



## National Security Update

### ***Status of 2020 Defense Authorization/Appropriations and NDAA Highlights***

Our twelfth *IFPA National Security Update* examines the current status of the U.S. defense authorization, appropriations, and budget process with a focus on the Fiscal Year (FY) 2020 National Defense Authorization Act (NDAA) and assesses its strengths and weaknesses in light of key programs and policies discussed in previous *Updates*.

Topics addressed in our *National Security Update* series include hypersonic missiles, missile defense priorities, nuclear modernization issues, President Trump's Executive Order on Electromagnetic Pulse, the status of the Space Force, China's actions in the South China Sea and U.S. options, and the military applications of artificial intelligence. *IFPA Updates* may be accessed on our website at [www.ifpa.org/](http://www.ifpa.org/).

#### **Key Conclusions and Findings**

- The FY 2020 NDAA contains several positive elements and significant contributions to U.S. defense policy and programs. It also has weaknesses and shortcomings.

#### ***The NDAA's Strengths***

- The establishment of the U.S. Space Force as the sixth branch of the U.S. armed services. A dedicated service focusing on space is needed for several reasons including:
  - The United States is increasingly reliant on space to conduct virtually all of its military operations;
  - Space is no longer a sanctuary but is now a warfighting domain;
  - U.S. dependence on space for military operations continues to grow including in support of the missile defense mission;
  - Space responsibilities and budget authorities are fragmented among numerous Department of Defense (DOD) and national security stakeholders with no centralized leadership; and,
  - DOD's space bureaucracy has been slow/reluctant to leverage the commercial/high-tech sectors and their ability to develop, produce, and field space technologies and systems rapidly.
- Moving forward with the development of a space-sensor layer focused on detecting and tracking the Chinese and Russian hypersonic missiles being developed to carry nuclear weapons was endorsed by both the House and Senate.

- The NDAA directed that a test in 2020 to ascertain the capability of the U.S. Navy's *Standard Missile-3* IIA to defend against ICBMs should move forward (the House version of the NDAA would have drastically reduced the budget for such testing). A positive outcome in these tests could have significant implications for the capability to defend the U.S. homeland against longer-range ballistic missiles from any source, including Russia and China.
- DOD will proceed with development of a low-yield nuclear warhead to be deployed on *Trident* submarines (the House version of the NDAA would have killed this program) in response to Russia's greater number and variety of non-strategic nuclear systems coupled with its stated "escalate-to-deescalate" nuclear doctrine encompassing the employment of nuclear weapons in a conventional conflict that appear to lower the threshold for Moscow's first-use of nuclear weapons.
- The acknowledgement that the United States must focus on defeating not only ballistic missiles but also on defending against cruise and hypersonic missiles. Both China and Russia are proceeding rapidly with the development and deployment of advanced cruise and hypersonic missiles.
- The recognition that DOD needs to develop/deploy weapons, including missile defense technologies and systems, far more rapidly by streamlining DOD acquisition policies and incorporating the best practices and technologies developed in the commercial/private sector.
- The FY 2020 NDAA incorporates a provision giving President Trump's March 2019 Executive Order (EO) on Electromagnetic Pulse (EMP) the force of law binding on the relevant U.S. government departments and agencies. However, efforts to address the EMP problem set forth in the EO could get bogged down and slow-rolled by bureaucratic inertia and lobbyists who have long ignored the EMP problem or worked to underestimate its impact. As a result, to keep the EO on track, ongoing oversight and support from the White House and Congress is critical to hold stakeholders in government departments/agencies and in the private sector accountable for its implementation.

### ***NDAA Weaknesses and Disconnects***

- The NDAA was shortsighted in cancelling the space-based test bed to conduct research on a space-based missile intercept layer. Space-based interceptors offer the capability to counter the threats posed by ballistic and hypersonic missiles, enhance deterrence (by denial), augment U.S. escalatory options, and help mitigate the offense/defense cost-exchange ratio that currently favors the offense. Space interceptors would also provide a boost-phase intercept (BPI) capability significantly augmenting the effectiveness of U.S. missile defenses.
  - If the United States does not move forward with a capability for space-based testing, development and fielding of a space-based intercept layer will be significantly delayed and when deployed, problems that could have been averted had a space-testing regime been in place will be far more costly and time consuming to correct. The test-bed cancellation occurs at the same time our peer

competitors, Russia and China, are modernizing their ballistic missile inventories and developing hypersonic missiles, and rogue states such as North Korea and Iran are expanding both the quality and quantity of their ballistic-missile arsenals.

- The optimum approach to BPI is a network of space-based interceptors modeled on the most promising option, a 21st-century version of the *Brilliant Pebbles* space-intercept concept developed during the Reagan Administration which in 2019 dollars would cost \$23.09 billion spread over a twenty-year period for a constellation of 1000 *Brilliant Pebbles*.
- The NDAA states that it is U.S. policy to rely on nuclear deterrence for the defense of the U.S. homeland against Russian and Chinese intercontinental missile threats. Not including missile defenses as part of U.S. deterrence policy to deter/defend the U.S. homeland against nuclear attacks by Russia and China is a major failing of both the FY 2020 NDAA and the Trump Administration's Missile Defense Review (MDR) released in early 2019. This omission conflicts with the language used throughout the MDR stating that defense of the U.S. homeland is the highest priority. The MDR correctly identifies the logic and rationale of missile defense but fails to apply such logic to countering the most pressing threats to the United States: Russian and Chinese long-range ballistic missiles. This highlights a conspicuous failing in both the Administration's and Congress' thinking on deterrence policy and the critical role missile defenses can, and should play, in escalation control against our two primary adversaries.
- Further underscoring the flawed and inconsistent thinking on the "reliance on nuclear-deterrence-only policy" is the fact that the Administration and Congress support a space-based sensor layer to detect, track, and help destroy the nuclear-tipped hypersonic missiles being developed by Russia and China that threaten the U.S. homeland. If the Administration and Congress support missile defenses against the Russia and China's nuclear hypersonic threat they should also support missile defenses to counter Russian and Chinese long-range missiles threatening the United States.
  - The nuclear-deterrence-only policy to prevent long-range nuclear attacks against the U.S. homeland by Russia and China needs to be changed to incorporate missile defenses as an integral element of our policy to deter/counter missile threats to the United States regardless from what nation they originate.

### ***The U.S. Appropriations Process and Continuing Resolutions***

- The U.S. appropriations process needs to be fixed. In particular the all-too-frequent inability to pass the appropriations bill on time before October 1st and the beginning of the new fiscal year necessitates the passage of continuing resolutions (CRs) to prevent a government shutdown. Since 2010 the Defense Department has operated under a CR for over 39 months and three CRs were enacted in 2019 to avert a shutdown. CRs are unproductive and result in increased budgetary uncertainty, impede efficient planning, and slow down needed defense procurements. Most damaging, CRs bar DOD from initiating or restarting a project for which there were no funds allocated in the previous fiscal year.
  - Multi-year defense appropriations – as well as authorizations and budgets – should be considered as a possible solution to help correct this situation.

## **Overview of the Defense Authorization/Appropriations and Budgeting Process**

The National Defense Authorization Act (NDAA) is the annual defense policy bill which, as the name implies, authorizes the Pentagon to undertake various defense-related activities and procurements. The actual money to fund these activities comes from the annual defense appropriation bills, one of which appropriates funds for the Department of Defense and other defense/national security related functions.

The 116th Congress recently passed both the final FY 2020 NDAA (the NDAA will be examined in greater detail in the next section) and the 12 appropriations bills, including the defense appropriations bill. A split Congress with Republicans controlling the Senate and Democrats the House and exacerbated by contentious issues, including disagreements over the source of funding for the U.S.-Mexico border wall, had stymied the authorization and appropriation process delaying passage of the respective bills beyond the September 30th deadline and the new fiscal year that began on October 1, 2019. This impasse forced Congress and the White House to enact continuing resolutions (more below) to avert a government shutdown.

### ***Continuing Resolutions***

A continuing resolution (CR) is a stopgap procedure Congress can utilize to fund the U.S. government for a limited period because the appropriation bills have not been enacted. CRs are put in place to provide Congress with additional time to pass those bills and thus prevent a shutdown. In most cases, CRs occur because of a standoff between the Democrats and the Republicans or between Congress and the president.

A 35-day partial federal shutdown, the longest in U.S. history, occurred in December 2018 into January 2019 because agreement on the final appropriations bills and the passage of a CR could not be reached by Congress and President Trump, primarily due to disputes over funding for the U.S.-Mexican border wall. A CR, the first of three in 2019, was passed at the conclusion of this shutdown to give negotiators time to enact the appropriation bills.

According to a Congressional Research Service report, DOD has “started the fiscal year under a CR for 13 of the past 18 years (FY 2002-FY 2019) and every year since FY2010 excluding FY2019” and since 2010 has operated under a CR for over 39 months. The report goes on to state that a CR “limits an agency’s ability to take advantage of efficiencies through bulk buys and multiyear contracts. It can foster inefficiencies by requiring short-term contracts that must be reissued once additional funding is provided, requiring additional or repetitive contracting actions.”<sup>i</sup>

In September and November 2019, CRs occurred because the 12 appropriation bills for FY 2020 had not passed prior to the September 30th deadline and the start of the new fiscal year. If the appropriation bills had not been passed by both chambers of Congress (the House passed the bill on December 17th and the Senate on December 19th) and then signed by President Trump prior to midnight on December 20th when the November CR ended, another stopgap CR would have been needed to forestall a shutdown. As noted, sticking points over the border-wall issue (which held up the defense authorization process as well) together with clashes on the appropriate levels of defense and non-defense spending were at the heart of delays in the FY 2020 appropriations process.

A CR, particularly the possibility of a full-year CR, sparks considerable concern in the Pentagon. In most cases, a CR prohibits DOD from starting or resuming a project for which there were no funds allocated in the previous fiscal year. If a full-year CR for FY 2020 occurred, DOD would not be allowed – unless it was able to garner difficult-to-negotiate exemptions called “anomalies” – to begin 79 new-start programs or 39 planned production increases. A full-year CR would also mean that defense funding would continue at the FY 2019 rate reducing DOD’s budget by about \$20 billion from the FY 2020 level.<sup>ii</sup>

### ***The Appropriations Process***

Each year based on a budget resolution passed by Congress, the House and Senate Appropriations Committees receive an overall funding allocation for the upcoming fiscal year which determines how much funding to apportion to the 12 appropriations subcommittees and their respective bills in each chamber. (See Chart 1 for a list of the 12 House and Senate Appropriations Subcommittees and bills).

### **Chart 1 The 12 Appropriation Bills**

1. *Agriculture, Rural Development, Food and Drug Administration, and Related Agencies*: funds the USDA (except the Forest Service) and other agencies;
2. *Commerce, Justice, Science, and Related Agencies*: funds the Department of Commerce, the Department of Justice, NASA, and other agencies;
3. *Defense*: funds the military, the intelligence community, and other national defense related agencies;
4. *Energy and Water Development*: funds the Department of Energy, the U.S. Army Corps of Engineers, and other agencies;
5. *Financial Services and General Government*: funds the Department of the Treasury, the Executive Office of the President, and other government functions;
6. *Homeland Security*: funds the Department of Homeland Security;
7. *Interior, Environment, and Related Agencies*: funds the Department of the Interior, the EPA, the U.S. Forest Service, and a number of independent agencies;
8. *Labor, Health and Human Services, Education, and Related Agencies*: funds the Department of Education, the Department of Health and Human Services, the Department of Labor, and other agencies;
9. *Legislative Branch*: funds the House of Representatives (the Senate Legislative Branch oversees funding for the U.S. Senate), the U.S. Capitol, the Library of Congress, and other legislative branch functions;
10. *Military Construction, Veterans Affairs, and Related Agencies*: funds the military construction (including military housing), the Department of Veterans Affairs, and related agencies;
11. *State, Foreign Operations, and Related Programs*: funds the U.S. State Department, USAID, and related programs; and
12. *Transportation, Housing and Urban Development, and Related Agencies*: funds the Department of Transportation, HUD, and related agencies.

The House and Senate Appropriations Committees had difficulty negotiating a deal on the specific funding allocations for each of the 12 FY 2020 bills. The dispute over spending for the U.S.-Mexico border wall led to vastly different allocations in both chambers. Consequently, each chamber was working from different spreadsheets. The difficulty in reconciling the House and Senate versions of the appropriation bills resulted in two continuing resolutions to avoid a government shutdown.

However, on December 12, 2019 House Appropriations Committee Chairwoman Nita M. Lowey (D-NY) and Senate Appropriations Committee Chairman Richard C. Shelby (R-AL) announced a tentative agreement for federal spending in FY 2020 totaling about \$1.4 trillion. According to reports, border-wall funding would remain at the 2019 level with the Trump Administration retaining the right to transfer funds from other accounts for the wall.<sup>iii</sup>

On Tuesday, December 17, 2019 the House overwhelmingly passed the 12 bills, which had been broken up into two smaller bills to increase their prospects for passage by Congress and then signing by President Trump.<sup>iv</sup> The Senate passed the two bills on Thursday, December 19th in an 81-11 vote and President Trump signed the appropriation bills into law on December 20th, the final day of the November CR.

The U.S. defense appropriations process needs to be fixed. In particular the all-too-frequent inability to pass the appropriations bill on time necessitating continuing resolutions (three were required in 2019) is unproductive and results in increased defense budget uncertainty, impedes planning, and slows down defense procurements. Multi-year defense appropriations, authorizations, and budgets should be considered to rectify this situation.

### ***The Bipartisan Budget Act of 2019***

On August 2, 2019, President Trump signed into law a two-year spending bill called the Bipartisan Budget Act (BBA) of 2019 that raised the debt ceiling, boosted defense and non-defense spending, and permanently ended sequestration, the mandatory, across the board cuts enacted in the Budget Control Act of 2011. The deal set defense funding at \$738 billion in FY 2020 and \$740.5 billion in FY 2021 providing the Pentagon with a level of budget certainty.

However, the budget certainty comes with some downsides. The FY 2020 \$738 billion figure falls short of the \$750 billion the White House and Republicans have maintained the Pentagon needs to sustain modernization efforts. While the new FY 2020 defense budget represents a 3% increase from the 2019 budget, it is on the low end of the 3% to 5% actual growth Secretary of Defense Mark Esper and then-Chairman of the Joint Chiefs General Joseph Dunford stated the Pentagon needs for its modernization efforts.<sup>v</sup>

The real problem will surface in the BBA's second year defense budget, when Pentagon funding increases by only \$2.5 billion to \$740.5 billion. If the funding level for FY 2021 is not boosted, it will present a problem for modernization and other DOD funding priorities because with inflation the \$740.5 billion figure represents no real increase in spending power from the previous year.

## The FY 2020 NDAA

On December 9, 2019, conferees from the Senate and House Armed Services Committees reconciled their respective bills and produced a final version of the FY 2020 NDAA. This legislation, also frequently referred to as the defense policy bill, authorized \$738 billion in spending as well as updated policy for the Department of Defense and National Nuclear Security Administration.

Two days later the full House overwhelmingly approved the FY 2020 NDAA in a 377 to 48 vote (Republicans: 189 yes and 6 no; Democrats: 188 yes and 42 no). On Tuesday, December 17th, the bill was also overwhelmingly passed by the Senate 82-8.<sup>vi</sup> During a ceremony at Joint Base Andrews in Maryland on Friday, December 20th, President Trump signed the NDAA into law.<sup>vii</sup>

Unlike last year, when Congress moved swiftly enacting the NDAA well in advance of October 1st, the beginning of each new fiscal year, this year the process extended more than two months beyond the start of FY 2020. The agreement comes after several months of bicameral negotiations and, as noted earlier, made more difficult by control of the House by Democrats and the Senate by Republicans and several prickly issues that had to be resolved, most notably funding for the border wall. Approximately \$17 billion separated the House and Senate versions of the FY 2020 NDAA: the House version authorized \$733 billion; the Senate's \$750 billion.

Republican opposition to the House version – the bill came out of House Armed Services Committee with no Republican votes – forced House Democratic leaders to allow several amendments and policy measures (e.g., restrictions on the use of defense funding for the U.S.-Mexico border wall, anti-discrimination protections for transgender troops, and restrictions on toxic chemicals in drinking water on military bases) to be added to the bill. This was necessary to ensure sufficient Democratic votes to pass the bill without any minority support. The House bill was approved on a strictly partisan vote of 220-197.

This contrasts sharply with the Senate's version of the NDAA which passed with broad bipartisan support in an 86-8 vote. During the House/Senate Conference Committee, which first met on September 19, 2019, the Republicans were successful in eliminating most of the amendments and policy measures in the House bill.

The NDAA Conference Report follows the funding levels set forth in the Bipartisan Budget Agreement of 2019 cited earlier with a top budget of \$738 billion. Specifically, it authorizes a base budget of \$658.4 billion, \$71.5 billion for Overseas Contingency Operations (OCO), and \$5.3 billion for emergency disaster recovery (see Chart 2).

Following the release of the NDAA Conference Report President Trump stated (via Twitter) that he enthusiastically supports the final NDAA stating that "I will sign this historic defense legislation immediately!" The President's eagerness to sign the FY 2020 NDAA into law – which he did on December 20th – should come as no surprise: the 3,488-page NDAA contains the majority of his key defense priorities. These include the creation of the U.S. Space Force as the sixth branch of the military (more below); defense funding for the southern border wall; the deployment of a low-yield variant of a submarine-launched nuclear warhead (more below); and a 3.1% military pay raise.<sup>viii</sup>

## **Chart 2**

### **FY 2020 NDAA Discretionary Funding Levels**

- DOD Discretionary Base Budget \$635B
- DOE Discretionary Base Budget: \$23.1B
- Other Non-Defense: \$300M
- FY20 Base Budget NDAA Topline: \$658.4B
- Overseas Contingency Operations (OCO): \$71.5B
- FY20 Discretionary Topline: \$729.9B
- Defense-Related Activities Outside NDAA Jurisdiction: \$8.1B
- National Defense Topline w/OCO \$738B
- Emergency Disaster Recovery \$5.3B

### **Selected Programs and Policies in the NDAA**

This section assesses the strengths and weaknesses, positive elements and shortcomings of the FY 2020 NDAA with regard to several programs and policies that were addressed in past *IFPA National Security Updates*.

#### ***The U.S. Space Force***

The House and Senate versions of the FY 2020 NDAA both supported creation of an independent branch of the armed services for space operations. The two bills differed, however, on the organization of the new space branch and ways to control costs. In the final FY 2020 NDAA, the language on the Space Force follows more closely the Senate version adhering to President Trump’s Space Force nomenclature versus the House version that uses the “Space Corps” label similar to what the House proposed two years ago under Republican leadership. The NDAA creates the U.S. Space Force as the sixth branch of the U.S. armed forces which will reside under the Department of the Air Force but as an independent service similar to the relationship of the Marine Corps within the Department of the Navy.

The Space Force will be led by a four-star Chief of Space Operations (CSO) chosen from the ranks of Air Force general officers who will report directly to the Secretary of the Air Force and will become a member of the Joint Chiefs. The NDAA states that during a one-year transition period General John Raymond, Commander, U.S. Space Command, will be temporarily dual-hatted assuming the role of CSO until a permanent CSO is named and confirmed. The Air Force Space Command will also be redesignated as the U.S. Space Force.<sup>ix</sup>

The NDAA creates a Senate-confirmed Assistant Secretary of the Air Force for Space Acquisition and Integration who will “provide a renewed focus on the acquisition of space systems” and will chair a Space Force Acquisition Council to ensure integration across the national security space enterprise. In this capacity, the new space acquisition executive will also oversee and direct the Air Force’s Space and Missile Systems Center in California and the Space Rapid Capabilities Office in New Mexico together with the Space Development Agency which was created in March 2019. The NDAA also establishes an Assistant Secretary of Defense

for Space Policy within the Office of the Secretary of Defense who will be the senior civilian responsible for oversight of space war fighting.<sup>x</sup>

The NDAA gives the Secretary of the Air Force authority to transfer Air Force personnel to the newly established Space Force. The NDAA goes on to state that “To minimize cost and bureaucracy, the Space Force will require no additional billets and remains with the President’s budget request.<sup>xi</sup> The Trump Administration requested \$72.4 million for the Space Force. However, the appropriations bill passed by the full House and Senate and signed into law by President Trump slashed funding for the Space Force by over \$32 million. Since the congressional appropriators have the final word on actual funding levels, this means that the Space Force budget for FY 2020 will be \$40 million.<sup>xii</sup>

As described in our *Update on the Trump Administration’s Space Force Proposal*,<sup>xiii</sup> creation of a new dedicated branch of the service for space was required for several reasons. The United States is increasingly reliant on space as a critical element of U.S. national security and military power to conduct virtually all of its military operations including missile defense. Space is no longer a sanctuary but is now a warfighting domain (the final 2020 NDAA confirmed this designation) with the use of U.S. space capabilities under threat by the counter-space assets of our adversaries, especially China and Russia, who are simultaneously improving space capabilities to conduct their own military operations. As a result, U.S. space superiority is eroding.

Moreover, space responsibilities and budget authorities are fragmented among numerous DOD and national security stakeholders with no centralized leadership for decision making nor with the needed budget authority for acquisitions. The U.S. Space Force is required because there is no central advocate for space within the U.S. space enterprise. DOD’s space bureaucracy has also been slow/reluctant to leverage the commercial/high-tech sectors and their ability to develop, produce, and field space technologies and systems rapidly.<sup>xiv</sup> The FY 2020 NDAA directs DOD to access commercial technologies more effectively and to encourage non-traditional companies, i.e., startups and commercial high-tech firms with little-to-no defense contracting experience but which possess essential cutting-edge technologies and know-how, to work with the Defense Department.

As noted, one of the primary goals of both the House and Senate in the establishment of the Space Force was to elevate and harmonize DOD’s various fragmented space programs. However, the final NDAA does not transfer responsibilities for certain space-oriented military and intelligence entities such as the National Reconnaissance Office and the National Geospatial-Intelligence Agency to the new Space Force. This may change as the Space Force becomes more established and demonstrates its effectiveness in coordinating space activities under its current remit.

Given the NDAA’s standup of the Space Force, together with the establishment of the SDA and U.S. Space Command earlier in 2019, how the bureaucratic responsibilities are sorted out among the various agencies and organizations which play a role in U.S. national security for space-related endeavors including the space-sensor layer (see below) will be the subject of *IFPA Updates* in 2020.

## ***A Space-based Sensor Architecture***

Both the Senate and House versions of the NDAA authorized the Pentagon to develop a new space-sensor layer (SSL) to detect/track hostile missiles with a focus on hypersonic threats. The House version authorized DOD to develop a hypersonic and ballistic missile tracking sensor payload (HBTSS). The Senate version directs the Missile Defense Agency (MDA) to pursue the system as soon as technically feasible with the goal of beginning testing in space no later than December 31, 2021. In addition, the Senate bill contained a provision that would place the MDA Director in primary charge of the development of the HBTSS in cooperation with the Defense Advanced Research Projects Agency (DARPA), the Air Force, and the Space Development Agency (SDA).

This Senate provision was retained in the final FY 2020 NDAA<sup>xv</sup> with MDA taking the lead on the HBTSS despite objections set forth by the Trump Administration in a September 4, 2019 letter to the Chairmen and Ranking Members of the Senate and House Armed Services Committees. The Administration argued that selecting a lead agency for the sensor layer at this early stage “would limit DoD’s ability to establish the most cost-effective missile defense architecture for the Nation.”<sup>xvi</sup>

As detailed in the *IFPA Hypersonic Missiles and U.S. Security Update*, a space-sensor layer is a critical component in addressing the hypersonic missile (HM) threat because U.S. ground-based radars, given their line-of-sight limitations caused by the horizon and curvature of the Earth, would have trouble tracking HMs.<sup>xvii</sup> The current Space-based Infrared System (SBIRS) and the future Next Generation Overhead Persistent Infrared (OPIR) are geostationary systems, 22,236 miles above the earth, designed to detect ballistic missiles not HMs.

The SSL and HBTSS payload are envisioned as a constellation of many low-cost satellites deployed in low-earth orbit (LEO). The SSL/HBTSS would have significantly greater capability to detect and track the dimmer/reduced signatures presented by HMs because of the constellation’s closer proximity in LEO – compared to the geostationary orbits of SBIRS and OPIR – to the HMs which fly in and along the edges of the Earth’s atmosphere. According to Michael Griffin, Under Secretary of Defense for Research and Engineering, the signatures of HMs are less than strategic ballistic missiles “by a factor of 10 or 20 times.”<sup>xviii</sup>

Apart from birth-to-death tracking and discrimination, the LEO sensor network would also likely be able to provide fire-control data and kill assessment for the burgeoning Russian and Chinese hypersonic missiles which are being designed primarily to carry nuclear payloads threats. A new space-sensor network could also help increase the range and accuracy of current and future U.S. interceptors.

## ***Testing the SM-3 IIA Against ICBMs***

The final NDAA overturned an amendment in the House version that would have slashed the \$53.8 million funding request for a flight test of the *Standard Missile* (SM)-3 Block IIA against an intercontinental ballistic missile (ICBM) target by \$41.7 million.<sup>xix</sup> As noted in our *Update on The 2019 Missile Defense Review*, testing the SM-3 IIA against ICBMs is very important and could have significant implications for the ability to defend the United States against longer-range ballistic missiles from any source.

If proved capable against ICBMs, the SM-3 IIA deployed in an *Aegis Ashore* configuration could support the homeland defense mission and possibly serve as a low-cost option for an East Coast missile defense site to strengthen our ability to counter North Korean and possible Iranian ICBMs. If deployed in larger numbers, SM-3 IIAs capable of intercepting ICBMs could, together with the existing U.S. Ground-based Missile Defense (GMD) system in Alaska and California, form the basis for a defense of the U.S. homeland against Russian and Chinese ballistic missiles. Given that SM-3 IIAs are less expensive than GMD interceptors, they would also help mitigate the existing offense/defense cost-exchange ratio that currently favors the offense.<sup>xx</sup>

### ***Defense Against the Range of Missile Threats***

A positive development in the NDAA is the provision requiring the Secretary of Defense to redesignate all Department of Defense strategies, policies, programs, and systems to reflect that U.S. missile defense programs defend against a variety of missile threats which will serve to augment integrated air and missile defense planning. These include ballistic, cruise, and hypersonic missiles in all phases of flight.<sup>xxi</sup>

### ***Submarine-launched Low-yield Nuclear Warheads***

One of the major policy differences in the NDAs of both chambers was whether to develop and deploy a new low-yield nuclear warhead (designated the W76-2 reportedly with a yield of between 5 and 7 kilotons) on *Trident* submarines.<sup>xxii</sup> House language prevented the Navy from moving forward with this effort while the Senate version gave it the green light. In the final FY 2020 NDAA the House conferees receded (i.e., withdrew) their amendment included in the House NDAA version.<sup>xxiii</sup> Consequently, funding for the Navy's low-yield nuclear warhead will proceed.

As noted in our *Update on The Trump 2018 Nuclear Posture Review*,<sup>xxiv</sup> the Trump Administration first proposed development of a new low-yield warhead to be placed on a limited number of submarine-launched ballistic missiles (SLBMs) in its February 2018 Nuclear Posture Review (NPR). This was in response to Russia's greater number and variety of non-strategic nuclear systems coupled with Moscow's stated "escalate-to-deescalate" nuclear doctrine encompassing the employment of nuclear weapons in a conventional conflict, simulated in numerous Russian wargame exercises, that appear to "lower the threshold for Moscow's first-use of nuclear weapons."

The NPR stated that the United States will expand "flexible U.S. nuclear options now, to include low-yield options, ... for the preservation of credible deterrence against regional aggression" designed to remove any perceived Russian advantage and to raise the nuclear threshold.<sup>xxv</sup> A low-yield SLBM warhead will be survivable, presents no host-nation drawbacks, and will minimize concern over the potential vulnerabilities of U.S. dual-capable aircraft (DCA) to the increasingly effective air-defenses of Russia and China. It will also bolster the credibility and assurance of the U.S. nuclear umbrella and allow our allies/partners to forgo acquisition of nuclear weapons, thus contributing to U.S. nonproliferation goals.<sup>xxvi</sup>

### ***The EMP Executive Order***

The FY 2020 NDAA incorporates a provision to "acknowledge the release of the Executive Order [*Coordinating National Resilience to Electromagnetic Pulses*] dated March 26, 2019." This means the EMP Executive Order (EO) has the force of law binding on the relevant U.S.

government departments and agencies. Our July 2019 *Update on The Trump Administration's Executive Order on Electromagnetic Pulse* applauded the White House EMP EO which represented the first comprehensive government-wide policy to protect the nation against naturally-occurring (solar storms) or man-made EMP (via detonation of a nuclear device).<sup>xxvii</sup>

Our EMP EO Update cautions, however, that efforts to address the EMP problem could get bogged down and slow-rolled by bureaucratic inertia and lobbyists who have long ignored the EMP problem or worked to underestimate its impact, in some cases even falsifying data and test results. Consequently, to keep the EO on track, the ongoing support and oversight from the White House and Congress is critical to hold stakeholders in government departments/agencies and in the private sector accountable for its implementation.

### ***A Space-based Missile Defense Intercept Layer and Test Bed***

The FY 2018 and 2019 NDAs authorized the Pentagon to begin developing a space-based missile defense intercept system if funds were appropriated for it. This year, however, the House NDAA included an amendment that would repeal the requirement contained in the FY 2018 NDAA directing the Missile Defense Agency “to establish a space test bed to conduct research on a space-based missile intercept layer.” The Senate version did not contain this provision. The Senate members in the Conference Committee rescinded this provision thus eliminating the space test bed program.<sup>xxviii</sup>

Doing away with the space test bed was shortsighted. Several *IFPA Updates* over the past year have described in detail the benefits that space-based interceptors offer to counter the threats posed by ballistic and hypersonic missiles, enhance deterrence (by denial), augment U.S. escalatory options, and help mitigate the offense/defense cost-exchange ratio that now substantially favors the offense. For example, the *IFPA Update* entitled *The 2019 Missile Defense Review: Strengths and Weaknesses*, states that space interceptors would provide a boost-phase intercept (BPI) capability significantly augmenting the effectiveness of U.S. missile defenses.<sup>xxix</sup>

BPI, particularly emanating from a space-based intercept layer, allows a series of highly desirable outcomes: relative ease of interdiction because the ballistic missile is moving slowly and producing an enormous infra-red signature facilitating detection and targeting; the missile has not released its warheads/decoys; all or most of the debris from the intercepted missile would fall back on the territory of the launching nation; it would lessen the defense burden on U.S. midcourse- and terminal-phase missile defense systems; and it presents no host-nation drawbacks.

Because a space-intercept layer would be based in low-earth orbit in relatively close proximity to the earth's atmosphere, it would also be able to interdict the hypersonic missiles which primarily fly in the Earth's atmosphere shortly following launch. China and Russia are both developing hypersonic missiles expected to carry nuclear warheads with deployment projected in the early 2020s.<sup>xxx</sup>

The optimum approach to BPI is a network of space-based interceptors modeled on the most promising option, the 1980s *Brilliant Pebbles* space-intercept concept developed during the Reagan Administration which was never brought to fruition. It consisted of a constellation of 1,000 interceptors in LEO which was estimated to cost \$11 billion in 1989 dollars. In 2019

dollars, a 21st-century constellation of 1000 *Brilliant Pebbles* would cost \$23.09 billion spread over a twenty-year period.

Scrapping the space test bed as the Congress did in the final NDAA was ill-considered. If the United States does not have a testing capability in space, the prospects for development and fielding of a space-based intercept layer will be significantly delayed, and when deployed problems that could have been averted had a space-testing regime been established will be far more costly and time consuming to correct.

The cancellation of the space test bed has taken place at the same time Russia and China are modernizing their ballistic missile inventories and rapidly developing nuclear-tipped hypersonic missiles, and rogue states such as North Korea and Iran are expanding both the quality and quantity of their ballistic missile arsenals.

### ***Nuclear Retaliation to Deter Near-Peer Attacks on the U.S. Homeland***

A section of the FY 2020 NDAA discussing missile defense repeats a misconceived and flawed policy approach to U.S. homeland defense most recently advanced in the Trump Administration's January 2019 Missile Defense Review (MDR) which was subsequently addressed in our April 2019 *Update on The 2019 Missile Defense Review*.

The current NDAA amends the FY 2017 NDAA to state that "It is the policy of the United States to rely on nuclear deterrence to address more sophisticated and larger quantity near-peer intercontinental missile threats [i.e., from Russia and China] to the homeland of the United States."<sup>xxxii</sup> The earlier MDR also stated that the United States will rely solely on the threat of retaliation with its offensive nuclear forces to dissuade Russia and China from launching nuclear strikes against the U.S. homeland.

As noted in our April *MDR Update*, from a strategic perspective, not including missile defenses as an integral element of U.S. deterrence policy to deter/defend the U.S. homeland against nuclear attacks by Russia and China – the two nations which four Trump Administration security documents have declared as representing the gravest threats now confronting the United States – is a major failing of both the MDR and the final FY 2020 NDAA. This omission conflicts with the language used throughout the MDR which declares that defense of the U.S. homeland is the highest priority and underscores the central and beneficial role missile defenses plays in U.S. security strategy.

The MDR correctly identifies the logic and rationale of missile defense but fails to apply such logic to countering nuclear attacks on the U.S. homeland by Russia and China. This represents a conspicuous shortcoming in both the Administration's (in the MDR) and Congress' thinking (in the FY 2020 NDAA) on deterrence policy and the critical role missile defenses can, and should play, in escalation control against our two primary adversaries.

Further underscoring the misguided and inconsistent thinking on the "reliance on nuclear-deterrence-only policy," i.e., mutually assured destruction or MAD, is the fact that, as noted above, both the Administration and Congress strongly support a space-based sensor layer to detect and track hypersonic missiles threatening the U.S. homeland to enable their interdiction by U.S. missile defenses. A number of official U.S. policy, defense, strategy, and intelligence documents as well as statements by senior U.S. national security officials state that the

hypersonic threat posed by China and Russia is real and growing. And importantly, as our *Hypersonic Update* points out, the Russian and Chinese hypersonic systems are being developed primarily to carry nuclear payloads.

If our national security policy/strategy documents together with our senior defense officials and Congress recognize the need to detect, track, and destroy Chinese and Russian nuclear-tipped hypersonic missiles racing toward our homeland, why is the same not true for the interdiction by U.S. missile defenses of Chinese/Russian nuclear ballistic missiles? The logic of the nuclear-deterrence-only/MAD policy to prevent long-range nuclear attacks against the U.S. homeland by Russia and China is obviously faulty and lacks consistency. This policy needs to be reassessed and changed making missile defenses a major element of U.S. deterrence policy to deter and counter missile threats to the U.S. homeland regardless from what nation they emanate.

In addition, the language contained in the NDAA calling for an “Independent Study” on the impacts of development and deployment of U.S. homeland missile defenses on the security of the United States as a whole is also a cause of concern regarding the role of missile defenses in countering Russian/Chinese attacks on the United States.

The study’s first task is to “consider whether security benefits obtained by the deployment of homeland missile defenses of the United States are undermined or counterbalanced by adverse reactions of potential adversaries, including both rogue states and near-peer adversaries.” The second task is to “consider the effectiveness of the homeland missile defense efforts of the United States to deter the development of ballistic missiles, in particular by both rogue states and near-peer adversaries.”<sup>xxxii</sup>

Both study tasks could be construed as a potential effort to undercut the compelling and growing rationale for homeland defense to defeat/deter attacks on the U.S. homeland by China and/or Russia with a variety of new and upgraded missile defense technologies and systems.

For example, the U.S. is not deploying “homeland missile defenses” against “near-peer adversaries” because of the U.S. reliance on nuclear-deterrence-only/MAD policy stated in both the MDR and current NDAA. As a result, in the study’s first task to determine if the security benefits of U.S. homeland defenses are offset by the actions of our near-peer competitors cannot be evaluated because we are not fielding defenses for that mission. However, it is likely that the study will cite the plethora of statements and comments from President Putin and Chinese officials in opposition to U.S. missile defenses as evidence that these “adverse reactions” far outweigh the security benefits of U.S. homeland defenses even though it is stated U.S. policy that such defenses will *not be utilized* to deter/counter the threat posed by Russian and Chinese long-range nuclear ballistic missiles to the United States.

Furthermore, the study is not looking at whether the security benefits of U.S. missile defenses deployed in NATO Europe and the Eastern Pacific region to deter/counter Russia and China, respectively, are counterbalanced by their adverse reactions. This is because Congress in its NDAA – and the Administration’s MDR – fully understand and support the logic of missile defenses to deter/defeat the threat posed by our two near-peer competitors on a regional

basis, but do not grasp the salutary role of missile defenses when it comes to defense of the U.S. homeland. What's good in a regional context is good for the U.S. homeland!

With regard to the second study task, if the United States is not pushing forward with homeland defense capabilities specifically to counter near-peer adversaries because of the reliance on the nuclear-deterrence-only/MAD policy, how can we judge the effectiveness of "homeland missile defense efforts of the United States" to deter Russian and Chinese development of ballistic missiles? In these circumstances, the answer arrived at by the Independent Study would undoubtedly be a preordained "not very effective," which may be the answer some MAD advocates in Congress are seeking.

In this regard, it is possible that the vote in the House version of the NDAA to significantly slash funding for SM-3 IIA testing against ICBMs was in part an attempt by deterrence-only supporters to preempt the possibility noted earlier that low-cost SM-3 IIAs (in comparison with GMD interceptors) could be used to expand the U.S. homeland defense mission to include protection against Russian and Chinese ICBM threats. It is possible as well that together with MAD advocates, opposition to SM-3 IIA testing against ICBMs could also have come from supporters of the current GMD homeland defense system who do not want competition from the SM-3s potentially reducing the number of GMD interceptors needed to be procured in the future.

## **Conclusions**

The final FY 2020 NDAA contains several positive elements and significant contributions to U.S. defense policy and programs. It also has weaknesses and shortcomings.

### ***The NDAA's Strengths***

The NDAA established a U.S. Space Force as the sixth branch of the U.S. armed services. A dedicated service focusing on space is needed for several reasons including the fact that the United States is increasingly reliant on space to conduct virtually all of its military operations; space is no longer a sanctuary but is now a warfighting domain; U.S. dependence on space for military operations continues to grow including in support of the missile defense mission; space responsibilities and budget authorities are too fragmented among numerous DOD and national security stakeholders with no centralized leadership; and, DOD's space bureaucracy has been slow/reluctant to leverage the commercial/high-tech sectors and their ability to develop, produce, and field space technologies and systems in a timely fashion.

The acknowledgement in the NDAA that the United States must focus on defeating not just ballistic missiles but also on defending against cruise and hypersonic missiles is important and will serve to augment integrated air and missile defense planning. In addition, the NDAA recognized that DOD needs to develop/deploy weapons systems, including missile defense technologies and systems, far more rapidly by streamlining DOD acquisition policies and incorporating the best practices and technologies developed in the commercial/private sector.

The NDAA also supports the development of a space-sensor layer focused on the detection and tracking of the burgeoning hypersonic missile threat presented by China and Russia. The LEO sensor network would also likely be able to provide fire-control data and kill assessment. A

new space-sensor network could also help increase the range and accuracy of current U.S. interceptors.

The NDAA directed that tests in 2020 to ascertain the capability of the U.S. Navy's *Standard Missile-3* IIA to interdict ICBMs should move forward (the House version of the NDAA would have drastically reduced funding, significantly delaying the test program – and possibly resulting in its eventual cancellation). A positive outcome in these tests could have significant implications for the ability of the United States to defend against longer-range ballistic missiles from any source, including Russia and China.

DOD will proceed with development of a low-yield nuclear warhead to be deployed on *Trident* submarines (the House version of the NDAA would have killed this program) in response to Russia's greater number and variety of non-strategic nuclear systems coupled with its stated "escalate-to-deescalate" nuclear doctrine encompassing the employment of nuclear weapons in a conventional conflict that appear to lower the threshold for Moscow's first-use of nuclear weapons.

The FY 2020 NDAA incorporates a provision giving President Trump's March 2019 Executive Order on Electromagnetic Pulse (EMP) the force of law binding on the relevant U.S. government departments and agencies. However, efforts to address the EMP problem could get bogged down and slow-rolled by bureaucratic inertia and lobbyists who have long ignored the EMP problem or worked to underestimate its impact. As a result, to keep the EO on track, the ongoing support and oversight from the White House – and Congress – is critical to hold stakeholders in government departments/agencies and in the private sector accountable for its implementation.

### ***Some Key NDAA Weaknesses and Disconnects***

The NDAA was shortsighted in cancelling the space-based test bed to conduct research on a space-based missile intercept layer. Space-based interceptors offer the capability to counter the threats posed by ballistic and hypersonic missiles, enhance deterrence (by denial), augment U.S. escalatory options, and help mitigate the offense/defense cost-exchange ratio that currently favors the offense. Space interceptors would also provide a boost-phase intercept capability significantly augmenting the effectiveness of U.S. missile defenses.

If the United States does not have a space-based testing capability, development and fielding of a space-based intercept layer will be significantly delayed and when deployed problems that could have been avoided if a space-based testing regime had been in place will be far more costly and time consuming to correct. The cancellation of the space test occurs at the same time Russia and China are modernizing their ballistic missile inventories and rapidly developing hypersonic missiles designed to carry nuclear weapons, and rogue states such as North Korea and Iran are expanding both the quality and quantity of their ballistic-missile inventories.

The optimum approach to BPI is a network of space-based interceptors modeled on the most promising option, the 1980s *Brilliant Pebbles* space-intercept concept developed during the Reagan Administration which in 2019 dollars would cost \$23.09 billion spread over a twenty-year period for a constellation of 1000 *Brilliant Pebbles*.

Another key drawback of the FY 2020 NDAA is that it reaffirmed the policy, most recently set forth in the 2019 Missile Defense Review, that “It is the policy of the United States to rely on nuclear deterrence to address more sophisticated and larger quantity near-peer intercontinental missile threats to the homeland of the United States.” However, the stated goal of the space-sensor layer which the Administration and Congress both support is to detect, track, and help counter the hypersonic missiles carrying nuclear payloads being developed by China and Russia which will be undoubtedly used to target the U.S. homeland.

Logically, the Administration and Congress should also support the interdiction of Chinese/Russian nuclear ballistic missiles that represent the gravest threat to the U.S. homeland as a key element of our security strategy. The reasoning behind relying exclusively on the nuclear-deterrence-only/MAD policy to prevent long-range nuclear attacks against the U.S. homeland by Russia and China is flawed and inconsistent. This policy needs to be changed to allow missile defense of the United States to counter missile threats regardless from what nation they emanate.

### ***The U.S. Appropriations Process and Continuing Resolutions***

The U.S. appropriations process needs to be fixed. In particular the all-too-frequent inability to pass the appropriations bill on time before October 1st and the beginning of the new fiscal year necessitates the passage of continuing resolutions (CRs) to prevent a government shutdown. Since 2010 the Defense Department has operated under a CR for over 39 months and three CRs were enacted in 2019 to avert a shutdown.

CRs are unproductive and result in increased budgetary uncertainty, impede efficient planning, and slow down needed defense procurements. Most damaging, CRs bar DOD from initiating or restarting a project for which there were no funds allocated in the previous fiscal year. Multi-year defense appropriations, authorization, and budgets should be considered as a possible solution to help correct this situation.

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