

## UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification						DATE:	
APPROPRIATION/BUDGET ACTIVITY						February 2008	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE	
COST (\$ in Millions)						0604262N, V-22A	
	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total PE Cost	251.574	115.477	68.763	26.652	5.055	5.178	5.280
1425 V-22	251.574	115.477	68.763	26.652	5.055	5.178	5.280

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

The V-22 Osprey is an ACAT-ID Joint Program led by the Department of the Navy for the purpose of developing, testing, evaluating, procuring and fielding a tilt rotor, vertical takeoff and landing aircraft for Joint Service application. The V-22 program is designed to provide an aircraft to meet the amphibious/vertical assault needs of the Marine Corps, the strike rescue needs of the Navy, and the special operations needs of the Air Force and the United States Special Operations Command (USSOCOM). The V-22 will replace the CH-46E and CH53A/D in the Marine Corps with the MV-22; supplement the H-60 in the Navy with the HV-22; and replace the MH-53J and MH-53M as well as augment the C-130 in the Air Force and USSOCOM with the CV-22. The V-22 will be capable of flying over 2100 nautical miles with a single refueling, giving the services the advantage of a Vertical/Short Take-off, and Landing (VSTOL) aircraft that can rapidly self-deploy to any location in the world. This program is funded under Engineering Manufacturing and Development (EMD) for correction of deficiencies and includes Block A and Block B upgrades because they encompassed engineering and manufacturing development of new end-items prior to the production approval decision. Block C suitability and effectiveness upgrades began in FY06 and continue thru FY12. Block C is the first post-full rate production decision upgrade to be executed.

FY2008 funding totals do not include \$82.4M previously requested for current FY2008 GWOT requirements.

## B. PROGRAM CHANGE SUMMARY

Funding:	FY 2007	FY 2008	FY 2009
FY 2008 President's Budget:	267.448	117.997	57.058
FY 2009 President's Budget:	251.574	115.477	68.763
Total Adjustments	-15.874	-2.520	11.705

## Summary of Adjustments

Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-6.199	-0.750	
Congressional Increases			
Economic Assumptions			0.550
Miscellaneous Adjustments	-9.675	-1.770	11.155
Subtotal	-15.874	-2.520	11.705

## Schedule:

Not  
Applicable

## Technical:

Not Applicable

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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-5			0604262N, V-22A			1425, V-22			
COST (\$ in Millions)			FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
1425 V-22			251.574	115.477	68.763	26.652	5.055	5.178	5.280
RDT&E Articles Qty									

## A. MISSION DESCRIPTION AND BUDGET ITEM

JUSTIFICATION: The V-22 Osprey is an ACAT-ID Joint Program led by the Department of the Navy for the purpose of developing, testing, evaluating, procuring and fielding a tilt rotor, vertical takeoff and landing aircraft for Joint Service application. The V-22 program is designed to provide an aircraft to meet the amphibious/vertical assault needs of the Marine Corps, the strike rescue needs of the Navy, and the special operations needs of the Air Force and the United States Special Operations Command (USSOCOM). The V-22 will replace the CH-46E and CH-53A/D in the Marine Corps with the MV-22; supplement the H-60 in the Navy with the HV-22; and replace the MH-53J and MH-53M as well as augment the C-130 in the Air Force and USSOCOM with the CV-22. The V-22 will be capable of flying over 2100 nautical miles with a single refueling, giving the services the advantage of a Vertical/Short Take-off, and Landing (VSTOL) aircraft that can rapidly self-deploy to any location in the world. This program is funded under Engineering Manufacturing and Development (EMD) for correction of deficiencies and includes Block A and Block B upgrades because they encompassed engineering and manufacturing development of new end-items prior to the production approval decision. Block C suitability and effectiveness upgrades began in FY06 and continue thru FY12. Block C is the first post-full rate production decision upgrade to be executed.

## B. ACCOMPLISHMENTS / PLANNED PROGRAM:

Continued development of Block B	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	121.759	89.312	55.583
RDT&E Articles Qty			

Continue MV-22 development efforts by Bell-Boeing. Rolls-Royce continues to provide engine support and repair of repairables for MV-22 flight testing. Complete MV-22 software development efforts. Continue development in support of MV-22 Block upgrades. Continue development of maintenance training equipment. Continue Weapons Repairable Assembly (WRA) and Test Program Set (TPS) development. Continue logistics, flight test, and flight test support, address correction of deficiencies, and provide funding for the V-22 Way Forward. Continue contracted development efforts on aircraft #8. Block C suitability and effectiveness upgrades began in FY06 and continue thru FY12. Block C is the first post-full rate production decision upgrade to be executed.

Continued support of Block B development	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	41.574	26.165	13.180
RDT&E Articles Qty			

Continue in-house field activity support of Integrated Test Team (ITT), Integrated Product Teams (IPT), logistics and training activities, the manned flight simulator and numerous other efforts at over 12 activities. Continue development in support of MV-22 Block upgrades. Continue field development efforts on aircraft #8, and three LRIP aircraft. Provide R&D support in the areas of Reliability and Maintainability (R&M) data analysis, loads and dynamics, electromagnetic environmental effects, V-22 flight controls, survivability, subsystems, shipboard compatibility, propulsion, V-22 avionics, facilities, structures, communications, Small Business Innovative Research, etc. Continue logistics, flight test, and flight test support, and addressed correction of deficiencies. R&D support and planning for the Block C suitability and effectiveness upgrade which began in FY 06 and continue thru FY12. Block C is the first post-full rate production decision upgrade to be executed.

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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-5	0604262N, V-22A	1425, V-22	
Continued development of Block 0	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	88.241		
RDT&E Articles Qty			

Continue CV-22 Block-0 EMD development. Provide flight test support for CV-22 aircraft #7 and #9. Provide engineering and maintenance support for CV-22 flight testing. Fund fuel costs for test aircraft and/or engines. Provide R&D support in the areas of R&M data analysis, loads and dynamics, electromagnetic environmental effects, CV-22 flight controls, survivability, subsystems, shipboard compatibility, propulsion, CV-22 avionics, facilities, computer support, structures, communications, Small Business Innovative Research, etc. Continue logistics, flight test, and flight test support, and address correction of deficiencies. Support CV-22 Additional Test Asset (ATA) flight test infrastructure and contractor maintenance/logistics support for ATA.

C. OTHER PROGRAM FUNDING SUMMARY:	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
164000 / V-22									
V-22 APN-1	1,557.410	1,946.109	2,220.401	2,301.363	2,204.515	2,430.227	2,290.897	10,632.831	25,583.753
V-22 APN-6 Spares	51.296	26.518	39.767	53.925	30.886	26.829	22.850	262.340	514.411
59000 / V-22									
V-22 APN-5	144.802	67.915	41.473	25.026	25.557	26.024	26.600	1,145.309	1,502.706
Related RDT&E:									
0401318F CV-22	12.756	16.688	18.717	42.177	39.640	33.457	24.336	TBD	187.771
1160421BB CV-22	0.000	22.872	38.229	27.140	42.064	29.304	30.491	TBD	190.100

## D. ACQUISITION STRATEGY:

The MV-22 is currently in EMD under contract N00019-93-C-0006 awarded to Bell-Boeing on 22 Oct 92, and definitized in May 94. As a result of mishaps during and subsequent to MV-22 OPEVAL (Apr and Dec 00), the program was restructured employing a phased approach to return to flight and tactical introduction. The Contractor and Government defined deficient areas within the program/aircraft requiring correction prior to return to flight. A Block Upgrade approach has been planned, with required efforts being identified in Block "A", "B", and "C". Block "A" includes those efforts necessary to return the V-22 to safe and operational fleet operations. Block "B" includes those efforts necessary to improve the effectiveness and suitability of the aircraft. Block "C" includes mission enhancements like weather radar and cabin effectiveness suitability improvements. Non-recurring development activities are to be initiated and completed for all efforts identified to be in Block "A", "B", and "C". The Contractor will develop specific Statements of Work and Preliminary Specification Change Notices required to integrate the Block Upgrade efforts into the baseline EMD Program. A Systems Requirements Review, Initial Design Review, and Final Design Review will be held for each of the Block efforts so the design maturity can be reviewed and the Government can redirect activities as appropriate. The CV-22 EMD program is structured in Blocks to define an evolutionary approach to achieving full operational capability. Block "0" is the initial baseline CV-22 variant. Block "10" enhances mission capability with the addition of Directional Infrared Countermeasures. Additional Blocks are in planning to continue the growth process throughout the operational life of the weapon system.

Exhibit R-3 Cost Analysis (page 1)									DATE: February 2008			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E,N / BA-5		0604262N, V-22A			1425, V-22							
	Contract Method & Type		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
Cost Categories		Performing Activity & Location										
PRODUCT DEVELOPMENT												
CV-22 Develop Support Equip	VARIOUS	VARIOUS	8.554	5.009	Jan 2007						13.563	
CV-22 Hardware Dev Airframe	SS-CPAF	BOEING COMPANY, RIDLEY PARK, PA	854.918	62.060	Jan 2007						916.978	916.978
CV-22 Hardware Dev Propulsion	C-CPIF	ROLLS-ROYCE CORP, INDIANAPOLIS, IN	12.239	.152	Jan 2007						12.391	12.391
MV-22 Develop Support Equip	VARIOUS	NAWCAD, LAKEHURST NJ	3.987	1.704	Jan 2007						5.691	
MV-22 Develop Support Equip	C-CPIF	BOEING COMPANY, RIDLEY PARK, PA	42.624	1.300	Jan 2007						43.924	43.924
MV-22 Hardware Dev Airframe	SS-CPAF	BOEING COMPANY, RIDLEY PARK, PA	3,708.484	104.627	Jan 2007	81.537	Jan 2008	54.010	Jan 2009	20.327	3,968.985	3,968.985
MV-22 Hardware Dev Propulsion	C-CPIF	ROLLS-ROYCE CORP, INDIANAPOLIS, IN	190.073	.951	Jan 2007	.809	Jan 2008	1.572	Jan 2009	1.778	195.183	195.183
MV-22 Training Development	VARIOUS	VARIOUS	18.004	4.116	Jan 2007	3.882	Jan 2008	.779	Jan 2009	1.709	28.491	
SUBTOTAL PRODUCT DEVELOPMENT			4,838.884	179.919		86.228		56.361		23.814	5,185.206	

Remarks: Total award fee pool available for MV and CV combined is \$228,238,249.00. To date \$202,338,054.00 has been awarded for a percentage of 88.7 percent. Award Fee included in MV-22 Primary Hardware Development Airframe line. Dollars may not add due to rounding.

SUPPORT												
CV-22 Govt Engineering Sppt	WX	NAWCAD, PATUXENT RIVER MD	20.495	1.308	Nov 2006						21.803	
CV-22 Integrated Log Sppt	VARIOUS	VARIOUS	8.049	.347	Nov 2006						8.395	
CV-22 Technical Data	C-CPIF	BOEING COMPANY, RIDLEY PARK, PA	4.567	3.468	Nov 2006						8.035	8.035
CV-22 Technical Data	WX	NAVAIR TEC EN SV CMD, SAN DIEGO CA	6.131								6.131	
MV-22 Govt Engineering Sppt	WX	NAWCAD, PATUXENT RIVER MD	1,093.142	2.096	Nov 2006	.544	Nov 2007	.457	Nov 2008	.652	1,096.891	
MV-22 Integrated Log Sppt	VARIOUS	VARIOUS	28.203	.615	Nov 2006						28.818	
MV-22 Technical Data	C-CPIF	BOEING COMPANY, RIDLEY PARK, PA	93.395	16.180	Nov 2006	6.966	Nov 2007				116.541	116.541
SUBTOTAL SUPPORT			1,253.982	24.013		7.511		.457		.652	1,286.616	

Remarks: Dollars may not add due to rounding.

TEST & EVALUATION												
CV-22 Dev Test & Eval	MIPR	EDWARDS AFB, CA	33.468	13.096	Nov 2006						46.564	
MV-22 Dev Test & Eval	WX	NAWCAD, PATUXENT RIVER MD	935.639	13.493	Nov 2006	13.158	Nov 2007	7.654	Nov 2008	13.222	983.166	
MV-22 Live Fire Test & Eval	WX	NAWCWD, CHINA LAKE CA	1.636								1.636	
MV-22 Oper Test & Eval	WX	OPER T & E FOR CD 30, NORFOLK VA	37.157	2.502	Nov 2006	2.861	Nov 2007	.669	Nov 2008	.517	43.707	
SUBTOTAL TEST & EVALUATION			1,007.900	29.091		16.019		8.323		13.739	1,075.073	

Remarks: Dollars may not add due to rounding

Exhibit R-3 Cost Analysis (page 1)			DATE: February 2008	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME		
RDT&E,N / BA-5	0604262N, V-22A	1425, V-22		

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
MANAGEMENT												
CV-22 Engineering Tech Sppt	VARIOUS	VARIOUS	9.963	2.527	Nov 2006						12.490	
CV-22 Management Sppt Serv	VARIOUS	VARIOUS	12.511								12.511	
CV-22 Program Mgmt Support	WX	NAWCAD, PATUXENT RIVER MD	9.830								9.830	
CV-22 Travel	WX	NAWCAD, PATUXENT RIVER MD	4.406	.276	Nov 2006						4.682	
MV-22 Engineering Tech Sppt	VARIOUS	VARIOUS	1,030.280	8.118	Nov 2006	2.844	Nov 2007	1.374	Nov 2008	.745	1,043.362	
MV-22 Management Sppt Serv	VARIOUS	VARIOUS	144.769	4.343	Nov 2006	1.683	Nov 2007	1.229	Nov 2008	1.300	153.325	
MV-22 Studies and Analyses	VARIOUS	VARIOUS	1.244								1.244	
MV-22 Program Mgmt Support	WX	NAWCAD, PATUXENT RIVER MD	47.535	2.174	Nov 2006	.809	Nov 2007	.699	Nov 2008	1.310	52.527	
MV-22 Travel	WX	NAWCAD, PATUXENT RIVER MD	12.531	1.113	Nov 2006	.383	Nov 2007	.319	Nov 2008	.604	14.950	
SUBTOTAL MANAGEMENT			1,273.069	18.551		5.719		3.621		3.960	1,304.920	

Remarks: Dollars may not add due to rounding.

Total Cost			8,373.835	251.574		115.477		68.763		42.165	8,851.814	
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Remarks: Dollars may not add due to rounding.

CLASSIFICATION:																																
EXHIBIT R4, Schedule Profile																								DATE: February 2008								
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME												
RDT&E, N / BA-5										0604262N, V-22A										H1425, V-22												
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				
Program Milestones			MV-22 IOC ▲								CV-22 IOC 2Q FY09 △																					
Engineering Milestones															FCA △								PCA △									
Test & Evaluation Milestones																																
Deliveries																																

## CLASSIFICATION:

Exhibit R-4a, Schedule Detail

DATE:

February 2008

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT

PROJECT NUMBER AND NAME

**RDT&BA-5**

0604262N, V-22A

H1425, V-22

Schedule Profile

FY 2007

FY 2008

FY 2009

FY 2010

FY 2011

FY 2012

FY 2013

CV-22 Flight Test

1Q-4Q

MV-22 Operational Evaluation (OPEVAL) Phase II

MV-22 Milestone III

MV-22 Initial Operational Capability (IOC)

3Q

Block-C Preliminary Design Review (PDR)

3Q

Block-C Critical Design Review (CDR)

4Q

CV-22 Operational Utility Evaluation

CV-22 Initial Operational Test &amp; Evaluation (IOT&amp;E)

1Q

CV-22 Initial Operation Capability (IOC)

2Q

Block-C Functional Configuration Audit

4Q

Block-C Physical Configuration Audit

3Q