONTINUING	
------------	--	--	--------	-------	--	-------	--	-------	--	------------	------------	--

Remarks:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2008	
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-4			PROGRAM ELEMENT NUMBER AND NAME 0603216N, AVIATION SURVIVABILITY			PROJECT NUMBER AND NAME 0591, ACFT SURVIVABILITY, VULNERABILITY & SAFETY		
COST (\$ in Millions)			FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
0591, ACFT SURVIVABILITY, VULNERABILITY & SAFETY			1.520	1.547	1.608	1.639	1.677	1.710
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Aircraft Survivability, Vulnerability and Safety. This project develops prototype hardware to improve the survivability of Navy and Marine Corps aircraft. This project addresses the likelihood of an aircraft being hit (susceptibility) and the probability of a kill if the aircraft is hit (vulnerability). Types of programs funded under this project include signature reduction efforts, subsystem and component hardening and development of fire and explosion suppression techniques for fuel systems.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

Technology Requirements	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	.264	.150	.160
RDT&E Articles Qty			

Technology Requirements: Determine future survivability technology requirements through trade studies that result in program master plans or specific system improvement plans. Data gathering and analysis that determines specific survivability improvements for a platform or platform types. Technology reviews that determine current state of survivability technology development for USN, USMC, US Army, US Air Force, and industry. Trade studies include transport aircraft infrared signature analysis, rotary wing survivability requirements, advanced threat assessments, and methodology improvements. Support the program manager by performing survivability related systems engineering support.

Technology Design & Development	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	.611	.997	.951
RDT&E Articles Qty			

Technology Design & Development: Design of susceptibility and/or vulnerability reduction prototype hardware. Fabrication and integraton/installation of prototype hardware in mockups, aircraft, test fixtures, or as part of larger subsystems. Prototype hardware includes fire and fuel protection systems, transparent and opaque armors, exhaust suppressors, counter-asymmetric threat hardware.

Technology Test and Evaluation	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	.645	.400	.497
RDT&E Articles Qty			

Technology Test & Evaluation: Integration, laboratory, ground, and flight tests of prototype hardware. Includes ballistic testing of coupons, samples, and production representative hardware. Radio frequency, Infrared, visual, and acoustic signature measurements of components and fully installed systems. Testing of hardware uses surrogate or real threats or threat systems at major range and test facilities. All tests are designed to demonstrate prototype's technology readiness level indicating maturity level and ability to transition to production (through engineering change proposal (ECP) or spiral development).

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2008
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0603216N, AVIATION SURVIVABILITY	PROJECT NUMBER AND NAME 0591, ACFT SURVIVABILITY, VULNERABILITY & SAFETY

C. OTHER PROGRAM FUNDING SUMMARY: FY 2007 FY 2008 FY 2009 FY 2010 FY 2011 FY 2012 FY 2013 To Complete Total Cost
Not Applicable

D. ACQUISITION STRATEGY: NOT APPLICABLE

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2008		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E,N / BA-4		0603216N, AVIATION SURVIVABILITY				0591, ACFT SURVIVABILITY, VULNERABILITY & SAFETY						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Primary Hardware Development	SS-CPFF	BELL HELICOPTER				.582	JAN 08	.541	JAN 09		1.123	1.123
Primary Hardware Development	SS-CPFF	VARIOUS	9.381	.361	DEC 06						9.742	9.742
Systems Eng	VARIOUS	VARIOUS	8.928	.250	NOV 06	.100	NOV 07	.100	NOV 08	CONTINUING	CONTINUING	
Systems Eng	MP	US ARMY				.125	NOV 07	.075	NOV 08	CONTINUING	CONTINUING	
Systems Eng	WR	NSWC CARDEROCK D, WST BETHESDA	4.520								4.520	
SUBTOTAL PRODUCT DEVELOPMENT			22.829	.611		.807		.716		CONTINUING	CONTINUING	

Remarks:

SUPPORT												
Development Support, MFOQA	WX	NSWC, CARDEROCK, MD	2.483								2.483	
Software Development, MFOQA	SS-CPFF	BOEING, ST LOUIS, MO	1.012								1.012	1.012
Technical Data	WX	VARIOUS	.279								.279	
Studies & Analyses (DC)	CPFF	SURVICE, INC	.400	.185	NOV 06						.585	.585
Systems Eng (DC)	CPFF	SURVICE, INC				.150	DEC 07	.175	DEC 08		.325	.325
Systems Eng (DC)	TBD	WYLE				.060	DEC 07	.060	DEC 08	CONTINUING	CONTINUING	
SUBTOTAL SUPPORT			4.174	.185		.210		.235		CONTINUING	CONTINUING	

Remarks:

TEST & EVALUATION												
Dev Test & Eval (RB)	WX	NAWCAD, PATUXENT RIVER MD	.198								.198	
Dev Test & Eval	WX	VARIOUS	1.922								1.922	
Live Fire Test & Evaluation	WX	NAWCWD CHINA LAKE CA	.550	.645	NOV 06	.300	NOV 07	.372	NOV 08	CONTINUING	CONTINUING	
Live Fire Test & Evaluation	MP	ARMY RESEARCH LAB				.100	NOV 07	.125	NOV 08	CONTINUING	CONTINUING	
SUBTOTAL TEST & EVALUATION			2.670	.645		.400		.497		CONTINUING	CONTINUING	

Remarks:

MANAGEMENT												
Program Mgmt Support	VARIOUS	VARIOUS	.384	.069	VARIOUS	.070	DEC 07	.100	DEC 08	CONTINUING	CONTINUING	
Program Mgmt Support	TBD	J F TAYLOR, LEXINGTON PARK, MD				.030	JAN 08	.030	JAN 09		.060	.060
Travel (RB)	TO	NAVAIR HQ, PATUXENT RIVER MD	.254	.010	NOV 06	.030	NOV 07	.030	NOV 08	CONTINUING	CONTINUING	
SUBTOTAL MANAGEMENT			.638	.079		.130		.160		CONTINUING	CONTINUING	

Remarks:

Total Cost			30.311	1.520		1.547		1.608		CONTINUING	CONTINUING	
------------	--	--	--------	-------	--	-------	--	-------	--	------------	------------	--

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																	DATE: February 2008											
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME									PROJECT NUMBER AND NAME														
RDT&E,N / BA-4					0603216N, AVIATION SURVIVABILITY									0591, ACFT SURVIVABILITY, VULNERABILITY & SAFETY														
Fiscal Year	FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones																												
Survivability Master Plan Updates																												
Asymmetric Threat Evaluations																												
Advanced Fire Protection Program																												
Technology Design & Development																												
Rotary Wing Prototype Hardware																												
Survivability Improvements																												
Advanced Fire Protection Program																												
Technology Test & Evaluation																												
Rotary Wing Ballistic Testing																												
Rotary Wing Signature Tests																												
Prototype Hardware Tests																												
Advanced Fire Protection Test																												
Production Milestones																												
Deliveries																												

EXHIBIT R-2a, RDT&E Project Justification							DATE:	
							February 2008	
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME		
RDT&E,N / BA-4			0603216N, AVIATION SURVIVABILITY			0592, ACFT & ORDNANCE SAFETY		
COST (\$ in Millions)			FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
0592, ACFT & ORDNANCE SAFETY			1.519	1.509	1.594	1.644	1.677	1.713
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Aircraft and Ordnance Safety Program transitions innovative munitions safety technology to Navy and Marine Corps air weapons, to comply with the Chief of Naval Operations direction that all munitions carried aboard Navy ships be insensitive to unplanned stimuli (thermal, impact, and shock events). The Aircraft and Ordnance Safety Program also ensures the safety and protection of personnel, aircraft, ships, and operational facilities, through improved precision targeting, fail-safe ordnance, selective effects munitions and shock/blast force protection technologies.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

Insensitive Munitions	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	1.519	1.509	1.594
RDT&E Articles Qty			

INSENSITIVE MUNITIONS

*Conduct improved air to air missile propulsion demonstration and testing. Output: baseline Insensitive Munitions (IM) performance of air breathing systems.

*Conduct shock/blast barrier protection demonstration and testing. Demonstrate pumice as a sympathetic detonation barrier for weapon shipping containers. Investigate alternative mitigation materials.

Output: Design, modeling and demonstration of shock absorbent materials for the protection of weapons and weapon platforms.

*Demonstrate improved air launched munitions for force protection and homeland defense. Analysis, Design, Demonstration of an improved Navy IM bomb that will mitigate Sympathetic Detonation and cook-off threats. Output: Demonstrate/determine the IM and safety characteristics of improved air launched munitions.

*Develop and validate insensitive munitions solutions to advanced energetic material warheads and rocket motors. Hyperbaric materials, New binding materials, Novel fuses and high energy density materials. Continue Improved Navy IM bomb analysis/design/demo. Output: Design, modeling and demonstration of insensitive munitions solutions to new advanced energetic materials.

*Develop and validate insensitive munitions solutions for advanced containment/case/warhead materials. Metal matrix composite materials, High temperature cases, Reactive warheads, Composite cases. Continue evaluating reactive material warheads for IM compliance. Output: Design, modeling and demonstration of insensitive munitions solutions to new advanced containment/case/warhead materials.

C. OTHER PROGRAM FUNDING SUMMARY:

FY 2007 FY 2008 FY 2009 FY 2010 FY 2011 FY 2012 FY 2013 To Complete Total Cost

Not Applicable

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2008
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0603216N, AVIATION SURVIVABILITY	PROJECT NUMBER AND NAME 0592, ACFT & ORDNANCE SAFETY

D. ACQUISITION STRATEGY:

The Aircraft and Ordnance Safety Project acquisition strategy consists of actions (technology transition) which are intended to assist the improvement of NAVAIR-cognizant munitions. Specific task planning involves close coordination with the program offices, field activities, and the IM and IMAD offices. Primary considerations in planning address windows of opportunity within the overall system procurement/life cycle, including milestone II (E&MD), P3I, and PIP events. Munition system design elements involving IM response risk (existing or anticipated) are analyzed in relation to proven and available IM technologies applicable to improvements in those design elements. When it is established that a system can probably be improved by implementing new technology and a window of opportunity for transition is available, the greatest overall improvement in fleet safety regarding IM response risk is the final deciding factor used to prioritize task selection for funding from limited resources.

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2008		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-4			PROGRAM ELEMENT 0603216N, AVIATION SURVIVABILITY				PROJECT NUMBER AND NAME 0592, ACFT & ORDNANCE SAFETY					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Systems Eng	WX	NAWCWD, CHINA LAKE CA	21.987	1.519	OCT 06	1.509	OCT 07	1.594	OCT 08	CONTINUING	CONTINUING	
SUBTOTAL PRODUCT DEVELOPMENT			21.987	1.519		1.509		1.594		CONTINUING	CONTINUING	

Remarks:

SUPPORT												
SUBTOTAL SUPPORT												

Remarks:

TEST & EVALUATION												
SUBTOTAL TEST & EVALUATION												

Remarks:

MANAGEMENT												
SUBTOTAL MANAGEMENT												

Remarks:

Total Cost			21.987	1.519		1.509		1.594		CONTINUING	CONTINUING	
------------	--	--	--------	-------	--	-------	--	-------	--	------------	------------	--

Remarks:

EXHIBIT R4, Schedule Profile																				DATE: February 2008								
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME													
RDT&E,N / BA-4					0603216N, AVIATION SURVIVABILITY										0592, ACFT & ORDNANCE SAFETY													
Fiscal Year	FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Air to Air Missile Propulsion System Demo Testing																												
Shock/Blast Barrier Protection Modeling and Demo/Testing																												
Improved Air Launched Weapons																												
Advanced Energetic Materials																												
Advanced Containment/Case/Warhead Materials																												
Deliveries																												

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2008	
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-4			PROGRAM ELEMENT NUMBER AND NAME 0603216N, AVIATION SURVIVABILITY			PROJECT NUMBER AND NAME 1819, CV ACFT FIRE SUPPRESSION		
COST (\$ in Millions)			FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
1819 CV ACFT FIRE SUPPRESSION			.698	.696	.734	.756	.772	.787
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This project develops improved fire fighting systems and fire protective measures for aircraft related fires on aircraft carriers, including assessment of fire properties, definition of fire threats, improvements to fire fighting agents and delivery systems, fire detection and suppression system performance evaluations, and fire fighter training improvements.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

Fire Fighting	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	.698	.696	.734
RDT&E Articles Qty			

Fire Fighting Agents: Evaluate new or modified agents which adequately address changing agent restrictions or technical needs. Objective is to ensure that periodic, but unpredictable, restrictions on agent production or use, primarily driven by the environmental and toxicological fields, do not negatively impact fleet safety.

Fire Fighting Systems: Evaluate system automation features and demonstrate enhancements to personnel protection equipment. Objective is to evaluate system hardware for effectiveness against updated fire threats.

Fire Fighting Tactics: Evaluate reduced manning impact and resultant modifications to tactics. Provide opportunities for training during agent/system testing. Objective is to maintain emergency capabilities as reductions in manpower draw from available response crews.

C. OTHER PROGRAM FUNDING SUMMARY:	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
Not Applicable									

D. ACQUISITION STRATEGY: Not Applicable

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2008	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0603216N, AVIATION SURVIVABILITY				PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADDS			
COST (\$ in Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	
Project Cost	22.776	15.500						
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

CONGRESSIONAL ADDS

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2008	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA4	PROGRAM ELEMENT NUMBER AND NAME 0603216N, AVIATION SURVIVABILITY	PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADDS	
B. Accomplishments/Planned Program			
9173C			
Accomplishments/Effort/Subtotal Cost	FY 07 2.914	FY 08	FY 09
RDT&E Articles Quantity			
Rotorcraft External Airbag Protection			
Rotorcraft application will require larger airbags integrated into the aircraft and development of a "predictive" crash sensors and algorithms. Initial impact studies (water and ground) have already been conducted. Two flight tests of the REAPS system onboard H-53 will be conducted.			
9346C			
Accomplishments/Effort/Subtotal Cost	FY 07 1.164	FY 08 1.189	FY 09
RDT&E Articles Quantity			
Equipment Life Extension Project			
This effort will fund an equipment life extension laboratory for definition of systems no longer procurable that are critical to functionality of weapon systems. By equipping currently existing in-house laboratories to maintain, modify, and update existing, non supported systems, a significant cost reduction will be realized.			
9507C			
Accomplishments/Effort/Subtotal Cost	FY 07 1.749	FY 08 1.988	FY 09
RDT&E Articles Quantity			
Intellegent Autonomy Transition Program			
A high level of autonomy is required to achieve manpower reduction goals, data-link bandwidth limitations, and covert operations. The challenge is integrating new technology into existing military unmanned craft and finding a Research and Development/Test and Integration Center to host developmental testing. Autonomous systems are non-deterministic which are very difficult to test/certify. The current effort attempts to break this cycle of cost increases for unmanned systems by developing control algorithms and low cost high bandwidth data links to connect the UAVs to the control system.			

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2008
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA4	PROGRAM ELEMENT NUMBER AND NAME 0603216N, AVIATION SURVIVABILITY	PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADDS
B. Accomplishments/Planned Program		
9510C		
Accomplishments/Effort/Subtotal Cost	FY 07 1.749	FY 08 0.789
RDT&E Articles Quantity		
Silver Fox UAV		
Support the assessment of Silver Fox's ability to provide surveillance during mine clearing operations. In particular, search and scan patterns will be assessed and optimized. Key areas of study include determining resolution and field of view of the sensor as a function of altitude and mission profile.		
9763C		
Accomplishments/Effort/Subtotal Cost	FY 07 0.971	FY 08 1.589
RDT&E Articles Quantity		
Smart Visor		
The Smart Visor will integrate emerging liquid crystal and or thin film technologies into a visor substrate to improve laser eye protection. The approach is based on a polymeric stack that can be molded into the visor substrate. The second approach that could provide variable attenuation in real time is a spherical liquid crystal visor. Both approaches will provide cost effective broadband, variable density protection.		
9961N		
Accomplishments/Effort/Subtotal Cost	FY 07 1.554	FY 08
RDT&E Articles Quantity		
AIR SENTINEL		
Funding will develop an automated system that resides in the ground control station of a UAV system for the detection and management of unmanned aircraft emergencies.		

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2008	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA4	PROGRAM ELEMENT NUMBER AND NAME 0603216N, AVIATION SURVIVABILITY	PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADDS	
B. Accomplishments/Planned Program			
9962N	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	3.885		
RDT&E Articles Quantity			
Integrated Command Decision Work Environment			
<p>The concept is based on complete integration of isolation, computer, Multi-Layered Displays, controls and secure seating into one structure that will decrease the cost over conventional workstations significantly, while increasing reliability. This new form of operational workstation when combined with a Common Display Open Architecture and next generation visualization will ensure alignment of the technology to meet the emerging requirements of U.S. Navy new ship construction and modernization plans.</p>			
9963N	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	1.942	1.589	
RDT&E Articles Quantity			
Intelligence Gathering Uninhabited System			
<p>Funds to provide an operational system to joint ground forces for localized Intelligence, Surveillance, and Reconnaissance System that are based on an open and scalable systems architecture in a low impact and cost effective manner.</p>			
9964N	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	3.157		
RDT&E Articles Quantity			
Joint Helmet Mounted Cueing System QuadEye			
<p>To develop a light weight, modular night vision camera capable of being integrated into current and future helmet-mounted displays .</p>			

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2008	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA4	PROGRAM ELEMENT NUMBER AND NAME 0603216N, AVIATION SURVIVABILITY	PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADDS	
B. Accomplishments/Planned Program			
9965N	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	2.719	2.789	
RDT&E Articles Quantity			
Unmanned Aircraft Systems Optimization Tech			
To optimize the performance of the sensors onboard both manned and unmanned vehicles, stationary systems and smart dust.			
9966N	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.971	2.389	
RDT&E Articles Quantity			
Unmanned Force Augmentation System			
To continue research, development and testing of advanced Unmanned Air System technologies that facilitate the rapid transition of Unmanned Air Vehicle systems to the warfighters that offer order-of-magnitude improvements in usability, capability, and operational effectiveness.			

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2008	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA4	PROGRAM ELEMENT NUMBER AND NAME 0603216N, AVIATION SURVIVABILITY	PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADDS	
B. Accomplishments/Planned Program			
	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.000	1.589	
RDT&E Articles Quantity			
Modular Advanced Helmet Vision System			
The Modular Advanced Helmet Vision Systems (MAVS) will provide significantly improved impact, hearing, laser eye, and chem-bio protection, along with communications and oxygen delivery, in a versatile, low-cost, mission reconfigurable design.			
	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.000	1.589	
RDT&E Articles Quantity			
Technology Collaboration for Aerospace			
The Technology Collaboration for Aerospace will develop new and better system modeling software or processes for human systems integration (HIS) oriented engineering with initial emphasis on physical modeling of human body and human body components.			