

UNCLASSIFIED

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

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>					R-1 Program Element (Number/Name) PE 0603239N I (U)NAVAL CONSTRUCTION FORCES							
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	0.000	0.000	0.000	2.350	-	2.350	2.314	2.100	2.200	2.443	Continuing	Continuing
3444: <i>Airfield/Port Damage Repair</i>	0.000	0.000	0.000	2.350	-	2.350	2.314	2.100	2.200	2.443	Continuing	Continuing

Note

This PE is a new start

A. Mission Description and Budget Item Justification

Project 3444 directly supports resilient and agile logistics in accordance with the National Defense Strategy (NDS) of 2018, A Design for Maintaining Maritime Superiority 2.0, and the NAVFAC Strategic Design 2.0 Guidance. This program will deliver new capabilities to overcome expeditionary performance limitations in the areas of airfield damage repair (ADR), port damage repair (PDR), and expeditionary engineering and materials to maximize resiliency and agility.

Investment in ADR technologies enhance Navy force response plans, and Joint Force Commander's flexibility to deploy and employ from expeditionary airfields, as well as deliver and sustain warfighting capabilities at the point of effect. This includes "right size, just-in-time" technologies that can facilitate both conventional and autonomous rapid assessment, repair, and re-constitution of expeditionary airfields.

Innovative PDR capabilities enable the reviving, re-armament, repair, re-fueling, re-calibration and re-constitution of fleet platforms at Navy Port Facilities of opportunity. This effort will develop technologies that facilitate just-in-time assessment and rapid repair of piers, quay-walls, fleet moorings, critical expeditionary waterfront facilities and infrastructure, and port facilities above, at, and below the waterline.

Development of alternative expeditionary engineering materials will maximize agility and resilience while minimizing supply chain risk. These technologies will enable in-the-field production of parts (including original and spare parts for expeditionary equipment) and in-situ fabrication of expeditionary structures. This includes production equipment (such as additive manufacturing systems), raw materials (such as locally sourced construction materials), inspection and quality certification equipment, as well as support methods and criteria to employ these systems in the expeditionary environment. New concepts for expeditionary engineering equipment technologies enhance expeditionary engineering operations, to include site identification, selection, and planning; site clearing and preparation; construction activities; site operations support (including local material handling, damage repair, etc.); and site deconstruction and retrograde activities. Technologies demonstrated will provide required engineer support capability while maximizing deployability (by minimizing size and weight) and enhancing operator safety (by providing direct operator protection or allowing for remote or autonomous operation).

UNCLASSIFIED

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 0603239N / (U)NAVAL CONSTRUCTION FORCES
---	--

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	2.350	-	2.350
Total Adjustments	0.000	0.000	2.350	-	2.350
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	0.000	0.000	2.350	-	2.350

UNCLASSIFIED

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 0603239N / (U)NAVAL CONSTRUCTION FORCES				Project (Number/Name) 3444 / Airfield/Port Damage Repair			
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
3444: Airfield/Port Damage Repair	0.000	0.000	0.000	2.350	-	2.350	2.314	2.100	2.200	2.443	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

This project is a new start

A. Mission Description and Budget Item Justification

Project 3444 directly supports resilient and agile logistics in accordance with the National Defense Strategy (NDS) of 2018, A Design for Maintaining Maritime Superiority 2.0, and the NAVFAC Strategic Design 2.0 Guidance. This program will deliver new capabilities to overcome expeditionary performance limitations in the areas of airfield damage repair (ADR), port damage repair (PDR), and expeditionary engineering and materials to maximize resiliency and agility.

Investment in ADR technologies enhance Navy force response plans, and Joint Force Commander's flexibility to deploy and employ from expeditionary airfields, as well as deliver and sustain warfighting capabilities at the point of effect. This includes "right size, just-in-time" technologies that can facilitate both conventional and autonomous rapid assessment, repair, and re-constitution of expeditionary airfields.

Innovative PDR capabilities enable the reviving, re-armament, repair, re-fueling, re-calibration and re-constitution of fleet platforms at Navy Port Facilities of opportunity. This effort will develop technologies that facilitate just-in-time assessment and rapid repair of piers, quay-walls, fleet moorings, critical expeditionary waterfront facilities and infrastructure, and port facilities above, at, and below the waterline.

Development of alternative expeditionary engineering materials will maximize agility and resilience while minimizing supply chain risk. These technologies will enable in-the-field production of parts (including original and spare parts for expeditionary equipment) and in-situ fabrication of expeditionary structures. This includes production equipment (such as additive manufacturing systems), raw materials (such as locally sourced construction materials), inspection and quality certification equipment, as well as support methods and criteria to employ these systems in the expeditionary environment. New concepts for expeditionary engineering equipment technologies enhance expeditionary engineering operations, to include site identification, selection, and planning; site clearing and preparation; construction activities; site operations support (including local material handling, damage repair, etc.); and site deconstruction and retrograde activities. Technologies demonstrated will provide required engineer support capability while maximizing deployability (by minimizing size and weight) and enhancing operator safety (by providing direct operator protection or allowing for remote or autonomous operation).

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

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Naval Expeditionary	0.000	0.000	2.350	0.000	2.350
Articles:	-	-	-	-	-

UNCLASSIFIED

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 0603239N / (U)NAVAL CONSTRUCTION FORCES	Project (Number/Name) 3444 / Airfield/Port Damage Repair

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
<p>FY 2020 Plans: N/A</p> <p>FY 2021 Base Plans: -Development of methodologies for airfield damage repair -Technologies that facilitate port damage repair -Expeditionary engineering materials and equipment to maximize agility and resilience while minimizing supply chain risk and enhance expeditionary engineering operations.</p> <p>FY 2021 OCO Plans: N/A</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: This project is a new start to address capability gaps for the Expeditionary Construction Domain.</p>					
Accomplishments/Planned Programs Subtotals	0.000	0.000	2.350	0.000	2.350

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

N/A

Remarks

D. Acquisition Strategy

The Projects identified in this budget are carefully selected to respond to resiliency considerations of evolving and aging airfields, ports, expeditionary operations, and to facilitate rational risk based decisions and solutions to protect and decrease risk levels for Department of the Navy-critical expeditionary waterfront facilities and infrastructure. The results of these projects will be the development of design and construction criteria and or components that directly influence Navy-critical expeditionary waterfront facilities and infrastructure.

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 0603239N / (U)NAVAL CONSTRUCTION FORCES	Project (Number/Name) 3444 / Airfield/Port Damage Repair

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3444				
Airfield Damage Group: Saltwater Concrete	1	2021	2	2022
Airfield Damage Group: P-8 Poseidon for Airfield Damage Repairs	1	2022	4	2024
Airfield Damage Group: Autonomous Airfield and Port Inspection	2	2023	2	2025
Port Damage Repair: PDR JCIDS	1	2021	3	2022
Port Damage Repair: MRSD Testing	1	2021	3	2022
Port Damage Repair: Expedient Pier Assessment and Repair	1	2021	2	2024
Port Damage Repair: Quaywall Repair	1	2021	2	2023
Port Damage Repair: Pillar Trng Packg. & Pier Recon & Assesment Tool (PRAT)	1	2022	1	2023
Port Damage Repair: Aerial Port Assesment System (APAS)	1	2022	2	2025
Port Damage Repair: Port Assessment Process	1	2021	1	2025
Port Damage Repair: Improving the Speed and Agility of Port and Airfield Repairs	1	2021	1	2023
Port Damage Repair: Deployable Automated Construction	1	2024	4	2025