

FY 2020 NDAA Update and Highlights

The Fiscal Year (FY) 2020 National Defense Authorization Act (NDAA) process has truly begun. Much like interns in blue blazers and khaki pants, amendments to the annual defense policy bill have been flooding both chambers of Congress for weeks. As of June 18, 502 amendments have been filed in the Senate alone. This is an increase from years past: For FY 2019, 433 amendments were considered; FY 2018, over 300. This trend is bicameral. There were 370 that the House Armed Services Committee considered in its 21 hours long markup this year compared to 315 in FY 2019 and 274 in FY 2018. Why the steady increase of NDAA amendments? The NDAA is considered “must pass” legislation, and legislators are poised for some easy wins by putting up provisions as amendments. Most amendments are passed through voice votes, many lumped together as en-bloc amendments (where members vote on the whole package), and only rarely is a roll-call vote requested where each member votes individually. In the House this year, only 24 amendments required roll-call votes. This trend looks likely to continue in future years.

The Senate Armed Services Committee (SASC) finished marking up their bill, S. 1790, on May 22. The Senate began considering the bill on the floor on June 19 and passed it on June 27. The House Armed Services Committee (HASC) marked up its bill, H.R. 2500, in subcommittee on June 5 and in full committee in the early hours of June 13. It is unlikely to be placed on the House calendar until after the recess. Once each chamber passes its version of the NDAA, the Congress will appoint a Conference Committee to bridge the gap between \$733 billion (H.R. 2500) and \$750 billion (S. 1790) in spending, and compromise on legislative provisions in the final bill.

NDAA Signage History

Fiscal Year	Bill	Date Signed
FY 2019	HR 5515	8/13/18
FY 2018	HR 2810	12/12/17
FY 2017	S 2943	12/23/16
FY 2016	S 1356	11/25/15
FY 2015	HR 3979	12/19/14

It appears Congress is on track to get the FY 2020 NDAA to the President’s desk by September. The current fiscal year is up on September 30. This is not the norm, however (see chart). In the previous five years, only one NDAA has been signed before the deadline. But even if Congress does manage to get this to the President in time, the money will not be given until the Defense Appropriations bill is passed. It’s unclear when that will occur; the House has an Appropriations bill, but the Senate does not. The Senate will most likely not take up appropriations until after there is an agreement on the Budget Control Act (BCA), which caps discretionary spending. For more information on the Appropriations status, please click [here](#).

The AOC has been monitoring key provisions in both bills. EW-related funding put forth by the President’s budget and both bills can be found [here](#). Below are legislative and direct report language

highlights in both the House and Senate NDAA's. If you have any questions, please contact Amanda Crowe at crowe@crows.org.

S. 1790

Legislative Language

Limitation on availability of funds for communication systems lacking certain resiliency features (sec. 151)- The committee defines these program resiliency requirements as features that: 1) Deny geo-location of a transmission that would allow enemy targeting of the force; 2) Securely communicate classified information in a jamming environment of like-echelon forces; and 3) Utilize a waveform that is made available in the DOD Waveform Information Repository.

Repeal of tactical unmanned vehicle common data link requirement (sec. 154)- This section repeals section 141 of the FY06 NDAA, as the standards set to not keep pace with the current high threat environment and the National Defense Strategy.

Development and acquisition strategy to procure secure, low probability of detection data link network capability (sec. 211)- This provision requires the Chief of Staff of the Air Force (CSAF) and the Chief of Naval Operations (CNO) to develop a joint development and acquisition strategy to procure a resilient, low latency, and low probability of detection data link network capability that would enable effective operation in contested environments.

Electromagnetic spectrum sharing research and development program (sec. 214)- This provision would require the Secretary of Defense, in consultation with the Administrator of the National Telecommunications and Information Administration and the Federal Communications Commission, to establish an electromagnetic spectrum sharing and development program for fifth-generation wireless network technologies, Federal systems, and non-Federal incumbent systems that would focus on expanding sharing of electromagnetic spectrum.

Extension of National Security Commission on Artificial Intelligence (sec. 1042)- This delays the termination of the National Security Commission on Artificial Intelligence until March 1, 2021.

Modification of enhancement of positioning, navigation, and timing capacity (sec. 1613)- The committee recommends a provision that would direct the Secretary of the Air Force to ensure that military Global Positioning System (GPS) user equipment terminals can incorporate signals from the European Union's Galileo and Japan's QZSS satellites, beginning with the implementation of open system architecture solutions to provide for robust positioning, navigation, and timing (PNT). The provision would also direct the Secretary to ensure that military GPS terminals can receive allied and non-allied PNT signals, provided that analysis indicates that the benefits outweigh the risks or that the risks can be appropriately mitigated.

Direct Report Language

Air Force ISR SIGINT data integration- The committee directs the Secretary of the Air Force to provide a briefing to the congressional defense committees, no later than March 1, 2020, on how the Air Force is implementing its Next Generation Intelligence, Surveillance, and Reconnaissance Dominance Flight Plan

in order to make Air Force airborne SIGINT data from the RC-135, U-2, RQ-4, MQ-9, and future SIGINT capabilities discoverable and available to the joint warfighter.

Multifunction capability to provide communications in contested environments- The committee is concerned about the ability of the Department of Defense to maintain its advantage in full spectrum operations in the future. To better prepare for future combat operations against a near-peer adversary, the committee believes that the DOD needs to expedite testing of multi-domain capabilities and systems that provide distributed, shared, full spectrum situational awareness and spectrum maneuver. This testing should include cognitive machine learning or artificial intelligence applications to assess new and unknown electronic signals in real-time. Such testing would also demonstrate advanced technologies, such as modern waveforms that are designed to be low-probability-of-intercept, low-probability-of-detection, and ultra-wideband radio frequency converged apertures that permit the U.S. to maintain spectrum dominance. These systems should also enable secure communications across networks with different security levels and between both legacy and advanced systems. Therefore, the committee directs the Secretary of Defense to provide the congressional defense committees with a briefing, no later than March 1, 2020, on the plan for the conduct of live testing of technologies and capabilities designed to permit secure full spectrum operations in the fiscal years 2020-2021 timeframe.

Navy laser integration plans- The committee directs the Secretary of the Navy to provide a briefing to the Senate Armed Services Committee, not later than October 1, 2019, describing the path forward for shipboard integration of HEL systems and the risk production plan to achieve improved technology and manufacturing readiness levels for such higher power systems. The committee also directs the Secretary to provide briefings on the progress of laser systems development and testing every 6 months through fiscal year 2021.

Cross-functional teams- The committee directs the Secretary of Defense to provide the committee, not later than February 1, 2020, an explanation as to why section 911 authorities (in the FY17 NDAA) have not been utilized to create cross-functional teams.

H.R. 2500

Legislative Language

Documentation Relating to Advanced Battle Management System (sec. 214)- This section would require the Secretary of the Air Force to provide program documentation for the Advanced Battle Management System (ABMS) family of systems. The committee is concerned with the lack of discernible benchmarks to assess and measure progress. The ABMS Analysis of Alternatives (AOA) will conclude in 2019. At that time, the committee expects the Air Force to complete the documentation requested by this section and submit it to the congressional defense committees not later than 180 days after completion of the AOA.

Strategy and Implementation Plan for Fifth Generation Information and Communications

Technologies (sec. 223)- This section would require the Secretary of Defense to develop and implement a strategy for fifth generation information and communications technologies not later than 270 days after the date of the enactment of this Act and to provide a briefing to the congressional defense

committees not later than 180 days after the date of the enactment of this Act on progress in developing the strategy.

Artificial Intelligence Education Strategy (sec. 225)- This section would require the Secretary of Defense to develop a strategy which identifies the key aspects, applications, and challenges associated with artificial intelligence that can be developed into an educational curriculum for military service members who utilize the technology in the execution of responsibilities. This section would also require the development of an implementation plan for the educational curriculum

Annual Determination on Plan on Full Integration and Exploitation of Overhead Persistent Infrared Capability (sec. 1602)- The section adds a sunset clause to the requirement.

Prototype Program for Multi-Global Navigation Satellite System Receiver Development (sec. 1604)- This section would require the Secretary of Defense to establish under the Space Development Agency (SDA) a program to prototype an M-code based, multi-global navigation satellite system (GNSS) receiver that would incorporate both allied and non-allied, trusted and open GNSS signals to increase the resilience and capability of military positioning, navigation, and timing (PNT) equipment. This section would also require the SDA Director to submit to the congressional defense committees, the House Committee on Foreign Affairs, and the Senate Committee on Foreign Relations, not later than 120 days after date of the enactment of this Act, a report including an explanation of how the Secretary intends to comply with section 1609 of the FY19 NDAA; an outline of any potential cooperative efforts acting in accordance with the North Atlantic Treaty Organization, the European Union, or Japan that would support such compliance; an assessment of the potential to host, or incorporate through software defined payloads, Global Positioning System M-code functionality onto allied GNSS systems; and an assessment of new or enhanced monitoring capabilities that would be needed to incorporate GNSS functionality into weapon systems of the Department.

Independent Study on Plan for Deterrence in Space (sec. 1606)- This section would require an independent study on deterrence in space and would require this independent study to be assessed by the Defense Policy Board.

Direct Report Language

Airborne Intelligence, Surveillance, and Reconnaissance Operational Assessment- The committee directs the Secretary of Defense to conduct a stress test of joint intelligence, surveillance, and reconnaissance enterprise capabilities required to achieve the operational objectives of its highest priority global campaign plans and evaluate the capability and capacity of existing service programs of record to satisfy joint force requirements for critical categories of intelligence. The committee also directs the Secretary of Defense to provide a briefing to the House Committee on Armed Services by March 1, 2020, on the results of this stress test. The briefing shall include capability and capacity shortfalls in platforms, sensors, and personnel, as well as address proposed risk mitigation strategies to address critical deficiencies.

Centers of Innovation for Space Operational Testing - The committee directs the Secretary of Defense to provide a briefing to the House Committee on Armed Services not later than September 30, 2019, on a plan regarding the opportunities and costs to expand activities at existing defense facilities and

partnerships to support operational testing and development of innovative technologies for multi-domain national security space missions.

Comptroller General Report on Navy Collective Training for High-End Combat Missions- The committee directs the Comptroller General of the United States to conduct a study addressing: (1) the extent to which the Navy's training standards have been updated or changed to portray realistic scenarios, as based on current intelligence; (2) the extent to which Navy training and exercises incorporate current and future threats, including cyber attacks, electronic warfare, new acoustic sensors, and unmanned underwater vehicles; (3) the extent to which current warfare certifications and training readiness data provide an accurate portrayal of the Navy's readiness to perform in high-end combat missions; and (4) any other related matters the Comptroller General considers appropriate.

Advanced radar research- The committee directs the Chief of Naval Research to submit a report to the House Committee on Armed Services not later than April 30, 2020, on its support of partnerships with laboratory-based antenna test facilities that help the Navy understand, characterize, and calibrate advanced all-digital radars that are under development.

High Energy Laser system integration- The committee directs the Secretary of the Navy to submit a report to the congressional defense committees not later than April 1, 2020, describing a path forward for integration of HEL Systems 150-300 kW on large capital warships, including CVNs and large amphibious ships.

Directed energy test range workloads- The committee directs the Assistant Director for Directed Energy in the Office of the Under Secretary of Defense for Research and Engineering to provide a briefing to the House Committee on Armed Services not later than September 30, 2019, on the test and evaluation infrastructure and test asset needs to meet directed energy requirements over the next 5 years.

Electronic warfare planning for near-peer adversaries- The committee is concerned about the extent to which the Department is planning and preparing to defend itself and operate in an environment where peer and near-peer adversaries could use existing and emerging capabilities that degrade use of the electromagnetic spectrum. Therefore, the committee directs the Comptroller General of the United States to assess the Department's electronic warfare and electromagnetic spectrum operations strategy and implementation efforts. The assessment should include the current electronic warfare threat from peer or near-peer adversaries and actions the Department has taken in response to include the protection of critical warfighting capabilities; the extent to which the Department has incorporated current and emerging electromagnetic spectrum risks into service and combatant command operational planning efforts and exercises; the status and effectiveness of the Electronic Warfare Executive Committee established by the Secretary of Defense in 2015; the Department's implementation of the 2013 Electromagnetic Spectrum Strategy; and any other matters the Comptroller General determines to be relevant. The committee further directs the Comptroller General to provide a briefing to the House Committee on Armed Services not later than March 1, 2020, on preliminary findings, and to present final results in a format and timeframe agreed to at the time of the briefing.

Qualitative Analysis of Adversary Development of Emergent Technologies- The committee directs the Secretary of Defense, in coordination with the Chairman of the Joint Chiefs of Staff and the Director of the Defense Intelligence Agency, to provide a report to the congressional defense committees and the congressional intelligence committees by December 6, 2019, containing a technical description of U.S.

joint force emergent capabilities, as well as a description of advancements made by strategic near-peer competitors in comparable emergent technologies, including but not limited to hypersonic weapons, rail gun technologies, quantum computing, and counter-space capabilities. Further, the committee directs the Secretary of Defense, in coordination with the Chairman of the Joint Chiefs of Staff and the Director of the Defense Intelligence Agency, to provide a briefing to the House Committee on Armed Services not later than November 1, 2019, on the initial findings in the report, including specific information that will be used to affect defense acquisition and development of joint force systems and capabilities to ensure that the United States maintains the capability to deter and address emerging threats.

Unified Air Force Airborne Signals Intelligence Enterprise- The committee directs the Secretary of the Air Force to provide a report to the House Committee on Armed Services by March 1, 2020, containing the Air Force's vision, strategy, and implementation plan to utilize Air Force airborne SIGINT program resources to establish a unified airborne SIGINT enterprise based on shared joint and intelligence community standards.

Global Positioning System denied environments- The committee directs the Under Secretary of Defense for Acquisition and Sustainment to provide a briefing to the House Committee on Armed Services not later than November 1, 2019, on efforts, including developmental and non-developmental item acquisition programs, to address U.S. munition capability gaps for longer range systems operating in GPS-denied or -degraded environment.

Radio Frequency Countermeasures for Rotary Wing Aircraft- The committee directs the Secretary of Defense to provide a briefing to the House Armed Services Committee, no later than January 31, 2020, that includes: a near and long-term acquisition and development strategy to provide radio frequency countermeasure (RFCM) protection for current and future rotary wing aircraft for each of the military services.

Air National Guard F-16 Radar Upgrades- The committee directs the Chief of Staff of the Air Force, in coordination with the Chief of the National Guard Bureau, to provide a report to the House Armed Services Committee not later than February 1, 2020 that details an operational risk assessment, requirements determination, and acquisition and fielding strategy with associated funding profiles for upgrading the ANG's F-16s with AESA radars.

Advanced Development of Asset Protection Technologies- The Committee directs the Secretary of the Army to provide a briefing to the committee not later than December 1, 2019 on the Army's plans and programs, if any, to develop, demonstrate, manufacture and deploy advanced multi-functional materials and technologies that can be combined for customizable asset protection systems and increased weapon system capabilities.

Air Combat Training System and Spectrum Allocation- The committee directs the Secretary of Defense to provide a briefing to the House Armed Services Committee no later than December 31, 2019, on actions taken related to impact mitigation of the Advanced Wireless Services 3 auction, and how relocation and compression efforts to date have been managed for DoD ACTS programs, F-35, electronic warfare programs, satellite operations, and other related areas.

Navy study on lethality of surface combatant ships against swarm technology- The committee directs the Secretary of the Navy to conduct a study on the lethality of surface combatant ships, both large and small against swarm technology, and deliver a report to Congress not later than January 1, 2021. Such study shall include each of the following at a minimum: (1) A threat analysis of current threat capabilities from foreign adversaries regarding swarm tactics using manned or unmanned aerial vehicles, unmanned underwater vehicles, and unmanned surface vehicles within ten nautical miles of coast line, sea ports and adversary ships; (2) A description of the current capabilities used by the Navy that have the capability or are designed specifically to counter swarm technology through kinetic means; electronic warfare; or directed energy; and (3) A description of future requirements for large and small surface combatant ships, including the capability of defending against swarm tactics and advancing technology; the capability of engaging swarm targets from port and starboard sides with the same effects as the bow; the capability of adding additional systems onto the hull of a surface combatant ship, both large and small, to enhance lethality against swarm and other threats; and a comparison between directly manned weapon systems and remote weapon stations.

Report on Commercial and Space-based Radio Frequency Mapping- The committee directs the National Reconnaissance Office to provide a report to the House Committee on Armed Services not later than November 1, 2019 on commercial space-based radio frequency mapping and associated operations and services for space-based electromagnetic collections. The report shall include the timelines, milestones, and processes to establish the ordering and data delivery systems for commercial space-based radio frequency mapping and associated operations and services for space-based electromagnetic collections, how such commercial operations and services should integrate into existing workflows of the Department of Defense, how such commercial operations and services could be integrated into other existing analytics platforms, and how these services can meet current and future mission requirements.