

**UNCLASSIFIED**

**EXHIBIT R-2, FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET**

**DATE: FEBRUARY 1999**

**BUDGET ACTIVITY: 5**

**PROGRAM ELEMENT: 0604264N**

**PROGRAM ELEMENT TITLE: Aircrew Systems Development**

**(U) COST: (Dollars in Thousands)**

<u>Project Number &amp; Title</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
W0606 Aircrew Systems Development	16,985	11,322	6,801	11,198	9,138	9,376	9,625	9,854	CONT.	CONT.
<b>TOTAL</b>	<b>16,985*</b>	<b>11,322**</b>	<b>6,801</b>	<b>11,198</b>	<b>9,138</b>	<b>9,376</b>	<b>9,625</b>	<b>9,854</b>	<b>CONT.</b>	<b>CONT.</b>

\*FY98 Budget reflects a \$5,697K Congressional Add for NACES II Ejection Seat Product Improvement effort executed under Project Unit Number W2421.

\*\*FY99 Budget reflects a \$2,500K Congressional Add for AV-8B Escape Improvement effort executed under Project Unit W2421.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Aircrew Systems Development program provides engineering and manufacturing development (EMD) of Aviation Life Support Systems to protect aircrews from current and future threats including: directed energy weapons, chemical/biological/radiological agents/fallout, ballistic projectiles, temperature extremes, heat/fire, low concentration oxygen environments, high dynamic forces during emergency egress, and high "G" forces. The program also provides development for the following capabilities: head protection, inflight restraint, emergency egress and descent, escape and evasion, survival and rescue, and anthropometric sizing for small aircrew. Acquisition initiatives include: competition, the application of streamlining initiatives, use of non-developmental items (NDI), joint and tri-service developments, and the pursuit of NATO/allied cooperative ventures, which expedite introduction of new products into Navy and Marine Corps fixed and rotary wing aircraft, reduce costs, and promote commonality.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ENGINEERING AND MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.

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**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

DATE: FEBRUARY 1999

**BUDGET ACTIVITY: 5**

**PROGRAM ELEMENT: 0604264N**

**PROJECT NUMBER: W0606**

**PROGRAM ELEMENT TITLE: Aircrew Systems Development**

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(U) COST: (Dollars in Thousands)

<u>Project Number &amp; Title</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
W0606 Aircrew Systems Development	16,985	11,322	6,801	11,198	9,138	9,376	9,625	9,854	CONT.	CONT.
<b>TOTAL</b>	<b>16,985*</b>	<b>11,322**</b>	<b>6,801</b>	<b>11,198</b>	<b>9,138</b>	<b>9,376</b>	<b>9,625</b>	<b>9,854</b>	<b>CONT.</b>	<b>CONT.</b>

\*FY98 Budget reflects a \$5,697K Congressional Add for NACES II Ejection Seat Product Improvement effort executed under Project Unit Number W2421.

\*\*FY99 Budget reflects a \$2,500K Congressional Add for AV-8B Escape Improvement effort executed under Project Unit W2421.

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

(U) SUBPROJECTS:

- (U) **ESCAPE AND CRASH SAFETY:** Naval Aircrew Common Ejection Seat Pre-Planned Product Improvement (NACES P3I), Advanced Crashworthy Aircrew Survival Systems (ACASS), Joint Cockpit Air Bag System (JCABS), Crashworthy Troop Seats (CWTS), and Non-NACES and Small Occupant Escape System Improvements.
- (U) **LIFE SUPPORT/THREAT PROTECTION:** Extreme Cold Weather Improvement Program (ECWIP), Aircrew Modified Equipment Leading to Increased Accommodation (AMELIA), PRC-112P3I, Aircrew Accommodation Expansion Program (AAEP), Advanced Oxygen Delivery System (AODS), Advanced Oxygen Mask (AOM), Aircrew Cooling, and Advanced Integrated Life Support Systems (AILSS).
- (U) **HELMET, VISION AND DISPLAYS:** Joint Night Vision Systems (JNVS), Joint Helmet Mounted Cueing System (JHMCS), Navy Day/Night All Weather Helmet (NDNAWH), Joint Service Advanced Laser Eye Protection Visor (JALEPV) Program, Laser Eye Protection Improvement Program (LEPIP) EDU-5/P Spectacles, and Agile Frequency Laser Eye Protection.

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**(U) PROGRAM ACCOMPLISHMENTS AND PLANS:**

**1. FY 1998 ACCOMPLISHMENTS:**

- (U) (10,052) NACESP3I: Completed Phase I CDR and initiated System DT. Started ECP preparation. Contract awarded for Phase II and started technology trade-off and integration studies. Non-NACES and Small Occupant Escape System Improvements: Conducted technology trade-off studies, conducted simulations and analysis on selected alternatives and prepared program plan for integration efforts. ACASS: Completed preliminary testing on MA-16 inertia reel and submitted to a/c platforms for successful incorporation. JCABS: Completed Joint Army/Navy integration design. CWTS: Contract awarded and successfully completed contract award protest for troop seats.
- (U) (1,745) ECWIP: Continued DT/OT for cold weather clothing and survival items and prepared ECP's. AMELIA: Continued DT and OT of modified equipment and began ECP preparation. AAEP: Continued cockpit mappings. AILSS: Monitored Army EMD for rotary wing system. Aircrew Cooling: Initiated DT studies.
- (U) (5,188) NVS: Monitored USAF panoramic NVG program and NVS Detachment system. JHMCS: Continued platform integration and software development. Finalized Critical Design Review (CDR)/commenced DT. NDNAWH: Developed test procedures. LEPID EDU-5/P Spectacles: Completed DT and commenced OT. JALEPV: Held PDR and commenced DT. Delivered 55 T&E visors. Commenced compatibility, environmental and laser saturation testing. Prepared ECP.

**2. FY 1999 PLAN:**

- (U) (5,378) NACESP3I: Conduct system qualification testing and aircraft integration efforts, and approve ECP's. Conduct Phase II technology trade-off and integration studies and conduct demonstration/DT testing on selected candidate technologies. CWTS: Complete DT and prepare H-1 platform ECP's. Continue DT H-3 & H-46.
- (U) (411) ECWIP: Continue DT/OT for cold weather clothing and survival items and prepare ECP's. AMELIA: Continue DT and OT of modified equipment and prepare ECP's. AAEP: Complete cockpit mappings and make recommendations to platforms.
- (U) (5,375) NVS: Monitor and participate in JNVS testing, product improvements. JHMCS: Complete platform integration and software development, DT/OT evaluators. JALEPV: Deliver pre-production visors, MSIII, start production, commence agile frequency protection studies. LEPID EDU-5/P Spectacles: Complete OT.
- (U) (158) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

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**PROGRAM ELEMENT TITLE: Aircrew Systems Development**

**PROJECT TITLE: Aircrew Systems Development**

**3. FY 2000 PLAN:**

- (U) (1,486) NACES P3I: Finalize testing and approve audit for a/c platform installation. Conduct DT/OT testing and physical configuration audit on selected candidate technologies. CWTS: Complete H-1(4BN) FSD a/c installation and a/c OT. Commence preparation of H-3/H-46 platform ECP's. Non-NACES and Small Occupant Escape System improvements: Conduct DT/OT on selected subsystems.
- (U) (2,200) ECWIP: Complete DT/OT for cold weather clothing and survival items and prepare ECP's. AMELIA: Continue DT and OT of modified equipment and prepare ECP's. Aircrew Cooling: Recommence DT studies.
- (U) (3,115) NVS: Monitor and participate in JNVS testing and product improvements. JHMCS: MSIII. NDNAWH: MSII.

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**PROGRAM ELEMENT TITLE: Aircrew Systems Development**

**PROJECT TITLE: Aircrew Systems Development**

**(U) B. PROGRAM CHANGE SUMMARY**

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	17,366	9,454	9,246
(U) Appropriated Value:	17,366	11,954	
(U) Adjustments from President's Budget:	-381	+1,868	-2,445
(U) FY 2000 President's Budget Submit:	16,985	11,322	6,801

**CHANGE SUMMARY EXPLANATION:**

(U) Funding: FY 1998 decrease reflects -\$251 thousand for Small Business Innovation Research (SBIR) assessment and -\$130 thousand for higher Navy priorities. FY 1999 increase reflects +\$2,500 thousand for AV-8B Escape Improvement effort, -\$590 thousand for Contract Advisory and Assistance Support, -\$28 thousand for revised economic assumptions and -\$14 thousand for minor program adjustments. FY 2000 decrease reflects a -\$2,327 thousand reduction for program delays in FY-97, -\$18 thousand for minor program adjustments, -\$47 thousand for NWCF rate adjustments, and -\$53 thousand for inflation reductions.

(U) Schedule: FY 98 - 4Q CWTS H-1, H-3 & H-46 Engineering Milestone slipped from 3Q due to a contract award protest. 3Q CWTS H-1, H-3 & H-46 Contract Award slipped from 2Q. Contract awarded Feb 98 to Skyline Industries, Inc. East-West Manufacturing, a competitive company, protested. GAO resolution has been ongoing and finalized now (3Q). 2Q PNR EMD Contract Award has been removed due to funding being shifted to higher priority efforts, JHMCS and NVS. FY 99 - 3Q JHMCS OT T&E Milestone changed from 4Q due to program acceleration. 4Q AODS DT T&E Milestone has been removed due to funding being shifted to higher priority efforts, JALEPV, JHMCS, etc. FY 00 – Panoramic NVG MSI has been removed because this effort will be encompassed within the Navy's Day/Night Helmet.

(U) Technical: N/A

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PROGRAM ELEMENT TITLE: Aircrew Systems Development

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(U) C. OTHER PROGRAM FUNDING SUMMARY

<u>Appn</u>	<u>FY 1998</u> <u>Budget</u>	<u>FY 1999</u> <u>Budget</u>	<u>FY 2000</u> <u>Estimate</u>	<u>FY 2001</u> <u>Estimate</u>	<u>FY 2002</u> <u>Estimate</u>	<u>FY 2003</u> <u>Estimate</u>	<u>FY 2004</u> <u>Estimate</u>	<u>FY 2005</u> <u>Estimate</u>	<u>To</u> <u>Complete</u>
AVIATION LIFE SUPPORT-OPN	11,265	16,545	17,053	16,522	28,784	29,187	29,909	30,519	CONT.

Related RDT&E

(U) P.E. 0603216N (Aviation Survivability), P.E. 0604706F (Life Support Equipment, related Air Force efforts), P.E. 0604713A (Combat Feeding, Clothing and Equipment, related Army efforts. Coordinated through the OSD sponsored Tri-Service Life Support RDT&E Steering Committee), P.E. 0604384BP (Chemical Biological (CB) program), P.E. 06084201F (Common Avionics related Air Force efforts).

(U) D. ACQUISITION STRATEGY: COTS/NDI where possible, cost plus award fee contracts, CAIV. Majority of programs non-ACAT programs with no specific acquisition strategies.

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**(U) E. SCHEDULE PROFILE**

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>To Complete</u>
(U) Program Milestones	4Q JCABS SH-60 ECP	2Q AOM MSII 3Q AODS MSII 3Q JALEPV MSIII 3Q LEPIP MSIII NACES P3I ECP	JHMCS MSIII NDNAWH MSII	CWTS H-3, & H-46 ECP NON-NACES ECP NACES P3I ECP'S
(U) Engineering Milestones	2Q LEPIP PDR 2Q JALEPV PDR 3Q NACES P3I CDR 4Q CWTS H-1, H-3, & H-46 4Q JHMCS CDR	2Q JALEPV ECP		
(U) T&E Milestones	1Q NDNAWH DT 3Q LEPIP DT COMP. 3Q CWTS H-1, H-3, & H-46 DT 3Q JHMCS DT 4Q LEPIP OA COMP.	1Q JALEPV OA 3Q AOM DT NACES P3I DT 3Q JHMCS OT 1Q NACES P3I DT/OT 3Q CWTS H-1, H-3, & H-46 DT	NACES P3I DT 3Q COOLING DT JHMCS P3I NDNAWH MSII	NACES P3I DT/OT  NDNAWH DT
(U) Contract Milestones		3Q CWTS H-1, H-3,& H-46 AWARD 3Q NACES P3I AWARD 4Q JALEPV DT COMP.		

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**EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS**

**DATE:** FEBRUARY  
1999

**BUDGET ACTIVITY:** 5

**PROGRAM ELEMENT:** 0604264N

**PROJECT NUMBER:** W0606

**PROJECT TITLE:** Aircrew Systems Development

<u>Cost Categories:</u>	<u>Contract Method &amp; Type</u>	<u>Performing Activity &amp; Location</u>	<u>Total Prior Yrs Cost</u>	<u>FY 1999 Cost</u>	<u>FY 1999 Award Date</u>	<u>FY 2000 Cost</u>	<u>FY 2000 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
Systems Engineering (Misc. less \$1M)	WX/RX	NAWC	21669	1919	Various	2340	Various	CONT.	CONT.	
JHMCS Hardware Development	MIPR	WPAFB	3500	2350	JAN 99	500	JAN 00		6350	6350

**Subtotal Product Development**

**25169      4269                      2840                      CONT.      CONT.**

**Remarks:**

ILS (Misc. less \$1M)	WX/RX	NAWC	13583	1028	Various	795	Various	CONT.	CONT.	
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**Subtotal Support**

**13583      1028                      795                      CONT.      CONT.**

**Remarks:**

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EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

DATE: FEBRUARY  
1999

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PROGRAM ELEMENT: 0604264N

PROJECT NUMBER: W0606

PROJECT TITLE: Aircrew Systems Development

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental T&E (Misc. less \$1M)	WX/RX	NAWC	27342	4667	Various	1946	Various	CONT.	CONT.	
Operational T&E (Misc. less \$1M)	WX/RX	NAWC	3037	521	Various	495	Various	CONT.	CONT.	
<b>Subtotal Test &amp; Evaluation</b>			<b>30379</b>	<b>5188</b>		<b>2441</b>		<b>CONT.</b>	<b>CONT.</b>	
<b>Remarks:</b>										
MISC (LESS THAN \$1M)	WX/RX	NAWC	4550	679	Various	725	Various	CONT.	CONT.	
<b>Subtotal Management</b>			<b>4550</b>	<b>679</b>		<b>725</b>		<b>CONT.</b>	<b>CONT.</b>	
<b>Remarks:</b>										
SBIR Assessment				158						
<b>Total Cost</b>			<b>73681</b>	<b>11322</b>		<b>6801</b>		<b>CONT.</b>	<b>CONT.</b>	

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