







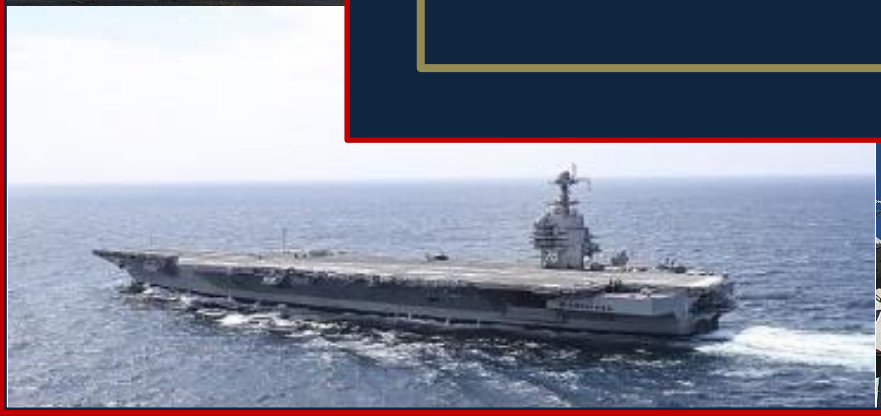


# *Highlights*

*of the Department of the*

# *Navy*

*FY* **2020**

*Budget*

*Office of Budget - 2019*

# The BOTTOM LINE

## Fiscal Year 2020 Department of the Navy Budget Submission

The Fiscal Year 2020 (FY20) budget submission of $205.6B is an increase of $9.5B (4.6%) from the FY19 **enacted** budget (base+OCO). The increased funding is beginning to reverse the erosion of our military advantage and we are on a better trajectory to restore that competitive advantage. This budget is strategy-driven and balanced to maximize our naval power. The budget fields a formidable force in all domains of naval operations.

The central theme in our National Defense Strategy (NDS) and other strategic guidance is the return of Great Power Competition and our FY20 budget request reflects the implementation of this guidance to ensure that the Department will compete, deter and win against great powers, and it will ensure our forces are ready to conduct prompt, sustained combat operations to protect America from attack and to preserve strategic influence in key regions of the world. This budget aligns and resources the people, capabilities, and processes required to implement this NDS. It builds on prior-year investments to deliver increased readiness and lethality both today and in the future, and this budget is synchronized for the joint fight across all domains. In terms of capacity, this budget provides for a larger overall force: we deliver more people and platforms, as well as enablers that make the force whole. We deliver a better and more innovative force through investments that improve our legacy platforms and provide for a more robust and lethal mix of next-generation opportunities. The budget also increases the availability and readiness of our force.

**Highlights**

- The budget provides for a deployable battle force of 301 ships in FY20. This supports 11 aircraft carriers and 33 amphibious ships that serve as the foundation upon which our carrier and amphibious ready groups are based.
  - In FY20, 10 battle force ships will be delivered: 4 Destroyers, 3 Nuclear Attack Submarines (SSN), 2 Littoral Combat Ships, and 1 Expeditionary Fast Transport; additionally, 5 battle force ships will be retired: 2 SSNs and 3 Mine Warfare ships.
- Ship procurement funds 12 new-construction battle force ships in FY20 (1 CVN*, 3 SSN, 3 DDG, 1 FFG, 2 T-AO, and 2 T-ATS), as well as 2 Large Unmanned Surface Vessels (USVs); and 55 battle force ships/10 Large USVs across the Future Years Defense Plan (FYDP). (** Awarded in 2-CVN procurement with FY18 CVN).*
- Aircraft procurement funds 148 airframes (fixed wing, rotary wing, unmanned) in FY20 (10 F-35B, 20 F-35C, 4 E-2D, 24 F/A-18E/F, 6 P-8A, 3 KC-130J, 22 F-5, 6 CH-53K, 10 CMV-22, 32 TH-57 Replacement, 6 VH-92A, 2 MQ-4C, and 3 MQ-9A); and 650 airframes across the FYDP.
- Military basic pay increases by 3.1%, basic allowance for housing increases 4.0%, and basic allowance for subsistence increases 2.4%.
- Key readiness programs are funded: Ship Depot Maintenance (95% requirement); Ship Operations (58 days/quarter deployed & 24 days/quarter non-deployed); Air Depot Maintenance (funded to maximum throughput); Flying Hours (aligned with increasing mission capable rates); Marine Corps ground equipment (equipment reset 99% complete, serviceability at 93%, availability at 82%); and facilities sustainment to 87%/88% of the sustainment model (Navy/USMC, respectively).
- Research & Development increases 9.5% over FY19, providing innovative capabilities in shipbuilding (Columbia class), aviation (F-35), weapons (Maritime Strike Tomahawk), hypersonics, unmanned, family of lasers, digital warfare, applied AI, big data analytics, and USMC ground equipment. These technological advancements are crucial to maintaining DON's competitive advantage.
- Military Construction funds 40 projects: 12 new platform/mission, 12 restore warfighting readiness, 3 European Deterrence Initiative, 1 Reserve, 2 Guam, 2 Naval shipyards, 2 Force 2025, 5 replace aging infrastructure, and 1 training project.
- Overseas Contingency Operations funding increases are due to compliance with the Budget Control Act of 2011.
- Our integrated Business Operations Plan is aligned to the NDS and allows us to create departmental processes that directly support reform. Savings of -$1.9B in FY20/-$9.4B FYDP have been reinvested due to business process improvements (e.g. execution reviews/SSC delays), business systems improvements (e.g. aviation cross functional teams), weapons systems acquisition (e.g. 2 CVN buy, MYPs), divestments (e.g. CG SLEP), and policy (e.g. Performance-to-Plan, reimbursable work orders, Sailor 2025).

## Key Messages

- Prioritizes a strategy-driven and balanced approach.
- Provides a Bigger, Better, More Ready Naval Force.
- Stable, predictable funding key to naval power.
- Supports the NDS tenets of *Compete, Deter, and Win*.
- Aligns people, capabilities, and processes to maximize naval power in all domains of potential conflict.
- Grows capacity, increases capability, & improves readiness.
- Prioritizes R&D - enabling technologies to maintain competitive advantage.
- Fully committed to audit effort.

## Facts & Figures

- The FY20 total budget is $205.6B *(& delta from FY19 enacted):*
  - $52.1B for Military Personnel *(+$2.3B/+4.6%)*
  - $68.5B for Operation & Maintenance *(+$5.6B/+8.9%)*
  - $61.1B for Procurement *(-$0.4B/-.06%)*
  - $20.4B for Research and Development *(+$1.8B/+9.5%)*
  - $3.5B for Infrastructure *(+$0.2B/+6.5%)*
  - 340,500 Active Navy end strength *(+5,100 ES)*
  - 186,200 Active Marine Corps end strength *(+100 ES)*
  - 217,476 Civilian full-time equivalents *(+3,192 FTE)*
- Reform savings of -$1.9B in FY20/-$9.4B FYDP.

http://www.finance.hq.navy.mil/fmb/PB/books.htm

# Highlights of the Department of the Navy FY 2020 Budget
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All DON budget materials are available at
http://www.finance.hq.navy.mil/fmb/pb/books.htm

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## List of Supporting Figures

Note: All photographs in this document were obtained from the Department of the Navy's official website, http://www.navy.mil/, and the Marine Corps' official website, http://www.marines.mil/, and are available for public use.

The estimated cost of this report or study for the Department of the Navy (DON) is $42,846. The estimated total cost for supporting the DON budget justification material is approximately $1,803,116 for the 2019 Fiscal Year. This includes $81,351 in supplies and $1,721,765 in labor.

You can reach this document on a mobile device by scanning the QR code below:

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# SECTION I – OVERVIEW

The Department of the Navy (DON) provides America's primary forward deployed forces. The Marine Corps is an integral part of both the naval force and the combined/joint force that must be a tailorable, flexible, and versatile force capable of responding to any crisis across the full range of military operations. By enhancing lethality and investing in capabilities, the Navy and Marine Corps team will remain the most effective global maneuver force in the world. As great competitors attempt to remake the rules and disrupt the global commons, we will rise to deter and defeat those challenges, protect the American homeland, and protect our economic prosperity by keeping the arteries of commerce open on the world's interconnected oceans.

The FY 2020 President's Budget aligns people, capabilities, and processes to implement Navy and Marine Corps contributions to the National Defense Strategy. Further, it prioritizes a strategy-driven and balanced approach by building on prior investments, sustains the industrial base, maintains a competitive advantage, transitions to an affordable future force, and leverages process reform. To increase America's naval power, we will build a bigger fleet -- more platforms like ships, aircraft, and weapons; we'll build a better fleet -- more capability across all our naval platforms by fielding state-of-the-art systems and continually modernizing legacy ones; and we'll build a ready fleet -- more at-sea time, more flying, more parts and maintenance improvements.

A fundamental tenet of our budget request is about maintaining balance across these dimensions of naval power. Naval power is not a choice between increased capacity or better capability -- it is a combination of both. Naval power is not a choice between readiness and modernization -- it requires a balance of both. Naval power is not a choice between more complex stand-alone technologies or networked systems -- it is achieved through both. The talent to operate and sustain a larger and more lethal force is not a choice between more people or better training -- it must draw on

components from both. Optimizing this balance ensures the naval forces can maneuver as desired, respond when directed, and win in a short or prolonged fight.

## *STRATEGIC GUIDANCE AND THEMES*

The FY 2020 President's Budget was informed by strategic guidance issued by the White House, Secretary of Defense, Secretary of the Navy, and the two Service Chiefs. Specifically, the National Security Strategy, the National Defense Strategy (NDS), the Secretary of the Navy's guidance on "People, Capabilities and Processes," the Chief of Naval Operations (CNO) "A Design for Maintaining Maritime Superiority" and "Navy Strategy," and the Commandant of the Marine Corps' (CMC) "Marine Corps Operating Concept" position our naval forces to compete, deter, and win – and ensure that we are ready to conduct prompt and sustained combat operations, to protect America from attack, and to preserve America's strategic influence in key regions around the world.


The key tenets of the National Security Strategy are: Protect the Homeland, the American People, and American Way of Life; Promote American Prosperity; Preserve Peace through Strength; and Advance American Influence.

The NDS directs the Department to compete, deter, and win alongside our allies and partners to prevail in conflict and preserve peace through strength. Great power competition has reemerged as the central challenge to U.S. security and prosperity, demanding prioritization and hard strategic choices. Therefore, the focus is to build a more lethal force, strengthen alliances, attract new partners, and reform the Department for increased performance and affordability.

The priorities of the Secretary of the Navy which are foundational to this budget include: develop and retain our greatest resources - the military and civilian

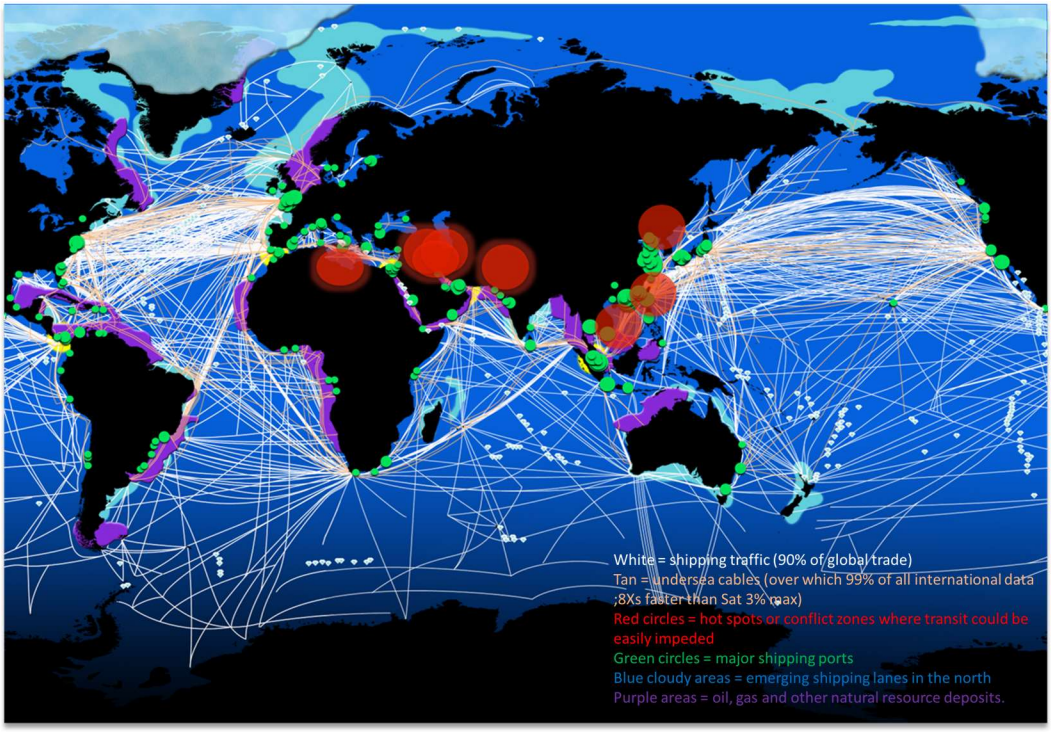
workforce; deliver combat ready forces to win conflicts; and continuously improve the affordability and speed at which we deliver performance. The CNO guidance states the Navy will become more agile; will compete in ways that are sustainable; and, fighting with the Joint force, our allies and partners, will control the high end of maritime conflict. The CMC direction is to operate to fight and win in 2025 and beyond; shape our actions as we design and develop the capabilities and capacity of the future force; and employ sea-based and land-based Marine Corps capabilities to support the sea control fight.

## *OPERATIONAL ENVIRONMENT AND CONTEXT*

Today's execution of the guidance is the result of the resources and hard choices made in prior years to field today's Navy and Marine Corps. At the same time, this budget adapts the force to reflect key changes in the security environment.

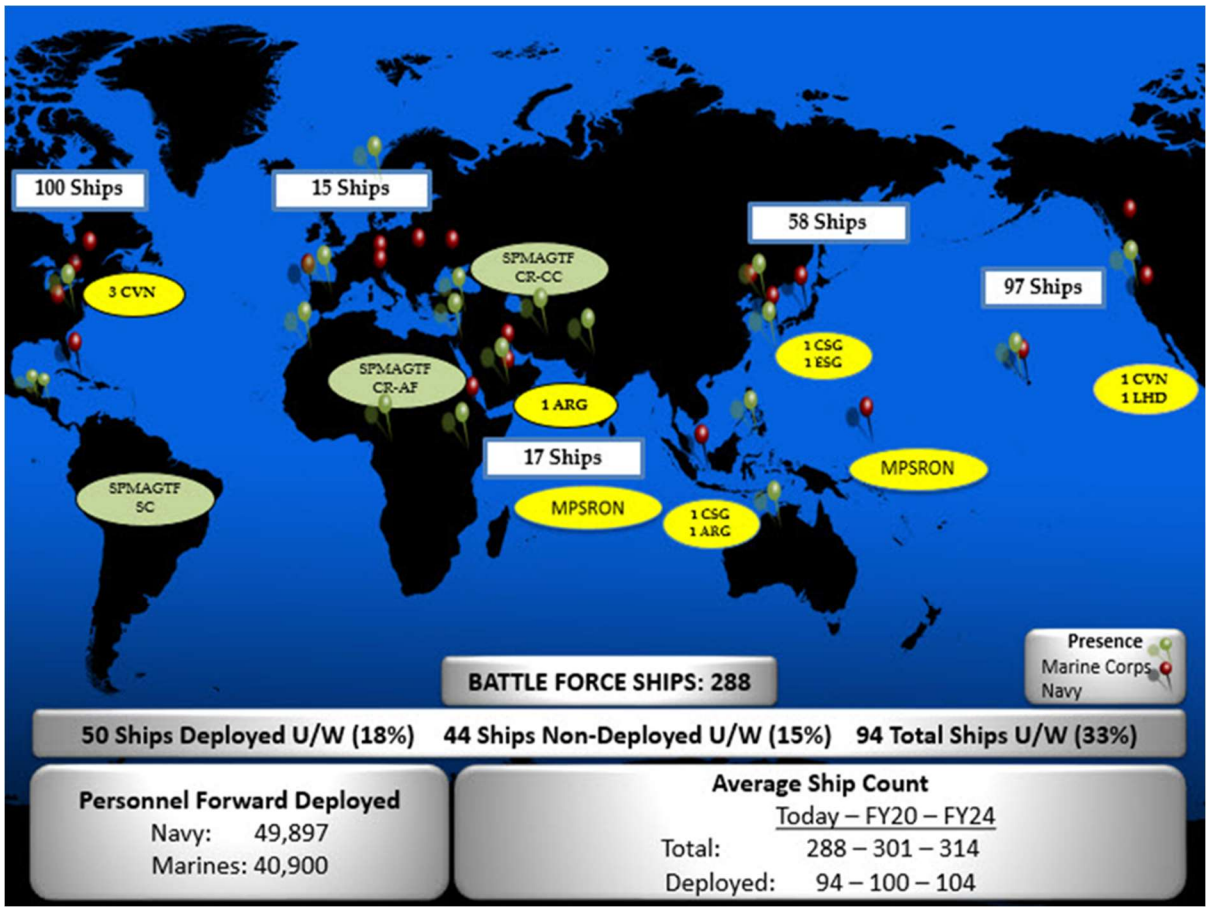
There is increased reliance on the maritime systems with shipping traffic, arctic trade routes, and new technologies making undersea resources more accessible. U.S. and allied interests are being challenged more often. Competitors are bringing high-end military capabilities and aggressive actions in multiple domains (Figure 1.1).

*Figure 1.1 – Security and Operational Environment*



In meeting these challenges, the Navy and Marine Corps provide forward postured sea-based forces (Figure 1.2). This includes over 49,000 Sailors and over 40,000 Marines deployed or forward ashore on 94 ships, two Carrier Strike Groups, and two Amphibious Ready Groups around the world.

***Figure 1.2 – Operational Context** (as of 6 February 2019)*




Overall, the Navy and Marine Corps today remain deeply engaged, at high tempo and in harm's way providing immediate options, assuring allies and deterring our adversaries.

# FY 2020 PRESIDENT'S BUDGET

The total FY 2020 President's Budget request for the DON is $205.6 billion. This is an increase of 4.6 percent from the FY 2019 enacted budget and since FY 2018, the DON has been averaging a 3.8 percent annual budget growth. The increased funding is reversing the erosion of the military advantage from prior years. These increases and stability support our readiness and increase our overall combat capabilities while we grow our capacity where it makes sense. All resources are required to deliver a bigger, better, and more ready force.


The FY 2020 President's Budget request represents a strategy-driven, balanced approach to fielding a ready force, maximizing our naval power with increased lethality, and that grows capable capacity - all through targeted investments in our people, capabilities, and processes. The budget denotes a responsible plan to spend hard-earned taxpayer dollars to maintain our strategic advantages across the spectrum of conflict. The budget funds the critical programs that will enable our Sailors and Marines to go into battle with the best training bringing to bear superior technology and overwhelming firepower such that any aggressor we face will be soundly defeated.

The hard choices required to achieve this balance include trade-offs in legacy force structure allowing the trade space to accelerate investments in future force capabilities for the future fight. The Department is developing and fielding new capabilities in the areas of unmanned vehicles, directed energy, artificial intelligence, hypersonics, and other advanced weapons technology.

To provide the required ability to deter aggression and respond to emerging security threats—including extremist organizations, pandemic diseases and natural disasters—we must maintain a ready force. Maintaining a ready force empowered to

execute the mission of the Navy and the Marine Corps depends completely on the Navy and Marine Corps Active, Reserve, and civilian team.

The active military manpower is aligned to support force structure changes as the fleet size grows from 288 in FY 2018 to 314 in FY 2024, which is an increase of 8.3 percent. Over the same period, the Navy active duty strength grows by 7.3 percent. The active strength is 340,500 in FY 2020 and increases to 354,000 in FY 2024. This personnel growth also supports the introduction of new platforms and capabilities, addresses lessons learned from our comprehensive and strategic readiness reviews and reduces gaps in fleet manning. The FY 2020 Navy Reserve Personnel budget supports both Selected Reservists and Full Time Support personnel to deliver relevant operational capability and preserve strategic depth. The Navy Reserve continues to be an integrated force multiplier to the active component, leveraging prior active duty experience and training, as well as critical civilian skill sets not resident in the active component.

The active Marine Corps duty force is increasing to 186,200 in FY 2020. This increase supports the Marine Corps Operating Concept that focuses on the changes necessary to operate successfully in an increasingly complex global environment, as we focus on building a more experienced, better trained, and more capable force. The Marine Corps Selected reserve force remains at 38,500. The Marine Corps Reserve maintains a "Ready-Relevant-Responsive Force" capable of seamlessly augmenting, reinforcing, and operating as part of the total force to fulfill Combatant Command and Service rotational and emergent requirements.

The FY 2020 budget requests funding for 217,476 civilians, recognizing the key role the civilian workforce has in the Department. This modest 1.5 percent increase from FY 2019 represents sustained and targeted growth. Our additional civilians are crucial to our ability to sustain our equipment, from shipyard workers to aviation mechanics; engineers to develop and test enhancements to communications, radar, and weapons; and scientists to design the weapons and platforms of the future. All

of this is geared toward improving our readiness and building a more capable force in a balanced manner.

In addition to investing in our people who will successfully execute the mission, the Department remains committed to ensuring our critical programs, capabilities, and platforms are ready for combat today and in the future. Ship depot maintenance funding increases by 6.8 percent over FY 2019, as the Department continues to improve material readiness. This level of funding grows the public and private shipyards to beyond the current effective capacities and builds the workforce and sustains the industrial base. Ship operations funding increases by 5.9 percent over FY 2019, providing consumables, repair parts, administration, and ship operation training costs. This solidifies the department's ability to conduct worldwide ship operations, enabling us to fulfill our maritime role in support of the NDS. The operations tempo is funded at 58 deployed days and 24 non-deployed days underway per quarter. The Navy continues to fund aviation maintenance to our maximum capacity, with funding realigned to key performance drivers such as aviation logistics, equipment readiness, and engineering support. The flying hour program grows slightly to align with increasing mission capable rates.

The Marine Corps Ground and Logistics Combat Elements are ready to meet current operational requirements. The FY 2020 budget continues to invest in modernizing key capabilities. Marine Corps ground equipment depot maintenance decreases by 21 percent from FY 2019 as funds are realigned to readiness and capability investments.

To support Shore Readiness, the Navy grows 8.3 percent in FY 2020. This increase is driven by a decision to fund 85 percent of the facilities' requirement, up from 80 percent. Major projects include modernization projects for shipyards, air operations production, maintenance infrastructure, and the transition of Naval Facilities Command from the Working Capital Fund. Funding for Marine Corps increases 16 percent in FY 2020. This increase supports recapitalization and repair requirements as part of the Commandant's Infrastructure Reset Strategy, which reduces

infrastructure footprint to ensure investments are optimized to better contribute to Force readiness and lethality. The budget also requests 40 new military construction projects to support new platforms, replace aging infrastructure, and training facilities.

In addition to focusing on increased readiness support, for research and development, the Department is also investing in capabilities and capacity to help build the future force as described in the NDS. Research and development funding increases 9.9 percent in FY 2020 for engineering manufacturing development efforts. This funds ship, aircraft, and weapons developments that transition the force to better deter and defeat future threats. In addition, the FY 2020 budget is targeting development of long-range hypersonic strike, unmanned aircraft and vessels, ship-based lasers, rapid prototyping, big data analytics, artificial intelligence, and cyber capabilities.

The Department continues to support a strong shipbuilding program, which is fundamental to the Navy and the nation and provides the capable capacity needed for the future fight. Ship construction includes 55 battle force ships and ten large unmanned surface vessels across the FYDP. The 12 battle force ships funded in FY 2020 include the CVN 81 Ford-class carrier, three *Virginia* class submarines, three *Arleigh Burke*-class destroyers, two *John Lewis*-class fleet oilers, one FFG(X) guided missile frigate, and two towing, salvage and rescue ships.

There are also two large unmanned surface vessels in FY 2020. The aircraft procurement of 619 aircraft across the FYDP supported in the FY 2020 budget will provide sustainability to the fleet. Aircraft quantity increases from 134 to 148 in FY 2020. Along with some high-end aircraft, the Department's plan to purchase relatively low-cost aircraft, and this change in mix drives a budget decrease. The weapons procurement plan is balanced to maximize lethality.

Lastly, consistent with the Department's recent Business Operations Plan, one of our lines of effort is to reform the Department's practices for greater performance and affordability. This approach resulted in the identification of savings over $1.9 billion in FY 2020 and over $9.4 billion across the FYDP. For the first time in FY 2018, the Department completed an enterprise-wide audit of all of our processes, systems, and resources, and learned a great deal from it. The Department will continue to use the audit process as a tool to improve our financial management systems, processes, and

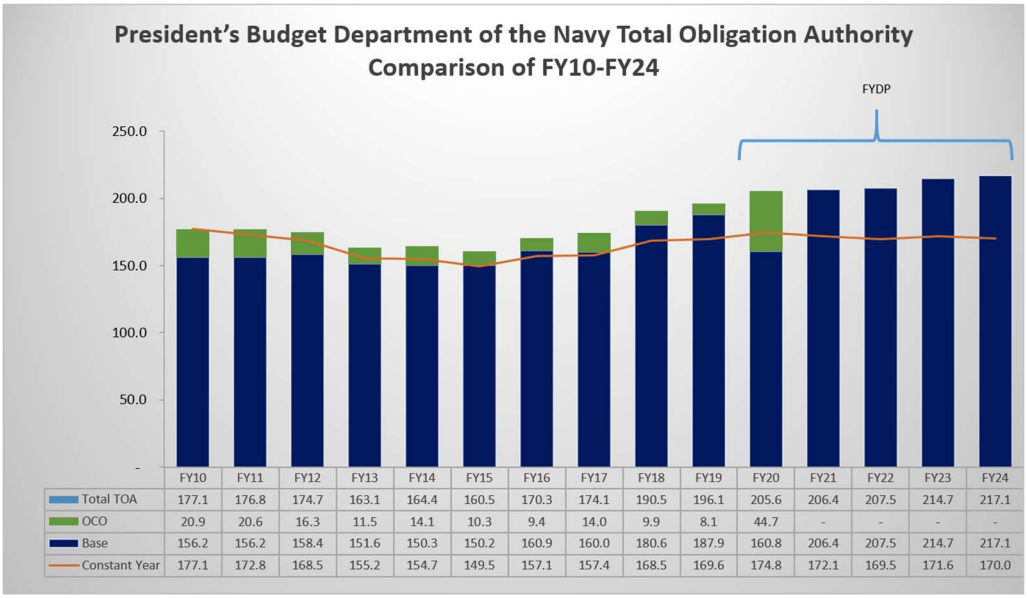
controls. The continual pursuit of ongoing reform and audit initiatives will allow the DON to greater leverage the assets and processes we have, enabling us to deliver more warfighting capability for every dollar spent.

Overall, the Department's investments in readiness and infrastructure improve upon efforts in the FY 2020 President's Budget and are essential for generating trained, properly equipped combat ready forces, and supporting the National Security Strategy spanning all corners of the globe. This budget request fields a ready and formidable force in all domains of naval operations – a force to deter, and when conflict is necessary, to soundly defeat any threat to the U.S., its interests, or its allies.

## RESOURCE SUMMARY

The combined base and contingency operations DON FY 2020 President's Budget request is $205.6 billion. Figure 1.3 displays the DON historic topline trend and indicates that the increased funding from FY 2018 to FY 2020 reverses the erosion of our competitive advantage which we appreciate. However, we are still at FY 2010 levels of purchasing power. Figures 1.4 through 1.6 display the total DON FY 2020 President's Budget request by appropriation title. All resources shown are required to deliver a bigger, better, and ready force. The need for stable and predictable funding remains.

*Figure 1.3 – DON FY 2020 Fiscal Context (Dollars in Billions)*




| | FY10 | FY11 | FY12 | FY13 | FY14 | FY15 | FY16 | FY17 | FY18 | FY19 | FY20 | FY21 | FY22 | FY23 | FY24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total TOA | 177.1 | 176.8 | 174.7 | 163.1 | 164.4 | 160.5 | 170.3 | 174.1 | 190.5 | 196.1 | 205.6 | 206.4 | 207.5 | 214.7 | 217.1 |
| OCO | 20.9 | 20.6 | 16.3 | 11.5 | 14.1 | 10.3 | 9.4 | 14.0 | 9.9 | 8.1 | 44.7 | - | - | - | - |
| Base | 156.2 | 156.2 | 158.4 | 151.6 | 150.3 | 150.2 | 160.9 | 160.0 | 180.6 | 187.9 | 160.8 | 206.4 | 207.5 | 214.7 | 217.1 |
| Constant Year | 177.1 | 172.8 | 168.5 | 155.2 | 154.7 | 149.5 | 157.1 | 157.4 | 168.5 | 169.6 | 174.8 | 172.1 | 169.5 | 171.6 | 170.0 |

*Figure 1.4 – FY 2020 DON Total Budget by Appropriation Title $205.6 Billion (Dollars in Billions)*

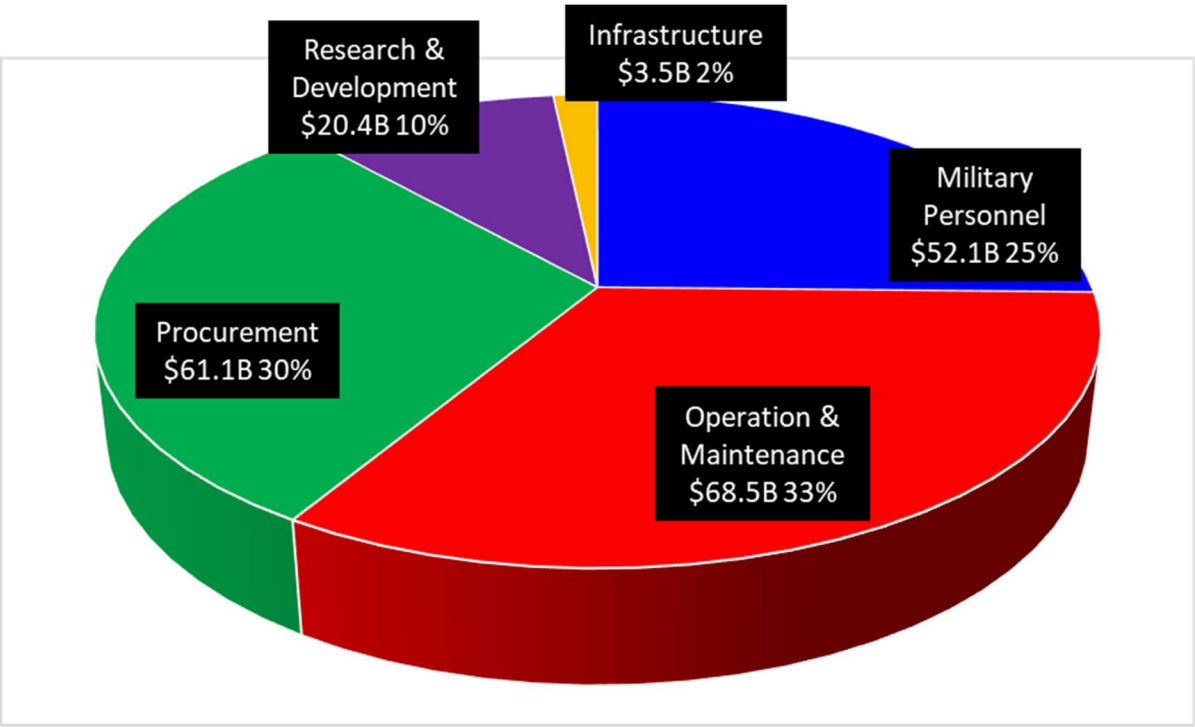



*Figure 1.5 – FY 2020 DON Total Budget by Appropriation Title $205.6 Billion (Dollars in Millions)*

| *Discretionary Budget Authority in Millions* DON + OCO + Emergency | FY 2019 | FY 2020 Request | Delta FY2020 – FY2019 |
|---|---|---|---|
| Military Personnel | 49,784 | 52,068 | 2,284 |
| Operation and Maintenance | 62,917 | 68,524 | 5,606 |
| Procurement | 61,439 | 61,065 | (373) |
| RDT&E | 18,658 | 20,435 | 1,777 |
| Military Construction | 2,848 | 3,114 | 265 |
| Family Housing | 419 | 366 | (54) |
| **Total Department of the Navy** | **196,066** | **205,572** | **9,506** |

## *Figure 1.6 – Appropriation Summary, FY 2018 – FY 2020*

| *(In millions of Dollars)* | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| Military Personnel, Navy | 29,040 | 30,550 | 32,188 |
| Military Personnel, Marine Corps | 13,197 | 13,888 | 14,279 |
| Reserve Personnel, Navy | 1,996 | 2,060 | 2,135 |
| Reserve Personnel, Marine Corps | 763 | 785 | 842 |
| Medicare-Eligible Retiree Health Fund Contribution, Navy | 1,577 | 1,466 | 1,550 |
| Medicare-Eligible Retiree Health Fund Contribution, MC | 903 | 831 | 860 |
| Medicare-Eligible Retiree Health Fund Contribution, Res Navy | 143 | 131 | 137 |
| Medicare-Eligible Retiree Health Fund Contribution, Res MC | 81 | 74 | 77 |
| Operation and Maintenance, Navy | 53,004 | 53,378 | 57,687 |
| Operation and Maintenance, Marine Corps | 8,118 | 7,843 | 9,052 |
| Operation and Maintenance, Navy Reserve | 1,094 | 1,055 | 1,148 |
| Operation and Maintenance, Marine Corps Reserve | 287 | 275 | 301 |
| Environmental Restoration, Navy | - | 366 | 336 |
| Aircraft Procurement, Navy | 20,103 | 20,324 | 18,641 |
| Weapons Procurement, Navy | 3,622 | 3,726 | 4,333 |
| Shipbuilding and Conversion, Navy | 22,963 | 24,150 | 23,784 |
| Other Procurement, Navy | 8,259 | 9,278 | 10,011 |
| Procurement, Marine Corps | 2,019 | 2,778 | 3,111 |
| Procurement of Ammunition, Navy/Marine Corps | 1,038 | 1,182 | 1,186 |
| National Sea-Based Deterrence Fund | 862 | - | - |
| Research, Development, Test, and Evaluation, Navy | 18,465 | 18,658 | 20,435 |
| Military Construction, Navy and Marine Corps | 1,993 | 2,593 | 2,900 |
| Military Construction, Naval Reserve | 95 | 43 | 55 |
| Family Housing, Navy (Construction) | 88 | 105 | 48 |
| Family Housing, Navy (Operations) | 337 | 315 | 318 |
| National Defense Sealift Fund | 226 | - | - |
| Consolidated Prior BRAC | 216 | 212 | 158 |
| **TOTAL** | **190,489** | **196,066** | **205,572** |
| | | | |
| ***Navy*** | ***162,873*** | ***152,914*** | ***159,698*** |
| ***Marine Corps*** | ***27,616*** | ***43,152*** | ***45,874*** |
| | | | |
| *Overseas Contingency Operations (Included in FY TOTALS)* | *9,568* | *8,137* | *44,735* |

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# People

# SECTION II – PEOPLE

## OVERVIEW

Our ability to complete our mission successfully rests on the Navy and Marine Corps team - Sailors and Marines, active duty and reserve, our civilian teammates and all our families.

People are our greatest resource and, therefore, our number one priority. Our Sailors and Marines are the world's most capable fighting force, protecting American security and prosperity around the globe. Our civilian workforce provides these men and women with the resources and support required to maintain maritime superiority through forward presence, which in turn preserves peace through strength and advances American influence.

To that end, the FY 2020 Military Personnel appropriations support the implementation of the Blended Retirement System (BRS). The BRS blends the traditional defined benefit retirement pension with automatic and matching contributions to service members' Thrift Savings Plan (TSP) account. Beginning January 1, 2018, all new service members (both enlisted and officer) are automatically enrolled in the BRS. Members who entered service prior to that date, and had less than 12-years' service had until December 31, 2018 to opt-in to the BRS. The FY 2020 submission funds a pay raise of 3.1 percent.

## MILITARY PERSONNEL

### *Active Navy Personnel*

The Department's military personnel are the cornerstone of the Navy. Our mission objectives are accomplished because Sailors adhere to our core values enhancing the trust and confidence of the American people. The Navy has increased strength to support the introduction of new platforms and capabilities, address lessons learned

from our comprehensive and strategic readiness reviews and reduce gaps in fleet manning.

FY 2020 continues our focus on recruiting, developing, retaining, and promoting the best Sailors and maintaining the optimal mix of personnel with the right skills and experience to man the Fleet. To fight and win, we need a force that draws from the broadest talent pools, values health and fitness, attracts and retains innovative thinkers, provides flexible career paths, and prioritizes merit over tenure. The FY 2020 Military Personnel, Navy budget request is 5,100 higher than the end strength in FY 2019 and supports Navy manpower, personnel, training, and education. To ensure success, the Navy has made investments in special and incentive pays, critical to recruiting and retaining the very best people our nation has to offer.

Furthermore, the FY 2020 request increases funding and strength for phased increases in manpower for expeditionary and aviation operational units, re-establishment of U.S. Second Fleet, production recruiters to support increased accession mission capacity, DDG-51 *Arleigh Burke* class destroyer new construction crews and class manpower increases, helicopter maritime strike (MH-60R Seahawk) squadron new construction and manpower requirements, changes to CVN 79 *Gerald R. Ford* class aircraft carrier new construction crew resulting from updated crew phasing, increases to the expeditionary mine countermeasures mission, and the necessary capabilities required for increased enlisted and officer accession capacity of 42,000 and 4,500 respectively.

Although the overwhelming majority of military personnel funding is mandated by law, we continue to scrutinize these appropriations for efficiencies. We have improved the execution of our permanent change of station (PCS) processes and propose the next step be increasing the availability of PCS funds from one to two years. This will result in significant savings over time. Additionally, the Navy optimized medical capability and capacity to requirement. This optimization resulted in divesting six of 14 total expeditionary medical facilities personnel units (five active/ one reserve), as well as a shift in support from active to reserve for hospital ships. Our equipment sets were not reduced.


In FY 2020, we continue to implement Navy fitness initiatives, provide for more adaptive workforce opportunities, and further performance-based advancement programs. The Navy's goal is to deliver the right training at the right time to the right Sailor for the right job by focusing on quality, not just quantity of training. To achieve this goal, Ready Relevant Learning (RRL) is a transformational Navy training initiative that will accelerate the learning of every Sailor for faster response to our rapidly changing warfighting requirements, thereby improving Sailor performance by coupling the timing of training with deckplate needs and career development milestones. RRL will create a learning continuum across a Sailor's career. Finally, RRL will modernize our training delivery methods, supplementing our traditional brick and mortar schoolhouses with modern, multi-media, multi-platform delivery solutions. Modernized training delivery will produce more efficient and effective training by leveraging new technologies and centralized training support via several manpower, personnel, training and education transformation initiatives. In the end, we intend to increase the tempo and efficiency with which we train, and adapt our processes to be receptive to innovation and creativity for the individual, the team, and the institution.

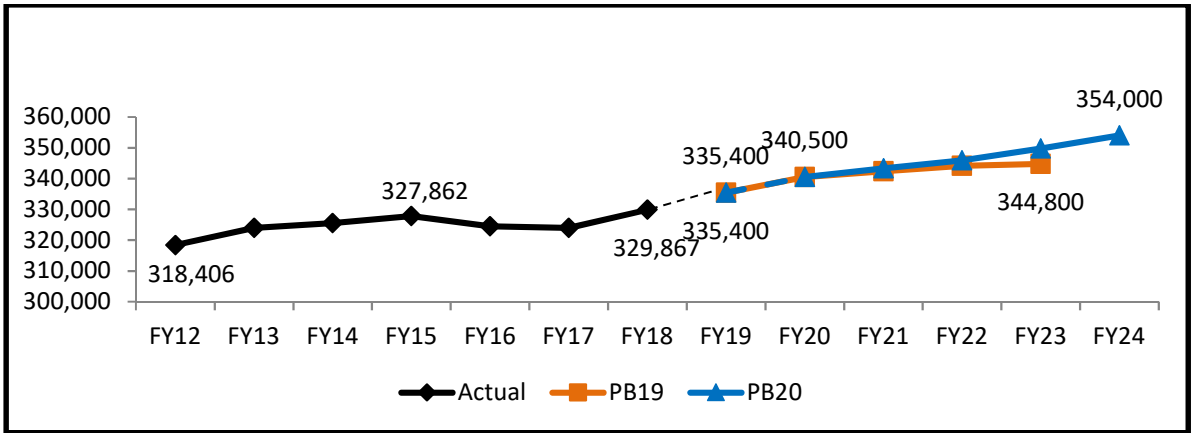
The Navy will continue improving the quality of life for Sailors and implementing quality of service initiatives begun in prior years. We will provide a comprehensive package of pay and benefits that rewards Sailors assigned to deployable units by providing increased sea pay, special and incentive pays for critical skill-sets, and compensation for Sailors underway for extended deployments. We will manage our personnel strength to deliver a naval force that produces leaders and teams who learn and adapt to achieve maximum possible performance, and who achieve and maintain high standards to be ready for decisive operations and combat. Navy active military manpower is reflected in Figures 2.1 and 2.2.

Overseas Contingency Operations (OCO) funding is requested for deployed pay and allowances in support of contingencies and mobilized reservists to support operations in the U.S. Central Command (CENTCOM) area of operations

## *Figure 2.1 – Active Navy Personnel Strength*

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| Officers | 54,745 | 54,912 | 54,995 |
| Enlisted | 270,666 | 276,142 | 281,157 |
| Midshipmen | 4,456 | 4,346 | 4,348 |
| **Total Strength** | **329,867** | **335,400** | **340,500** |

## *Figure 2.2 – Active Navy End Strength Trend*




## *Reserve Navy Personnel*

The FY 2020 Reserve Personnel, Navy budget request supports 59,000 Selected Reservists and Full Time Support personnel to deliver relevant operational capability and preserve strategic depth, rapidly increasing the agility and lethality of the Navy Total Force.

The Navy Reserve is an integrated force multiplier to the active component, leveraging experience in warfighting, industry, and innovation to help stay ahead of our nation's competitors. A robust reserve component (RC) enables the Navy to

leverage prior active duty experience and training, critical civilian skill-sets not resident in the active component (AC), and industry and academic partnerships.

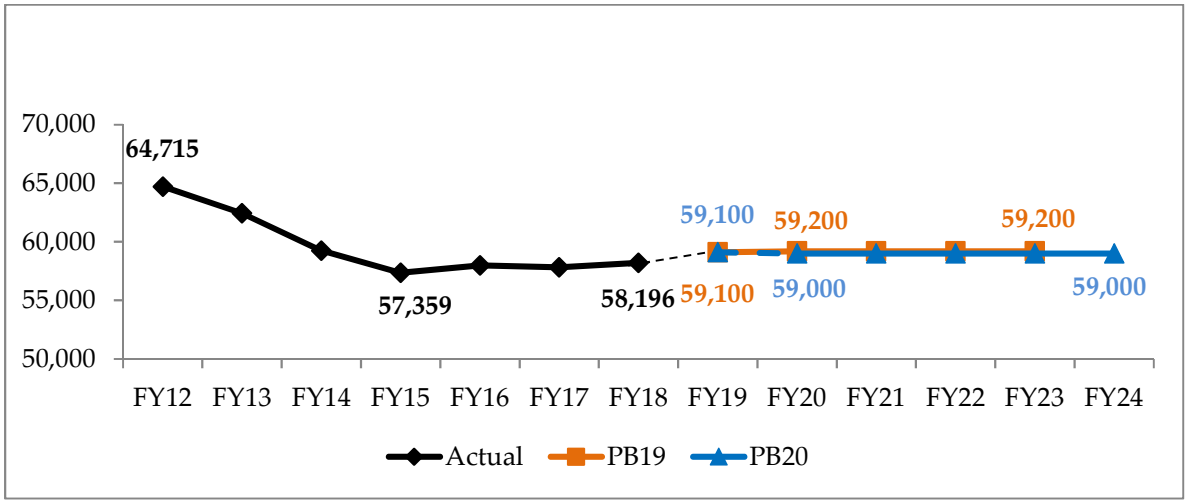
In FY 2020, the Navy Reserve will decrease slightly by 100 end strength as shown in Figures 2.3 and 2.4. The primary reduction areas include expeditionary medicine, non-prior service new accession trainees and aircraft maintenance personnel. Following a reduction in uniformed medical requirements across the Navy, a smaller Reserve Expeditionary Medical Force still retains a highly skilled cadre of professionals better aligned for rapid surge support. The Navy Reserve is also shifting the accession focus to attract more qualified prior service Sailors versus training new recruits, thus retaining more active duty experience and skill sets for the Fleet. Additionally, an optimal mix of aviation contract maintenance will reduce the need for uniformed maintainers in our logistics squadrons with commercial variant aircraft.

The Navy Reserve remains a combat-ready, agile and committed force of citizen sailors who are ready to win.

## *Figure 2.3 – Reserve Navy Personnel Strength*

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| Drilling Reserve | 48,082 | 48,990 | 48,845 |
| Full Time Support | 10,114 | 10,110 | 10,155 |
| **Total Strength** | **58,196** | **59,100** | **59,000** |

## *Figure 2.4 – Reserve Navy End Strength Trend*




## *Active Marine Corps Personnel*

As set forth by the 82nd Congress and reaffirmed by the 114th, the Marine Corps purpose is to provide maritime expeditionary combined arms air-ground task forces that are "most ready, when the nation is least ready." We are a naval force whose mission requires us to be ready – a "fight tonight", forward-deployed force, able to respond immediately to emergent crises around the globe either from the sea or home station.

The FY 2020 Military Personnel, Marine Corps budget request funds an active duty end strength of 186,200. This is an overall end strength increase of 100 from FY 2019 to continue implementing the Marine Corps Force (MCF) 2025, a yearlong, ground up review that focused on the changes necessary to operate successfully in an increasingly complex global environment. This growth supports building a more experienced, better trained, and more capable force by increasing the number of Marines with special skills, like those required for special operations, intelligence operations, electronic, information, and cyber warfare. The Marine Corps increased infantry squad leaders by 330 using internal structure realignments in order to address the need for more experienced and better trained leaders within the infantry formations. Our manning requires leaders with the grade, experience, technical and tactical qualifications associated with their billets, which is essential to the Marine Corps as a "fight tonight" force.

Central to our role in providing a lethal force is recruiting the most qualified men and women within our nation who are willing to raise their hand, affirm an oath, and wear the Eagle, Globe, and Anchor. The Marine Corps will ensure we recruit the right people, devoted to upholding the values of honor, courage, and commitment.

The Marine Corps is the nation's crisis response force, which provides our nation the ability to respond to unexpected crises, from humanitarian assistance and disaster relief efforts, to non-combatant evacuation operations, to major combat operations. This same element can be reinforced quickly to contribute to assured access anywhere in the world in the event of a major contingency. Figures 2.5 and 2.6 provide active duty Marine Corps manpower levels over time.

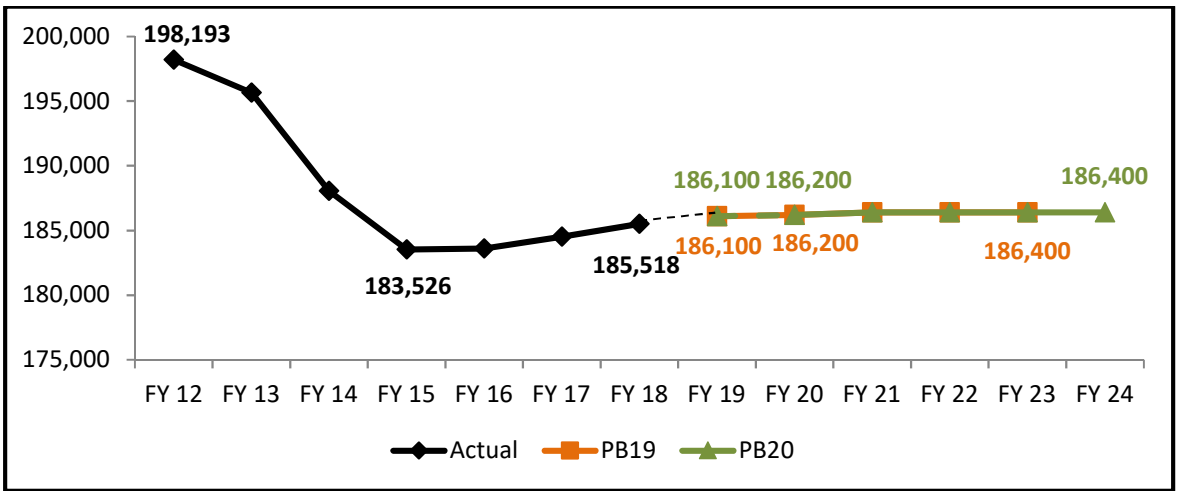
In the past year, the Marine Corps executed 170 operations, eight amphibious operations, 115 theater security cooperation events and participated in 51 exercises and relief operations for Hurricanes Maria, Florence, and Michael. Within the context of these efforts, Amphibious Ready Groups / Marine Expeditionary Units (ARG/MEU) supported Combatant commands along-side regional partners providing a range of deliberate and crisis response options. Major exercises were held in Romania, Israel, Jordan, Malaysia, and off the coast of Djibouti. The Marine Corps also participated in theater security cooperation (TSC) exercises held in Brazil, Latvia, Jordan, Mexico, and Philippines that enhanced military cooperation, capability, and interoperability with partner nations while sustaining a ready, forward presence in support of the Combatant Commander requirements.

OCO funding is requested for deployed pay and allowances in support of contingencies, mobilized reservists to support operations in the U.S. CENTCOM area of operations, and continued support of wounded, ill, and injured Marines.

## *Figure 2.5 – Active Marine Corps Personnel Strength*

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| Officers | 21,332 | 21,311 | 21,512 |
| Enlisted | 164,186 | 164,789 | 164,688 |
| **Total Strength** | **185,518** | **186,100** | **186,200** |

## *Figure 2.6 – Active Marine Corps End Strength Trend*




## *Reserve Marine Corps Personnel*

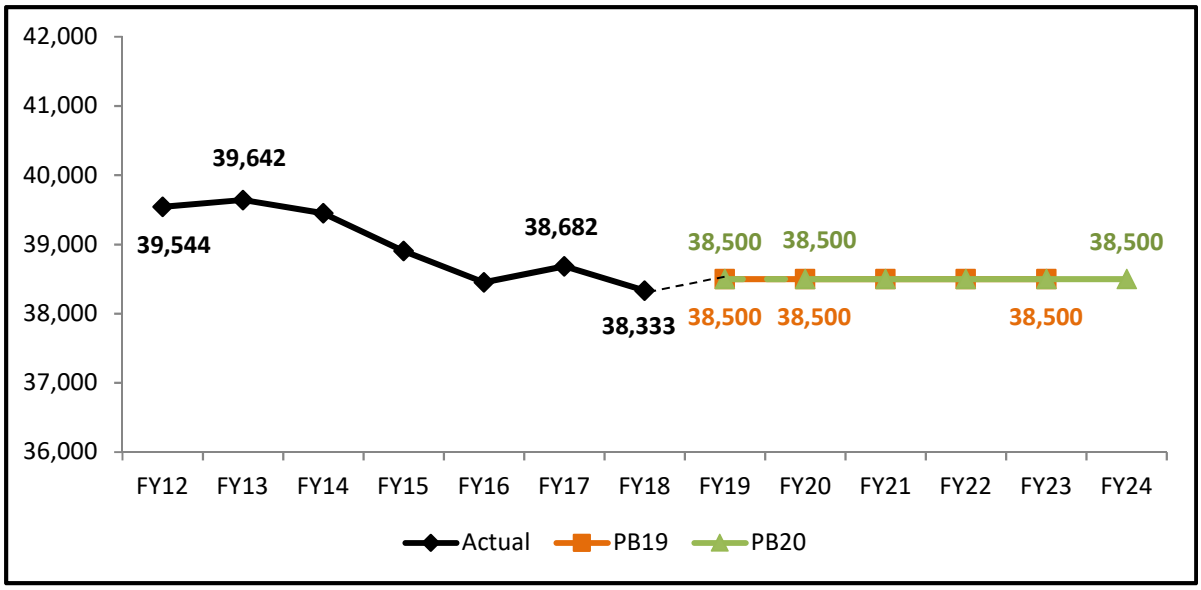
The FY 2020 budget request supports a Marine Corps Reserve end strength of 38,500, the same level as FY 2019, as shown in Figures 2.7 and 2.8. The Marine Corps Reserve maintains a 'Ready-Relevant-Responsive' force capable of seamlessly augmenting, reinforcing, and operating as a part of the Total Force to fulfill Combatant Command (CCMD) and Service rotational and emergent requirements. The Reserves support each CCMD by providing forces capable of regional security cooperation, crisis response and prevention activities, and major combat operations. The Marine Corps Reserve maintains a robust operational tempo while providing critical capabilities essential to sustaining lasting national security at the strategic level. Global deployments, along with participation in Service-level, joint, and multilateral exercises, develop the depth of experience necessary to ensure the Marine Corps Reserve is relevant and ready to meet the CCMD needs for highly trained, experienced, and motivated general-purpose forces.

The budget provides pay and allowances for drilling reservists, personnel in the training pipeline, and full-time active reserve personnel.

## *Figure 2.7 - Reserve Marine Corps Personnel Strength*

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| Drilling Reserve | 36,034 | 36,239 | 36,114 |
| Full Time Support | 2,299 | 2,261 | 2,386 |
| **Total Strength** | **38,333** | **38,500** | **38,500** |

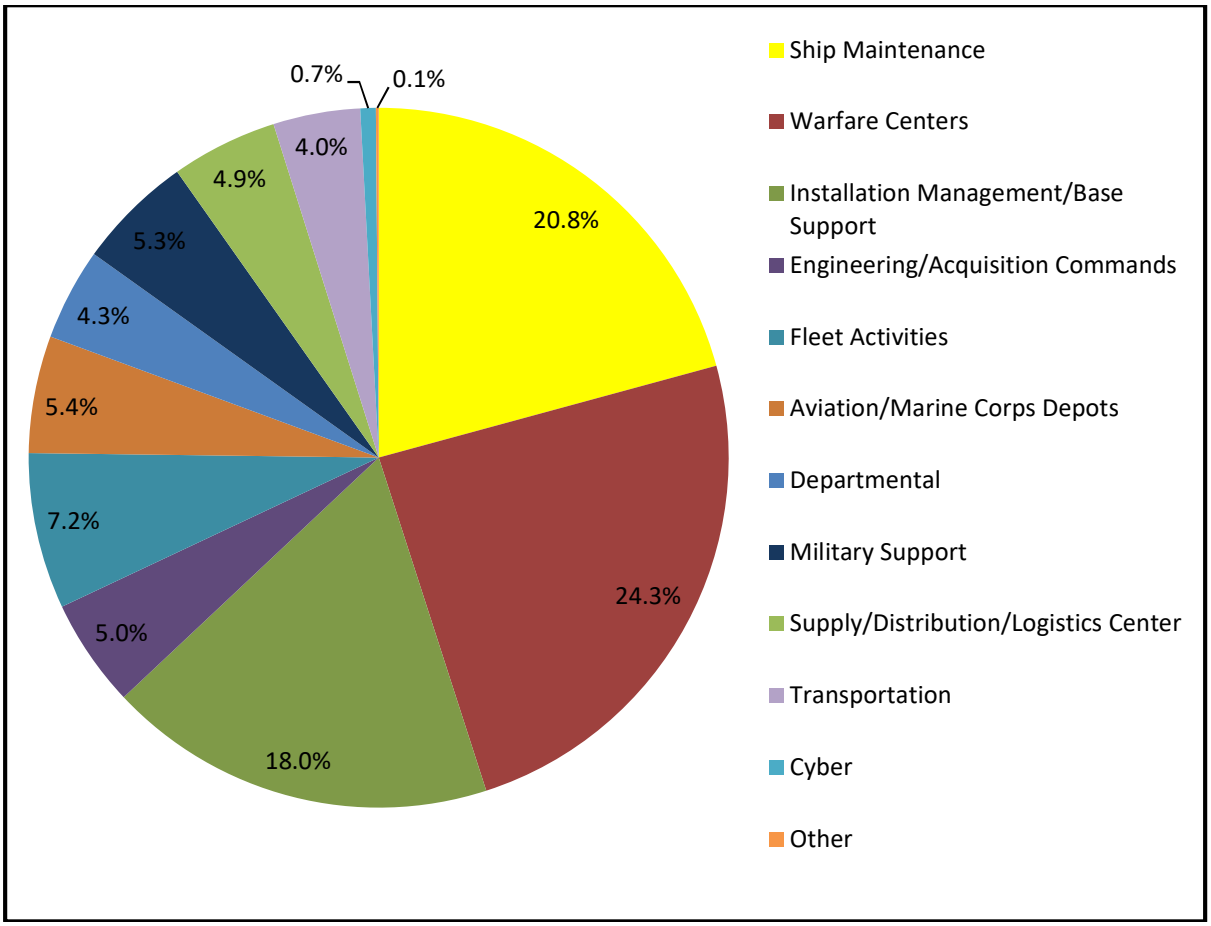
## *Figure 2.8 – Reserve Marine Corps End Strength Trend*



# CIVILIAN PERSONNEL

The DON mission to recruit, train, equip and organize requires Total Force management—a mix of Sailors, Marines, civilians, and industry partners necessary to provide the "Navy the Nation Needs". We maintain a balanced approach to the management of the civilian force, ensuring we have the right mix of skills to support new strategies, tactics, and capabilities. As we grow the Fleet and develop new maintenance concepts, we require more skilled labor for shipyards and air depots. We also invest in scientists, engineers, cyber experts, and others as we adopt new technologies and operating concepts. Figure 2.9 displays the diverse nature of the civilian workforce.

## *Figure 2.9 – Civilian Manpower Work Areas, FY 2020*



This budget maintains our commitment to increasing readiness through sustained and targeted growth. Civilian personnel increases at our warfare centers provides for increased lethality through new weapons technologies. Growth in civilians at our maintenance depots increase our capacity to fight on many fronts by keeping our ships and aircraft battle ready. Additional personnel supporting acquisition and human resources reflects our dedication to developing the workforce necessary to meet the future demands. Additionally, we have enhanced our intelligence and fleet operations workforce in the Indo-Pacific region to confront the growing threat of adversaries.

Figure 2.10 displays total civilian Full Time Equivalent personnel (FTEs) by component, type of hire, appropriation, and by work area.

## *Figure 2.10 – DON Civilian Manpower in Full-Time Equivalent Personnel*

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| **Total - Department of the Navy*** | **208,964** | **214,284** | **217,476** |
| **By Component** | | | |
| Navy | 187,532 | 192,702 | 195,502 |
| Marine Corps | 21,432 | 21,582 | 21,974 |
| **By Type Of Hire** | | | |
| Direct | 197,366 | 202,895 | 205,614 |
| Indirect Hire, Foreign National | 11,598 | 11,389 | 11,862 |
| **By Appropriation/Fund** | | | |
| Operation and Maintenance, Navy | 97,717 | 101,977 | 115,724 |
| Operation and Maintenance, Navy Reserve | 810 | 846 | 979 |
| Operation and Maintenance, Marine Corps | 19,651 | 19,679 | 20,049 |
| Operation and Maintenance, Marine Corps Reserve | 206 | 236 | 267 |
| **Total - Operation and Maintenance** | **118,384** | **122,738** | **137,019** |
| Base Closure and Realignment | 49 | 49 | 49 |
| Family Housing (Navy/Marine Corps) | 634 | 683 | 654 |
| Research, Development, Test, and Evaluation, Navy | 927 | 1,106 | 1,175 |
| **Total - Other** | **1,610** | **1,838** | **1,878** |
| **Total - Working Capital Funds** | **88,970** | **89,708** | **78,579** |

*FY 2018 Includes 7 O&M,N FTE funded by Overseas Contingency Operations

| FTE by Work Area | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| Warfare Centers/Research Labs | 51,843 | 52,582 | 52,752 |
| Ship Maintenance (e.g., Shipyards) | 42,524 | 43,938 | 45,161 |
| Installation Management/Base Support | 37,833 | 38,192 | 39,091 |
| Fleet Activities (e.g., Ship/Air Operations) | 13,837 | 15,113 | 15,681 |
| Aviation/Marine Corps Depots | 11,797 | 11,776 | 11,768 |
| Military Support (e.g., Training, Quality of Life) | 10,909 | 11,686 | 11,627 |
| Engineering/Acquisition Commands (excludes PEOs) | 11,403 | 10,132 | 10,876 |
| Supply/Distribution/Logistics Center | 9,641 | 10,399 | 10,686 |
| Departmental (e.g., Navy/Marine Corps HQ, PEOs) | 9,025 | 9,223 | 9,267 |
| Transportation | 8,976 | 8,662 | 8,738 |
| Cyber** | 798 | 1,296 | 1,563 |
| Other | 378 | 1,285 | 266 |

**Cyber FTE realigned from "Other" Work Area beginning in FY 2018

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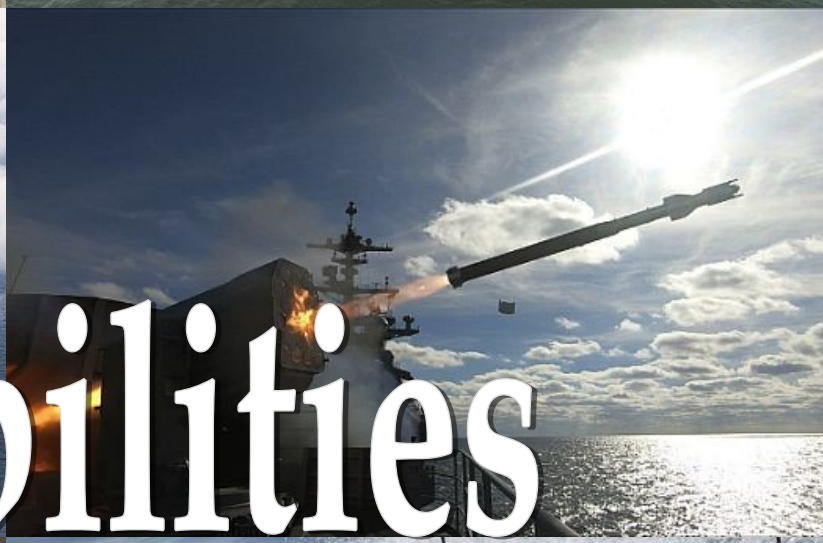


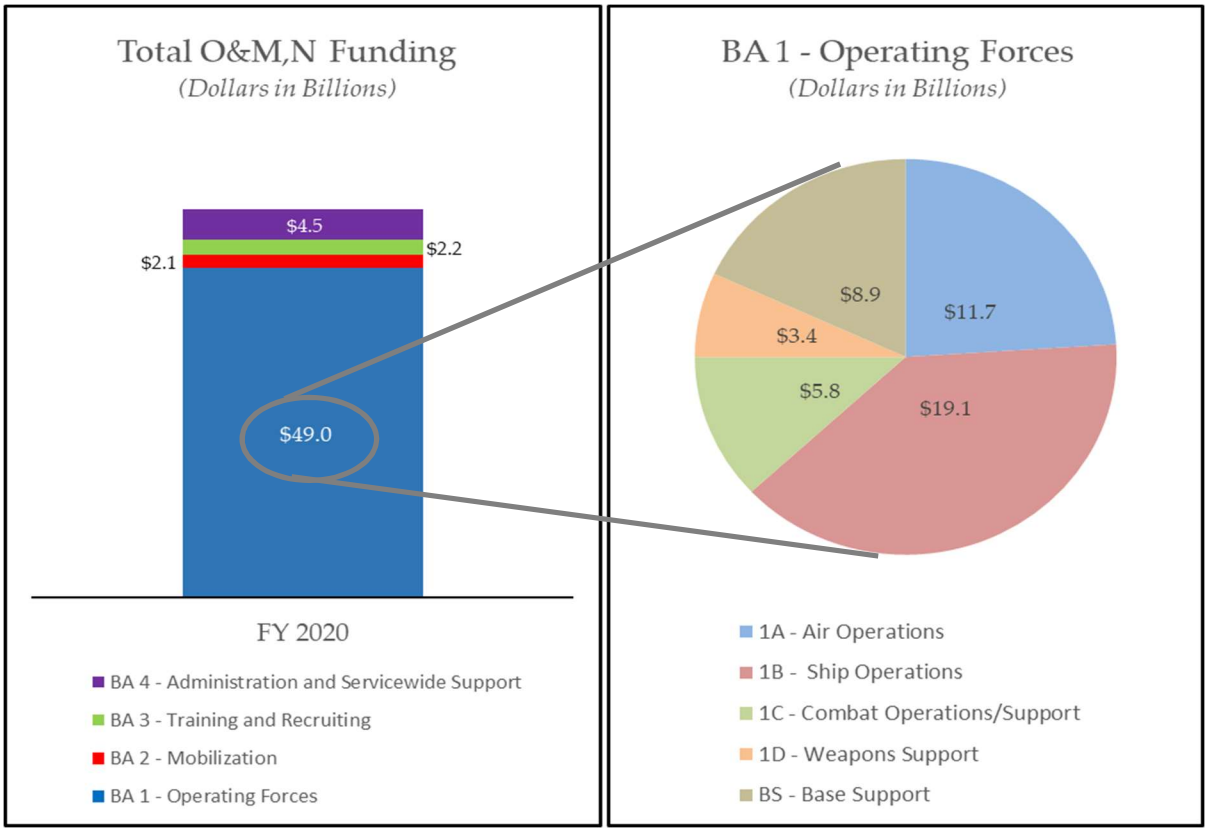
# Capabilities

# SECTION III – READINESS

## NAVY OVERVIEW

Navy and Marine Corps forces remain deeply engaged, at a high operational tempo and in harm's way providing immediate options, assuring allies and deterring our adversaries. The FY 2020 budget builds on the effort from the FY 2019 budget focused on improving readiness in Navy major readiness accounts and enabling accounts that support training and deploying our forces. This budget request supports requirements for our carrier strike groups (CSGs), amphibious ready groups (ARGs), and Navy and Marine aviation units to train and respond to persistent and emerging threats. The Navy deploys full-spectrum-ready forces to further security objectives in support of U.S. interests. The Navy and Marine Corps forward-postured, sea-based forces provide immediate response options and assure our allies of our commitment. Figure 3.1 displays the active Navy's operation and maintenance funding in FY 2020.

### *Figure 3.1 – FY 2020 Active Navy Operation and Maintenance (O&M) Funding*



# *SHIP OPERATIONS*

The Ship Operations program provides the Navy with critical mission capabilities. The budget provides for a deployable battle force of 301 ships at the end of FY 2020, as shown in Figure 3.2. This level of operational funding supports 11 aircraft carriers and 33 large amphibious ships that serve as the foundation upon which our CSGs and ARGs are based. In FY 2020, 10 battle force ships will be delivered: three Nuclear Attack Submarines (SSN), two Littoral Combat Ships (LCS), one Expeditionary Fast Transports (EPF), and four Destroyers (DDG). In FY 2020, five battle force ships will be retired: three Mine Countermeasures (MCM) and two Nuclear Attack Submarine (SSN).

## *Figure 3.2 – DON Battle Force Ship Inventory*

*Note: FY 2019 represents end of year projections.*

| Category | Ship Type | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|---|
| Aircraft Carrier | CVN | 11 | 11 | 11 |
| **Aircraft Carrier Total** | | **11** | **11** | **11** |
| Ticonderoga Class Cruiser | CG (47) | 22 | 22 | 22 |
| Guided Missile Destroyers | DDG (51) | 66 | 67 | 70 |
| Zumwalt-class Destroyers | DDG (1000) | 0 | 1 | 2 |
| Littoral Combat Ship | LCS | 16 | 20 | 22 |
| Mine Countermeasures Ships | MCM | 11 | 11 | 8 |
| **Surface Combatant Total** | | **115** | **121** | **124** |
| Amphibious Warfare Assault Ships | LHA/LHD | 9 | 10 | 10 |
| Amphibious Transport Docks | LPD | 11 | 11 | 11 |
| Dock Landing Ships | LSD | 12 | 12 | 12 |
| **Amphibious Ships Total** | | **32** | **33** | **33** |
| Nuclear Attack Submarines | SSN | 51 | 51 | 52 |
| Fleet Ballistic Missile Sub | SSBN | 14 | 14 | 14 |
| Guided Missile (SSGN) Subs | SSGN | 4 | 4 | 4 |
| **Submarine Total** | | **69** | **69** | **70** |
| Dry-Cargo Ammunition Ships | T-AKE | 12 | 12 | 12 |
| Fleet Replenishment Oilers | T-AO | 15 | 15 | 15 |
| Fast Combat Support Ships | T-AOE | 2 | 2 | 2 |
| **Combat Logistics Ships Total** | | **29** | **29** | **29** |
| Submarine Tenders | AS | 2 | 2 | 2 |
| High-Speed Transport | T-HST | 1 | 1 | 1 |
| Amphibious Command Ship | LCC | 2 | 2 | 2 |
| Ocean Surveillance Ship | T-AGOS | 5 | 5 | 5 |
| Prepo Dry-Cargo Ammunition Ships | T-AKE MPS | 2 | 2 | 2 |
| Salvage Ships | T-ARS | 2 | 2 | 2 |
| Ocean Tugs | T-ATF | 3 | 3 | 3 |
| Expeditionary Fast Transport | T-EPF | 9 | 11 | 12 |
| Expeditionary Mobile Base | T-ESB | 2 | 3 | 3 |
| Expeditionary Transfer Dock | T-ESD | 2 | 2 | 2 |
| **Support Ships Total** | | **30** | **33** | **34** |
| **Total Battle Force Ships** | | **286** | **296** | **301** |

## *Active Ship OPTEMPO*

The FY 2020 budget request supports the Optimized Fleet Response Plan (OFRP), enabling ships to surge and reconstitute by maintaining a continuous flow from maintenance after deployment, through basic phase training back to deployable ready assets. This is achieved through a goal of seven-month deployments. This concept enables the Department to provide multiple CSGs to meet the threat and deliver decisive military force. The Navy will support these goals and respond to global challenges by planning for 58 underway days per quarter for the active operations tempo (OPTEMPO) of our deployed forces and 24 underway days per quarter for non-deployed forces in the baseline. This provides funding and resources for all aspects of ship operations required to continuously deploy combat ready warships and supporting forces in support of national objectives.

## *Mobilization*

The Navy's mobilization forces, displayed in Figure 3.3, provide logistics capability that enables rapid response to contingencies worldwide. The prepositioning ship squadrons are forward deployed in key ocean areas to provide the initial military equipment and supplies for operation. The prepositioned response is followed by the surge ships, which are maintained in a reduced operating status from four to 30 days. The number of days indicates the time from ship activation until the ship is available for tasking; e.g., Reduced Operating Status 5 (ROS-5) indicates it will take five days to make the ship ready to sail, fully crewed and operational. Figure 3.4 reflects the hospital ships and the capacity measured by the number of patient beds for both the USNS MERCY and USNS COMFORT.

## *Figure 3.3 – Strategic Sealift*

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| **Prepositioning Ships:** | | | |
| Maritime Prepo Ships (O&M,N) | 14 | 14 | 14 |
| Army Prepo Ships (O&M,A) | 7 | 7 | 7 |
| Air Force Prepo Ships (O&M,AF) | 2 | 2 | 2 |
| Navy Prepo OPDS Ship with Tender (O&M,N) | 1 | 1 | 1 |
| **Surge Ships:** | | | |
| Large Medium-Speed RORO Ships (FY18 NDSF/FY19/20 OMN)* | 10 | 10 | 10 |
| Container/RORO Ships (former Prepo) (FY18 NDSF/FY19/20 OMN)* | 5 | 5 | 5 |
| Ready Reserve Force Ships (FY18 NDSF/FY19/20 OMN)* | 46 | 46 | 46 |
| Prepositioning Capacity (millions of square feet) | 4.7 | 4.7 | 4.7 |
| Surge Capacity (millions of square feet) | 10.6 | 10.6 | 10.6 |
| Total Sealift Capacity (millions of square feet) | 15.3 | 15.3 | 15.3 |

* Note: NDSF realigned to OMN in FY 2019.

## *Figure 3.4 – Hospital Ships*

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| **Hospital Ships:** | | | |
| Hospital Ships | 2 | 2 | 2 |
| Hospital Ship Capacity (number of patient beds) | 2,000 | 2,000 | 2,000 |

## *Ship Maintenance*

The Department's organic ship maintenance program is mission funded in O&M. It provides funding for repairs, overhauls, and refueling of submarines, carriers, and surface ships at the Navy's four public shipyards, regional maintenance centers, intermediate maintenance facilities, and at private shipyards via contracts. In addition to continued support for ongoing maintenance availabilities, the FY 2020 budget invests in Naval Shipyard (NSY) capacity by increasing the FTE workforce in order to increase shipyard throughput. Additionally, to better align workload to capacity, FY 2020 continues to fund private sector submarine maintenance. This accounts for an increased requirement of $668 million from the FY 2019 enactment and only funds ship maintenance to 95 percent. These efforts are important because they minimize the more expensive future execution of deferred current work, maximize utilization of private and public maintenance capacity, and support decreased idle time and increased operational availability. Maintenance is still challenged by late discovery of growth/new work in execution causing duration extensions to maintenance periods, which in turn creates private shipyard workload,

as well as workforce and facility capacity challenges. The FY 2018 funding in Figure 3.5 includes $673 million for emergent repairs to the USS FITZGERALD and USS JOHN S MCCAIN, and accounts for the downward trend in FY 2019.

## *Figure 3.5 – Department of the Navy Ship Maintenance*

| *(Dollars in Millions)* | **FY 2018** | **FY 2019** | **FY 2020** |
|---|---|---|---|
| **Active Forces** | | | |
| Ship Maintenance BA-1, 1B4B | 10,371 | 9,759 | 10,427 |
| % Funded | 100% | 96% | 95% |
| **Total Ship Maintenance (1B4B, 1B5B, & OCO)** | **12,546** | **11,925** | **12,501** |

# *AIR OPERATIONS*

## *Active Tactical Air Forces*

The budget provides for the operation, maintenance, and training of nine active Navy carrier air wings (CVWs) and three Marine Corps air wings in FY 2020, as reflected in Figure 3.6. The Navy and Marine Corps plan to mitigate the inventory challenge with service life extension of legacy F/A-18 A-D airframes to 8,000-10,000 hours (over original design of 6,000 hours). Furthermore, the Navy will execute service life modification (SLM) of F/A-18E/F aircraft to 9,000 hours, and the Service will procure additional F/A-18E/F aircraft. Figure 3.7 displays aircraft inventories.

## *Figure 3.6 – DON Aircraft Force Structure*

| **Active Forces** | **FY 2018** | **FY 2019** | **FY 2020** |
|---|---|---|---|
| Navy Carrier Air Wings | 9 | 9 | 9 |
| Marine Air Wings | 3 | 3 | 3 |
| Patrol Wings | 2 | 2 | 2 |
| Helicopter Maritime Strike Wings | 2 | 2 | 2 |
| Helicopter Combat Support Wings | 2 | 2 | 2 |
| **Subtotal** | **18** | **18** | **18** |
| | | | |
| **Primary Authorized Aircraft (PAA) - Active** | | | |
| Navy | 2,153 | 2,314 | 2,376 |
| Marine Corps | 1,055 | 1,242 | 1,214 |
| **Subtotal** | **3,208** | **3,556** | **3,590** |
| | | | |
| **Total Active Inventory (TAI)** | **4,012** | **4,094** | **3,912** |

## *Figure 3.7 – DON Aircraft Inventory*

| Class Category | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| Attack | 265 | 273 | 267 |
| Fighter | 57 | 58 | 57 |
| In-Flight Refuel | 78 | 78 | 83 |
| Patrol | 193 | 209 | 189 |
| Rotary Wing | 1,054 | 1,084 | 1,020 |
| Strike Fighter | 1,093 | 1,042 | 1,003 |
| Tilt Rotor | 293 | 311 | 311 |
| Training Jet | 276 | 277 | 277 |
| Training Prop | 310 | 311 | 310 |
| Training Rotary | 120 | 115 | 115 |
| Transport | 102 | 108 | 103 |
| Unmanned | 41 | 99 | 45 |
| Utility | 30 | 29 | 31 |
| Warning | 100 | 100 | 101 |
| **Total** | **4,012** | **4,094** | **3,912** |

## *Aircraft OPTEMPO*

Mission and other flight operations include all Navy and Marine Corps tactical air (TACAIR) and anti-submarine warfare (ASW) forces, shore-based Fleet air support, and irregular warfare. Funding provides flying hours to maintain required levels of readiness enabling Navy and Marine Corps aviation forces to perform their primary missions as required in support of national objectives. The flying hour support program provides funding for transportation and travel of equipment, squadron staff, and personnel. In addition, it provides funding for aircrew training systems, commercial air services, and various information technology systems. These support accounts enable the training for and execution of primary missions.

The Navy measures aviation readiness using the Defense Readiness Reporting System Navy. CVWs maintain varied training and readiness (T&R) levels in accordance with the OFRP in order to provide adequately trained aircrews across a 36-month deployment cycle. Marine Corps TACAIR readiness differs in approach and requires a steady readiness profile to be maintained in order to be prepared to rapidly and effectively deploy on short notice for operational plans or contingency operations. The Marine Corps Aviation Plan (AVPLAN) directs the T&R requirements and resources to attain readiness levels over a 12-month snapshot of a USMC 36-month squadron training cycle. The AVPLAN aligns with Department requirements by implementing a comprehensive, capabilities-based training system that provides mission skill-proficient crews and combat leaders to the Combatant Commanders.

The FY 2020 funding supports the requirements of deployed units, units training in preparation to deploy, and the maximum executable requirements of non-deployed units for sustainment and maintenance readiness levels. The budget funds to T-ratings of 2.0 Navy / 2.0 Marine Corps and provides for nine active CVWs and three Marine Corps air wings.

## *Aircraft Depot Maintenance*

The aircraft depot maintenance program funds repairs, overhauls, and inspections of aircraft and aircraft components to ensure sufficient quantities are available to meet fleet requirements to decisively win combat operations. To create the mission capable aircraft required to recover aviation readiness, the FY 2020 budget funds the Fleet readiness centers (FRCs) to the maximum executable levels and reflects an increase in engine maintenance production associated with a continued shift in workload and unit cost mix for priority type/model/series in an effort to reduce out-of-reporting (OOR) aircraft status. An increase in aviation logistics provides for maintenance costs associated with more F-35 and MV-22 aircraft added to the Fleet. Additionally, FY 2020 rebalances savings obtained from the E-6B contract cost reduction and reduced aircraft depot maintenance requirements to invest in aviation readiness enabling programs. The FY 2020 budget also includes an increase to support aircrew systems physiological episode mitigation efforts. Figure 3.8 displays funding for aircraft depot maintenance and aviation logistics.

# *Figure 3.8 - Aircraft Depot Maintenance and Aviation Logistics*

***Aircraft Depot Maintenance (1A5A)***

| *(Dollars in Millions)* | **FY 2018** | **FY 2019** | **FY 2020** |
|---|---|---|---|
| Airframes | 687 | 766 | 661 |
| Engines | 583 | 587 | 618 |
| Components | 51 | 49 | 44 |
| **Total (Baseline + OCO)** | **1,322** | **1,402** | **1,322** |
| **Percent Funded of Total Requirement** | 89% | 92% | 95% |

***Aviation Logistics (1A9A)***

| *(Dollars in Millions)* | **FY 2018** | **FY 2019** | **FY 2020** |
|---|---|---|---|
| KC-130J Hercules | 90 | 71 | 82 |
| MV-22 Osprey | 200 | 159 | 199 |
| E-6B Mercury | 64 | 80 | 76 |
| F-35 Lightning II | 593 | 682 | 895 |
| **Total (Baseline + OCO)** | **946** | **992** | **1,252** |

# *NAVY RESERVE OPERATIONS*

The Department's RC operating forces consist of aircraft, combat equipment and support units, and their associated weapons in delivering strategic depth and operational capabilities to the Navy, Marine Corps and joint forces. Funding is also provided to operate and maintain RC activities and commands in all fifty states plus Puerto Rico and Guam. This geographical diversity allows the Navy's Selected Reservists the opportunity to train outside of fleet concentration centers. The facility inventory remains at 132 for the Navy Reserves in FY 2020.

## *Reserve Component Air Forces*

RC flying hour funding enables ready Navy and Marine Corps Reserve aviation forces to operate, maintain, and deploy in support of the Department's mission objectives. The Naval Air Force Reserve, as shown in Figure 3.9, consists of one tactical support wing (five squadrons), one logistics support wing (12 squadrons), one maritime support wing (four squadrons), and two integrated helicopter mine countermeasures squadrons. The 4th Marine Aircraft Wing (MAW) consists of 12 squadrons and supporting units. Actions in FY 2020 include the transistion of AC FA-18C's to the RC to replace legacy FA-18A/B's in support of adversary and training mission requirements. Marine Light Attack Helicopter Squadron (HMLA) 775 will add 10 AH-1Z aircraft, replacing the AH-1W in support of rotary wing capability

modernization. Marine Aerial Refueler Transport Squadron (VMGR) 452 will add two KC-130J aircraft in support of aerial refueling services and air transport for personnel, equipment and supplies.

*Figure 3.9 – Reserve Component Aircraft Force Structure*

| Reserve Forces Air Wings | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| Navy Tactical Support Air Wing | 1 | 1 | 1 |
| Navy Logistics Support Air Wing | 1 | 1 | 1 |
| Navy Maritime Support Air Wing | 1 | 1 | 1 |
| Marine Aircraft Wing | 1 | 1 | 1 |
| **Total** | **4** | **4** | **4** |

| Primary Authorized Aircraft (PAA) – Reserve | | | |
|---|---|---|---|
| Navy | 140 | 141 | 141 |
| Marine Corps | 135 | 141 | 136 |
| **Total** | **275** | **282** | **277** |

## *Reserve Component Aircraft Depot Maintenance*

The RC aircraft depot maintenance program is integrated with the Active Component (AC) program to fund repairs, overhauls, and inspections. Figure 3.10 displays baseline and overseas contingency operations funding requests and readiness indicators for RC aircraft depot maintenance.

*Figure 3.10 - Reserve Component Aircraft Depot Maintenance*

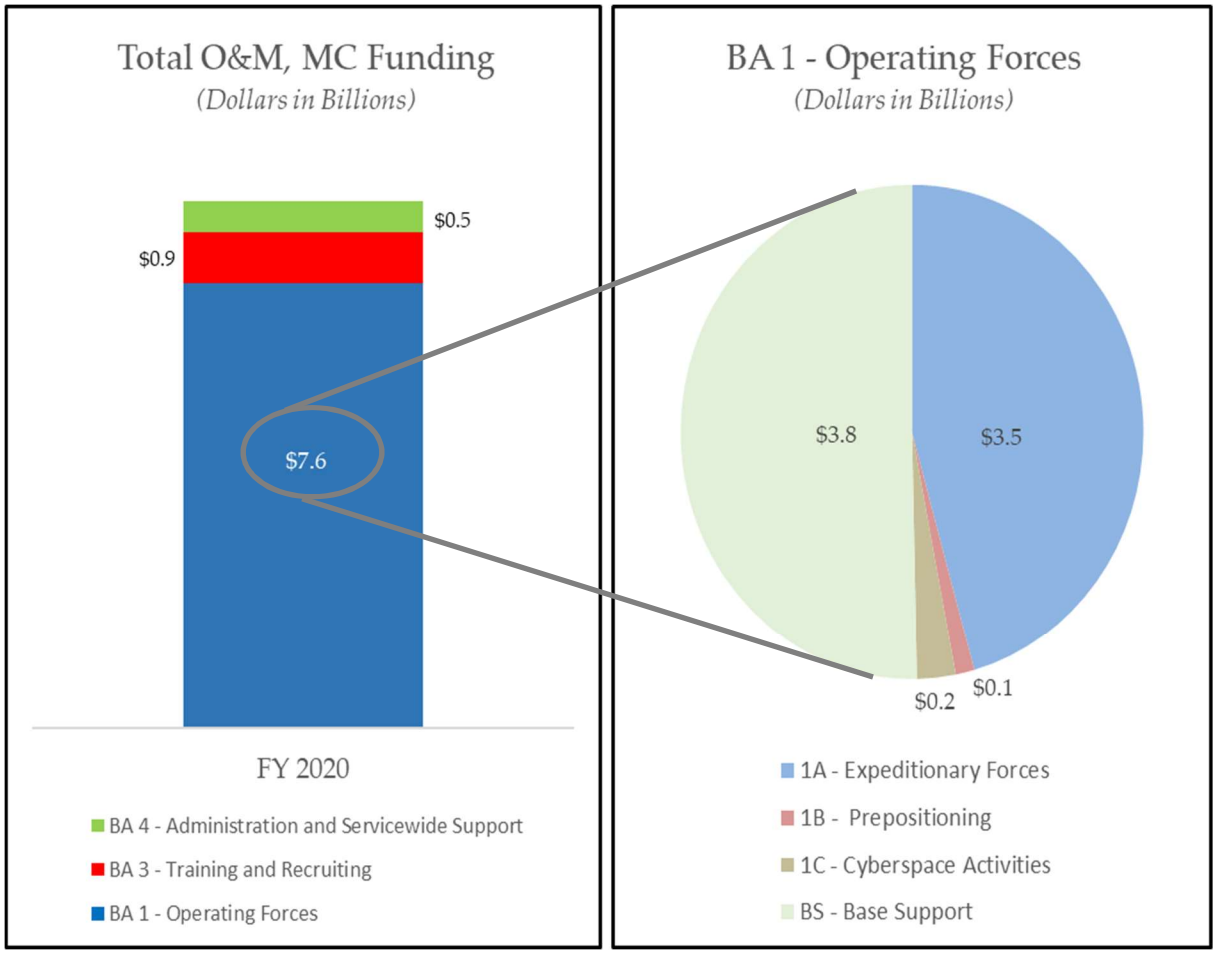
*(Dollars in Millions)*

| Reserve Forces | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| Airframes | 74 | 86 | 90 |
| Engines | 25 | 24 | 18 |
| **Baseline Reserve Aircraft Depot Maintenance** | **99** | **110** | **108** |
| Overseas Contingency Operations & RAA | 15 | 11 | 12 |
| **Total Reserve Aircraft Depot Maintenance** | **114** | **121** | **120** |
| **Percent Funded of Total Requirement** | 89% | 97% | 97% |

# *MARINE CORPS OVERVIEW*

The Marine Corps role as America's Expeditionary Force in Readiness informs how we man, train, and equip our force, driving how we prioritize and allocate the resources we are provided. The ultimate goal is to achieve a more lethal, maneuverable, and resilient force able to operate in the emerging strategic environment. The Marine Corps remains committed to building the most ready force our nation can afford, aligning with the Department of Defense's (DoD) guidance to improve warfighting readiness, achieve program balance, and increase lethality by focusing on three key budget priorities: modernization, readiness, and manpower. While our organization, training, and equipment must continually evolve to meet changes in the operational environment, this fundamental purpose is unchanging. Particular focus within the O&M funding is on the operating forces, training exercises, and installations. Figure 3.11 displays active Marine Corps' O&M funding in FY 2020.

***Figure 3.11 – FY 2020 Active Marine Corps O&M Funding***



# MARINE CORPS OPERATIONS

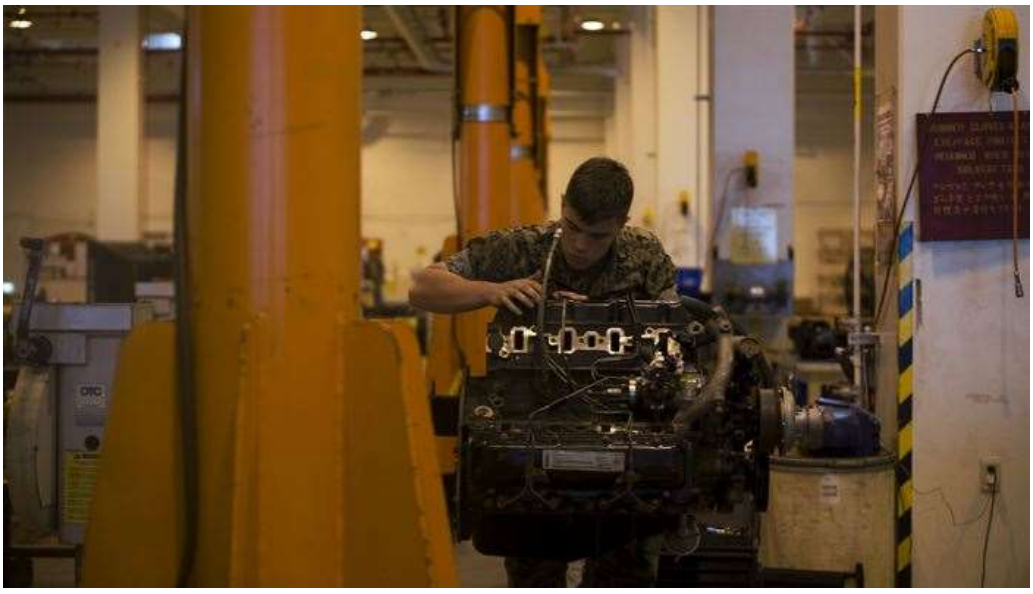
## Active Operations

Our overall theme for FY 2020, competing with a peer threat, continues efforts to rebuild the Marine Corps for the 21st Century by increasing resources applied to three key budget priorities: modernization, readiness, and manpower. Driven by Marine Corps Force 2025, the capability investment strategy which modernizes the force toward implementing the Marine Corps Operating Concept (MOC), we plan to rebuild a more relevant, lethal and ready Marine Corps to maintain our military advantage in a fiscally prudent and executable manner, addressing critical modernization requirements and investing in key warfighting capabilities without sacrificing near term readiness. Additionally, we plan to resource our infrastructure reset, Indo-Pacific force posture, science and technology projects to rapidly field Force 1.1 and 2.0 technologies, full-spectrum cyber operations, materiel, munitions, maintenance and training requirements that together generate the right capability and capacity required. Allocating money across our budget priorities supports DoD guidance to prioritize close combat lethality and build a future force oriented on meeting potential peer or near-peer adversaries.

Combatant Commander (CCDR) demand for Marines and tailored Marine Air-Ground Task Forces (MAGTFs) continues to drive an aggressive operational tempo. We consistently maintain about one-third of our operating forces (OPFOR) forward deployed in more than 60 countries. Of those forward deployed forces, more than 11,000 served aboard Navy warships last year. In addition to efforts mentioned previously, the Marine Corps provided tailored military combat-skills training and advisor support to foreign forces as part of Marine Corps Forces Special Operation Command (MARSOC); and enabling full spectrum cyberspace operations while supporting joint and coalition forces as part of Marine Forces Cyber (MARFORCYBER).

## *Ground Equipment Depot Maintenance*

The Marine Corps uses a Total Force (active plus reserve component) approach for the planning and execution of ground equipment depot maintenance. For Total Force ground equipment depot maintenance, we continue to make strategic choices in the divestiture of certain programs to reallocate funds toward building a more lethal, modern, multi-domain, expeditionary force. This has included accepting near-term capacity risk by reducing depot level maintenance for the legacy Assault Amphibious Vehicle (AAV) as we transition to the Amphibious Combat Vehicle (ACV). As noted in Figure 3.12 below, the accepted risk in depot repair of equipment sets, including the Command, Personnel, and Recovery variants of the AAV offset increased depot maintenance for the M88A2 Heavy Recovery Vehicle; the LAV-25 Light Assault Vehicle; and the M1A1 Main Battle Tank. While there is a decrease to electronics and communications systems, the enterprise continues to execute depot maintenance for equipment sets including: the AN/UPX-37 Interrogator Set, the High Frequency Vehicle Radio, the Satellite Signals Navigation Set, the Firefinder Radar Set, the AN/MRC-145/145A Radio Set Manpack, the Transportable Tactical Satellite Communications System, and the Optical Power and Radio Test Sets. Increases to ordnance weapons and munitions is comprised of depot maintenance requirements for equipment sets such as the Common #2171 Ordnance, the Explosive Ordnance Disposal, Remote Fuze Disassembly System, the 155MM Lightweight Towed Howitzer, as well as other systems.



## *Figure 3.12 – Marine Corps Ground Equipment Depot*

| *(Dollars in Millions)* | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| Active Force | | | |
| Automotive Equipment | 96 | 52 | 28 |
| Combat Vehicles | 154 | 197 | 141 |
| Construction Equipment | 19 | 6 | 30 |
| Electronics and Communications Systems | 32 | 68 | 52 |
| Missiles | 4 | 3 | 3 |
| Ordnance Weapons and Munitions | 34 | 41 | 33 |
| **Total Active Forces (Baseline + OCO)** | **339** | **367** | **287** |

Sum of $ may not match due to rounding

OCO funds continue to be required for the purpose of reconstituting weapon systems and equipment and overcoming high demand/low density challenges in support of forward deployed forces, like our Special Purpose Marine Air Ground Task Forces (SP-MAGTF), conducting operations within the U.S. Central Command (CENTCOM) and U.S. Africa Command (AFRICOM) areas of responsibility. The high use and harsh environment encountered during expeditionary operations necessitate frequent and thorough overhaul of these systems. The FY 2020 funding request reflects the amount needed to meet depot and intermediate field-level maintenance requirements that support in-theater augmented equipment while continuing to sustain the readiness and mobilization capability of the MAGTF equipment used for training and operational requirements.

# *MARINE CORPS RESERVE OPERATIONS*

The Marine Corps Reserve is a full partner in the Marine Corps' Total Force concept. The reserve component is trained, organized, and equipped in the same manner as the active force. The reserve provides complementary assets that enable the Marine Corps Total Force to mitigate risk and maximize opportunities. Similar to the active component, the Marine Forces Reserve consists of the Marine Forces Reserve headquarters and its subordinate Marine Division, Marine Aircraft Wing, and Marine Logistics Group, all of which are headquartered in New Orleans, Louisiana. The reserves are unique in that the subordinate regiments/groups, battalions/squadrons, and companies/detachments are located at 161 reserve training centers and sites across the United States. The FY 2020 budget maintains the reserve component's capability and invests in physical security upgrades for many sites.

## *Ground Equipment Depot Maintenance*

The Marine Corps uses a Total Force (active plus reserve component) approach for the planning and execution of ground equipment depot maintenance. Specifically for the reserve force, the FY 2020 budget ensures that the combined repairs and procurement programs provide a balanced level of attainment and maintenance of inventory in order to meet mission requirements. Though the overall maintenance budget remains constant from year to year, the variations in the categories are driven by the same strategic choices, divestitures, and allocation of funds decisions as stated in the ground equipment depot maintenance section. Figure 3.13 reflects Marine Corps Reserve ground equipment depot maintenance for FY 2020. For the Marine Corps Reserves, in FY 2020 the changes include a decrease in automotive equipment for the Armored High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) and Armored Refueler Semi Trailers; an increase in combat vehicles for the Assault Breacher Vehicles (ABV), Light Armored Vehicle (LAV), and tanks (M1A1 and M88 Retriever); an increase in construction equipment for bridging capabilities and water purification systems; a decrease in electronic and communications systems to support active operation deficiencies; and a decrease in ordnance weapons and munitions for the 155MM Lightweight, Towed Howitzer.

## *Figure 3.13 – Marine Corps Reserve Ground Equipment*

| *(Dollars in Millions)* | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| Reserve Forces | | | |
| Automotive Equipment | 2 | 2 | 1 |
| Combat Vehicles | 6 | 8 | 10 |
| Construction Equipment | 2 | 1 | 3 |
| Electronics and Communications Systems | 5 | 4 | 3 |
| Missiles | 1 | 1 | 0 |
| Ordnance Weapons and Munitions | 3 | 3 | 2 |
| **Total Active Forces (Baseline + OCO)** | **19** | **19** | **18** |
| | | | |
| **Percent of Total Funded Requirement** | 100% | 100% | 100% |

Sum of $ may not match due to rounding

# *FACILITY SUSTAINMENT, RESTORATION, AND MODERNIZATION*

Navy and Marine Corps installations enable fleet operations, equipment reconstitution, material sustainment, Total Force training, unit recovery, sailor and marine administrative support, and quality of life programs. Continued investment in Facility Sustainment, Restoration, and Modernization (FSRM) funding is necessary to maintain our shore installations supporting required capabilities. The FSRM program maintains the working order of our facilities inventory and prevents premature condition degradation of mission critical facilities.

## *Facility Sustainment*

The FY 2020 budget funds Navy sustainment at 87 percent of the DoD-modeled requirement while Marine Corps facility sustainment is resourced at 88 percent. This level of sustainment surpasses the FY 2020 OSD mandate of at least 85 percent funding with additional funds added to Marine Corps accounts to assist in natural disaster mitigation from events which occurred late in calendar year 2018. The Marine Corps will maintain an average of 85 percent throughout the Future Years Defense Program (FYDP).

## *Facility Restoration and Modernization*

The Navy continues refinement of condition-based maintenance application as it efficiently prioritizes and accurately budgets restoration and modernization within the FSRM program. The Navy has focused funding on recapitalization of those critical facilities that support warfighting readiness with a substantial investment in modernizing public shipyard infrastructure and capital equipment.

The Marine Corps program strives to restore deteriorated facilities to an acceptable facilities condition rating, targeting those facilities in poor (Q3) and failing (Q4) condition. Specific efforts in this budget have been identified in repairs directly caused by natural disasters that occurred in FY 2018. The damage of which has increased the restoration and modernization requirement to be two and half times the normal budgeted amount.

Hurricanes Florence and Matthew caused an estimated $3.7 billion of damages to Marine Corps infrastructure. Mitigation plans are being developed to fully finance the necessary recovery efforts. These costs started being recognized in FY 2018 and will continue through the FYDP as Military Construction (MILCON) projects are pursued and completed. We expect to have an ongoing dialogue that evaluates opportunity costs, risks and timing in order to identify available financial resources that can be used to repair and rebuild the infrastructure damaged by these natural disasters.

## *Facility Demolition*

Facility Demolition accounts for the demolition of obsolete and excess structures, thereby reducing costly upkeep on older structures and potential fire and safety hazards from installations. This demolition effort removes obsolete and excess structures, reduces upkeep cost, and improves the integrity of installations by eliminating degraded facilities. The Marine Corps remains on target to eliminate 31 million square feet (MSF) by FY 2027 as directed by the Commandant's Infrastructure Reset Strategy. Funding in FY 2020 aims to divest of 1.8 MSF of older,

excess, and obsolete facilities contributing to the consolidation and right-sizing of the Marine Corps' facilities footprint to improve operational readiness.

### *Marine Corps Infrastructure Reset*

The Marine Corps continues to prioritize and invest in the Infrastructure Reset Strategy in order to improve infrastructure lifecycle management and ensure infrastructure investments are aligned with Marine Corps capability-based requirements to support the warfighting mission and contribute directly to current and future force readiness. In the FY 2020 budget, the Marine Corps has maintained a balanced facility investment portfolio across the four key facility investment categories – MILCON, FSRM (recapitalization), and Demolition. The Marine Corps remains on track to meet all goals set out in the Infrastructure Reset Strategy.

## *ENVIRONMENTAL RESTORATION, NAVY*

The Environmental Restoration, Navy (ERN) appropriation provides funds to clean-up sites polluted before 1987. While budgeted as ERN, in the funding year of execution the funds are transferred to the respective appropriation.

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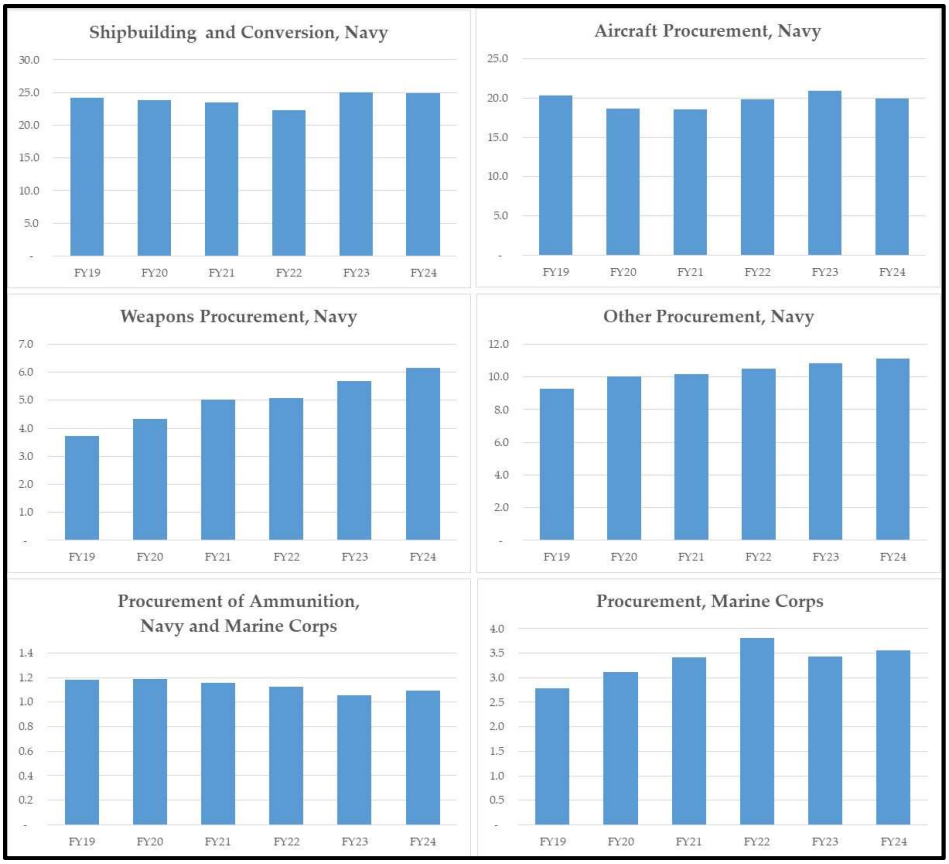
# SECTION IV – PROCUREMENT

## OVERVIEW

As outlined in the introduction section, the Department needs a bigger force to address the challenges associated with the great power competition we find ourselves in. The Navy plan is for the battle force ship inventory to steadily increase in quantity from 288 in early FY 2019 to 314 in FY 2023, with a goal of 355 ships by FY 2034. The FY 2020 budget continues investments in F/A-18 and F-35 strike fighter aircraft, and we increase our preferred munitions inventory, building capacity for the high-end fight. We also invest in unmanned vehicles, cybersecurity, command, control, communications, computers, and intelligence, addressing the multiple dimensions of conflict the Department faces. This budget provides a balanced approach to growing capacity, equipping Sailors and Marines for the future conflict. Figure 4.1 displays procurement funding streams through FY 2024.

### *Figure 4.1 – Procurement, FY 2019 – FY 2024 (Dollars in Billions)*



# *SHIP PROCUREMENT, NAVY*

The 2016 National Defense Authorization Act detailed a long-term requirement for 355 ships in the battle force, and the FY 2020 budget moves the Department in the right direction to meet this requirement. The Navy's shipbuilding budget procures twelve battle force ships, including one *Ford* class aircraft carrier, three *Virginia* class submarines - two of which include Virginia Payload Module (VPM), three *Arleigh Burke* class destroyers, one FFG(X) guided missile frigate, two *John Lewis* class oilers, and two T-ATS towing, salvage, and rescue ships. There are also two large unmanned surface vessels funded in RDTE,N in FY 2020. The plan from FY 2020 to FY 2024 is shown in Figure 4.2.

## *Figure 4.2 – Shipbuilding Procurement Quantities and Total Funding*

| (Dollars in Billions) | FY 2019 | FY 2020 | FY 2021 | FY 2022 | FY 2023 | FY 2024 | FY20-24 |
|---|---|---|---|---|---|---|---|
| **New Construction:** | | | | | | | |
| Columbia Class Submarine | - | - | 1 | - | - | 1 | 2 |
| CVN 78 (Ford class) | - | 1 | - | - | - | - | 1 |
| SSN 774 (Virginia class) | 2 | 3 | 2 | 2 | 2 | 2 | 11 |
| DDG 51 | 3 | 3 | 2 | 2 | 3 | 3 | 13 |
| LCS | 3 | - | - | - | - | - | - |
| FFG (X) (SSC) | - | 1 | 2 | 2 | 2 | 2 | 9 |
| LHA(R) | - | - | - | - | - | 1 | 1 |
| LPD Flight II / LX(R) | - | - | 1 | - | 1 | - | 2 |
| Expeditionary Sea Base (ESB) | 1 | - | - | - | 1 | - | 1 |
| Expeditionary Fast Transport (EPF) | 1 | - | - | - | - | - | - |
| T-AO 205 | 2 | 2 | 1 | 1 | 2 | 1 | 7 |
| T-ATS | 1 | 2 | 1 | 1 | 1 | - | 5 |
| T-AGOS(X) | - | - | - | 1 | 1 | 1 | 3 |
| **New Construction Total QTY** | **13** | **12** | **10** | **9** | **13** | **11** | **55** |
| **New Construction Total ($B)** | **$ 22.3** | **$ 22.2** | **$ 20.4** | **$ 18.9** | **$ 23.8** | **$ 23.5** | **$ 108.9** |
| **Unmanned:** | | | | | | | |
| Large Unmanned Surface Vessel (LUSV)[1,2] | - | 2 | 2 | 2 | 2 | 2 | 10 |
| **Total Unmanned QTY** | **-** | **2** | **2** | **2** | **2** | **2** | **10** |
| **Total RDTE,N ($B)** | **-** | **$ 0.4** | **$ 0.5** | **$ 0.6** | **$ 0.6** | **$ 0.6** | **$ 2.7** |
| **Other Construction:** | | | | | | | |
| LCAC SLEP | 1 | - | - | - | - | - | - |
| Ship to Shore Connector | 8 | - | 4 | 7 | 5 | 5 | 21 |
| LCU 1700 | 2 | 4 | 4 | 4 | 4 | 4 | 20 |
| CVN RCOH | - | 1 | - | - | - | - | 1 |
| T-ARC Cable Laying/Repair Ship | - | - | - | 1 | - | - | 1 |
| **Other Construction Total QTY** | **11** | **5** | **8** | **12** | **9** | **9** | **43** |
| **Total Shipbuilding QTY** | **24** | **19** | **20** | **23** | **24** | **22** | **108** |
| **Total Shipbuilding, SCN only ($B)** | **$ 24.2** | **$ 23.8** | **$ 23.5** | **$ 22.3** | **$ 25.0** | **$ 24.9** | **$ 119.5** |

[1]Contains offensive missle capability

[2]Budgeted in RDTE,N

## *Aircraft Carriers*

The next generation aircraft carrier, the *Ford* class, is the centerpiece of the carrier strike group. Taking advantage of the *Nimitz* class hull form, the *Ford* class will feature an array of advanced technologies designed to improve warfighting capabilities and allow significant manpower reductions. With $2.3 billion requested in FY 2020, the Department will continue to finance the third increment of detailed design and construction for the third *Ford* class carrier (USS Enterprise (CVN 80)) and second increment for the fourth *Ford* class carrier (CVN 81). The CVN 80 and CVN 81 were awarded as a two-carrier procurement. Awarding the two carriers together is estimated to save the Department $4 billion compared to the Navy's original cost estimates for buying CVN 80 and CVN 81 separately.

As part of this budget request, we made the difficult decision to retire CVN 75 in lieu of its previously funded refueling complex overhaul (RCOH) - that was scheduled to occur in FY 2024. This adjustment is in concert with the Defense Department's commitment to proactively pursue diversified investments in next generation, advanced, and distributed capabilities, including unmanned and optionally manned systems, and to provide a strong industry demand signal for the same. This approach pursues a balance of high-end, survivable manned platforms with a greater number of complimentary, more affordable, potentially more cost-imposing, and attritable options.

## *Submarine Programs*

The Navy continues to modernize the submarine fleet. Planning, design and advanced construction continues for the *Columbia* class submarine to provide continuous sea-based strategic deterrence. In the fourth year of advance procurement funding for the *Columbia* class submarine ($1.7 billion), the Department will continue funding detailed design efforts, continuous missile tube production, and advanced construction of major hull components and propulsion systems which will help stabilize the manufacturing base and reduce cost and schedule risk.

*Virginia* class fast attack submarines (SSN 774) continue to join the existing fleet of *Los Angeles* and *Seawolf* class submarines to provide covert force application throughout the world's oceans. The FY 2020 budget request includes funds for three Block V *Virginia* class fast attack submarines and related advance procurement and economic order quantity funds ($9.9 billion) executing as part of the FY 2019 to FY 2023 MYP. All hulls in Block V will include Acoustic Superiority, a step improvement in acoustic stealth and on-hull sensors. Additionally, two hulls in FY 2020 will include the VPM, a hull section with four additional payload tubes capable of carrying an additional 28 Tomahawk cruise missiles which increases the Tomahawk capacity from 12 per ship to 40 per ship.

## *Surface Ship Programs*

The Navy continues to invest in capabilities to counter improved ballistic missile capabilities emerging worldwide. The FY 2020 budget requests $5.3 billion for three *Arleigh Burke* class destroyers (DDG 51) and related economic order quantity funds as part of the multi-year procurement (MYP) in support of this capable platform. These destroyers will be Flight III ships, equipped with the advanced Air and Missile Defense Radar (AMDR), and are part of the FY 2018 ten-ship MYP with options for additional ships.

The FY 2020 budget request also contains $1.3 billion to procure the first multi-mission frigate. The Guided Missile Frigate (FFG(X)) is a more lethal and survivable multi-mission small surface combatant to address increasingly complex threats in the global maritime environment.

## *Amphibious and Logistics Platforms*

The FY 2020 budget request includes funds for two *John Lewis* class oilers (T-AO 205) and related advance procurement ($1.1 billion). The *John Lewis* class oiler will recapitalize the existing *Henry J. Kaiser* class oilers to supply fuel and dry cargo to Navy ships at sea.

The T-ATS Towing, Salvage, and Rescue ship program requests two

ships ($150 million). T-ATS class will be the functional replacement for the T-ATF class Fleet Tugs and the T-ARS class Salvage ships.

The Navy's Landing Craft Utility (LCU) 1700 program will procure four craft in FY 2020 ($86 million). The LCU 1700 class is the functional replacement for the LCU 1610 class and provides heavy lift capability to transport personnel and cargo from ship to shore.

## AIRCRAFT PROCUREMENT, NAVY

Navy and Marine Corps aviation provides our nation's leaders with ashore and afloat force application options where it matters and when it matters. The FY 2020 budget request procures 148 manned and unmanned aircraft. Figure 4.3 depicts the aviation program through FY 2024.

### *Figure 4.3 – Aircraft Procurement Quantities and Total Funding*

| (Dollars in Billions) | FY 2019 | FY 2020 | FY 2021 | FY 2022 | FY 2023 | FY 2024 | FY20-24 |
|---|---|---|---|---|---|---|---|
| **Fixed Wing:** | | | | | | | |
| F-35C (CV) | 15 | 20 | 18 | 29 | 27 | 26 | 120 |
| F-35B (STOVL) | 22 | 10 | 15 | 17 | 20 | 20 | 82 |
| F/A-18E/F | 24 | 24 | 24 | 12 | 12 | 12 | 84 |
| E-2D AHE | 6 | 4 | 4 | 5 | 5 | - | 18 |
| P-8A (MMA) | 10 | 6 | - | - | - | - | 6 |
| T-44 Replacement (USN) | - | - | - | - | 10 | 20 | 30 |
| KC-130J | 2 | 3 | 5 | 5 | 5 | 3 | 21 |
| F-5 | - | 22 | - | - | - | - | 22 |
| **Rotary Wing:** | | | | | | | |
| CH-53K (HLR) | 8 | 6 | 12 | 19 | 18 | 19 | 74 |
| MV-22B/CMV-22B | 13 | 10 | 9 | 11 | 8 | 4 | 42 |
| AH-1Z | 25 | - | - | - | - | - | 0 |
| TH-57 Replacement | 0 | 32 | 31 | 31 | 15 | 0 | 109 |
| VH-92A | 6 | 6 | 5 | 0 | 0 | 0 | 11 |
| **UAV:** | | | | | | | |
| MQ-4C Triton | 3 | 2 | 2 | 3 | 5 | 5 | 17 |
| MQ-25 Stingray (USN) | - | - | - | - | 4 | 4 | 8 |
| MQ-9A Reaper (USMC) | 0 | 3 | 3 | - | - | - | 6 |
| **Total Major Aircraft QTY** | **134** | **148** | **128** | **132** | **129** | **113** | **650** |
| **Total Aircraft Procurement ($B)** | **$ 20.3** | **$ 18.6** | **$ 18.5** | **$ 19.8** | **$ 20.9** | **$ 19.9** | **$ 97.7** |

## *Fixed Wing*

Our multifaceted strategy to sustain and recapitalize the strike fighters is reliant on fully funding sustainment accounts, reducing strike fighter utilization, and procurement of additional F/A-18E/F and F-35B/C aircraft. The F-35C Carrier Variant (CV) provides the Navy and Marine Corps with a multi-role stealthy strike fighter to complement the F/A-18. The F-35B Short Takeoff and Vertical Landing (STOVL) variant is a multi-role strike fighter replacing the AV-8B for the Marine Corps. The F/A-18 program was approved for a three-year MYP beginning in FY 2019.

The E-2D Advanced Hawkeye program is the next generation, carrier-based early warning, command, and control aircraft that provides improved battle space detection, supports theater air missile defense, and offers improved operational availability. The E-2D was approved for a five year MYP beginning in FY 2019 to complete the program of record.

The P-8A Multi-Mission Maritime Aircraft's (MMA) ability to perform undersea warfare to include intelligence, surveillance, and reconnaissance (ISR); long-range surface warfare; and high altitude torpedo capability missions make it a critical force multiplier for the Joint Task Force Commander. The increased performance and capabilities of the P-8A enables the crew to arrive on station faster, stay on-task longer, and (most significantly) achieve unprecedented reliability. FY 2020 completes the P-8A procurement with six aircraft.

The KC-130J aircraft is designed for cargo, tanker, and troop carrier operations. The mission of the KC-130J is to provide tactical in-flight refueling and assault support transport. FY 2019 is the first year of a five-year MYP for the program.

The Department is procuring F-5E/F aircraft from the government of Switzerland in support of the USN and USMC adversary requirements. The F-5 is an agile, highly maneuverable, reliable supersonic fighter, combining advanced aerodynamic design, engine performance and low operating costs.

## Rotary Wing

The CH-53 is the DoD's only ship-board compatible, heavy-lift helicopter. The Marine Corps has been operating the CH-53E since the early-1980s and is replacing this legacy aircraft with the upgraded and more capable CH-53K. The new CH-53K will have heavy-lift capabilities that exceed all other DoD rotary wing-platforms.

The V-22 Osprey shifts procurement to the CMV-22B variant, which will replace the C-2A carrier Onboard Delivery (COD). The MV-22B variant fills a critical capability role with the Marine Corps by incorporating the advantages of a Vertical/Short Takeoff and Landing aircraft that can rapidly self-deploy to any location in the world. The V-22 program entered into a five-year MYP in FY 2018.

FY 2020 is the first year that the Department of the Navy procures the Advanced Helicopter Training System (AHTS) to replace the TH-57B/C Training System. The AHTS is a family-of-systems that provides the capability to train advanced rotary wing and intermediate tilt-rotor students for designations as aviators in the Navy, Marine Corps, and Coast Guard.

The VH-92A Presidential Executive Helicopter is the replacement helicopter for the VH-3D and the VH-60N, the aircraft currently used for the safe and timely transportation of the President, Vice President, and other distinguished officials as directed by the White House Military Office. The first year of procurement for this aircraft was FY 2019, and the Department will complete the aircraft procurement in FY 2021 with a total of 11 aircraft.

## Unmanned Aerial Vehicles (UAVs)

The FY 2020 budget continues procurement of unmanned platforms in support of Joint Force and Combatant Commander demands for increased ISR capability and capacity. The MQ-4C Triton is a high-altitude, long endurance unmanned aircraft system designed to provide persistent maritime ISR of nearly all the world's high-density sea-lanes, littorals, and areas of national interest. FY 2020 continues production and maintains our commitment to the ISR transition plan.

The MQ-9A Reaper aircraft is a single-engine, turbo-prop, remote-piloted aircraft designed to operate over-the-horizon at medium to high altitude for long endurance sorties. FY 2020 is the first year of procurement for the MQ-9 aircraft.

# *WEAPONS PROCUREMENT, NAVY*

Figure 4.4 shows quantities in the FY 2020 request for specific weapons programs. The FY 2020 weapons procurement budget is $4.3 billion.

## *Figure 4.4 –Weapons Procurement Quantities and Total Funding*

| (Dollars in Billions) | FY 2019 | FY 2020 | FY 2021 | FY 2022 | FY 2023 | FY 2024 | FY20-24 |
|---|---|---|---|---|---|---|---|
| **Ship Weapons:** | | | | | | | |
| TACTOM | - | 90 | 90 | - | - | - | 180 |
| TACTOM Recert | 5 | 112 | 156 | 156 | 348 | 274 | 1,046 |
| TACTOM Mod | 112 | 156 | 156 | 348 | 274 | 274 | 1,208 |
| TACTOM- MST | - | 20 | 44 | 65 | 142 | 104 | 375 |
| SM 6 | 125 | 125 | 135 | 135 | 145 | 200 | 740 |
| RAM Blk II | 108 | 120 | 120 | 120 | 120 | 120 | 600 |
| ESSM Blk II | 45 | 60 | 125 | 175 | 300 | 300 | 960 |
| MK 48 HWT | 53 | 58 | 71 | 75 | 76 | 68 | 348 |
| MK 48 CBA SS KITS | 79 | 54 | 25 | 39 | - | - | 118 |
| MK 48 TI-1 | - | - | - | 17 | - | 28 | 45 |
| MK 54 LWT MOD 0 | 66 | 42 | - | - | - | - | 42 |
| MK 54 LWT MOD 1 | - | 30 | 74 | 110 | 124 | 128 | 466 |
| ADVANCED LWT | - | - | - | 6 | 54 | 54 | 114 |
| HARPOON BLK II+ MOD | 81 | 79 | 57 | - | - | - | 136 |
| LCS OTH Missiles | 8 | 18 | 15 | 16 | 26 | 26 | 101 |
| LCS SSMM | 90 | 120 | 115 | 109 | 109 | 109 | 562 |
| SOPGM | 31 | - | - | - | - | - | - |
| **Aircraft Weapons:** | | | | | | | |
| SIDEWINDER (AIM-9X) | 311 | 292 | 299 | 236 | 177 | 135 | 1,139 |
| AMRAAM | 141 | 169 | 331 | 358 | 363 | 359 | 1,580 |
| AARGM BLK I | 261 | 245 | 245 | 249 | 254 | - | 993 |
| AARGM BLK II | - | - | 16 | 16 | 16 | 291 | 339 |
| JAGM* | 75 | 382 | 481 | 195 | 322 | 312 | 1,692 |
| LRASM | 35 | 48 | 48 | 48 | 48 | 48 | 240 |
| HELLFIRE | 23 | 29 | - | - | - | - | 29 |
| SDB II | 750 | 750 | 750 | 750 | 750 | 750 | 3,750 |
| **Total Weapons QTY** | **2,399** | **2,999** | **3,353** | **3,223** | **3,648** | **3,580** | **16,803** |
| **Total Weapon Procurement ($B)** | **$ 3.7** | **$ 4.3** | **$ 5.0** | **$ 5.1** | **$ 5.7** | **$ 6.2** | **$ 26.3** |

## *Ship Weapons*

The Tactical Tomahawk (TACTOM) missile provides a premier attack capability against long range, medium range, and tactical targets on land and can be launched from both surface ships and submarines. The Block IV Tactical Tomahawk preserves the Tomahawk's long-range precision-strike capability while significantly increasing responsiveness and flexibility. The Department will procure 90 new Block V TACTOM, 112 Navigation/Communications (NAV/COMMs) kits, formerly known as Anti-Access Area Denial (A2AD) modernization kits, and 156 TACTOM NAV/COMMs modernization kits in FY 2020.

The Standard Missile (SM-6) is the primary air defense weapon for AEGIS cruisers and destroyers. The SM-6 Block I possesses an extended range engagement capability to provide an umbrella of protection for U.S. forces and allies against the full spectrum of manned fixed-wing and rotary-wing aircraft, unmanned aerial vehicles, and land attack and anti-ship cruise missiles in flight. The DON has focused on its efforts to integrate the kill chain, consisting of the E-2D, CEC, AEGIS, and the SM-6 missile. The FY 2020 budget reflects a funding profile for the proposed five-year MYP with completion in FY 2023.

The Rolling Airframe Missile (RAM), a cooperative effort with Germany, is a high firepower, low-cost, lightweight ship self-defense system designed to engage anti-ship cruise missiles and asymmetric threats. The production of Block II missiles provides increased kinematic capability against high maneuvering threats and improved radio frequency (RF) detection against low probability of intercept threats. RAM is investing in the RAM Block II Raid engineering change proposal (ECP) to provide an upgraded

seeker and Missile-to-Missile Link (MML) capability to counter emerging complex raid threats. The FY 2020 budget supports the procurement of 120 RAM Block II missiles including hardware to support fleet training requirements.

The Evolved Sea Sparrow Missile (ESSM) serves as the Navy's primary surface-to-air, ship self-defense missile system. ESSM is an international cooperative effort to design, develop, test, produce, and provide in-service support to a new and improved version of the SPARROW missile (RIM-7P) with a kinematic performance to defeat current and projected threats that possess low-altitude, high-velocity, and maneuver characteristics beyond the engagement capabilities of the RIM-7P. ESSM Block II replaces the guidance section with a dual mode active/semi-active X-band seeker. In FY 2020 Navy will increase the procurement of the ESSM Block II missile to 60.

The MK 48 Advanced Capability heavyweight torpedo is used solely by submarines and is employed as the primary anti-submarine warfare and anti-surface warfare weapon aboard attack, ballistic missile, and guided missile submarines. FY 2020 efforts will continue procurement of the Common Broadband Advanced Sonar System, and guidance and control modifications to the existing torpedo, optimizing the weapon for both deep and littoral waters, and adding advanced counter-countermeasure capabilities. FY 2020 is the fifth year of procurement of new torpedoes.

The MK-54 Lightweight Torpedo (LWT) is an anti-submarine torpedo deployed from surface ships and Anti-Submarine Warfare (ASW) air platforms in littoral scenarios operating in shallow water acoustic and environmental conditions. It is effective in the presence of threat countermeasures and capable in deep water engagements. The MK-54 Mod 0 LWT maximizes the use of non-developmental item (NDI) technologies, incorporating the proven technologies from existing torpedo programs with state of the art commercial-off-the-shelf (COTS) processors and is a modular upgrade to LWT Inventory. MK-54 Mod 1 builds on the MK-54 Mod 0 improvements to expand the torpedo's capability in shallow water littoral environment and also improves the torpedo's counter-countermeasure capability to allow higher effectiveness in current and future threat environments. The FY 2020 budget procures 42 MOD 0 and 30 MOD 1 to support fleet requirements.

The Harpoon Block II+ missile is a net-enabled, air-launched, anti-ship cruise weapon with the ability to receive in-flight updates that improve the targeting and engagement of moving maritime targets. This system utilizes global positioning to provide in-flight updates coupled with an active radar seeker to provide accurate targeting. FY 2020 procures kits to retrofit the Harpoon 1C weapons in the current inventory.

The Over the Horizon (OTH) missile provides the Littoral Combat Ship/Frigate (LCS/FFG) with long-range, anti-surface offensive capability against surface combatants. The OTH Weapon Systems (WS) consists of a Missile Launch System and a complement of missiles. This program procures 18 LCS OTH missiles in FY 2020.

The Littoral Combat Ship Surface-to-Surface Missile Module (LCS SSMM) combined with the Longbow Hellfire Missile form a segment of the Surface Warfare (SUW) mission package which increases firepower and offensive/defensive capabilities against large numbers of highly maneuverable, fast, small craft threats, giving LCS the ability to protect the sea lanes and move a force quickly through a choke point or other strategic waterway.

## *Aircraft Weapons*

The AIM-9X (Sidewinder) missile is a "launch-and-leave" munition that employs passive infrared energy for acquisition and tracking of enemy aircraft. FY 2020 continues procurement of AIM-9X Block II and AIM-9X Block II+ missiles, which incorporate specialized external materials to enhance aircraft platform survivability.

The Advanced Medium Range Air-to-Air Missile (AMRAAM) is the next generation, all-weather, radar-guided missile designed to counter existing air-vehicle threats having advanced electronic attack capabilities. Upgrades to the missile incorporate active radar in conjunction with an inertial reference unit and microcomputer that make the missile less dependent on the aircraft fire control system. FY 2020 provides funding to procure 169 AIM-120D missiles to support warfighter requirements.

The Advanced Anti-Radiation Guided Munition (AARGM) is an upgrade to the legacy High-speed Anti-Radiation Missile (HARM), with a multi-mode guidance and targeting capability. The Department continues with the ninth year of AARGM production in FY 2020.

The Joint Air-to-Ground Missile (JAGM) is the replacement for the Hellfire missile. JAGM is an air-launched missile system, which utilizes multi-mode seeker technology providing advanced line-of-sight and beyond-line-of-sight capabilities. FY 2020 funding supports the first JAGM full rate production buy of 382 missiles.

The Long Range Anti-Ship Missile (LRASM) is the next generation anti-surface warfare missile that is designed to provide precise, discriminating, and lethal long-range, air-launched capabilities. LRASM is a semi-autonomous anti-ship missile, which reduces dependence on external platforms and GPS navigation in order to penetrate sophisticated enemy air defense systems. FY 2020 is the fourth year of procurement.

The AGM-114 Hellfire is a family of laser-guided missiles employed against point and moving targets by both rotary and fixed-wing aircraft. The FY 2020 request procures 29 Hellfire Captive Air Training Missiles (CATMs). Missiles expended in theater will be replaced with JAGM.

Small Diameter Bomb Increment II (SDB II) is an Air Force led ACAT I joint program, which provides the warfighter a capability to attack mobile targets in all-weather from stand-off range. SDB II addresses the requirement to attack mobile targets; multiple kills per pass; multiple ordnance carriage; all weather operations; near-precision munitions capability; capability against fixed targets; reduced munitions footprint; increased weapons effectiveness; minimized potential for collateral damage; reduced susceptibility of munitions to countermeasures; and a migration path to net-centric operations capability. FY 2020 is the third year of procurement for the DON.

# PROCUREMENT, MARINE CORPS

In FY 2020 the Marine Corps continues to balance its ground equipment procurement and future development to support the current fight while modernizing to determine the future fight. The Marine Corps' path to achieve maximum readiness in ground equipment in the near and far term combines key modernization efforts, select legacy systems investment, force design adjustments, and training infrastructure enhancements to attain an optimally effective force. Modernization is essential to develop the Marine Corps across all warfighting functions and is the key to ensuring tomorrow's Marine Corps is equipped to execute the Marine Corps Operating Concept and outmatch anticipated future challenges. The FY 2020 request includes key warfighting modernization efforts for Amphibious Combat Vehicles, Ground/Air Task Oriented Expeditionary Radar Systems, and Joint Light Tactical Vehicles. The FY 2020 PMC budget is $3.1 billion.

## *Major Procurement Programs*

Networking on the Move (NOTM) provides Marine commanders with the ability to conduct digital command and control by providing tactical voice, video, and data services while traversing the battlefield. This force modernizing technology will enhance the Marine Corps' ability to operate as an expeditionary force. The Marine Corps has different variants based on the vehicle being used: the NOTM Ground Combat Vehicle (NOTM-GCV), NOTM Utility Task Vehicle (NOTM-UTV), and NOTM-Airborne (NOTM-A). The FY 2020 budget will support the procurement of both the GCV and UTV variants of the system for use by the Marine Corps.

Joint Light Tactical Vehicle (JLTV) Family of Vehicles is a joint Army and Marine Corps program of which Army is the lead service. The program objectives are to restore the mobility and payload once provided by the original High Mobility Multi-Wheeled Vehicle to the future light tactical vehicle fleet while providing increased modular protection within the weight constraints of the expeditionary force. JLTV

configurations will be derived from two basic vehicle variants, the Combat Tactical Vehicle and the Combat Support Vehicle. The FY 2020 request reflects procurement of 1,398 vehicles (244 less than FY 2019) and associated kits. The kits will support the baseline vehicle by providing the warfighter the ability to augment the vehicle's configuration to meet required capabilities.

The Amphibious Combat Vehicle (ACV) will be a partial and complementary replacement for the legacy Assault Amphibious Vehicle (AAV) in the Assault Amphibious (AA) battalions within the Marine Divisions. The ACV, an advanced generation, eight-wheeled armored personnel carrier, will mitigate current and projected capability gaps by providing improved lethality against dismounted enemy troops, more effective land and water tactical mobility, and increased force protection and survivability from blasts, fragmentation, and kinetic energy threats. The ACV program is structured to be executed in multiple phases, with the first phase designed to provide an initial operational capability of personnel carriers. The ACV Increment 1.1 variant will deliver combat-ready Marines from ship-to-shore connector craft in order to mass forces at littoral penetration points and continue to maneuver onward to inland objectives. FY 2020 funding procures the first full-rate production lot of 56 vehicles, plus procurement of related items such as production support, systems engineering/program management, engineering change orders, government furnished equipment, and integrated logistics support.

Ground/Air Task Oriented Radar (G/ATOR) is an expeditionary, three-dimensional, short/medium range multi-role radar designed to detect cruise missiles, air breathing targets, rockets, mortars, and artillery. G/ATOR will support air defense, air surveillance, counter-battery/target acquisition, and aviation radar tactical enhancements; the final evolution will also support the Marine Corps' air traffic control mission. FY 2020 funding will procure eight G/ATOR systems and more in-depth operational testing and evaluation.

The Ground Based Air Defense Future Weapon System/Counter Unmanned Aerial System (GBAD/C-UAS) GBAD/C-UAS supports the short-range air defense mission to include the sustainment and upgrade of legacy systems as well as a GBAD Future Weapons System (GBAD-FWS). An effort consisting of a kinetic and non-kinetic capability to defeat the full spectrum of Low-Altitude, Low-Observable/Low-Radar Cross-Section threats, to include C-UAS. The GBAD FWS will consist of a multiple weapons system platform to defeat current and emerging threats for UAS, fixed and rotary wing aircraft, and cruise missiles to address a larger array of targets utilizing organic C2 and sensor systems.

# PROCUREMENT OF AMMUNITION, NAVY AND MARINE CORPS

The Procurement of Ammunition, Navy and Marine Corps (PANMC) appropriation buys vital munitions and related weaponry for the warfighter. PANMC is paramount for force capability and success in meeting future contingencies. It includes major fleet requirements such as general purpose bombs like the 2,000-pound laser-guided "bunker buster" Penetrator bomb. Airborne rockets purchases include the Advanced Precision Kill Weapon System (APKWS), which provides Marine Corps ground forces greater precision and effectiveness while increasing firing standoff range. Pyrotechnics and demolition purchases reinforce explosive ordnance disposal, the world's premier combat force for countering explosive hazards including improvised explosive devices and underwater mines.

The ammunition portfolio is a comprehensive array of capabilities that encompasses munitions for everything from the five-inch MK 54 guns on cruiser and destroyer combatant ships used against air, surface, and shore targets, to precision-guided artillery supporting the Marine Corps and Naval Special Warfare with accurate, first round fire-for-effect capability, and small arms munitions, that are essential for the Navy Sea Air Land Teams, and the Coastal Riverine and Security Forces. In FY 2020, PANMC's budget of $1.2 billion will fund the procurement of these and other vital ammunitions in support of the warfighter in virtually every aspect of air, land, and sea combat.

# OTHER PROCUREMENT, NAVY

The procurement, production, and modernization of equipment not provided for in the previous appropriations, which generally support multiple platforms, is financed in the Other Procurement, Navy (OPN) appropriation. This equipment ranges from

electronic sensors to training equipment to spare parts, and is integral to improving the fleet and shore establishment. The FY 2020 OPN budget is $9.6 billion.

## *Industrial Plant Equipment Program*

The Department's Industrial Plant Equipment (IPE) program supports the capitalized personal property procurements for the Naval shipyards (NSY) and fleet I-level maintenance activities. These capital improvements are integral to the nuclear enterprise. The FY 2020 OPN budget supports the replacement of obsolete NSY industrial plant equipment with new and efficiency-enabling equipment. In addition, this program supports the procurement of capital equipment for the shipyards which is required to support new mission requirements. This budget funds *Virginia* Class introduction at Norfolk NSY, concurrent *Virginia* Class maintenance availabilities at Portsmouth and Pearl Harbor NSYs, as well as the recapitalization of significantly aged IPE, weight handling equipment, and nuclear support equipment infrastructure.

## *Ship Programs*

The FY 2020 OPN budget continues to support surface combatant modernization programs across the Fleet in order to keep pace with emerging threats, provide capabilities to maneuver in the electromagnetic spectrum, and maximize surface ship service life. The DDG modernization program funds four total availabilities - one hull, mechanical and electrical (HM&E) and three dual combat systems and HM&E. The program also funds procurement for four HM&E availabilities and three combat system availabilities in FY 2020 for installation in FY 2022. The Consolidated Afloat Networks and Enterprise Services (CANES) program will fund the procurement of 18 afloat production units, 18 afloat technical insertion units, five ashore production units, and all integration and associated costs for pre-installation design. Additionally, CANES FY 2020 funding will install 14 afloat production units, three ashore units, and 22 afloat technical insertion units. Shipboard information warfare installations in FY 2020 include five Ship's Signal Exploitation Equipment systems,

and eight Graywing systems. Shipboard electronic warfare procurements include 19 Surface Electronic Warfare Improvement Program (SEWIP) Block 2, and three SEWIP Block 3 upgrades to the AN/SLQ-32.

## *Networks and C4I Programs*

The Department's ability to carry out missions is dependent on command, control, communication, computers, and intelligence (C4I) programs. Cyber security and resiliency are of principal concern to protect warfighting capabilities. The Navy and Marine Corps continue to issue technical standards and certifications to keep our C4I systems modernized and resilient against threats. Along with DoD, the Department continues to streamline our network operations through the use of common technologies and the synchronization of information technology (IT) networks. The Department continues to invest in modernizing business IT systems for military personnel and pay, contract development, and ship depot maintenance, among others, to standardize processes and improve auditability.


The Department is investing in enterprise-wide cybersecurity capabilities that reach beyond traditional information systems to encompass weapons systems, operational control systems, and critical infrastructure. Beyond specific investment line items, the Department is driving cybersecurity as an intrinsic design function across all programs and systems. FY 2020 investments include acceleration of cybersecurity protection for shipboard control systems to strengthen system cybersecurity controls. Previous investments across the enterprise informed by our Cybersecurity Executive Committee strategy consist of defense-in-depth to prevent attacks, platform and network segmentation to prevent adversary movement, and increased cyber situational awareness for anomaly detection.

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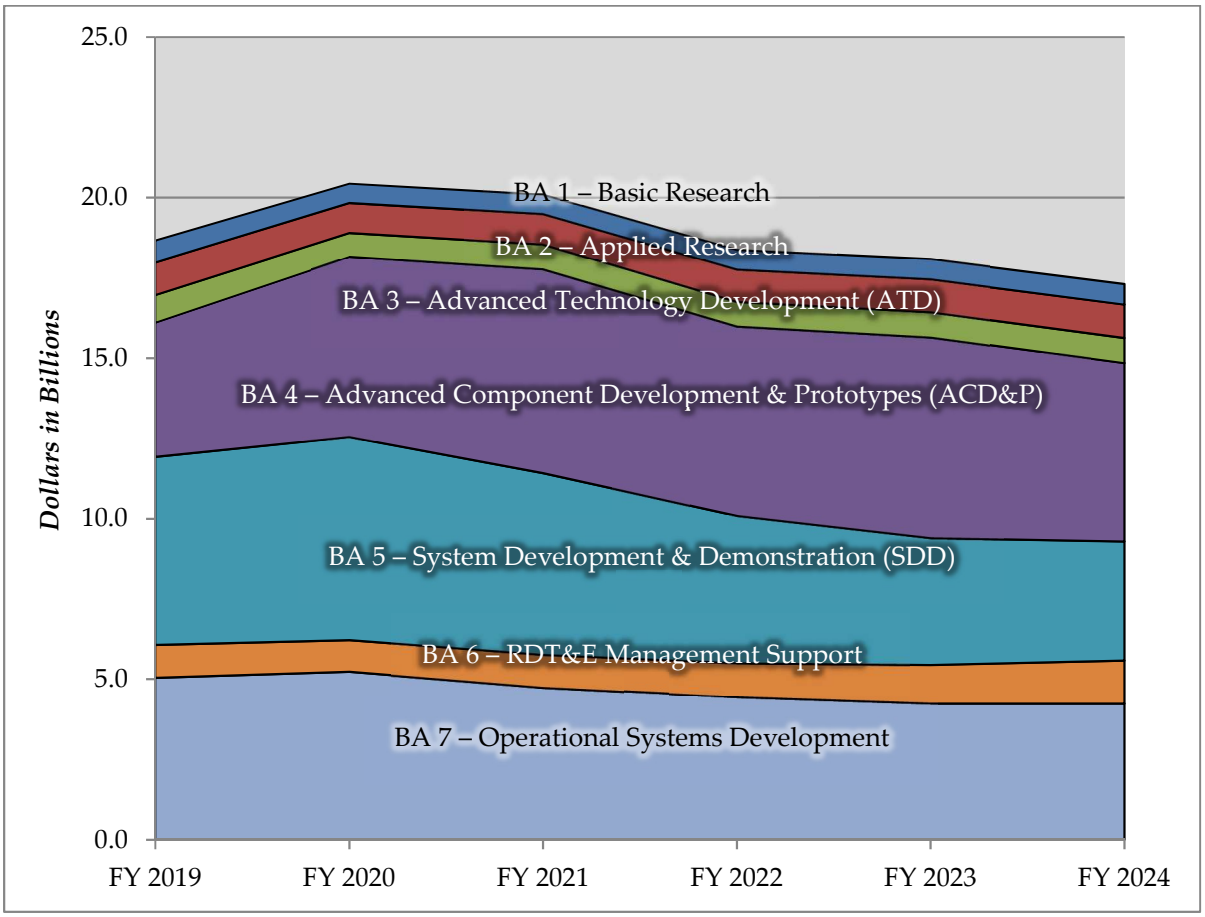
# SECTION V – DEVELOPMENT

## RESEARCH AND DEVELOPMENT SUPPORT

The Department of the Navy's Research, Development, Test and Evaluation (RDT&E) program supports DON missions by giving the Department asymmetric and technological advantages against adversaries in all environments and spectrums. Science and technology (S&T) research is vital to provide for future technologies that support innovative capabilities in shipbuilding, aviation, weapons, and ground equipment. Investment in research and development (R&D) is also fundamental in the *Columbia* Class Program, *Virginia* Payload Module, FFG(X), unmanned systems, electromagnetic warfare, and protecting our national interests across space and cyberspace. RDT&E funding is shown by budget activity in Figure 5.1.

### *Figure 5.1 –RDT&E Funding*



## *Science and Technology*

The FY 2020 budget requests $2.3 billion for the Navy's S&T programs and remains at 1.4 percent of DON base total obligation authority. The FY 2020 S&T budget request supports the Naval Research and Development Framework.

## *Ship Research and Development*

### ***COLUMBIA* Class**

The Department of Navy has budgeted $533 million in FY 2020 for the *Columbia* class submarine program. FY 2020 R&D efforts will continue to focus on the propulsion plant, nuclear technology development, common missile compartment design and prototyping, and platform development technologies like the propulsor, strategic weapons system, and maneuvering and ship control. FY 2020 R&D decreases from FY 2019 as *Columbia* continues from contract design to detailed design.

### ***FORD* Class**

The budget requests $287 million in FY 2020 to address unique technologies for the *Ford* class carriers. In FY 2020, research and development efforts begin for integrated Digital Shipbuilding (iDS) transformation in support of the two-carrier buy which is a critical affordability initiative to upgrade the digital data environment. RDT&E funding will continue Advanced Arresting Gear system development and demonstration and integrated testing efforts. Other FY 2020 efforts include CVN 78 test efforts in support of full ship shock trials and completion of integrated test and evaluation of the Electromagnetic Aircraft Launch System.

### ***VIRGINIA* Class**

*Virginia* class submarine research and development efforts continue to focus on cost reduction efforts, operational evaluation testing, development of sonar, combat control, electronic support systems, and submarine multi-mission team trainer efforts. The FY 2020 budget includes $118 million which continues efforts to improve electronic systems and subsystems, development of improved silencing capability, and reduced total ownership costs for Block V submarines.

### ***Frigate (FFG (X))***

The budget requests $59 million in FY 2020 to complete the conceptual design phase for the Future Guided-Missile Frigate, FFG(X), with efforts in systems engineering and ship design management leading to the award of a detailed design and construction contract. The remaining FY 2020 effort will be focused on Frigate

weapon system design and development; combat system and C4I integration; and test and evaluation. The Navy desires to maximize the lethality and survivability of the FFG(X) in surface warfare, air warfare through a local area defense capability, and anti-submarine warfare while keeping the ship an effective and affordable part of Distributed Maritime Operations.

**Unmanned Surface Vehicles/Vessels**

The FY 2020 budget requests $447 million to accelerate the unmanned surface vehicle/vessel (USV) portion of the Navy's Future Surface Combatant (FSC) strategy. The increase in funding from FY 2019 to FY 2020 includes $24 million for medium and $373 million for large USVs, leading to the transition of USV prototypes and associated payloads from RDT&E to procurement beginning in FY 2021.

**Unmanned Undersea Vehicles**

In FY 2020 the Navy will invest $359 million towards unmanned undersea vehicles (UUV). The increase in funding from FY 2019 to FY 2020 includes $182 million for the development, fabrication, and testing of the ORCA Extra Large Unmanned Undersea Vehicles and $68 million to support the advancement of Large Diameter Unmanned Undersea Vehicles. The FY 2020 funding request also supports small and medium unmanned undersea vehicles and MK-18 UUVs, as well as the associated payloads. Figure 5.2 displays the quantities for unmanned vehicles/vessels.

## *Figure 5.2 –Unmanned Surface and Undersea Vehicle/Vessel Quantities*

| Program | FY 2019 | FY 2020 | FY 2021 | FY 2022 | FY 2023 | FY 2024 | FYDP |
|---|---|---|---|---|---|---|---|
| **Unmanned Surface Vehicles/Vessels** | | | | | | | |
| **Large Unmanned Surface Vessel[1,2]** | **0** | **2** | **2** | **2** | **2** | **2** | **10** |
| **Total** | **0** | **2** | **2** | **2** | **2** | **2** | **10** |
| | | | | | | | |
| **Unmanned Undersea Vehicles** | | | | | | | |
| **MK-18 Unmanned Undersea Vehicle[3]** | 27 | 27 | 30 | 27 | 27 | 24 | 135 |
| **Small/Medium Unmanned Undersea Vehicle[2,3]** | 8 | 8 | 12 | 8 | 6 | 10 | 44 |
| **Large Diameter Unmanned Undersea Vehicle[2]** | 0 | 0 | 1 | 0 | 2 | 0 | 3 |
| **Extra Large Unmanned Undersea Vehicle[1,2]** | 0 | 2 | 2 | 1 | 2 | 2 | 9 |
| **Total** | **35** | **37** | **45** | **36** | **37** | **36** | **191** |

[1] Contains offensive missile capability.

[2] Budgeted in RDTE,N.

[3] Budgeted in OPN.

## *Aviation Research and Development*

The F-35 Lightning II Program will develop and field an affordable, highly common family of next generation strike aircraft for the United States Navy, United States Air Force, United States Marine Corps and international partner countries. There are three variants - the F-35A Conventional Takeoff and Landing variant, F-35B Short Take Off and Vertical Landing variant, and the F-35C Aircraft Carrier suitable variant. The initial operational capability (IOC) date for the F-35B STOVL was in FY 2015 and for the F-35C variant in FY 2019. The development of Block 4 capabilities continues in FY 2020 to support initial Fleet availability in FY 2021. In FY 2020, the Department of the Navy will procure 10 F-35B and 20 F-35C aircraft.

The Super Stallion CH-53E, the only heavy-lift helicopter specifically configured to support Marine Corps missions, entered the fleet in 1980. An improved CH-53K is required to support MAGTF heavy-lift requirements in the 21st century joint environment. The CH-53K will conduct expeditionary heavy-lift transport of armored vehicles, equipment, and personnel to support distributed operations deep inland from a sea-based center of operations. The system demonstration phase completed initial flight in the first quarter of FY 2016. Acquisition Milestone C was complete in the second quarter of FY 2017. In FY 2019 the program discovered several technical issues and is working to resolve them. The FY 2018 second low rate initial production (LRIP) and FY 2019 third LRIP production contracts will be awarded together in the third quarter of FY 2019 for a total of 14 aircraft. The FY 2020 LRIP four production contract is scheduled for award the second quarter of FY 2020.

The VH-92A Presidential Helicopter replaces the legacy VH-3D which was fielded in 1974 and the VH-60N which was fielded in 1989. The engineering and manufacturing development phase continues in FY 2019 to include the integration of systems, production, qualification, and support of test articles; logistics products development; and demonstration of system integration, interoperability, safety, and utility. In FY 2020 the program will conduct initial operational test and evaluation (IOT&E) and attain initial operational capability (IOC). LRIP two contract award for six aircraft is scheduled for the second quarter of FY 2020.

The Next Generation Jammer (NGJ) is the next step in the evolution of airborne electronic attack (AEA) and is needed to meet current and emerging electronic warfare gaps, ensure kill chain wholeness against growing threat capabilities and capacity, and to keep pace with threat weapons systems advances and expansion of the AEA mission area. The NGJ AEA pod will replace the aged ALQ-99 Tactical Jamming System and will be integrated into the EA-18G aircraft. NGJ mid-band technology maturation and risk reduction effort continue. Milestone C is scheduled for FY 2020 with IOC scheduled for FY 2022. Engineering developmental model (EDM) aircraft deliveries begin in FY 2019 and the FY 2020 budget request includes the contract award for seven system demonstration test articles (SDTAs).

F/A-18E/F Advanced Infrared Search and Track (IRST) is a passive long-wave infra-red (IR) sensor which provides an alternate fire control system in a high electronic attack, radio detection and ranging denied environment. Block II IRST upgrades the infra-red receiver and processor to provide enhanced warfighting capability through an improved engagement timeline, improved situational awareness, longer range passive detection and tracking, and a larger field of regard with specification performance. FY 2020 funding supports both Block I and Block II efforts. The IRST Block II engineering change proposal achieved Milestone C on December 4, 2018 and entered into LRIP in order to achieve IOC in FY 2021.

**Unmanned Aerial Systems**

The Unmanned Carrier-Launched Airborne Surveillance and Strike (UCLASS) program underwent a restructure, creating the new Unmanned Carrier Aviation (UCA)/MQ-25 Stingray program with a near-term focus on accelerating fielding timelines. The MQ-25 Stingray program rapidly develops an unmanned capability to embark on carriers as part of the carrier air wing (CVW) to conduct aerial refueling as a primary mission and provide some ISR capability as a secondary mission. MQ-25 Stingray extends CVW mission effective range, partially mitigates the current Carrier Strike Group (CSG) organic ISR shortfall, and fills the future CVW-tanker gap, mitigating strike fighter shortfalls and preserving F/A-18E/F fatigue life. As the first carrier-based, group five Unmanned Aircraft System (UAS), MQ-25 Stingray will pioneer the integration of manned and unmanned operations, demonstrate mature complex sea-based C4I UAS technologies, and pave the way for future multifaceted, multi-mission UASs to pace emergent threats. FY

2019 leverages previous work completed under UCLASS, focusing on the three segment areas: air, control system and connectivity, and carrier development. In FY 2020, the program will procure three SDTA aircraft and initiate assembly of four EDM vehicles. The MQ-25 Stingray is expected to provide an IOC to the fleet in FY 2024.

## *Navy Laser Family of Systems (NLFoS)*

The FY 2020 budget requests $101 million for the Navy Laser Family of Systems (NLFoS), which is designated a rapid prototyping, experimentation and demonstration (RPED) initiative to provide near-term, ship-based laser weapon capabilities. The NLFoS efforts form the foundation of an incremental strategy for increased laser weapon capability as it is matured. NLFoS includes the Surface Navy Laser Weapon System (SNLWS) and the Solid State Laser Technology Maturation (SSL-TM). SNLWS addresses anti-surface warfare and counter-intelligence, surveillance and reconnaissance (C-ISR) gaps with the ability to dazzle and destroy UASs and defeat fast inshore attack craft (FIAC). SNLWS includes the development of an advanced prototype laser weapon system in the 60 kW or higher class. SSL-TM will develop an advanced 150kW High Energy Laser (HEL) weapon demonstrator that will support future laser development with installation on a LPD17 class ship for at sea testing in FY 2020.

## *Rapid Prototyping and Development*

The Department continues to support RPED initiatives focused on expeditious development, exploration and fielding of innovative combat system technologies and engineering prototypes to provide advanced warfighting capabilities across all naval warfighting domains.

## *Ground Equipment Research and Development*

**Amphibious Combat Vehicle**

The ACV is an armored personnel carrier balanced in performance, protection, and payload for employment with the Ground Combat Element across the range of military operations to include a swim capability. The program has been structured to provide a phased, incremental growth in capability. ACV Increment 1.1 leverages and continues

the work that was previously accomplished under the Marine Personnel Carrier program to provide the personnel variant. ACV Increment 1.2 will deliver additional ACV 1.1 personnel variants (currently in production) as well as Command and Control (ACV-C), Recovery (ACV-R), and 30-mm (ACV-30) mission role variants (MRVs).

For ACV 1.1, the FY 2020 budget supports the completion of full-up system level (FUSL) testing and IOT&E. For ACV 1.2, the FY 2020 budget procures six test articles required in order to initiate testing in FY 2021.

**Ground Based Air Defense Future Weapon System/Counter Unmanned Aerial System (GBAD/C-UAS)**

GBAD/C-UAS supports the short-range air defense mission to include the sustainment and upgrade of legacy systems as well as a GBAD Future Weapons System (GBAD-FWS). An effort consisting of a kinetic and non-kinetic capability to defeat the full spectrum of low-altitude, low-observable, low-radar cross-section threats, to include C-UAS. The GBAD FWS will consist of a multiple weapons system platform to defeat current and emerging threats for UAS, fixed-wing, and rotary-wing aircraft, with cruise missiles to address a larger array of targets utilizing organic C2 and sensor systems.

The FY 2020 budget supports testing and evaluation of C-UAS soft-kill and hard-kill prototypes integrated on both the Mine-Resistant Ambush Protected (MRAP) All-Terrain Vehicles (M-ATVs) and Joint Light Tactical Vehicles (JLTVs), NET figure development support for Marine Air Defense Integrated System (MADIS) Increment 1, and C2, sensor software engineering development to integrate a Medium-Range Intercept (MRI) system.

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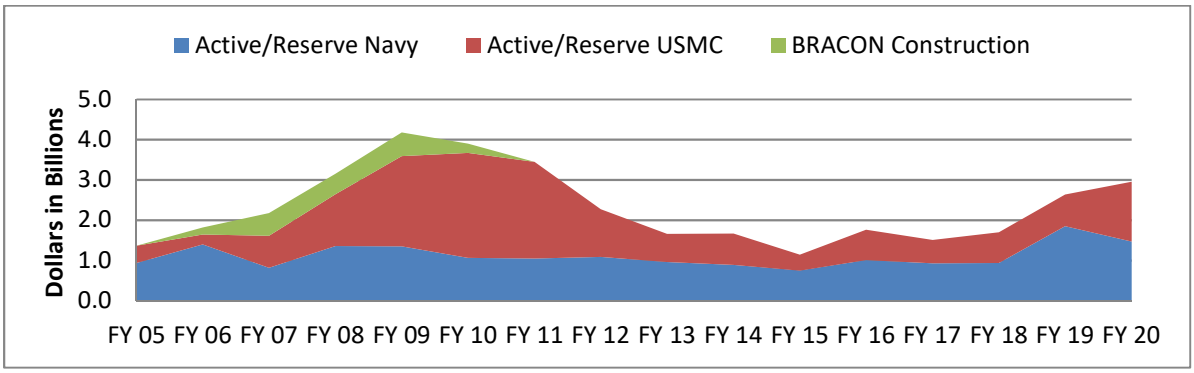
# SECTION VI – INFRASTRUCTURE

The mission of the Department could not be achieved without high quality facilities that support our Sailors, Marines, and their families. Further, our ability to rapidly deploy around the globe is directly connected to an effective shore infrastructure.

## MILITARY CONSTRUCTION

The FY 2020 budget request of $3.0 billion supports the Department's critical goals, financing 40 military construction projects, including 37 baseline projects and three OCO projects. Of these, 18 are for the active Navy, 18 for the active Marine Corps, one for the Navy Reserve Component, and three are for Navy OCO. Figures 6.1 and 6.2 display funding profiles for military construction.

### *Figure 6.1 – Historical Military Construction Funding*




### *Figure 6.2 – Military Construction Funding Summary*

| Military Construction Summary (Active and Reserve) | | | | | | |
|---|---|---|---|---|---|---|
| *(Dollars in Millions)* | FY 2019 | FY 2020 | FY 2021 | FY 2022 | FY 2023 | FY 2024 |
| Major Construction | 2,401 | 2,677 | 1,889 | 1,985 | 1,779 | 1,906 |
| Minor Construction | 32 | 106 | 57 | 78 | 72 | 93 |
| Planning and Design | 203 | 172 | 160 | 212 | 224 | 179 |
| **TOTAL** | **2,636** | **2,955** | **2,106** | **2,275** | **2,075** | **2,178** |

Key tenets in the Department's facilities investment strategy are as follows, with examples of FY 2020 funding for each:

- Investment in new platforms and technologies include:
  - Hangar 95 Renovation & Addition, MCAS Yuma, AZ ($90 million)
  - F-35 Training and Simulator Facility, MCAS Cherry Point, NC ($53 million)
  - Undersea Vehicle Maintenance Facility, Keyport, WA ($25 million)
  - Targeting and Surveillance System Production Support Facility, NAS Jacksonville, FL ($32 million)
  - Navy V-22 Hangar, NB Coronado, CA ($87 million)

- Restore Warfighting Readiness include:
  - Pier 5 (berths 2 and 3), COMFLTACT Yokosuka, Japan ($175 million)
  - Alert Force Complex, Travis AFB, CA ($64 million)
  - Communication Station, NAS Sigonella, Italy ($77 million)
  - Master Time Clocks and Operations Facility, NSA Washington, DC ($76 million)

- European Deterrence Initiative (EDI) include:
  - Joint Mobility Center, Naval Station Rota, Spain ($47 million)
  - In-Transit Munitions Facility, Naval Station Rota, Spain ($10 million)
  - Small Craft Berthing Facility, Naval Station Rota, Spain ($13 million)

- Guam (DPRI) construction projects in Guam to support the relocation of Marine Corps Forces from Okinawa to Guam and provide facilities to meet current and future training requirements include:
  - Bachelor Enlisted Quarters H, Joint Region Marianas ($164 million)
  - Machine Gun Range, Joint Region Marianas ($91 million)

- Naval Shipyards infrastructure modernization projects at Naval Shipyards supporting submarine force structure and maintenance requirements and include:
  - Dry Dock 4 and Pier 3 modernizations at Puget Sound Naval Shipyard ($51 million)
  - Dry Dock Flood Protection Improvements, Norfolk Naval Station, VA ($49 million)

- Force 2025 (Marine Corps of 2025) projects support future Marine Air Ground Task Force's (MAGTFs) afloat and sustain ashore operations:
  - I MEF Consolidated Information Center, MCB Camp Pendleton, CA ($114 million)
  - 10th Marines HIMARS Complex, MCB Camp Lejeune, NC ($35 million)

- Replace aging infrastructure:
  - 62 Area Mess Hall and Consolidated Warehouse, MCB Camp Pendleton, CA ($72 million)
  - II MEF Operations Center Replacement, MCB Camp Lejeune, NC ($122 million)
  - Bachelor Enlisted Quarters, Kaneohe Bay, HI ($134 million)

- Training:
  - Wargaming Center, MCB Quantico, VA ($143 million)

## *FAMILY HOUSING*

The family housing FY 2020 budget request of $366 million includes the operation, maintenance, recapitalization, leasing, and privatization oversight of the Department's family housing worldwide. The budget request represents the funding level necessary to provide safe and adequate housing either through the community or in government quarters.

The Department's FY 2020 budget request includes $48 million for construction projects in overseas locations. Additionally, $318 million is included for the operation and maintenance of approximately 8,800 government-owned units and approximately 1,800 leased units located worldwide. The level of funding translates to 94 percent of the government-owned inventory meeting adequate standards, which is above the 90 percent DoD goal. Figures 6.3 and 6.4 display resources and units for family housing.

For Navy projects, the Department's FY 2020 budget request includes $25 million for the improvement of 82 officer and enlisted family housing units at Commander Fleet Activities Yokosuka, Japan and Naval Station Rota, Spain. The budget also includes $281 million for the operation and maintenance of approximately 6,900 government-owned units and over 1,700 leased units located worldwide. The level of funding

translates to 93 percent of the government-owned inventory meeting adequate standards.

For Marine Corps projects, the Department's FY 2020 budget request includes $17 million for the improvement of 44 junior enlisted family housing units at Marine Corps Air Station Iwakuni, Japan. The budget also includes $37 million for the operation and maintenance of approximately 1,900 government-owned units and 11 leased units located worldwide. The level of funding translates to 92 percent of the government owned inventory meeting adequate standards.

## *Figure 6.3 – Family Housing Funding Summary*

| Family Housing Summary | | | | | | |
|---|---|---|---|---|---|---|
| *Dollars in Millions* | FY 2019 | FY 2020 | FY 2021 | FY 2022 | FY 2023 | FY 2024 |
| Operations | 315 | 318 | 328 | 332 | 338 | 345 |
| Construction | 105 | 48 | 100 | 88 | 258 | 207 |
| **TOTAL** | **420** | **366** | **428** | **420** | **596** | **552** |

## *Figure 6.4 – Navy & Marine Corps Family Housing Units*

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| Privatized inventory (end of FY) | 62,090 | 62,090 | 62,090 |
| Government Owned inventory (average) | 8,765 | 8,669 | 8,808 |
| Leased inventory (average) | 1,698 | 1,754 | 1,757 |
| Total Units | 72,553 | 72,513 | 72,655 |

## BASE REALIGNMENT AND CLOSURE

The Base Realignment and Closure (BRAC) Budget in FY 2020 is $158 million as reflected in Figure 6.5. These funds will be used to continue environmental clean-up and monitoring at legacy locations.

### *Figure 6.5 – BRAC Funding Summary*

| BRAC Summary | | | | | | |
|---|---|---|---|---|---|---|
| *(Dollars in Millions)* | FY 2019 | FY 2020 | FY 2021 | FY 2022 | FY 2023 | FY 2024 |
| Operation and Maintenenance | 10 | 10 | 9 | 9 | 8 | 8 |
| Enviromental | 202 | 148 | 118 | 116 | 98 | 100 |
| **TOTAL** | **212** | **158** | **127** | **125** | **106** | **108** |

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# SECTION VII – REVOLVING FUND

## Navy Working Capital Fund Overview

The Navy Working Capital Fund (NWCF) is a revolving fund that finances the DON activities which provide products and services on a reimbursable basis. NWCF is divided into five business areas:

- Supply Management. Performs inventory oversight functions that result in the sale of aviation and shipboard components, ship's store stock, repairables, and consumables to a wide variety of customers.
- Depot Maintenance. Provides worldwide maintenance, engineering, and logistics support through mobilization, repair of aircraft, engines, components, and weapons systems, and the manufacture of parts and assemblies.
- Transportation. Provides over-ocean movement of supplies and provisions to deployed forces, and maintains prepositioned equipment and supplies.
- Research and Development. Supports weapons systems, facilities and equipment for the air, land, sea, and space operating environments through development, engineering, acquisition, in-service support, and repair and maintenance.
- Base Support. Ensures facilities and installations have reliable access to utilities services such as electricity, water, steam, and natural gas, vehicle and equipment services, facility support contracting oversight, and building/facilities sustainment and recapitalization services.

Unlike for-profit commercial businesses, whose financial goal is to maximize profit, the NWCF activities' financial goal is to break even over the budget cycle. The NWCF provides stabilized pricing to customers and acts as a shock-absorber to fluctuations in market prices during the year of execution; fluctuations are recovered from customers in future years. The wide range of goods and services provided by NWCF activities are crucial to restoring readiness, improving lethality, and modernizing capability.

Consistent with the NDS, the FY 2020 NWCF is reforming business structures and practices for greater performance and affordability. Navy business reform initiatives impacting the NWCF include:

- The Facilities Engineering Command (FEC) is removed from the NWCF and realigned to appropriated funding in FY 2020. This realignment consolidates Commander, Navy Installations Command (CNIC) and FEC funding, accounting, and budgeting processes to improve support to the Navy shore infrastructure.

This reform initiative removes $3.1 billion from the NWCF and realigns 9,542 government personnel FTEs to Operation and Maintenance, Navy (O&M,N).

- The Navy Supply (NAVSUP) NWCF and appropriated funded workforce is rebalanced and realigned to better support overall Navy supply management functions. This reform initiative realigns 1,972 FTEs within the NWCF reimbursable workforce to appropriated funding in O&M,N.
- The Expeditionary Warfare Center (EXWC) is realigned from the NWCF Base Support to the NWCF Research and Development business area. This realignment was done to reflect the FY 2018 National Defense Authorization Act (NDAA) designation of EXWC as a Science and Technology Reinvention Laboratory (STRL).

After accounting for the reform initiatives and realignments discussed above, the FY 2020 NWCF maintains a workforce of 78,579 civilian and 1,183 military personnel. Effective FY 2020 the NWCF will be comprised of four primary business areas with 27 sites located across the country and over 120 detachments located globally.

The FY 2020 NWCF budget request reflects the DON's continued focus on balancing demands to ensure the right blend of goods and services are provided at the right cost. The value of goods and services provided by NWCF activities in FY 2020 is projected to be approximately $29.4 billion, as shown in Figure 7.1. The FY 2020 operating cost decreases by $3.3 billion from FY 2019. The decrease is primarily attributable to realigning the Base Support business area – FEC to fully mission funding. Additionally, part of the Supply Management workforce was rebalanced by realigning NWCF reimbursable FTEs to mission funding. The decrease in total operating cost is partially offset by an increase in Research and Development which reflects realignment of the EXWC from Base Support to the Research and Development business area.

## *Figure 7.1 – Summary of NWCF Costs*

| *(Dollars in Millions)* | **FY 2018** | **FY 2019** | **FY 2020** |
|---|---|---|---|
| **Operating Costs** | | | |
| Supply - Obligations | 9,089 | 9,323 | 8,413 |
| Depot Maintenance - Aircraft | 2,469 | 2,368 | 2,396 |
| Depot Maintenance - Marine Corps | 354 | 422 | 411 |
| Transportation | 3,045 | 2,935 | 3,314 |
| Research and Development | 13,796 | 14,469 | 14,728 |
| Base Support | 3,169 | 3,165 | 166 |
| **Total** | **31,923** | **32,681** | **29,427** |

## Cash Management

The DON's goal is to maintain the NWCF cash balance within the upper and lower operational range. The operational range is determined using the established DoD guidance for calculating cash requirements. Specifically, these are rate, range, risk mitigation, and reserves. For FY 2020 the DON NWCF budget includes a cash surcharge for the Military Sealift Command in the amount of $50 million. This surcharge is only applicable to Navy-owned ships and this infusion will position NWCF cash within the operational range.

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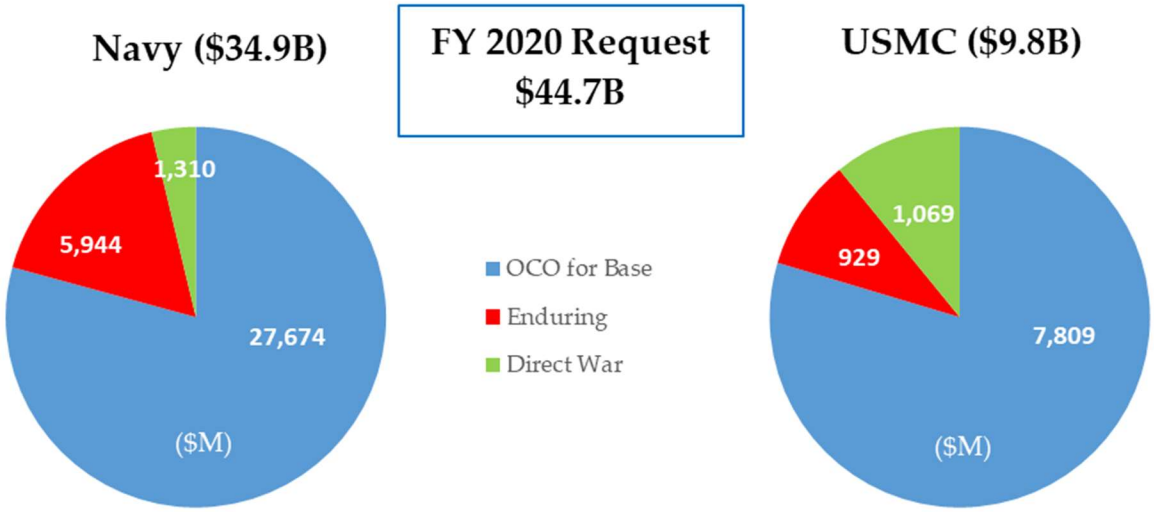
# SECTION VIII - OVERSEAS CONTINGENCY OPERATIONS (OCO)

## OVERVIEW

The Navy and Marine Corps overseas force posture is shaped by ongoing and projected operational commitments. FY 2020 continues funding to counter the Islamic State of Iraq and the Levant (ISIL) and for operations in Afghanistan, the Horn of Africa, and other locations in theater, as well as for the European Deterrence Initiative. The FY 2020 request includes incremental costs to fund operations, manpower, equipment, and infrastructure repair, as well as equipment repair and replacement. These costs include aviation and ship operations and maintenance, combat support, base support, Marine Corps operations and field logistics, mobilized reservists, and other special pays. Figure 8.1 shows a breakout of Navy and Marine Corps funding by OCO type.

*Figure 8.1 – Navy and Marine Corps FY 2020 OCO Funding*




The level of funding requested in FY 2020 increases due to the OCO for Base requirements, which is OCO funding for base budget requirements in support of the NDS. The budget requests these funds in OCO to comply with the base budget defense caps included in the Budget Control Act of 2011.

The Marine Corps has an active duty force of approximately 1,300 Marines ashore in the U.S. CENTCOM area of operations (AOR) and another roughly 850 Marine Reserve members supporting CENTCOM. Beyond the Marines participating in counterinsurgency, security cooperation, and civil-military operations; on any given day there are about 1,000 Sailors ashore and another roughly 6,500 afloat throughout the CENTCOM AOR. These sailors are conducting activities such as air operations, maritime infrastructure protection, combat construction engineering, cargo handling, combat logistics, maritime security, detainee operations, customs inspections, civil affairs, base operations, and other forward presence activities.

The Navy has active and reserve forces continually deployed in support of contingency operations overseas serving as members of Carrier Strike Groups, Expeditionary Strike Groups, Special Operating Forces, Seabee units, Marine forces, and medical units; some also serve as Individual Augmentees (IAs). Figure 8.2 provides the Overseas Contingency Operations funding profile.

# *Figure 8.2 – Department of the Navy OCO Funding*

*(Dollars in Millions)*

| | FY 2018 | FY 2019* | FY 2020 |
|---|---|---|---|
| **OCO** | | | |
| **Appropriation** | | | |
| Military Personnel, Navy | 387 | 385 | 356 |
| Reserve Personnel , Navy | 13 | 11 | 11 |
| Military Personnel, Marine Corps | 112 | 109 | 104 |
| Reserve Personnel , Marine Corps | 2 | 2 | 4 |
| Operation and Maintenance, Navy | 6,103 | 4,598 | 6,374 |
| Operation and Maintenance, Navy Reserve | 21 | 26 | 23 |
| Operation and Maintenance, Marine Corps | 1,139 | 1,122 | 1,124 |
| Operation and Maintenance, Marine Corps Reserve | 3 | 3 | 9 |
| Aircraft Procurement, Navy | 163 | 232 | 119 |
| Weapons Procurement, Navy | 131 | 14 | 98 |
| Other Procurement, Navy | 261 | 181 | 358 |
| Procurement, Marine Corps | 76 | 58 | 21 |
| Procurement of Ammuniton, Navy/Marine Corps | 233 | 229 | 205 |
| Military Construction, Navy | 33 | 227 | 95 |
| Military Construction, Navy Reserve | | | |
| Research, Development, Test, and Evaluation, Navy | 167 | 168 | 164 |
| **Sub Total OCO** | **8,845** | **7,366** | **9,065** |
| **US Coast Guard** | **0** | **0** | **190** |
| **Congressional Base to OCO Transfer** | **723** | **771** | **0** |
| **OCO for Base Requirements** | **0** | **0** | **35,480** |
| **DON Grand Total** | **9,568** | **8,137** | **44,735** |

NOTE: The FY 2018 column reflects cost of war (CoW) report data, submitted monthly.
*FY 2019 represents Enacted values.

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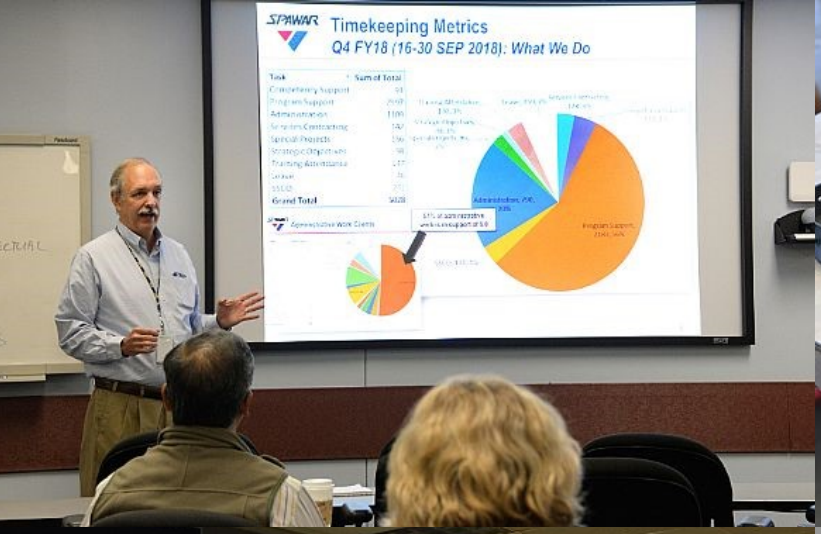

SPAWAR
Timekeeping Metrics
Q4 FY18 (16-30 SEP 2018): What We Do


NAVY

# Processes


UNITED STATES NAVY
INFORMATION WARFARE

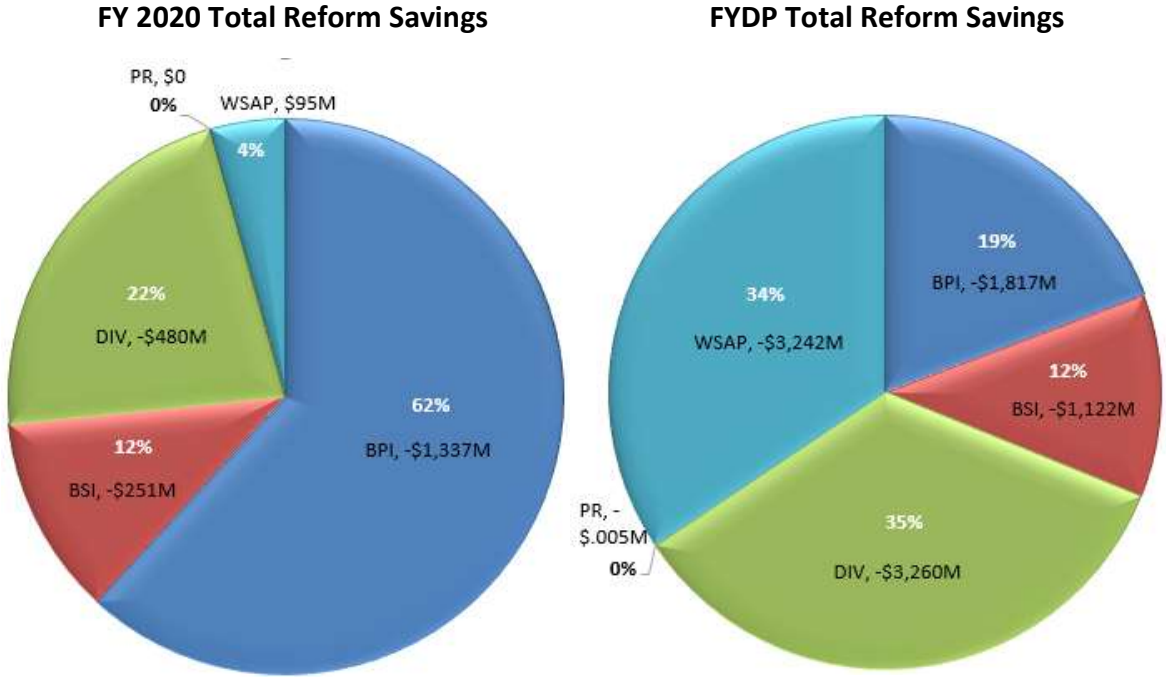

NAVSUP
NAVAL SUPPLY SYSTEMS COMMAND
BUSINESS SYSTEMS CENTER
ACCELERATING DIGITAL SOLUTIONS
NAVSUP
REGIONAL SUPPORT SITES

# SECTION IX – FINANCIAL OPERATIONS

## REFORM

Over the last several budget cycles, we have maintained our focus on reforming the Department's financial and business processes, allowing us to be better stewards of America's hard-earned tax dollars. We have an integrated Business Operations Plan for FYs 2019-2021 aligned to the National Defense Strategy (NDS) that allows us to create Departmental businesses processes that directly support reform. Consistent categories are being used across DoD to capture reform efforts which include: 1) Business Process Improvement, 2) Business Systems Improvement, 3) Policy Reform, 4) Weapon Systems Acquisition, 5) Divestments, and 6) Better Alignment of Resources. In development of the FY 2020 President's Budget, the DON reviewed internal processes and programs to achieve reform and funding savings of over $1.9 billion in FY 2020 and over $9.4 billion across the FYDP. A summary of FY 2020 and FYDP savings are included in the charts below.

*Figure 9.1 – Summary of FY 2020 and FYDP Reform Savings*



***Business Process Improvements (BPI) (FY 2020: -$1.3B; FYDP: -$1.8B)***

BPI represents a new or refined business process to increase effectiveness, efficiency, or reliability. (This does not include weapons systems acquisition). While continuing to scrutinize our operational force and capabilities, the DON is also pursuing efficiencies within our business processes which will drive the needed change to realize our reform goals. The specific business process improvement initiatives include:

- Execution Reviews: In order to ensure the timely and appropriate execution of funds, the DON conducts execution reviews. When execution of funds is delayed due to cost, schedule, or performance issues, funds are reduced to meet established execution benchmarks. Accordingly, the following savings were recouped for underexecution:

  - Research, Development, Test & Evaluation, Navy. Programs reduced include: Next Generation Jammer, F-35B C2D2, and F-35C C2D2. (FY 2020: -$502M; FYDP: -$502M)

  - Aircraft Procurement, Navy. Programs reduced include: F-18 Series, H-53 Series, P-3 Series, E-2 Series, C-2A, T-45 Series, Power Plant Changes, P-8 Series, V-22 Osprey, and F-35 CV Series. (FY 2020: - $160M; FYDP: - $160M)

  - Other Procurement, Navy. Programs reduced include: AN/SQQ-89 Surface ASW Combat System, LCS Class Support Equipment, and DDG Mod (FY 2020: -$119M; FYDP: -$119M)

  - Procurement, Marine Corps. Programs reduced include: Intelligence Support Equipment, USMC Training Devices, and Light Armored Vehicles Product Improvement Program (FY 2020: -$29M; FYDP: -$29M)

  - Weapons Procurement, Navy. Programs reduced include: Standard Missile Mods, Airborne Mine Neutralization Systems, and Spares and Repair Parts. (FY 2020: -$26M; FYDP: -$26M)

  - Procurement of Ammunition, Navy & Marine Corps. Programs reduced include: Airborne Rockets – All Types, 5 Inch/54 Gun Ammunition, and Infantry Weapons Ammunition. (FY 2020: -$21M; FYDP: -$21M)

- Organizational Realignment within the Naval Supply Systems Command (NAVSUP): In order to achieve overall reform goals and support internal audit readiness initiatives, NAVSUP implemented an organizational realignment to reduce administrative layers and provide the NAVSUP Commander more direct engagement with the Fleet Logistics Centers, the Fleet, and the regional customers they support. The administrative delayering results in a significant savings for the DON. (FY 2020: -$27M; FYDP: - $141M)

- Permanent Change of Station (PCS) Process Improvements: The Navy and Marine Corps have improved the execution of the PCS process through the implementation of several process and system improvements. The Navy and Marine Corps improvements include: implementation of a Defense Personal Property System; outbound interviews; implementation of processes to recover unexpended balances in the year-of-execution; and a reduction of obligation rates for separation moves, household goods and average cost per readiness move moves by approximately seven percent. (FY 2020: -$91M; FYDP: -$475M)

- Ship to Shore Connector (SSC): Savings are associated with SSC contractual delays in FY 2017, FY 2018, and FY 2019, as well as delivery delays of the previously awarded FY 2015 and FY 2016 craft. This resulted in program underexecution, which eliminates the need for the FY 2020 SSC request. There will be sufficient carry-over work from prior years to sustain production through FY 2020 with no negative impacts to the workforce. (FY 2020: -$315M; FYDP: -$248M)

- Reform Enterprise Lifecycle Maintenance Program (ELMP): Savings were achieved through a reduction to the depot maintenance requirement in the LMP. The readiness metric required to optimize the ELMP was re-validated and established at a lower baseline. (FY 2020: -$47M; FYDP: -$39M)

- Reform DON Task Management System: Implementation of a new, less costly, more efficient task management system will replace the outdated DON Tasking, Records, and Consolidated Knowledge Enterprise Repository system. (FY 2020: $0; FYDP: -$8M)

- Infrastructure Reset (IR) Strategy: The Marine Corps developed a strategy to improve infrastructure lifecycle management and investments. The IR Strategy is an 11-year plan that will provide a consolidated, right-sized infrastructure footprint within existing installations. (FY 2020: -$0; FYDP: $29M)

- Reduce Real Estate Leases: This initiative identifies savings through the reduction of commercial leased space across the United States and consolidation within existing DoD infrastructure. (FY 2020: -$0; FYDP: -$21M)

***Business System Improvement (BSI) (FY 2020: -$251M; FYDP: -$1.1B)***

BSI is a new or refined business system to increase effectiveness, efficiency, or reliability (does not include weapons systems acquisition). To support our business system improvement initiatives, the DON is also continually scrutinizing our business system capabilities with a focus on optimizing solutions that increase effectiveness, efficiency, and reliability. The specific business system improvements include:

- Naval Aviation Future Readiness Cross Functional Team (FRCFT) Initiatives: The FRCFT was established to identify new, innovative solutions for the Naval Aviation community. The FRCFT identified multiple initiatives for FY 2020 that resulted in savings for the Department, including:

  - H-1 Tail Rotor Driveshaft Coupling Redesign. Replacing old grease type coupling with new more reliable one-piece diaphragm coupling, mitigates fretting wear to the tail rotor driveshaft, significantly reduces costs, and reduces the burden to Fleet maintainers.

  - Naval Aviation Enterprise Beyond Cable Maintenance Interdiction Artisan. This initiative moves some depot maintenance artisans from the depot to the intermediate-level in order to complete repairs at a lower cost and more quickly return jets to the flight line.

  - DECK-ALS Phase 3. This initiative transitions paper aircraft logbooks to digital, increasing efficiency in aircraft transaction reports, speed of repair, and mitigates the cost impact when paper records are lost.

  - Optimized Scheduled Maintenance- Dynamic Scheduling. This initiative enables and empowers the Fleet to perform "Dynamic Scheduling" of scheduled maintenance tasks based upon flight rate (usage) rather than on calendar based dates.

  - Industrial Capability Management System (ICAMS). This initiative resurrects the ICAMS tool initially developed as a digital bridge, which

leads to a more robust and cost efficient depot repair. (FY 2020: -$246M; FYDP: -$1.1B)

- Reduce Joint Deployable Intelligence Support System (JDISS). This initiative yields cost savings associated with the Navy Sensitive Compartmented Information Network Management functions, due to the elimination of the requirement for the JDISS functionality for both Navy and Joint users. (FY 2020: -$5M; FYDP: -$23M)

***Divestment (DIV) (FY 2020: -$480M; FYDP: -$3.3B)***

DIV represents selling/disposing of assets including real estate, equipment, or other property. This does include weapons systems assets. The DON continues to review our portfolio and divest accordingly to ensure we achieve the appropriate balance of capabilities to meet the DON's mission. This is our largest reform effort consisting of the divestment of several legacy capabilities, as well as reductions in personnel. The specific divestment initiatives include:

- CG Service Life Extension Divestment. Savings were achieved through the divestment of the planned service life extension for the CG cruisers. The divestment of the CG SLEP was a result of the Navy prioritizing readiness over force structure. This resulted in the decommissioning of the legacy CG cruisers at the end of normal service life. (FY 2020: -$254M; FYDP: -$2.5B)

- Divestment of Amphibious Assault Vehicle (AAV) survivability upgrades: A determination was made that the AAV upgrades were less cost efficient than funding the desired Amphibious Combat Vehicle system resulting in the cancelation of the AAV upgrade. (FY 2020: -$155M; FYDP: -$407M)

- Divestment of Legacy Radar Systems. The AN/TPS-59 Mods modernization effort was terminated due to increased sustainment costs as the system ages. (FY 2020: -$24M; FYDP: -$125M)

- H-1 Mod Reduction. This is a maintenance initiative that replaces several high failure parts on the H-1 helicopter platform with a new design that has increased reliability. This will reduce the number of maintenance man-hours spent on repairing/replacing the high-failure parts. (FY 2020: -$37M; FYDP: -$67M)

- Legacy Counter-Radio Controlled Improvised Explosive Device (CREW) Divestment. This is the divestment of obsolete technology planned modular upgrades to the USMC CREW system. Multi-Function Electronic Warfare (EW) has bypassed the USMC CREW capability which was a narrower system to counter the threat posed by radio-controlled improvised explosive devices. (FY 2020: -$84K; FYDP: -$175M)

***Weapon System Acquisition Process (WSAP) (FY 2020: +$95M; FYDP -$3.2B)***

The DON has also achieved savings and gained multiple efficiencies through improved contracting and multi-year procurement efforts. The specific initiatives include:

- DON Contract/Multi-year Procurement Efficiencies:

  - Two CVN Procurement: Achieved savings by contracting for CVNs 80 and 81 together versus CVN 80 procurement in FY 2018 and CVN 81 procurement in FY 2019. There will be additional savings outside of the FYDP. (FY 2020: $200M; FYDP: -$2.4B)

  - F-35B Multi-year procurement (MYP) economic order quantity (EOQ) funding: Achieved savings from the funding of Early Operational Capability for the requested F-35 MYP contract (FY 2021 – FY 2023). (FY 2020: $0; FYDP: -$195M)

  - CMV-22 MYP contract: Realized negotiated savings associated with the CMV-22 MYP contract (FY 2020, -$107M; FYDP, -$170M)

  - MV-22 MYP savings: Realized negotiated savings associated with the V-22 MYP III contract (FY 2018 – FY 2022). (FY 2020: $0; FYDP: -$91M)

  - F-35C MYP EOQ funding: Achieved savings from the funding of EOQ for the requested F-35 MYP contract (FY 2021–FY 2023). (FY 2020: $12M; FYDP: -$37M)

  - Fire Control Suites Contract Savings: Achieved negotiated savings associated with the fire control suites and launching mechanisms. (FY 2020: -$4M; FYDP: -$22M)

  - LCS Sustainment and Modernization: Achieved savings by contracting for Selected Restricted Availability by fiscal year rather than individual ships to take advantage of economic order quantity. (FY 2020: -$750K; FYDP: -$5M)

- Assisted Acquisition through USA Learning: Achieved savings through the transition to USA Learning software suit, which eliminates the need for separate training and education contracts. (FY 2020, -$6M; FYDP, -$33M)

***Policy Reform (PR) (no financial savings)***

In addition to improving overall business processes, contracting practices, and divesting of legacy of capabilities, the DON is pursuing several policy reform initiatives. While the policy reform initiatives do not result in savings of financial resources, they represent decisions to document better ways of doing business and becoming a more efficient organization. The specific policy initiatives include:

- Performance to Plan (P2P): To meet the challenges laid out by the NDS, the DON, acting with urgency to build the Navy the Nation Needs, initiated an aggressive reform effort to deliver greater performance and affordability in Navy readiness and maintenance programs. This effort will propel the Navy to embrace a culture where program results and accountability matter by adopting a mindset of P2 that operates a data-informed, end-to-end, process management system incorporating industry leading practices to deliver more lethality to the fighter. This approach will improve Navy readiness by clearly articulating performance gaps, identifying barriers to execution, and developing potential solutions by accelerating learning through a data-driven approach; allocating resources more effectively to achieve measurable outcomes; and focusing on the most impactful drivers to accelerate readiness recovery.

- Reimbursable Work Orders (RWOs): To increase transparency and accountability, DON budget submitting offices (BSOs) were directed to reduce their reliance on RWOs which can tie up resources during the execution year. Doing so will support auditability by both reducing transactions that are unnecessary and often difficult to defend to auditors. Funds are aligned to the point of execution; if the performing agency is not able to fully utilize all of the funding provided by the requesting agency, funds are returned to the requestor (before funds expire).

- BSO Consolidation: Realigned the Naval Facilities Engineering Command (NAVFAC) BSO functions to the Commander Naval Installations Command (CNIC), who will provide direct funding authority to NAVFAC. Additionally, funding that other BSOs have traditionally provided to the facilities command through reimbursable transactions during the execution year for base operating

support efforts was realigned from those BSOs to CNIC. These changes in the distribution of funds will align direct budget authority with the organization executing the funds, reducing the amount of reimbursable work orders, and enable financial streamlining in the execution of BSO funding across the DON.

- Permanent Change of Station (PCS) Period of Availability: PCS obligations occur when a service member receives orders to move. This occurs up to six months prior to the actual move, often in the fiscal year prior to the move, at which time liquidations begin. Once a move is complete, the member has up to one year to file all claims. This results in liquidations for PCS lagging by approximately 25 months. Therefore, DoD is engaging Congress to change the period of availability for Military Personnel PCS from a one-year to a two-year account. Extending PCS funds an additional year due to liquidation behavior would enable efficient funds use.

- Sailor 2025: To combat future threats, maintain maritime superiority and competitively recruit and retain top talent, the Navy is transforming and modernizing the Manpower, Personnel, Training and Education Enterprise.

Attracting and retaining the very best Sailors in an increasingly competitive talent market requires more transparency, flexibility and choice in our human resources system. Sailor 2025 is a dynamic set of over 50 initiatives in three pillars – a modern personnel system; ready, relevant learning; and career readiness – designed to attract, recruit, retain, recognize and train our talent. The budget supports building a modern human resources and training infrastructure to improve warfighting readiness.

The Department is committed to meeting the priorities of the NDS for lethality, readiness, and advanced technologies through the continual pursuit of ongoing reform.

## *AUDIT BUSINESS TRANSFORMATION*

One of the three strategic thrusts called for in the NDS is reforming the Defense Department business practices for greater performance and affordability. The NDS states: "Better management begins with effective financial stewardship. The Department will continue its plan to achieve full auditability of all its operations,

improving its final process, systems, and tools to understand, manage, and improve cost."

Responding to this NDS strategic tenet, the Secretary of the Navy has published the Department of the *Navy Business Operations Plan, FY 2019-2021.* The plan is designed to reform business processes and drive efficiencies to increase speed, value, and support to the warfighter. In it, financial statement auditability is cited as a driver which will improve the quality of budgetary and financial information most valuable in managing the Defense Department.

Financial statement audits highlight deficiencies or inefficiencies in DON business practices and their internal controls. For example, audits identify opportunities to better track the count, location, and condition of DON's inventory. Resulting improvements will heighten inventory visibility, increasing readiness and lethality by speeding maintenance and reducing reorder costs.

By complying with accepted standards which must be in place to receive a favorable audit opinion, business managers will become increasingly accountable stewards of public funds, able to show a receipt for every taxpayer dollar spent. In addition, some efficiencies will result, driving down the cost of business operations.

Leaders at every echelon are taking responsibility for ensuring that strengthened internal controls over business processes and systems are in place. The primary spoke in DON's auditability strategy is reforming the Department's business systems environment. Initiatives are underway to consolidate and reduce the number of accounting systems used; to expand the capabilities of the target finance, accounting, and logistics Enterprise Resource Planning system; to strengthen the key internal controls governing business systems, including security, access, and interface controls. The number of business systems feeding transactions to the accounting systems will also be reduced, eliminating redundancy.

These actions, in addition to business process improvements, will require an investment in resources to complete them. This investment will yield dividends – ultimately resulting in a favorable opinion on yearly financial statement audits – but the most beneficial pay-back will be greater accuracy and transparency when public funds are spent. This will boost confidence that taxpayers and Congress have in the Department as its managers spend dollars in support of warfighters.

# *AUDITABILITY PROGRESS*

In FY 2018, the Navy and Marine Corps completed full-scope financial statement audits; this marked a first for Navy. Results highlighted deficiencies in systems and processes directly impacting readiness. The audit is not just a financial tool, it is a management tool forcing DON to evaluate how effective our collective team is in both small and large ways. As an example, the audit process has already revealed that the complexity of the Navy's 1,100-center inventory distribution network is too great for effective management; this in turn leads to challenges with the location and condition of all the parts and equipment the Navy owns. The DON's plan to achieve compliance with financial audit standards is the Department's most comprehensive business transformation initiative to date.

To prioritize remediation of the audit deficiencies, the Secretary of the Navy, in October 2018, outlined eight areas which will be the immediate focus for corrective actions. By concentrating resources and management attention to mobilize on these eight priorities, the Department will clear these principal obstacles preventing audit success and accelerate progress toward a favorable audit opinion. The eight areas include:

- Accounting Systems – Reducing the total accounting systems footprint to two by the end of FY 2020, with the ultimate goal of one accounting system by the end of FY 2021.

- Business Systems Consolidation – Developing a business systems architecture and reengineering business processes to guide information technology (IT) modernizations.

- Financial Reporting – Streamlining the financial statement preparation process, fixing process and system deficiencies that create adjustments to DON financial statements.

- Fund Balance with Treasury – Streamlining business processes to reconcile DON's financial records to Treasury's and transition to Treasury shared services for payment and collection operations.

- Inventory and Operating Materials and Supplies (OM&S) – Clarifying and re-engineering supply chain management busies processes to have 100 percent accountability of inventory and OM&S.

- Real Property – Conducting 100 percent inventory count of real property and improving the end-to-end processes to maintain accountability of real property assets.

- Budgetary Reform – Enforcing discipline in DON's funds distribution process and intragovernmental transactions.

- IT General Controls – Implementing risk management framework and correcting deficiencies in access and security controls over our systems.

The Navy-Marine Corps team is meeting these challenges head-on with full awareness that financial audit readiness will not be a one-time achievement – rather, it will be marked by a progressively changing business environment in which improvements will be incorporated into permanent work processes throughout FY 2019. The DON is committed to promoting a business culture in which all participants understand their respective roles in achieving and sustaining financial auditability, from senior leaders down to the business managers who support our warfighting team each day. The result will be strengthened stewardship for public funds, institutionalized by performing effective internal controls over business processes and systems, and by making business policies and procedures more prescriptive and compliant with accounting standards.

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## MILITARY PERSONNEL, NAVY

(Dollars in Millions)

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| Pay and Allowances of Officers | 8,069 | 8,441 | 8,759 |
| Pay and Allowances of Enlisted | 18,611 | 19,703 | 21,028 |
| Pay and Allowances of Midshipmen | 82 | 84 | 85 |
| Subsistence of Enlisted Personnel | 1,204 | 1,240 | 1,305 |
| Permanent Change of Station Travel | 942 | 954 | 888 |
| Other Military Personnel Costs | 132 | 129 | 122 |
| **Total: MPN** | **29,040** | **30,550** | **32,188** |

## MEDICARE-ELIGIBLE RETIREE HEALTH FUND CONTRIBUTION, NAVY

(Dollars in Millions)

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| Health Accrual | 1,577 | 1,466 | 1,550 |
| **Total: DHAN** | **1,577** | **1,466** | **1,550** |

## RESERVE PERSONNEL, NAVY

(Dollars in Millions)

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| Reserve Component Training and Support | 1,996 | 2,060 | 2,135 |
| **Total: RPN** | **1,996** | **2,060** | **2,135** |

## MEDICARE-ELIGIBLE RETIREE HEALTH FUND CONTRIBUTION, NAVY RESERVE

(Dollars in Millions)

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| Health Accrual | 143 | 131 | 137 |
| **Total: DHANR** | **143** | **131** | **137** |

## *MILITARY PERSONNEL, MARINE CORPS*

*(Dollars in Millions)*

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| Pay and Allowances of Officers | 2,882 | 3,065 | 3,166 |
| Pay and Allowances of Enlisted | 9,003 | 9,517 | 9,797 |
| Subsistence of Enlisted Personnel | 808 | 814 | 820 |
| Permanent Change of Station Travel | 448 | 437 | 444 |
| Other Military Personnel Costs | 56 | 55 | 52 |
| **Total: MPMC** | **13,197** | **13,888** | **14,279** |

## *MEDICARE-ELIGIBLE RETIREE HEALTH FUND CONTRIBUTION, MARINE CORPS*

*(Dollars in Millions)*

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| Health Accrual | 903 | 831 | 860 |
| **Total: DHAMC** | **903** | **831** | **860** |

## RESERVE PERSONNEL, MARINE CORPS

*(Dollars in Millions)*

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| Reserve Component Training and Support | 763 | 785 | 842 |
| **Total: RPMC** | **763** | **785** | **842** |

## MEDICARE-ELIGIBLE RETIREE HEALTH FUND , MARINE CORPS RESERVE

*(Dollars in Millions)*

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| Health Accrual | 81 | 74 | 77 |
| **Total: DHAMCR** | **81** | **74** | **77** |

# *OPERATION AND MAINTENANCE, NAVY*

*(Dollars in Millions)*

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| **Operating Forces** | | | |
| Air Operations | 10,787 | 11,227 | 11,747 |
| Ship Operations | 18,420 | 18,234 | 19,135 |
| Combat Operations/Support | 5,462 | 5,478 | 5,841 |
| Weapons Support | 2,900 | 3,165 | 3,386 |
| Base Support | 7,987 | 7,954 | 8,864 |
| **Total - Operating Forces** | **45,555** | **46,058** | **48,973** |
| | | | |
| **Mobilization** | | | |
| Ready Reserve and Prepositioning Forces | 706 | 855 | 1,295 |
| Activations/Inactivations | 197 | 161 | 428 |
| Mobilization Preparedness | 105 | 156 | 370 |
| **Total - Mobilization** | **1,008** | **1,173** | **2,092** |
| | | | |
| **Training and Recruiting** | | | |
| Accession Training | 303 | 306 | 321 |
| Basic Skills and Advanced Training | 1,207 | 1,235 | 1,416 |
| Recruiting & Other Training and Education | 428 | 406 | 421 |
| **Total - Training and Recruiting** | **1,939** | **1,947** | **2,158** |
| | | | |
| **Administration and Servicewide Support** | | | |
| Servicewide Support | 1,705 | 1,671 | 1,756 |
| Logistics Operations and Technical Support | 1,569 | 1,242 | 1,379 |
| Investigations and Security Programs | 1,207 | 1,287 | 1,329 |
| Cancelled Activities | 11 | 0 | 0 |
| Sprectrum/Telecommunications | 10 | 0 | 0 |
| **Total - Administration and Servicewide Support** | **4,502** | **4,200** | **4,464** |
| | | | |
| **Total: O&MN** | **53,004** | **53,378** | **57,687** |

## OPERATION AND MAINTENANCE, NAVY RESERVE

*(Dollars in Millions)*

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| **Operating Forces** | | | |
| Air Operations | 692 | 723 | 810 |
| Ship Operations | 1 | 1 | 1 |
| Combat Operations/Support | 147 | 150 | 157 |
| Base Support | 238 | 164 | 163 |
| **Total - Operating Forces** | **1,077** | **1,037** | **1,131** |
| **Administration and Servicewide Support** | | | |
| Servicewide Support | 13 | 15 | 15 |
| Logistics Operations and Technical Support | 3 | 3 | 3 |
| **Total - Administration and Servicewide Support** | **17** | **18** | **18** |
| **Sub Total: O&MNR** | **1,094** | **1,055** | **1,148** |

## OPERATION AND MAINTENANCE, MARINE CORPS

*(Dollars in Millions)*

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| **Operating Forces** | | | |
| Expeditionary Forces | 3,348 | 3,220 | 3,481 |
| USMC Prepositioning | 93 | 95 | 100 |
| Combatant Commander Direct Mission Support | 184 | 184 | 206 |
| Base Support | 3,013 | 2,975 | 3,837 |
| **Total - Operating Forces** | **6,638** | **6,473** | **7,624** |
| **Training and Recruiting** | | | |
| Accession Training | 20 | 18 | 22 |
| Basic Skills and Advanced Training | 586 | 569 | 593 |
| Recruiting & Other Training and Education | 255 | 259 | 278 |
| **Total - Training and Recruiting** | **861** | **845** | **894** |

| | | | |
|---|---|---|---|
| **Administration and Servicewide Support** | | | |
| Servicewide Support | 540 | 525 | 533 |
| Cancelled Activities | 78 | 0 | 0 |
| Spectrum/Telecommunications | 0 | 0 | 0 |
| Logistics OPS & Technical Support | 1 | 0 | 0 |
| **Total - Administration and Servicewide Support** | **619** | **525** | **533** |
| **Total: O&MMC** | **8,118** | **7,843** | **9,052** |

## *OPERATION AND MAINTENANCE, MARINE CORPS RESERVE*

*(Dollars in Millions)*

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| **Operating Forces** | | | |
| Expeditionary Forces | 138 | 121 | 133 |
| Base Support | 140 | 143 | 155 |
| **Total - Operating Forces** | **278** | **264** | **287** |
| **Administration and Servicewide Support** | | | |
| Servicewide Support | 9 | 11 | 14 |
| **Total - Administration and Servicewide Support** | **9** | **11** | **14** |
| **Total: O&MMCR** | **287** | **275** | **301** |

## *ENVIRONMENTAL RESTORATION, NAVY*

*(Dollars in Millions)*

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| Environmental Restoration Activities | 0 | 366 | 336 |
| **Total: ERN** | **0** | **366** | **336** |

# SHIPBUILDING AND CONVERSION, NAVY

*(Dollars in Millions)*

| | FY 2018 | | FY 2019 | | FY 2020 | |
|---|---|---|---|---|---|---|
| | QTY | $ | QTY | $ | QTY | $ |
| **New Construction** | | | | | | |
| Columbia Class Submarine | - | 862 | - | 3,173 | - | 1,699 |
| CVN 78 | 1 | 4,131 | - | 1,573 | 1 | 2,347 |
| SSN 774 | 2 | 5,451 | 2 | 7,137 | 3 | 9,925 |
| DDG 51 | 2 | 3,447 | 3 | 5,892 | 3 | 5,323 |
| DDG 1000 | - | 217 | - | 271 | - | 156 |
| LCS | 3 | 1,567 | 3 | 1,571 | - | - |
| FFG | - | - | - | - | 1 | 1,281 |
| LHA(R) | - | 1,711 | - | 350 | - | - |
| LPD Flight II/ LX(R) | 1 | 1,800 | - | 350 | - | 247 |
| Expeditionary Fast Transport | 1 | 225 | 1 | 225 | - | - |
| Expeditionary Sea Base | 1 | 635 | 1 | 647 | - | - |
| T-AO 205 | 1 | 533 | 2 | 1,052 | 2 | 1,054 |
| T-ATS | 1 | 76 | 1 | 81 | 2 | 150 |
| **Total New Construction** | **13** | **20,655** | **13** | **22,322** | **12** | **22,183** |
| **Other** | | | | | | |
| CVN RCOH | - | 1,646 | - | 426 | 1 | 648 |
| Oceanographic Ships | 1 | 180 | - | - | - | - |
| LCU 1700 | - | - | 2 | 42 | 4 | 86 |
| LCAC SLEP | - | - | 1 | 23 | - | - |
| Outfitting/Post Delivery | - | 489 | - | 550 | - | 755 |
| Ship to Shore Connector | 8 | 525 | 8 | 508 | - | - |
| Service Craft | - | 63 | - | 72 | - | 56 |
| YP Craft Maintenance/ROH/SLEP | - | - | - | - | - | - |
| Polar Icebreaker | - | 150 | - | - | - | - |
| Completion of PY Shipbuilding Programs | - | 118 | - | 207 | - | 56 |
| **Total Other** | **9** | **3,170** | **11** | **1,828** | **5** | **1,600** |
| **Total: SCN** | **22** | **23,825** | **24** | **24,150** | **17** | **23,784** |

# *AIRCRAFT PROCUREMENT, NAVY*

*(Dollars in Millions)*

| | FY 2018 | | FY 2019 | | FY 2020 | |
|---|---|---|---|---|---|---|
| | QTY | $ | QTY | $ | QTY | $ |
| Combat Aircraft | 130 | 13,090 | 123 | 13,159 | 80 | 10,270 |
| Airlift Aircraft | 2 | 207 | 0 | 0 | 0 | 0 |
| Trainer Aircraft | 0 | 0 | 0 | 0 | 32 | 261 |
| Other Aircraft | 15 | 1,189 | 11 | 1,640 | 36 | 1,672 |
| Modification of Aircraft | 0 | 2,927 | 0 | 3,116 | 0 | 3,531 |
| A/C Spares & Repair Parts | 0 | 2,196 | 0 | 1,880 | 0 | 2,167 |
| A/C Support Equip & Facilities | 0 | 494 | 0 | 529 | 0 | 740 |
| **Total: APN** | **147** | **20,103** | **134** | **20,324** | **148** | **18,641** |

# WEAPONS PROCUREMENT, NAVY

*(Dollars in Millions)*

| | FY 2018 | | FY 2019 | | FY 2020 | |
|---|---|---|---|---|---|---|
| | QTY | $ | QTY | $ | QTY | $ |
| **Ballistics and Other Missile** | | | | | | |
| TRIDENT II Mods | - | 1,132 | - | 1,057 | - | 1,177 |
| Evolved Sea Sparrow Missile (ESSM) | 31 | 74 | 45 | 98 | 60 | 128 |
| Tomahawk | 100 | 303 | - | 99 | 90 | 387 |
| AMRAAM | 120 | 185 | 141 | 188 | 169 | 225 |
| Sidewinder | 185 | 77 | 311 | 121 | 292 | 119 |
| JT Standoff Weapon (JSOW) | - | 5 | - | 1 | - | 0 |
| Standard Missile | 125 | 491 | 125 | 616 | 125 | 501 |
| Rolling Airframe Missile (RAM) | 120 | 107 | 108 | 96 | 120 | 107 |
| Aerial Targets | - | 122 | - | 134 | - | 152 |
| Joint Air Ground Missile (JAGM) | - | 4 | 75 | 24 | 382 | 91 |
| LRASM | 34 | 108 | 35 | 111 | 48 | 143 |
| Stand Off Precision Guided Munitions (SOPGM) | 19 | 3 | 31 | 11 | - | 0 |
| Small Diameter Bomb (SDB II) | 90 | 21 | 750 | 91 | 750 | 118 |
| LCS OTH Missile | - | 0 | 8 | 18 | 18 | 38 |
| Hellfire | 110 | 9 | 23 | 2 | 29 | 2 |
| Other | 392 | 297 | 459 | 351 | 612 | 441 |
| **Torpedo and Related Equipment** | | | | | | |
| MK-48 Torpedo | 41 | 80 | 53 | 104 | 58 | 114 |
| MK-54 Torpedo Mods | 144 | 95 | 66 | 84 | 72 | 119 |
| MK-48 Torpedo ADCAP Mods | 158 | 39 | 79 | 40 | 54 | 40 |
| Torpedo Support Equipment | - | 68 | - | 78 | - | 79 |
| Other | - | 32 | - | 36 | - | 34 |
| **Other Weapons** | | | | | | |
| Close-In Wpns Sys (CIWS) Mods | - | 73 | - | 63 | - | 44 |
| Gun Mount Mods | - | 73 | - | 75 | - | 66 |
| LCS Module Weapons | 88 | 11 | 90 | 11 | 120 | 15 |
| Other | - | 113 | - | 79 | - | 67 |
| **Spares and Repair Parts** | - | 102 | - | 136 | - | 126 |
| **Total: WPN** | **1,757** | **3,622** | **2,399** | **3,726** | **2,999** | **4,333** |

# *PROCUREMENT, MARINE CORPS*

*(Dollars in Millions)*

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| **Weapons and Combat Vehicles** | | | |
| AAV7A1 PIP | 85 | 97 | 39 |
| Amphibious Combat Vehicle | 157 | 167 | 318 |
| LAV PIP | 7 | 37 | 61 |
| Modification Kits | 20 | 23 | 23 |
| 155MM Ltwt Towed Howitzer | 20 | 37 | 25 |
| Other | 77 | 172 | 132 |
| **Guided Missiles and Equipment** | | | |
| Javelin | 38 | 3 | 20 |
| Other | 79 | 83 | 304 |
| **Communications and Electronic Equipment** | | | |
| Repair and Test Equipment | 38 | 46 | 55 |
| Common Computer Resources | 59 | 63 | 51 |
| Command Post Systems | 204 | 116 | 109 |
| Radio Systems | 28 | 251 | 227 |
| Comm Switching & Control Systems | 39 | 31 | 32 |
| Comm & Elec Infrastructure Supt | 36 | 73 | 21 |
| Common Aviation Command and Control System (CAC2S) | 48 | 33 | 37 |
| RQ-21 UAS | 83 | 0 | 0 |
| Ground/Air Task Oriented Radar (G/ATOR) | 135 | 220 | 273 |
| Other | 300 | 334 | 447 |
| **Support Vehicles** | | | |
| Commercial Cargo Vehicles | 57 | 24 | 29 |
| Joint Light Tactical Vehicle | 233 | 599 | 558 |
| Other | 25 | 58 | 22 |
| **Engineer and Other Equipment** | 222 | 286 | 294 |
| **Spares and Repair Parts** | 29 | 24 | 33 |
| **Total: PMC** | **2,019** | **2,777** | **3,111** |

## PROCUREMENT OF AMMUNITION, NAVY AND MARINE CORPS

*(Dollars in Millions)*

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| Navy Ammunition | 719 | 877 | 635 |
| Marine Corps Ammunition | 318 | 305 | 551 |
| **Total: PANMC** | **1,037** | **1,182** | **1,186** |

## OTHER PROCUREMENT, NAVY

*(Dollars in Millions)*

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| Ship Support Equipment | 2,712 | 3,068 | 2,803 |
| Communications and Electronics Equipment | 2,741 | 3,122 | 3,566 |
| Aviation Support Equipment | 460 | 538 | 657 |
| Ordnance Support Equipment | 978 | 1025 | 1149 |
| Civil Engineering Support Equipment | 108 | 120 | 172 |
| Supply Support Equipment | 511 | 604 | 677 |
| Personnel and Command Support Equipment | 462 | 494 | 609 |
| Spares and Repair Parts | 287 | 308 | 376 |
| **Total: OPN** | **8,259** | **9,279** | **10,009** |

# *RESEARCH, DEVELOPMENT, TEST AND EVALUATION, NAVY*

*(Dollars in Millions)*

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| Basic Research | 605 | 680 | 606 |
| Applied Research | 975 | 1,019 | 936 |
| Advanced Technology Development | 900 | 852 | 742 |
| Advanced Component Development | 4,211 | 4,173 | 5,599 |
| System Development and Demonstration | 6,038 | 5,865 | 6,333 |
| RDT&E Management Support | 1,389 | 1,023 | 990 |
| Operational Systems Development | 4,348 | 5,047 | 5,228 |
| **Total: RDT&E,N** | **18,465** | **18,658** | **20,435** |
| | | | |
| **By Service** | | | |
| **Navy** | 17,510 | 16,429 | 17,875 |
| **Marine Corps** | 955 | 2,228 | 2,560 |

## *MILITARY CONSTRUCTION, NAVY AND MARINE CORPS*
### *ACTIVE AND RESERVE*

*(Dollars in Millions)*

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| **Significant Programs** | | | |
| Major Construction | 1,680 | 2,366 | 2,626 |
| Minor Construction | 34 | 29 | 81 |
| Planning and Design | 279 | 198 | 193 |
| **Total: Navy** | **1,993** | **2,593** | **2,900** |
| | | | |
| **Naval Reserve** | | | |
| Major Construction | 59 | 35 | 25 |
| Minor Construction | 12 | 3 | 25 |
| Planning and Design | 24 | 5 | 5 |
| **Total: Navy Reserve** | **95** | **43** | **55** |
| | | | |
| **By Service** | | | |
| **Navy** | 933 | 786 | 1,488 |
| **Marine Corps** | 1,155 | 1,850 | 1,467 |

## *FAMILY HOUSING, NAVY AND MARINE CORPS*

*(Dollars in Millions)*

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| **Navy** | | | |
| Construction (Incl P&D) | 77 | 87 | 28 |
| O&M | 293 | 280 | 281 |
| **Total: Navy** | **370** | **367** | **309** |
| | | | |
| **Marine Corps** | | | |
| Construction (Incl P&D) | 10 | 18 | 20 |
| O&M | 44 | 35 | 37 |
| **Total: Marine Corps** | **55** | **52** | **56** |
| | | | |
| **Total: FH,N&MC** | **425** | **419** | **366** |

## *BASE REALIGNMENT AND CLOSURE ACCOUNTS*

*(Dollars in Millions)*

| | FY 2018 | FY 2019 | FY 2020 |
|---|---|---|---|
| Base Realignment and Closure IV | 0 | 0 | 0 |
| Base Realignment and Closure V | 0 | 0 | 0 |
| Consolidated Prior BRAC | 216 | 212 | 158 |
| **Total: BRAC** | **216** | **212** | **158** |

# LIST OF ACRONYMS

## A

**A2/AD** – *Anti-Access/Area-Denial*
**AABoD** - *Accelerated Acquisition Board of Directors*
**AARGM** - *Advanced Anti-Radiation Guided Munition*
**AAV** – *Assault Amphibious Vehicle*
**AC** - *Active Component*
**ACAT** – *Acquisition Category*
**ACV** – *Amphibious Combat Vehicle*
**AFSB** – *Afloat Forward Staging Base*
**AEA** – *Airborne Electronic Attack*
**AFRICOM** – *U.S Africa Command*
**AMDR** –*Air and Missile Defense Radar*
**AMRAAM** - *Advanced Medium Range Air-to-Air Missile*
**AOR** – *Area of Responsibility*
**AP** – *Advance Procurement*
**APKWS** - *Advanced Precision Kill Weapon System*
**ARGs** – *Amphibious Ready Groups*
**AS** – *Submarine Tenders*
**ASW** – *Anti-Submarine Warfare*
**AT/FP** – *Anti-Terrorism/Force Protection*
**AVPLAN** – *Aviation Plan*

## B

**BA** - *Budget Authority*
**BPI** – *Business Process Improvements*
**BRAC** – *Base Realignment and Closure*
**BSI** – *Business System Improvements*
**BRS** – *Blended Retirement System*

## C

**CANES** - *Consolidated Afloat Networks and Enterprise Services*
**CATM** – *Captive Air Training Missile*
**CBARS** – *Carrier Based Aerial Refueling System*
**CCDR** – *Combatant Commander*
**CCMD** – *Combatant Command*
**CDD** – *Capabilities Development Documentation*
**CENTCOM** - *U.S. Central Command*
**CG** - *Guided Missile Cruiser*
**CMC** – *Commandant of the Marine Corps*
**CNIC** – *Commander, Navy Installations Command*
**CNO** - *Chief of Naval Operations*
**COCOM** - *Combatant Command*
**COD** – *Carrier Onboard Delivery*
**CONOPS**- *Concept of Operations*
**CSG** - *Carrier Strike Groups*
**CV** – *JSF Carrier Variant*
**CVN** – *Nuclear Aircraft Carrier*
**CVW**- *Carrier Air Wing*
**C4I** - *Command, Control, Communication, Computers, and Intelligence*

## D

**DDG** – *Guided Missile Destroyer*
**DoD** – *Department of Defense*
**DON** – *Department of the Navy*
**DSG** – *Defense Strategic Guidance*

## E

**EA** – *Electronic Attack*
**ECP** - *Engineering Change Proposal*
**EDM** - *Engineering Development Model*
**ELMP** – *Enterprise Lifecycle Maintenance Program*
**EMALS** – *Electromagnetic Aircraft Launch System*
**ESB** – *Expeditionary Sea Base*
**EOD** – *Explosive Ordinance Disposal*
**EPF** – *Expeditionary Fast Transport*
**ERN** – *Environmental Restoration, Navy*
**ERP** - *Enterprise Resource Planning*
**ES** – *End-Strength*
**ESSM** – *Evolved Sea Sparrow Missile*
**EW** – *Electronic Warfare*
**EXWC** – *Engineering and Expeditionary Warfare Center*

## F

***F3R*** *- Form Fit, Function Refresh*
***FEC*** *– Facilities Engineering Command*
***FFG*** *– Guided Missile Frigate*
***FFRDC****- Federally Funded Research and Development Centers*
***FHP –*** *Flying Hour Program*
***FIAC****- Fast Inshore Attack Craft*
***FOC*** *– Full Operational Capability*
***FOS*** *– Full Operating Status*
***FoV****-Family of Vehicles*
***FRC*** *- Fleet Readiness Center*
***FRP*** *– Full Rate Production*
***FRTP*** *– Fleet Response Training Plan*
***FSC*** *– Future Surface Combatant*
***FSRM*** *– Facility Sustainment, Restoration, and Modernization*
***FTE*** *- Full-Time Equivalent*
***FUSL*** *– Full Up System Level Test*
***FY****- Fiscal Year*
***FYDP*** *- Future Years Defense Program*

## G

***G/ATOR*** *– Ground/Air Task Oriented Radar*
***GBAD/C-UAS*** *– Ground Based Air Defense/ Counter-Unmanned Aerial System*
***GBAD/FWS*** *– Ground Based Air Defense – Future Weapon System*
***GCS****- Guidance and Control Section*
***GCV****- Ground Combat Vehicle*

## H

***HADR*** *– Humanitarian Assistance and Disaster Relief*
***HARM*** *- High-Speed Anti-Radiation Missile*
***HEL****- High Energy Laser*
***HM&E*** *- Hull, Mechanical, and Electrical*

## I

***IA*** *– Individual Augmentee*
***IOC*** *– Initial Operational Capability*
***IOT&E*** *– Initial Operational Test & Evaluation*
***IED*** *– Improvised Explosive Device*
***ILS*** *– Integrated Logistics Support*
***IMA*** *– Individual Mobilization Augmentee*
***INS****- Inertial Navigation System*
***IPE-*** *Industrial Plant Equipment*
***IPP*** *– Invoice Processing Platform*
***IRAD****- Internal Research and Development*
***IR****- Infrared*
***IRR*** *– Infrared Receiver*
***IRST*** *– Infrared Search and Track*
***ISIL*** *– Islamic State of Iraq and the Levant*
***ISR*** *– Intelligence, Surveillance, and Reconnaissance*
***IT*** *– Information Technology*

## J

***JAGM*** *– Joint Air-to-Ground Missile*
***JHSV*** *- Joint High-Speed Vessel*
***JLTV*** *- Joint Light Tactical Vehicle*
***JPATS*** *- Joint Primary Aircraft Training System*
***JRB****- Joint Reserve Base*
***JSF*** *- Joint Strike Fighter*
***JSOW*** *- Joint Standoff Weapon*

## L

***LAV*** *– Light Armored Vehicle*
***LAV-ATM*** *– LAV Anti-Tank Modernization*
***LCAC*** *– Landing Craft Air Cushion*
***LCC*** *– Amphibious Command Ship*
***LCS*** *– Littoral Combat Ship*
***LCS-SSMM*** *– Littoral Combat Ship Surface-to-Surface Missile Module*
***LCU*** *– Landing Craft Utility*
***LHA*** *– Amphibious Warfare Assault Ship*
***LHD*** *– Amphibious Assault Ship*
***LMSR*** *- Large, Medium Speed Roll-On/Roll-Off Ships*
***LOC*** *– Limited Operational Capability*
***LPD*** *– Amphibious Dock Ship*
***LRASM*** *– Long-Range Anti-Ship Missile*
***LRIP*** *– Low-Rate Initial Production*
***LSD*** *– Dock Landing Ship*
***LX(R)*** *– Amphibious Ship Replacement*

## M

***MADIS –*** *Marine Air Defense Integrated System*
***MADS-K -*** *Man-Portable Anti-Drone Defeat System Kit*
***MAGTF*** *- Marine Air-Ground Task Force*

***MARSOC*** *– Marine Corps Forces Special Operations Command*
***MARFORCYBER*** *– Marine Corps Cyberspace Command*
***MAW*** *- Marine Aircraft Wing*
***MCB*** *– Marine Corps Base*
***MCF 2025*** *– Marine Corps Force 2025*
***MCM*** *– Mine Countermeasures Ships*
***MCAS*** *– Marine Corps Air Station*
***MCRD*** *– Marine Corps Recruiting Depot*
***MEF*** *- Marine Expeditionary Force*
***MEU*** *- Marine Expeditionary Unit*
***MILCON*** *- Military Construction*
***MILPERS*** *– Military Personnel*
***MLP*** *- Mobile Landing Platform*
***MML****- Missile-to-Missile Link*
***MOC*** *– Marine Corps Operating Concept*
***MPS*** *- Maritime Prepositioning Ships*
***MPMC*** *– Military Personnel, Marine Corps*
***MPN*** *– Military Personnel, Navy*
***MRAP*** *– Mine-Resistant Ambush Protected*
***MRI –*** *Medium-Range Intercept*
***MSC*** *- Military Sealift Command*
***MSF*** *– Million Square Feet*
***MTS*** *– Moored Training Ship*
***MYP*** *– Multi-Year Procurement*

## N

***NDAA -*** *National Defense Authorization Act*
***NAS*** *– Naval Air Station*
***NAVSUP*** *– Navy Supply Systems Command*
***NAWC*** *– Naval Air Warfare Center*
***NCDOC*** *– Navy Cyber Defense Operations Command*
***NDS*** *– National Defense Strategy*
***NDSF*** *- National Defense Sealift Fund*
***NECC*** *- Navy Expeditionary Combat Command*
***NGJ*** *– Next Generation Jammer*
***NLFoS*** *– Navy Laser Family of Systems*
***NLWS*** *– Navy Laser Weapon System*
***NOSC*** *– Navy Operational Support Center*
***NOTM****- Networking on the Move*
***NR&DE*** *- Naval Research and Development Establishment*
***NSWC*** *– Naval Surface Warfare Center*
***NSY*** *- Naval Shipyard*
***NUWC*** *– Naval Undersea Warfare Center*
***NWCF*** *- Navy Working Capital Fund*

## O

***OCO*** *– Overseas Contingency Operations*
***OEF*** *– Operation Enduring Freedom*
***OFRP*** *– Optimized Fleet Response Plan*
***OFRTP*** *– Optimized Fleet Response Training Plan*
***OIF –*** *Operation Iraqi Freedom*
***O&M*** *– Operations & Maintenance*
***OMB*** *– Office of Management and Budget*
***OPTEMPO*** *- Operational Tempo*
***OPN*** *– Other Procurement, Navy*
***OTH*** *– Over the Horizon*
***ORD*** *– Operational Requirements Document*
***OOR*** *– Out-of-Reporting*
***OPFOR –*** *Operating Forces*
***ORT*** *– Operation Rolling Tide*

## P

***PAA*** *- Primary Authorized Aircraft*
***PACOM*** *– U.S. Pacific Command*
***PANMC*** *– Procurement of Ammunition, Navy and Marine Corps*
***PB*** *– President's Budget*
***PBL –*** *Performance Based Logistics*
***PC*** *– Patrol Craft*
***PCS -*** *Permanent Change of Station*
***PEO*** *– Program Executive Office*
***PMC*** *– Procurement, Marine Corps*
***PMRF*** *– Pacific Missile Range Facility*

## R

***RAA -*** *Request for Additional Appropriations*
***RADAR*** *– Radio Detection and Ranging*
***RAM****-Rolling Airframe Missile*
***RBA*** *– Ready Basic Aircraft*
***RC*** *- Reserve Component*
***RCOH*** *– Refueling Complex Overhaul*
***R&D*** *– Research & Development*
***RDT&E,N*** *– Research, Development, Test and Evaluation, Navy*
***RF*** *– Radio Frequency*
***RFU*** *– Ready-for-Use*
***R&M*** *- Restoration and Modernization*
***ROS*** *- Reduced Operating Status*

***RPED*** *– Rapid Prototyping Experimentation and Demonstration*
***RPN*** *– Reserve Personnel, Navy*
***RRL*** *– Ready Relevant Learning*
***RSTA*** *– Reconnaissance, Surveillance, and Target Acquisition*

## S

***S2F*** *– Speed to Fleet*
***SBA*** *– Schedule of Budgetary Activity*
***SBR*** *– Statement of Budgetary Resources*
***SDB*** *– Small Diameter Bomb*
***SDBII****- Small Diameter Bomb Increment II*
***SDD*** *– System Development and Demonstration*
***SDTA*** *– System Demonstration Test Articles*
***SEAL*** *– Sea Air Land*
***SEWIP*** *– Surface Electronic Warfare Improvement Program*
***SFIM****- Strike Fighter Inventory Management*
***SLEP*** *– Service-Life Extension Program*
***SM*** *- Standard Missile*
***SNLWS****- Surface Navy Laser Weapon System*
***SOF*** *– Special Operations Force*
***SOPGM*** *– Stand-Off Precision Guided Munitions*
***SP-MAGTF*** *– Special Purpose MAGTF*
***SSBN*** *– Nuclear Ballistic Submarine*
***SSC*** *– Ship-to-Shore Connector*
***SSGN*** *– Guided Missile Submarine (Nuclear)*
***SSMM*** *– Surface-to-Surface Missile Module*
***SSN*** *- Nuclear Attack Submarine*
***SSL-TM*** *– Solid State Laser Technology Maturation*
***S&T*** *- Science and Technology*
***STEM-*** *Science, Technology, Engineering, and Mathematics*
***STOVL*** *- Short Takeoff and Vertical Landing*
***STUAS*** *- Small Tactical Unmanned Aircraft System*
***SUW*** *– Surface Warfare*

## T

***TACAIR*** *– Tactical Air*
***TACTOM*** *– Tactical Tomahawk*
***T-AE*** *– Combat Logistics Ship*
***T-AGOS*** *- Ocean Surveillance Ship*
***T-AH*** *– Hospital Ship*
***TAI*** *- Total Aircraft Inventory*
***T-AKE*** *- Dry-Cargo Ammunition Ship*
***T-AO*** *– Fleet Replenishment Oilers*
***T-AOE*** *– Fast Combat Support Ships*
***T-AO(X)*** *– Fleet Oiler Replacement*
***T-ATF*** *– Ocean Tugs*
***T-ESD*** *– Expeditionary Transfer Dock*
***T-HST****– High-Speed Transport*
***TMS*** *– Type/Model/Series*
***TOA*** *– Total Obligation Authority*
***TOW*** *– Tube-Launched Optically-Tracked, Wire-Guided*
***T&R*** *– Training and Readiness*
***TSC*** *– Theater Security Cooperation*
***TSP*** *– Thrift Savings Plan*

## U

***UCA-*** *Unmanned Carrier Aviation*
***UARC-*** *University Affiliated Research Center*
***UAS*** *- Unmanned Aerial System*
***UAV*** *- Unmanned Aerial Vehicle*
***UCLASS*** *– Unmanned Carrier Launched Airborne Surveillance and Strike*
***USMC*** *– United States Marine Corps*
***USN*** *– United States Navy*
***USV*** *– Unmanned Surface Vehicle/Vessel*
***UTV*** *– Utility Task Vehicle*

## V

***VPM*** *- Virginia Payload Module*

## W

***WCF*** *– Working Capital Fund*