CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **May 2009**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**					R-1 ITEM NOMENCLATURE 0604262N, V-22A			
COST ($ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Total PE Cost	**125.157**	**71.948**	**89.512**					
1425 V-22	**125.157**	**71.948**	**89.512**					

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 ugrades which encompassed engineering and manufacturing development of new end-items prior to the production incorporation decision. Block C suitability and effectiveness development upgrades began in FY06. The FY08 OCO funding provided is for the initial development of an all quadrant Defensive Weapons System (DWS). Funding includes costs associated with systems engineering, weapons system integration, and developmental assets. The funding presented represents the cost to begin development of this issue and will be executed in fiscal year 2009. The FY09 OCO funding provided is for the development of the Landing Gear Bay Fire Suppression System. The additional funding provided in FY10 addresses Capability Development Document (CDD) interoperability requirements through a spiral upgrade acquisition strategy. These funds are the first spiral that provides Key Enabling DoD mandated open systems architecture (MOSA) upgrades for the mission computer hardware and software while simultaneously addressing required interoperablility common avionics upgrades and current avionics obsolescence issues. Development efforts include Mission System Upgrade, Midwing Processing Unit and ARC 210 Generation 5 Radio.

R-1 SHOPPING LIST - Item No. 91

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**	R-1 ITEM NOMENCLATURE 0604262N, V-22A

B. PROGRAM CHANGE SUMMARY:

Funding:	FY08	FY09	FY10
FY09 President's Budget:	115.477	68.763	26.652
FY10 President's Budget:	125.157	71.948	89.512
Total Adjustments	9.680	3.185	62.860
Summary of Adjustments			
Congressional Rescissions			
Congressional Adjustments	12.901	3.371	
SBIR/STTR/FTT Assessments	-0.985		
Program Adjustments	-2.236		62.863
Rate/Misc Adjustments		-0.186	-0.003
Subtotal	9.680	3.185	62.860

Schedule:

The R-4 reflects updates made to the Integrated Master Schedule as a result of adjustments to contract award dates for the Block C development efforts. Block C Increment III was awarded in January 2008. Technical evaluations and flight test periods for this effort were also annotated.

Technical:

Not applicable

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **May 2009**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604262N / V-22A				PROJECT NUMBER AND NAME 1425 / V-22			
COST ($ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Project Cost	**125.157**	**71.948**	**89.512**					
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 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 ugrades which encompassed engineering and manufacturing development of new end-items prior to the production incorporation decision. Block C suitability and effectiveness development upgrades began in FY06. The FY08 OCO funding provided is for the initial development of an all quadrant Defensive Weapons System (DWS). Funding includes costs associated with systems engineering, weapons system integration, and developmental assets. The funding presented represents the cost to begin development of this issue and will be executed in fiscal year 2009. The FY09 OCO funding provided is for the development of the Landing Gear Bay Fire Suppression System. The additional funding provided i FY10 addresses Capability Development Document (CDD) interoperability requirements through a spiral upgrade acquisition strategy. These funds are the first spiral that provides Key Enabling DoD mandated open systems architecture (MOSA) upgrades for the mission computer hardware and software while simultaneously addressing required interoperablility common avionics upgrades and current avionics obsolescence issues. Development efforts include Mission System Upgrade, Midwing Processing Unit and ARC 210 Generation 5 Radio.

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604262N / V-22A	1425 / V-22

B. Accomplishments/Planned Program

Continued development of Blocks B/C	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	94.707	48.906	82.214
RDT&E Articles Quantity			

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, maintenance and flight training equipment, Weapons Repairable Assembly (WRA) and Test Program Set (TPS) development. Continue engineering, logistics, flight test, flight test support, address correction of deficiencies. Continue contracted development efforts on aircraft #8. Block C suitability and effectiveness upgrades began in FY06. The major components of Block C development are Forward Firing ALE-47 (Increment I), Environmental Control System (ECS) Upgrade (Increment II), and Weather Radar (Increment III). FY08 OCO funding will be placed on contract in FY 2009 for the development of a mission configurable, crew-served all quadrant Defensive Weapon System (DWS) as required in accordance with the programs Capabilities Development Document (CDD). Funding includes costs associated with systems engineering, weapons system integration, and developmental assets. FY09 OCO funding is for the development of the Landing Gear Bay Fire Suppression System. Plannned development efforts for th provided interoperability funding in FY10 includes Mid-Wing Process Unit (MPU) , Mission System Upgrade to Advanced Mission Computer with a common Integrated Core Avionics Processor (ICAP), and the ARC-210 Generation 5 Radio. These development efforts address V-22 Net-Ready Key Performance Parameters (KPP) and CDD interoperability requirements while simultaneously addressing current avionics obsolescence issues.

Continued support of Blocks B/C	FY 08	FY 09	FY 10
Accomplishments/Effort/Subtotal Cost	30.450	23.042	7.298
RDT&E Articles Quantity			

Continue in-house field activity support of Integrated Test Team (ITT), Integrated Product Teams (IPT), engineering, 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, power and propulsion, V-22 avionics, facilities management, structures, communications, Small Business Innovative Research, etc. Continue engineering, logistics, flight test, and flight test support, and addressed correction of deficiencies as required in support of the Flight Test Program, Block C and overall V-22 development upgrades. R&D support and planning for the Block C suitability and effectiveness upgrade which began in FY 06. Block C is the first post-full rate production decision upgrade to be executed. R&D support and planning for the DWS development and the interoperability development efforts begin in FY09.

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604262N / V-22A	1425 / V-22

C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2008	FY 2009	FY 2010
164000 / V-22			
V-22 APN-1	2,070.635	2,213.853	2,300.171
V-22 APN-6 Spares	53.799	39.650	35.475
59000 / V-22			
V-22 APN-5	114.921	43.181	78.002
Related RDT&E:			
0401318F CV-22	23.417	18.512	19.640
1160421BB CV-22	22.739	39.117	12.687

D. ACQUISITION STRATEGY:

The MV-22 is currently in a post Milestone III ACAT-ID program. 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 cabin effectiveness suitability improvements, i.e., ECS and Forward Firing ALE-47. 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 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 terrain following radar, additional fuel tanks, additional radios, and Block 20 includes capabilities such as radio frequency and infrared countermeasures improvements. Additional Blocks are in planning to continue the growth process throughout the operational life of the weapon system.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)						DATE: **May 2009**						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604262N, V-22A			PROJECT NUMBER AND NAME 1425, V-22						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
PRODUCT DEVELOPMENT												
CV-22 Develop Support Equipment	Various	Various	13.563									
CV-22 Hardware Dev Airframe	SS-CPAF	Boeing Co., Ridley Park, PA	916.978									
CV-22 Hardware Dev Propulsion	C-CPIF	Rolls-Royce Corp., Indy, IN	12.391									
MV-22 Develop Support Equipment	Various	NAWCAD, Lakehurst, NJ	5.691									
MV-22 Develop Support Equipment	C-CPIF	Boeing Co., Ridley Park, PA	43.924									
MV-22 Hardware Dev Airframe	SS-CPAF	Boeing Co., Ridley Park, PA	3,899.446	47.985	01/09	79.894	01/10					
MV-22 Hardware Dev Propulsion	C-CPIF	Rolls-Royce Corp., Indy, IN	192.435	0.921	01/09	2.320	01/10					
MV-22 Training Development	Various	Various	23.538									
Subtotal Product Development			5,107.966	48.906		82.214						

Remarks: Total award fee pool available for MV and CV combined is $231,581,626. To date $209,053,038 has been awarded for a percentage of 90.3 percent. Award Fee included in MV-22 Primary Hardware Development Airframe line. Dollars may not add due to rounding.

SUPPORT												
CV-22 Gov't Engineering Sppt	WX	NAWCAD, Pax River, MD	21.803									
CV-22 Integrated Log Sppt	Various	Various	8.395									
CV-22 Technical Data	C-CPIF	Boeing Co., Ridley Park, PA	8.035									
CV-22 Technical Data	WX	NATEC, San Diego, CA	6.131									
MV-22 Gov't Engineering Sppt	WX	NAWCAD, Pax River, MD	1,097.678	1.918	11/08	0.092	11/09					
MV-22 Integrated Log Sppt	Various	Various	28.818									
MV-22 Technical Data	C-CPIF	Boeing Co., Ridley Park, PA	116.536									
Subtotal Support			1,287.396	1.918		0.092						

Remarks: Dollars may not add due to rounding.

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)						DATE: **May 2009**						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604262N, V-22A			PROJECT NUMBER AND NAME 1425, V-22						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
TEST & EVALUATION												
CV-22 Dev Test & Evaluation	MIPR	Edwards AFB, CA	46.564									
MV-22 Dev Test & Evaluation	WX	NAWCAD, Pax River, MD	961.431	14.813	11/08	5.395	11/09					
MV-22 Live Fire Test & Evaluation	WX	NAWCWD, China Lake, CA	1.636									
MV-22 Operational Test & Evaluation	WX	OT&E Force, Norfolk, VA	41.192	1.850	11/08	0.517	11/09					
Subtotal T&E			1,050.823	16.663		5.912						
Remarks: Dollars may not add due to rounding.												
MANAGEMENT												
CV-22 Engineering Tech Sppt	Various	Various	12.489									
CV-22 Management Sppt Serv	Various	Various	12.511									
CV-22 Program Mgmt Support	WX	NAWCAD, Pax River, MD	9.830									
CV-22 Travel	WX	NAWCAD, Pax River, MD	4.682									
MV-22 Engineering Tech Sppt	Various	Various	1,044.355	0.822	11/08	0.736	11/09					
MV-22 Management Sppt Serv	Various	Various	151.955	1.976	11/08	0.325	11/09					
MV-22 Studies and Analysis	Various	Various	1.244									
MV-22 Program Mgmt Support	WX	NAWCAD, Pax River, MD	52.860	1.038	11/08	0.010	11/09					
MV-22 Travel	WX	NAWCAD, Pax River, MD	14.453	0.625	11/08	0.224	11/09					
Subtotal Management			1,304.380	4.461		1.295						
Remarks: Dollars may not add due to rounding.												
Total Cost			8,750.565	71.948		89.512						
Remarks: Dollars may not add due to rounding.												

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

EXHIBIT R4, Schedule Profile			DATE: **May 2009**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604262N, V-22	PROJECT NUMBER AND NAME H1425, V-22	

Fiscal Year	2008				2009				2010			
	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones						CV-22 IOC ★						
Engineering Milestones												
Block C Increments I & II				PDR ▲		CDR ▲						
Block C Increments III				SRR ▲		PDR ▲		CDR △				
Test & Evaluation Milestones								Block C Increments I,II,and III Development Flight Test				
Development Test	CV-22 IOT&E											
Operational Test	■											
Production Deliveries												

R-1 SHOPPING LIST - Item No. 91

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **May 2009**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT 0604262N, V-22				PROJECT NUMBER AND NAME H1425, V-22			
Schedule Profile	FY 2008	FY 2009	FY 2010					
CV-22 Initial Operational Test & Evaluation (IOT&E)	1Q							
CV-22 Initial Operational Capability (IOC)		2Q						
Block-C Inc I&II Preliminary Design Review (PDR)	4Q							
Block-C Inc I&IICritical Design Review (CDR)		2Q						
Block C Inc III System Requirements Review	4Q							
Block C Inc III Preliminary Design Review (PDR)		2Q						
Block C Inc III Critical Design Review (CDR)		4Q						
Block C Inc I,II, and III Development Flight Test			1Q-4Q					

R-1 SHOPPING LIST - Item No. 91