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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Navy **Date:** February 2020

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604126N / <i>Airborne Mine Countermeasures</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	11.314	14.052	20.248	17.366	-	17.366	19.643	18.397	18.056	18.405	Continuing	Continuing
2131: <i>Assault Breaching System</i>	11.314	14.052	17.248	17.366	-	17.366	19.643	18.397	18.056	18.405	Continuing	Continuing
9999: <i>Congressional Adds</i>	0.000	0.000	3.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	3.000

Note

The FY 2021 funding request was reduced by \$1.700M to account for the availability of prior year execution balances.

A. Mission Description and Budget Item Justification

The Assault Breaching System (ABS) program provides a combination of U.S. Navy systems to counter the threat to amphibious forces from obstacles and anti-landing/ sea mines in the Beach Zone and Surf Zone (0-10 ft water). The Assault Breaching Systems (ABS) consist of a system of systems approach that includes the following programs: Joint Direct Attack Munition (JDAM) Assault Breaching System (JABS); Coastal Battlefield Reconnaissance and Analysis (COBRA); Precision Navigation and Marking System (PNMS); Command, Control, Computers, Communications, and Intelligence (C4I). The Assault Breaching Systems enable the Navy-Marine Corps team to conduct Joint Forcible Entry Operations (JFEO), Ship-To-Objective Maneuver (STOM), and other combat operations to project power ashore.

JABS is a fielded system that neutralizes surface mines and obstacles in the Beach Zone (BZ) and Surf Zone (SZ). The ABS Tactical Decision Aid optimizes the Desired Points of Impact (DPI) for JDAM munitions to effectively neutralize mines and obstacles while minimizing the required number of munitions and friendly aircraft sorties. Continued testing is required to optimize the ABS Tactical Decision Aid database for the most common enemy mines and obstacles.

COBRA conducts Intelligence Surveillance Reconnaissance and Targeting (ISR/T). This system, which consists of two COBRA Airborne Payloads (CAPS) and one Post Mission Analysis (PMA) station, provides Coastal Mine Reconnaissance (CMR) capability. Block I is a multispectral sensor capable of daytime detection of surface-laid minefields and obstacles in the Beach Zone (BZ) and has on-board real-time processing. Block II capability adds an active illuminator sensor that enables nighttime detection of mines and obstacles in the BZ and the Surf Zone (SZ) (0-10 ft of water). COBRA consists of a modular payload architecture that is integrated onto the MQ-8 Fire Scout, other vessels of opportunity, and in its expeditionary configuration, from the shore. COBRA will serve in the CMR mission module for the SZ and BZ in the Littoral Combat Ship (LCS) Mine Countermeasures (MCM) Mission Package.

PNMS provides navigational upgrades for the Landing Craft, Air Cushion (LCAC); Landing Craft, Utility (LCU); and Amphibious Assault Vehicle (AAV). A system of virtual lane marking improves the navigation ability of these three assault craft which enables them to navigate safely through the neutralized assault lanes provided by JABS. OPN funds the CRAFTALTS to upgrade the navigation systems. LCU Navigation Upgrade provides modernized navigation system to enable safe transit through the breach lane. LCAC autopilot upgrade provides an integrated improvement to the LCAC Service Life Extension Program (SLEP) navigation system for craft control to allow precise navigation and hovering within the breach lane. These software upgrades and backfits occur during scheduled LCAC SLEPs. AAV Navigation Upgrade provides modernized navigation system to enable precise transit through the breach lane.

C4I system will tie all of the above systems together under an integrated ABS architecture that is compatible with the existing Mine Warfare architecture.

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Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604126N / <i>Airborne Mine Countermeasures</i>
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B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	14.625	17.248	18.901	-	18.901
Current President's Budget	14.052	20.248	17.366	-	17.366
Total Adjustments	-0.573	3.000	-1.535	-	-1.535
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	3.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.573	0.000			
• Program Adjustments	0.000	0.000	-1.700	-	-1.700
• Rate/Misc Adjustments	0.000	0.000	0.165	-	0.165

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 9999: *Congressional Adds*

Congressional Add: *Coastal battlefield reconnaissance and analysis system*

Congressional Add Subtotals for Project: 9999

Congressional Add Totals for all Projects

	FY 2019	FY 2020
	0.000	3.000
	0.000	3.000
	0.000	3.000

Change Summary Explanation

FY 2019: -\$573K SBIR
 FY 2020: +\$3.0M Program Increase - COBRA
 FY 2021: -\$1.7M underexecution reduction; +\$165K rate adjustment

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy										Date: February 2020		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0604126N / Airborne Mine Countermeasures				Project (Number/Name) 2131 / Assault Breaching System			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
2131: Assault Breaching System	11.314	14.052	17.248	17.366	-	17.366	19.643	18.397	18.056	18.405	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Assault Breaching System (ABS) program provides a combination of U.S. Navy systems to counter the threat to amphibious forces from obstacles and anti-landing/ sea mines in the Beach Zone and Surf Zone (0-10 ft water). The Assault Breaching Systems (ABS) consist of a system of systems approach that includes the following programs: Joint Direct Attack Munition (JDAM) Assault Breaching System (JABS); Coastal Battlefield Reconnaissance and Analysis (COBRA); Precision Navigation and Marking System (PNMS); Command, Control, Computers, Communications, and Intelligence (C4I). The Assault Breaching Systems enable the Navy-Marine Corps team to conduct Joint Forcible Entry Operations (JFEO), Ship-To-Objective Maneuver (STOM), and other combat operations to project power ashore.

JABS is a currently fielded system that neutralizes surface mines and obstacles in the Beach Zone (BZ) and Surf Zone (SZ). The ABS Tactical Decision Aid optimizes the Desired Points of Impact (DPI) for JDAM munitions to effectively neutralize mines and obstacles while minimizing the required number of munitions and friendly aircraft sorties. Continued testing is required to optimize the ABS Tactical Decision Aid database for the most common enemy mines and obstacles.

COBRA conducts Intelligence Surveillance Reconnaissance and Targeting (ISR/T). This system which consists of two COBRA Airborne Payloads (CAPS) and one Post Mission Analysis (PMA) station, provides Coastal Mine Reconnaissance (CMR) capability. Block I is a multispectral sensor capable of daytime detection of surface-laid minefields and obstacles in the Beach Zone and has on-board real-time processing. Block II capability adds an active illuminator sensor that enables nighttime detection of mines and obstacles in the BZ and the SZ (0-10 ft of water). COBRA consists of a modular payload architecture that is integrated onto the MQ-8 Fire Scout, other vessels of opportunity and in its expeditionary configuration from the shore. COBRA will serve in the CMR mission module for the SZ and BZ in the Littoral Combat Ship (LCS) Mine Countermeasures (MCM) mission package.

PNMS provides navigational upgrades for the Landing Craft, Air Cushion (LCAC); Landing Craft, Utility (LCU); and Amphibious Assault Vehicle (AAV). A system of virtual lane marking improves the navigation ability of these three assault craft which enables them to navigate safely through the neutralized assault lanes provided by JABS. OPN funds the CRAFTALTS to upgrade the navigation systems. LCU Navigation Upgrade: Modernized the navigation system to enable safe transit through the breach lane. LCAC Autopilot Upgrade: An integrated improvement to the LCAC Service Life Extension Program (SLEP) navigation system for craft control that allows precise navigation and hovering within the breach lane. These software upgrades and backfits occur during scheduled LCAC SLEPs. AAV Navigation Upgrade : Modernize the navigation system to enable precise transit through the breach lane.

C4I system will tie all of the above systems together under an integrated ABS architecture that is compatible with the existing Mine Warfare architecture.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Product Development	9.095	10.463	11.085	0.000	11.085

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604126N / Airborne Mine Countermeasures	Project (Number/Name) 2131 / Assault Breaching System

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
<p align="right"><i>Articles:</i></p> <p>FY 2020 Plans: COBRA - Continue design and development of COBRA hardware and continue integration test planning of additional SZ capabilities.</p> <p>JABS - Continue design and engineering of weapon effectiveness for BZ and SZ.</p> <p>FY 2021 Base Plans: COBRA - Design and development of -3A (algorithm optimization) and -4 (SMSI Camera integration) system enhancements. Perform -3A Developmental Test#1 integrated into the MQ-8B firescout. Conduct Block II Milestone B in Q3FY21.</p> <p>JABS - Continue design and engineering of weapon effectiveness for BZ and SZ.</p> <p>FY 2021 OCO Plans: N/A</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Increased funding in FY 2021 supports efforts leading to Block II Milestone B in Q3FY21 and additional JABS engineering efforts in support of characterization testing.</p>	-	-	-	-	-
<p>Title: Technical Support</p> <p align="right"><i>Articles:</i></p> <p>FY 2020 Plans: COBRA - Support the transition to MSD. Continue to provide shipping, contract and test/studies management and C4I Data Fusion. Provide technical /acquisition support and documentation.</p> <p>FY 2021 Base Plans: COBRA - Continue to provide management and shipping, contract and test/studies, C4I Data Fusion. Provide technical /acquisition support and documentation (ILS, training, data, drawings).</p> <p>FY 2021 OCO Plans: N/A</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement:</p>	1.447 -	1.307 -	1.070 -	0.000 -	1.070 -

UNCLASSIFIED

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Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604126N / <i>Airborne Mine Countermeasures</i>	Project (Number/Name) 2131 / <i>Assault Breaching System</i>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
No significant change.						
Title: Test and Evaluation		2.382	4.336	4.101	0.000	4.101
		Articles:	-	-	-	-
FY 2020 Plans: COBRA - Continue advance SZ component/capability design and test. Conduct Block I - 3A and 4 Flight Testing. JABS - SZ and BZ characterization testing.						
FY 2021 Base Plans: COBRA - Perform -3A Developmental Test#1 integrated into the MQ-8B firescout. JABS - Conduct SZ and BZ characterization testing.						
FY 2021 OCO Plans: N/A						
FY 2020 to FY 2021 Increase/Decrease Statement: Slight decrease in FY 2021 funding supports test and evaluation support necessary to meet COBRA Block I-3A flight testing requirements and JABS characterization testing.						
Title: Management		1.128	1.142	1.110	0.000	1.110
		Articles:	-	-	-	-
FY 2020 Plans: COBRA - Continue contract and financial management support. JABS - Continue to manage Mine magazine inventory management and shipping, contract management and tests/studies, C4I/Data fusion.						
FY 2021 Base Plans: COBRA: Continue contract and financial management support. JABS: Continue to manage Mine magazine inventory management and shipping, contract management and tests/studies, C4I/Data fusion.						
FY 2021 OCO Plans: N/A						
FY 2020 to FY 2021 Increase/Decrease Statement:						

UNCLASSIFIED

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Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604126N / <i>Airborne Mine Countermeasures</i>	Project (Number/Name) 2131 / <i>Assault Breaching System</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
No significant change.					
Accomplishments/Planned Programs Subtotals	14.052	17.248	17.366	0.000	17.366

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021 Base</u>	<u>FY 2021 OCO</u>	<u>FY 2021 Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPN/2624: <i>SHALLOW WATER Mine CM SHIP</i>	8.616	8.730	5.493	-	5.493	5.708	5.840	5.919	6.035	0.000	112.485

Remarks

D. Acquisition Strategy

Countermine/Counter Obstacle (CM/CO) JDAM Assault Breaching System (JABS) and ABS Tactical Decision Aid testing is ongoing. Intelligence/Surveillance/Reconnaissance/Targeting (ISR/T) - COBRA Block I achieved IOC in July 2017. Precision Navigation & Marking System (PNMS) - The navigation upgrades for the Landing Craft, Air Cushion (LCAC) and Landing Craft, Utility (LCU) are complete. AAV enhancements will be achieved through an ECP (PMA AAV (Marine Corps)) in Q1FY19.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy												Date: February 2020			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
1319 / 4				PE 0604126N / Airborne Mine Countermeasures				2131 / Assault Breaching System							
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Dev, COBRA	C/CPAF	Arete : Tucson, AZ	5.038	6.813	Jan 2019	8.438	Dec 2019	7.900	Dec 2020	-		7.900	Continuing	Continuing	Continuing
Systems Engineering, COBRA	WR	NSWC, PC : PANAMA CITY, FL	0.781	1.090	Nov 2018	1.688	Nov 2019	1.775	Nov 2020	-		1.775	Continuing	Continuing	Continuing
JABS	WR	NSWC PC : NSWC IH	0.799	0.354	Jan 2019	0.000		1.312	Nov 2020	-		1.312	Continuing	Continuing	Continuing
Training Dev, COBRA	WR	NSWC, PC : PANAMA CITY, FL	0.559	0.659	Jan 2019	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
ABS IPT/Test Assets/Proj Eng	WR	NSWC, PC : PANAMA CITY, FL	0.182	0.179	Dec 2018	0.337	Dec 2019	0.098	Dec 2020	-		0.098	Continuing	Continuing	Continuing
Subtotal			7.359	9.095		10.463		11.085		-		11.085	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	NSWC, PC : PANAMA CITY, FL	0.613	0.942	Dec 2018	0.908	Dec 2019	0.674	Dec 2020	-		0.674	Continuing	Continuing	Continuing
Integrated Logistics Support	WR	NSWC PC : PANAMA CITY, FL	0.072	0.111	Nov 2018	0.060	Nov 2019	0.087	Nov 2020	-		0.087	Continuing	Continuing	Continuing
Configuration Management	WR	NSWC, PC : PANAMA CITY, FL	0.072	0.111	Nov 2018	0.061	Nov 2019	0.087	Nov 2020	-		0.087	Continuing	Continuing	Continuing
Studies & Analysis	WR	NSWC IH : INDIAN HEAD, MD	0.185	0.283	Dec 2018	0.278	Nov 2019	0.222	Nov 2020	-		0.222	Continuing	Continuing	Continuing
Subtotal			0.942	1.447		1.307		1.070		-		1.070	Continuing	Continuing	N/A

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy												Date: February 2020			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
1319 / 4				PE 0604126N / Airborne Mine Countermeasures				2131 / Assault Breaching System							
Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test & Evaluation	WR	NSWC, IH : INDIAN HEAD, MD	1.126	1.229	Nov 2018	3.201	Nov 2019	1.471	Nov 2020	-		1.471	Continuing	Continuing	Continuing
Operational Test & Evaluation	WR	NSWC/ IH, PC : INDIAN HEAD, PANAMA CITY	0.361	0.405	Dec 2018	1.135	Nov 2019	0.876	Nov 2020	-		0.876	Continuing	Continuing	Continuing
Development Test	WR	NSWC PC : Panama City, FL	0.722	0.748	Nov 2018	0.000		1.754	Nov 2020	-		1.754	Continuing	Continuing	Continuing
Subtotal			2.209	2.382		4.336		4.101		-		4.101	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPFF	BAH, Northrop Grumman : DC, FL	0.090	0.131	Dec 2018	0.140	Dec 2019	0.137	Dec 2020	-		0.137	Continuing	Continuing	Continuing
Government Engineering Support	WR	NSWC, IH : INDIAN HEAD, MD	0.359	0.501	Nov 2018	0.505	Nov 2019	0.495	Nov 2020	-		0.495	Continuing	Continuing	Continuing
Program Management Support	WR	NSWC/ IH, PC : INDIAN HEAD, PANAMA CITY	0.318	0.438	Oct 2018	0.440	Oct 2019	0.422	Oct 2020	-		0.422	Continuing	Continuing	Continuing
Travel	WR	NAVSEA : WNY, DC	0.037	0.058	Dec 2018	0.057	Dec 2019	0.056	Dec 2020	-		0.056	Continuing	Continuing	Continuing
Subtotal			0.804	1.128		1.142		1.110		-		1.110	Continuing	Continuing	N/A
Project Cost Totals			11.314	14.052		17.248		17.366		-		17.366	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy **Date:** February 2020

Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604126N / Airborne Mine Countermeasures	Project (Number/Name) 2131 / Assault Breaching System
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COBRA	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025											
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q								
Acquisition Milestones				▲ Block I RFT	▲ Block I MSD							▲ Block II MSB							▲ Block II PDR	▲ Block II CDR												▲ Block II MSC				
System Development	Block I -3A Surf Zone Algorithm Design and Implementation								Block I -4 Daytime Surf Zone HW Development								Block II E&MD								Block II / MQ 8C Integration											
Test & Evaluation					Block I -3A and -4 Flight Test																Block II CT								Block II DT				Block II OA			
Deliveries	Block I LRIP								Block I Production & Sustainment																											

2021PB - 0604126N - 2131

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604126N / <i>Airborne Mine Countermeasures</i>	Project (Number/Name) 2131 / <i>Assault Breaching System</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
COBRA				
Acquisition Milestones: Block I Ready for Training	4	2019	4	2019
Acquisition Milestones: Block I Milestone Decision	1	2020	1	2020
Acquisition Milestones: Block II Milestone B	3	2021	3	2021
Acquisition Milestones: Block II Preliminary Design Review	1	2023	1	2023
Acquisition Milestones: Block II Critical Design Review	3	2023	3	2023
Acquisition Milestones: Block II Milestone C	3	2025	3	2025
System Development: Block I Algorithm Design & Implementation	1	2019	3	2021
System Development: Block I Hardware Development	1	2019	4	2023
System Development: Block II Engineering & Manufacturing Development	1	2022	2	2025
System Development: Block II / MQ 8C Integration	1	2024	4	2025
Test & Evaluation: Block I -3A and -4 Flight Test	1	2020	4	2025
Test & Evaluation: Block II Contractor Testing	1	2024	2	2025
Test & Evaluation: Block II Development Test	2	2025	4	2025
Test & Evaluation: Block II Operational Assessment	2	2025	3	2025
Deliveries: Block I Low Rate Production	1	2019	1	2021
Deliveries: Block I Production and Sustainment	1	2019	4	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy **Date:** February 2020

Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604126N / Airborne Mine Countermeasures	Project (Number/Name) 9999 / Congressional Adds
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
9999: Congressional Adds	0.000	0.000	3.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	3.000
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

COBRA conducts Intelligence Surveillance Reconnaissance and Targeting (ISR/T). This system, which consists of two COBRA Airborne Payloads (CAPS) and one Post Mission Analysis (PMA) station, provides Coastal Mine Reconnaissance (CMR) capability. Block I is a multispectral sensor capable of daytime detection of surface-laid minefields and obstacles in the Beach Zone (BZ) and has on-board real-time processing. Block II capability adds an active illuminator sensor that enables nighttime detection of mines and obstacles in the BZ and the Surf Zone (SZ) (0-10 ft of water). COBRA consists of a modular payload architecture that is integrated onto the MQ-8 Fire Scout, other vessels of opportunity, and in its expeditionary configuration, from the shore. COBRA will serve in the CMR mission module for the SZ and BZ in the Littoral Combat Ship (LCS) Mine Countermeasures (MCM) Mission Package. Congressional increase of \$3.0M to support acceleration of the COBRA program.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020
Congressional Add: Coastal battlefield reconnaissance and analysis system	0.000	3.000
FY 2019 Accomplishments: N/A		
FY 2020 Plans: Accelerate the planned integration of the simultaneous multi-spectral Imaging (9SMSI) camera into the redesigned COBRA Block I (-4) integrated gimbel (IG).		
Congressional Adds Subtotals	0.000	3.000

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy **Date:** February 2020

Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604126N / Airborne Mine Countermeasures	Project (Number/Name) 9999 / Congressional Adds
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Proj 9999	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025							
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
System Development																																

2021PB - 0604126N - 9999

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604126N / <i>Airborne Mine Countermeasures</i>	Project (Number/Name) 9999 / <i>Congressional Adds</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 9999				
System Development: Block I Hardware Development	2	2020	4	2020