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This section would authorize the Secretary of the Navy, subject to section 2306b of title 10, United States Code, to enter into one or more multiyear contracts, beginning with the fiscal year 2018 program year, for the procurement of V-22 Osprey aircraft and common configuration-readiness and modernization upgrades for the V-22 Osprey aircraft. Notwithstanding section 2306b(k) of title 10, United States Code, this section would also authorize the period covered by such contract entered into on a multiyear basis to exceed 5 years, but not to exceed 7 years. Additionally, this section would require that any such multiyear contract provide that any obligation of the United States to make a payment under the contract for a fiscal year, after fiscal year 2018, be subject to the availability of appropriations or funds for that purpose for such later fiscal year.

The committee encourages the Department of the Navy to execute a procurement profile for this multiyear in order to acquire the aircraft at economic order quantity levels that most efficiently acquire the aircraft and fully procures the programmed acquisition objective aircraft for the Department of the Navy.

This section would authorize the Secretary of Defense to enter into one or more contracts, beginning with the fiscal year 2018 program year, for the procurement of economic order quantities for material and equipment that has completed formal hardware qualification testing for the F-35 program and is to be used in procurement contracts to be awarded under the F-35 program in fiscal years 2019 and 2020. This section would also limit the amount of such contracts for fiscal year 2018, or any year thereafter, to not more than $661.0 million. Additionally, this section would limit the Secretary of Defense from entering into such contracts until a period of 15 days has elapsed following the date on which the Secretary submits to the congressional defense committees a written certification that the contract meets certain conditions.
Section 1XX—Cost-Benefit Analysis of Upgrades to MQ-9 Reaper Aircraft

This section would require the Secretary of Defense, in coordination with the Secretary of the Air Force, to conduct a cost-benefit analysis that compares upgrading MQ-9 Reaper aircraft to a Block 5 configuration, or foregoing the Block 5 upgrade to MQ-9 aircraft and proceeding with procurement of MQ-9B aircraft instead. The provision also requires the Department of Defense to submit the analysis to the congressional defense committees not later than 180 days after the date of the enactment of this Act.
SEC. 1. [Log 64946]. MULTIYEAR PROCUREMENT AUTHORITY FOR V–22 OSPREY AIRCRAFT.

(a) AUTHORITY FOR MULTIYEAR PROCUREMENT.—Subject to section 2306b of title 10, United States Code (except as provided in subsection (b)), the Secretary of the Navy may enter into one or more multiyear contracts, beginning with the 2018 program year, for the procurement of the following:

(1) V–22 Osprey aircraft.

(2) Common configuration-readiness and modernization upgrades for V–22 Osprey aircraft.

(b) CONTRACT PERIOD.—Notwithstanding section 2306b(k) of title 10, United States Code, the period covered by a contract entered into on a multiyear basis under the authority of subsection (a) may exceed five years, but may not exceed seven years.

(c) CONDITION FOR OUT-YEAR CONTRACT PAYMENTS.—A contract entered into under subsection (a) shall provide that any obligation of the United States to make a payment under the contract for a fiscal year after fiscal year 2018 is subject to the availability of appropriations or funds for that purpose for such later fiscal year.
SEC. 1. AUTHORITY FOR PROCUREMENT OF ECONOMIC ORDER QUANTITIES FOR THE F-35 AIRCRAFT PROGRAM.

(a) Authority for Procurement of Economic Order Quantities.—Subject to subsection (c), the Secretary of Defense may enter into one or more contracts, beginning with the fiscal year 2018 program year, for the procurement of economic order quantities of the material and equipment described in subsection (b).

(b) Material and Equipment Described.—The material and equipment described in this subsection is material and equipment—

(1) that has completed formal hardware qualification testing for the F–35 aircraft program; and

(2) is to be used in procurement contracts to be awarded under the F–35 aircraft program in fiscal years 2019 and 2020.

(c) Limitations.—

(1) Maximum Amount.—Of the funds authorized to be appropriated by this Act or otherwise made available for the Department of Defense for fiscal year 2018 or any fiscal year thereafter for the F–35 aircraft program, not more than $661,000,000
may be obligated or expended to enter into contracts
under subsection (a).

(2) CERTIFICATION.—The Secretary of Defense
may not enter into a contract under subsection (a)
until a period of 15 days has elapsed following the
date on which the Secretary submits to the congress-
ional defense committees a written certification that
the contract to be entered into under such sub-
section meets the following conditions:

(A) The contract will result in significant
cost savings as compared to the total antici-
pated costs of procuring the property through
contracts that are not for economic order quan-
tities.

(B) The estimates of the cost of the con-
tract and the anticipated cost savings resulting
from the contract are realistic.

(C) The minimum need for the property
that is to be procured under the contract is ex-
pected to remain substantially unchanged dur-
ing the contract period.

(D) There is a reasonable expectation that,
throughout the contract period, the head of the
relevant military department or defense agency
will request funding for the contract at the level required to avoid contract cancellation.

(E) The design of the property that is to be procured under the contract is expected to remain substantially unchanged and the technical risks associated with such design are not excessive.

(F) Entering into the contract will promote the national security interests of the United States.

(G) The contract satisfies the conditions described in subparagraphs (C) through (F) of section 2306b(i)(3) of title 10, United States Code.
SEC. 1. [Log 65567]. COST-BENEFIT ANALYSIS OF UP-GRADES TO MQ–9 REAPER AIRCRAFT.

(a) IN GENERAL.—The Secretary of Defense, in consultation with the Secretary of the Air Force, shall conduct an analysis that compares the costs and benefits of the following:

(1) Upgrading fielded MQ–9 Reaper aircraft to a Block 5 configuration.

(2) Proceeding with the procurement of MQ–9B aircraft instead of upgrading fielded MQ–9 Reaper aircraft to a Block 5 configuration.

(b) REPORT REQUIRED.—

(1) IN GENERAL.—Not later than 180 days after the date of the enactment of this Act, the Secretary of Defense shall submit to the congressional defense committees a report that includes the results of the cost-benefit analysis conducted under subsection (a).

(2) FORM OF REPORT.—The report required by paragraph (1) shall be submitted in unclassified form, but may include a classified annex.
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RESEARCH, DEVELOPMENT, TEST, AND EVALUATION, DEFENSE-WIDE

Items of Special Interest

Deployable assured position, navigation, and timing systems

Overseas waste disposal technology development
Lethal Miniature Aerial Missile Systems

In the committee report (H. Rept. 114-102) accompanying the National Defense Authorization Act for Fiscal Year 2016, the committee noted the effectiveness of the Lethal Miniature Aerial Missile System (LMAMS) currently fielded in the U.S. Central Command (CENTCOM) theater of operations, and supported the potential distribution of this capability across Army infantry units. The LMAMS is a single man-portable/operable, lightweight, beyond-line-of-sight, precision-guided, loitering aerial missile system capable of locating and engaging obscured and/or fleeting enemy targets who otherwise cannot be engaged by typical direct fire weapon systems.

The committee notes the Army requested a total of $63.5 million for 655 LMAMS as part of the fiscal year 2017 Overseas Contingency Operations request to address joint urgent operational needs in CENTCOM’s area of operations. The committee understands the LMAMS Capability Development Document has completed initial Army staff review, is currently being revised by the U.S. Army Training and Doctrine Command Maneuver Center of Excellence, and will then be considered by the Army Requirements Oversight Council for transition to a program of record. While the committee fully supports the Army’s request from fiscal year 2017 and the budget request for fiscal year 2018, the committee requires additional details regarding the Army’s long-term acquisition strategy for LMAMS.

Therefore, the committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services by November 1, 2017, on the Army’s long-term plan for LMAMS, to include current analysis of LMAMS operational performance to date, current fielding strategy, as well as projected funding requests across the Future Years Defense Program.

Armored brigade combat team modernization

The committee understands that Budget Control Act of 2011 (Public Law 112-25) funding levels have reduced buying power, disrupted modernization plans, and reduced the Army’s capability advantage over near-peer, high-end competitors.
The committee notes that Army modernization funding declined 74 percent from 2008-2015 as a result of the drawdown from two wars and the imposition of the budget caps by Public Law 112-25. Perhaps most significant is that research and development (R&D) funding has been reduced by 50 percent, and appears to be concentrated in the later stages of R&D at the prototyping and system design and development stages, which are the precursors to fielding new capabilities. The Vice Chief of Staff of the Army stated, in testimony before the House Committee on Armed Services, that today’s Army is “out-ranged, outgunned, and outdated; and on our present course, the U.S. Army will not be sufficiently modern to deter and defeat potential enemies.” The committee is concerned that the tactical overmatch that U.S. ground forces have enjoyed for decades is being diminished, or in some cases, no longer exists.

The committee believes the consequences of reduced modernization funding are most dramatic with respect to ground combat vehicle modernization. While the Army has definitive plans in place for Army aviation modernization, and has worked to establish mature acquisition strategies using multiyear procurement contracts for aviation platforms, the same cannot be said for ground combat vehicle modernization. The committee believes there is an immediate need for a more accelerated ground combat vehicle modernization strategy that should include the development of a next generation infantry fighting vehicle and main battle tank, while also looking for ways to accelerate needed upgrades for legacy combat vehicles in the near term to address immediate threats.

The committee understands the armored brigade combat team (ABCT), which is comprised of Abrams tanks, Bradley fighting vehicles, M109A7 Paladin self-propelled artillery, M113 Armored Personnel Carriers, Armored Multipurpose Vehicles, M88 Improved Recovery Vehicles, Joint Light Tactical Vehicles, and other systems is the only full-spectrum force in the Army's force structure. Over the past several National Defense Authorization Acts, the committee has noted concerns regarding the reduction of active ABCTs and the Army's ability to have sufficient numbers of fully ready active ABCTs to meet combatant commander steady-state and contingency plan requirements. The committee has also taken action to prevent further reductions in ABCT force structure, and prevent any production breaks in the combat vehicle industrial base. Given the return of armored units to the European theater, as well as the Army’s plans to increase ABCT capacity, the committee believes that these actions have been validated.

However, the committee remains concerned about the stability of ABCT modernization funding in fiscal year 2018 and beyond, and encourages the Army to fully modernize at least one ABCT per year. The committee directs the Secretary of the Army, in consultation with the Chief of Staff of the Army, to provide a report to the House Committee on Armed Services and the Senate Committee on Armed Services by April 5, 2018, on the Army’s plan for executing its ground combat vehicle modernization strategy. Elements of the report should include: the Army’s combat vehicle modernization priorities over the next 5 and 10 years; the extent to which those priorities can be supported at current funding levels within a relevant
time period; the extent to which additional funds are required to support such priorities; detail how the Army is balancing and resourcing these priorities with efforts to rebuild and sustain readiness and increase force structure capacity over this same time period; and explain how the Army is balancing its near-term modernization efforts with an accelerated long-term strategy for acquiring next generation combat vehicle capabilities.

The committee also directs the Comptroller General of the United States to provide a briefing to the House Committee on Armed Services by May 1, 2018, on the Comptroller General's preliminary assessment of the Army’s report on the ground combat vehicle modernization strategy. The committee further directs the Comptroller General to provide a report on the Comptroller General's final assessment to the House Committee on Armed Services at a date to be determined at the time of the briefing. The Comptroller General’s review should focus in particular on how the Army has developed its modernization priorities for the next 5 years, and examine how the Army is balancing and resourcing these priorities with efforts to rebuild and sustain readiness and increase force structure capacity over this time period. Additionally, the review should evaluate the extent to which the Army has balanced its near-term modernization efforts with its long-term strategy for acquiring new capabilities.

**M240B medium machine gun inventory assessment**

The committee has concerns regarding the Army's inventory of M240B medium machine guns due to the Army’s lack of detailed information regarding the condition of the weapons within that inventory. The committee understands the Army has achieved the procurement objective for the M240 medium machine gun, and that current M240 acquisition and sustainment strategies rely on piecemeal replacement of individual parts instead of new production. The committee is concerned about the impact of this strategy on the industrial base, and the potential to eliminate a critical production line that would be difficult and costly to reestablish at a later date. The committee also notes that M240 requirements could potentially increase as a result of the Army increasing end-strength levels and growing additional armored brigade combat teams. The committee believes the Army needs to clearly demonstrate the operationally viability of its M240B inventory.

In light of these concerns, the committee directs the Secretary of the Army to conduct an assessment of the health and operational viability of the Army’s M240B inventory. The committee further directs the Secretary of the Army to provide a briefing on the findings of this assessment to the Committees on Armed Services of the Senate and the House of Representatives by January 17, 2018. This briefing shall include, at a minimum: a detailed review of the Army’s current M240B inventory, to include the number of systems that are operationally ready, the number of systems that require repair, and the number of systems that should be taken out of inventory and replaced; a description of the full cost to repair and
refurbish an M240B machine gun, to include parts procurement, labor, logistics, and sustainment costs; a description of the current contracted cost to procure new production M240B machine guns; and a detailed comparison of the timelines associated with repair and refurbishment efforts, and those required to replace systems with new weapons.

Small arms magazine procurement

The committee understands the Enhanced Performance Magazine (EPM) is the latest upgrade of the 30 round 5.56mm magazine used in Army and Marine Corps rifles and carbines that resulted from the introduction of the M855A1 Enhanced Performance Round (EPR). The EPR, while providing a number of significant performance enhancements over the original general purpose M855 ammunition, to include improved lethality, contributed to a reduction in system level reliability under certain conditions. The committee understands the EPM mitigates the system reliability issues that resulted from using the EPR in Army weapons. However, the committee has been informed by the Marine Corps that in some Marine Corps unique weapons, such as the M27 Infantry Automatic Rifles and M16A4 rifles, reliability concerns remain. The committee further understands that, as a result of these concerns, that the Marine Corps conducted further reliability testing on additional commercial polymer magazines, and that the Commandant of the Marine Corps has approved the decision to field a different magazine than the EPM. The committee understands that as of now the Army will replace all legacy magazines with the EPM, and the Marine Corps will replace all legacy magazines with their qualified polymer magazine.

The committee has long supported small arms modernization, and notes that the Program Executive Office-Soldier through the Soldier Enhancement Program (SEP) is currently evaluating alternative magazines to the EPM, to include polymer magazines used by the Marine Corps. The committee expects the Army to leverage Marine Corps test and evaluation data and any other available Department of Defense data to the maximum extent possible to shorten the overall evaluation timeline which the committee understands could take up to 6-12 months. The committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services by September 29, 2017, with an update on the status of the Army's SEP evaluation.

Small arms production industrial base

The committee notes that the Ike Skelton National Defense Authorization Act for Fiscal Year 2011 (Public Law 111-383) repealed section 2473 of title 10, United States Code, which required the Department of Defense to only procure certain small arms repair parts and components from a limited number of industry sources that the Department had identified as comprising the small arms production industrial base (SAPIB).
The committee directs the Secretary of Defense, in coordination with senior military services acquisition executives, to provide a briefing to the House Committee on Armed Services by January 15, 2018, on the state of the small arms production industrial base. At a minimum, the briefing should identify critical small arms systems and items; describe the Department’s strategy for preserving a stable SAPIB in the areas of development, production, maintenance, and competitive contracting; describe the results of increased use of small business set-asides, as well as organic depot activities on quality, delivery, competition, engineering, and research and development investments and capability.

**PROCUREMENT OF AMMUNITION, ARMY**

*Items of Special Interest*

*Ammunition production base support*

In the committee report (H. Rept. 114-537) accompanying the National Defense Authorization Act for Fiscal Year 2017, the committee was concerned that despite a commitment by the Army to maintain steady-state funding of $250.0 million for ammunition industrial base upgrades, significant safety, environmental, and operational discrepancies exist among the Army ammunition plants (AAPs), in particular the four largest AAPs. This could require investments exceeding what is currently in the Army’s long-term modernization plan for the ammunition industrial base. The committee remains concerned about this discrepancy between documented need and planned investment. These committee concerns are further amplified by the recent explosion that occurred at the Lake City AAP. The committee understands the explosion caused significant damage to the primer production area and that, as a result of the explosion, the Army was forced to stop all production of small caliber ammunition production for an indefinite amount of time until safety inspections can be completed.

The committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services by November 1, 2017, on the Army’s 2025 Ammunition Industrial Base strategic plan.

**OTHER PROCUREMENT, ARMY**

*Items of Special Interest*

*Heavy Equipment Transport System modernization strategy*

The committee encourages the Army to continue development and procurement of a heavy equipment trailer solution to be used as part of the Heavy Equipment Transport System (HETS) for current and future combat vehicles. The committee notes the current heavy equipment transport (HET) trailer is rated for 70 tons, but the most modernized M1A2 Abrams main battle tank configuration, the
M1A2 SEPv3, will weigh in excess of 80 tons. The committee understands the current HET trailer will be unable to transport modernized M1A2 SEPv3 tanks, or future M1A2 SEPv4 configurations. The committee believes the Army will require a more capable means of transport organic to the service. The committee encourages the Army to begin to plan and resource the modification of all 192 existing HET trailers, as well as develop ways to accelerate the new Enhanced HETS developmental program.

The committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services by December 1, 2017, on the Army's strategy for upgrading current HETS and HET trailers.

**Personnel and cargo parachute acquisition and management**

The committee is concerned that the military services appear to lack a comprehensive and resourced plan to upgrade military personnel parachutes, parachute support equipment, and guided cargo parachutes. The committee understands both the Army and Marine Corps are pursuing high glide parachutes that will allow a parachutist to cover a substantial horizontal distance. However, this capability is not currently fully operational because the Army and Marine Corps have not procured complete parachute systems. While the military has the parachute, it does not have oxygen equipment with sufficient capacity to allow the full use of the high glide canopy. Additionally, the committee understands that the Army and Marine Corps have not procured guided cargo parachutes with the same glide capability as the personnel parachute. Finally, the committee notes that the Army has assigned responsibility for the acquisition of guided cargo parachutes and personnel parachutes to different program executive offices. The committee is concerned that this organizational structure could fragment responsibility for integrating the capabilities of all systems involved in airborne missions.

The committee directs the Secretary of Defense to provide a briefing to the House Committee on Armed Services by March 1, 2018, that examines (1) whether the Army and Marine Corps have a valid requirement for high glide canopies, and if so, whether each service has an integrated plan to procure all associated equipment required to use the high glide features; (2) whether the Army’s decision to divide parachutes between two different program offices hinders or enhances integration of their capabilities; and (3) whether the Army and Marine Corps have a plan and contracts that will allow for the improvement of parachutes over the life cycle of the equipment.

**Rough Terrain Container Handler recapitalization**

The committee is concerned that the budget request does not include funding for the Rough Terrain Container Handler (RTCH), a material handling equipment system considered vital and critical to Department of Defense expeditionary logistics. The committee understands the RTCH system, along with other material handling equipment logistic systems, provides strategic capability to
set the theater, strategic agility to the joint force, and maintains freedom of movement and action during sustained and high tempo operations at the end of extended lines of communication in austere environments. The committee is concerned by the number of RTCH systems that are combat worn, and notes there is neither a formal reset and recapitalization program for these systems, nor a long-term strategy to modernize a fleet that entered service in 2001.

Accordingly, the committee directs the Secretary of the Army to develop plans to recapitalize and modernize RTCH systems and other material handling equipment systems in a timely manner, and encourages the Army to resource this effort across the Future Years Defense Program. The committee further directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services by September 1, 2017, on this recapitalization strategy.

**Small unit support vehicle recapitalization strategy**

The committee understands the Army's family of small unit support vehicle (SUSV) fleet is used by Army units that train and operate in extreme cold weather conditions, and that this vehicle provides those units with unique capabilities not found elsewhere in the Army. In addition, while the committee is aware of the Army's effort to refurbish some of the fleet, the committee notes that legacy SUSVs are beyond their economic useful life and have become increasingly difficult to maintain. In the committee report (H. Rept. 114-537) accompanying the National Defense Authorization Act for Fiscal Year 2017, the committee required a briefing on the potential requirement for a replacement to the SUSV fleet. The briefing indicated the Army National Guard has established an SUSV overhaul program; however, this overhaul does not provide any additional capability.

The committee remains concerned regarding the capability and capacity of the Army's SUSV fleet, and therefore directs the Secretary of the Army to conduct a business case analysis (BCA) to determine whether the Army should develop or procure a replacement for the small unit support vehicle designated SUSV. The BCA should include the following elements:

1. an analysis of how the SUSV fleet will be affected if a replacement for the vehicle is not developed or procured;
2. an explanation of the costs associated with refurbishing the SUSV fleet;
3. a description of specific requirements for a new SUSV vehicle and whether there is a vehicle available that would meet such requirements;
4. an analysis that compares the costs and benefits of the procuring of a new SUSV to the costs and benefits of refurbishing the SUSV fleet; and
5. recommendations for the most cost-effective approach to addressing the needs of the SUSV fleet.

The committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services by March 1, 2018, on the results of the BCA.
Tactical network review

The committee understands that the Army is evaluating all of the tactical network components to reduce vulnerabilities and focus on capability gaps to ensure that the Army’s end-to-end network is resilient, interoperable, and secure. The committee notes that this review will cover the lower and upper tactical internet that make up the Army’s tactical network. The committee also notes that software-defined radios and various waveforms are among two of the components that comprise the lower tactical internet that support soldiers at the tactical level. The committee understands the Army’s network review should allow for the rapid introduction of other new capabilities, including advances in satellite communications, cyber protection, and electronic warfare, as well as assured positioning, navigation, and timing technology and other technologies that enable assured communications. The committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services by September 29, 2017, that details the network study results and the Army’s recommended way ahead.

Vehicle medical kits

The committee understands there have been significant advances made in emergency medical treatment for combat casualties, and notes that during Operation Iraqi Freedom, the military services, as a result of a joint urgent operational need from U.S. Central Command, fielded a standardized vehicle medical kit called the warrior aid and litter kit (WALK), to complement the capabilities already provided as part of the improved first aid kit and the combat lifesaver bag. The committee notes there is no official program of record for the WALK, and it is unclear to the committee as to how the Army would provide standardized vehicle medical kits for future contingency operations.

The committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services by March 1, 2018, on the advisability and feasibility of providing a standardized vehicle medical kit for combat and tactical vehicles.

AIRCRAFT PROCUREMENT, NAVY

Items of Special Interest

MQ-4C Triton unmanned aircraft system

The committee recognizes that the Navy’s MQ-4C Triton will be a forward-deployed, land-based, remotely piloted aircraft system that provides persistent maritime intelligence, surveillance, and reconnaissance (ISR) capability using a mission payload that will eventually be able to collect information in the signals and imagery intelligence disciplines. Given the MQ-4C combination of long endurance
and advanced sensors, it will provide robust ISR support in meeting combatant commanders’ requirements in the maritime domain. Although the MQ-4C program has had its share of cost, schedule, and execution challenges over the years, the committee fully supports the program, and acknowledges that it will be a critical component and integral capability both for the Navy and the intelligence community as a whole.

The MQ-4C is integral to recapitalization of the Navy’s maritime patrol and reconnaissance force (P-3C and EP-3E), and will be complementary to the capability provided by the P-8A patrol aircraft. The committee understands that a fleet of 68 MQ-4C aircraft is planned to support five separate lines of high-altitude airborne ISR capability to provide real-time ISR information to a variety of operational and tactical users. However, the committee is unclear as to how the Navy plans to support mission execution and subsequent tasking, collection, processing, exploitation, and dissemination (TCPED) processes of these ISR missions when ISR collection taskings may occur outside the traditional naval employment constructs of aircraft carrier strike group deployments and operations.

Therefore, the committee directs the Secretary of the Navy to provide a briefing to the House Committee on Armed Services not later than November 15, 2017, on MQ-4C mission execution and TCPED processes. The briefing should include:

1. a framework description of the manning, equipping, and training requirements for the MQ-4C system;
2. a description of the baseline architecture of the mission support infrastructure required to support MQ-4C operations;
3. how the Navy plans to support and execute the TCPED processes;
4. how the Navy plans to support flying operations from either line-of-sight or beyond-line-of-sight locations;
5. how many aircraft the Navy plans to dedicate annually to the ISR Global Force Management Allocation Process of the Department of Defense; and
6. how many hours of collection the MQ-4C will be able to provide annually in each of the intelligence disciplines for combatant commanders.

**AIRCRAFT PROCUREMENT, AIR FORCE**

**Items of Special Interest**

**A-10 to F-16 transition at Fort Wayne, Indiana**

The committee notes that section 134 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114-328) included a subsection that authorizes the Secretary of the Air Force to carry out the transition of the A-10 aircraft unit at Fort Wayne Air National Guard Base, Indiana, to an F-16 aircraft unit, as described by the Secretary in the Force Structure Actions map submitted in support of the budget request for fiscal year 2017. The committee understands that the Secretary of the Air Force has not yet planned for or announced this transfer,
and encourages the Secretary to execute this transfer as soon as possible. The committee remains concerned about the status of other A-10 and F-16 basing decisions for the Active Duty Air Force, Air Force Reserve, and Air National Guard.

Therefore, the committee directs the Secretary of the Air Force to provide a briefing to the House Committee on Armed Services by September 1, 2017, on an update of A-10 and F-16 basing decisions for the Active Duty Air Force, Air Force Reserve, and Air National Guard.

E-8C Joint Surveillance and Target Attack Radar System

The committee acknowledges that the E-8C Joint Surveillance Target Attack Radar System (JSTARS) is a proven Air Force Battle Management Command and Control platform enabled by leveraging its extremely capable active radar system that provides invaluable moving target indicator (MTI) intelligence, surveillance, and reconnaissance (ISR) targeting information to multiple users both on the ground and in airborne attack platforms. The demand for MTI capability within each geographic combatant commander’s area of responsibility far exceeds what JSTARS can currently provide due to its limited fleet size and strained crew resources. The committee also notes that the current fleet of 16 E-8C aircraft has issues and challenges the Air Force must successfully navigate to maintain viability until the current fleet of E-8C aircraft is replaced by the JSTARS Recapitalization program beginning in the late 2020s. Despite these issues and challenges, the committee is confident that the Secretary of the Air Force can develop a successful legacy JSTARS to JSTARS Recapitalization transition plan that would not prematurely retire E-8C aircraft, reassign crews or maintenance personnel, or otherwise create an MTI ISR capability gap or capacity deficit greater than what existing levels of aircraft should be providing currently.

Therefore, the committee directs the Secretary of the Air Force to provide a briefing to the House Committee on Armed Services not later than November 1, 2017, that describes, in detail, a strategy to sufficiently address manning, sustainment, modernization, and viability deficiencies that would resolve capability gaps, shortfalls, and deficiencies of the E-8C fleet of aircraft. The briefing should include a strategy that addresses right-sizing and balancing unit manning among the Total Force; maintaining proficient and current aircrews to meet operational requirements; resolving obsolescence and diminishing manufacturing sources of parts and supply; necessary mission system upgrades and operational enhancements across the E-8C fleet to keep the aircraft viable and relevant until the JSTARS Recapitalization aircraft is fielded; standardizing existing aircraft capabilities in areas such as imagery servers and the Automated Information System; a basing construct that would allow E-8C aircraft to operate simultaneously, if needed, from three forward operating locations, similar to other Air Force aircraft like the RC-135 and E-3A; and the associated cost, budget, and timeline required to implement the strategy.
Finally, the committee also directs the Secretary of the Air Force to provide a report to the congressional defense committees not later than March 1, 2019, that explains in detail all aspects of how and when the Air Force will transition from legacy JSTARS aircraft capability to JSTARS Recapitalization aircraft capability.

**F-15C capability, capacity, and recapitalization**

The committee notes that during the hearing on March 22, 2017, titled “The Current State of the U.S. Air Force,” before the Subcommittee on Readiness of the House Committee on Armed Services, Air Force witnesses testified that the Department of the Air Force is likely to decide during fiscal year 2019 budget deliberations whether or not to proceed with an option of divesting F-15C aircraft from the Air Force inventory and replacing those aircraft with upgraded F-16 aircraft.

The committee notes that the Air Force is executing a service life extension program to upgrade the F-15C with an improved radar and missile warning system, as well as airframe structural enhancements. The committee strongly supports the Eagle Passive Active Warning and Survivability System (EPAWSS) modernization program for the F-15C fleet. The committee recalls that the Air Force has previously stated a requirement to extend the service life of the F-15C aircraft fleet to fill the air superiority mission capacity gap created by the truncation of the F-22 procurement program to only 187 aircraft. Similarly, the committee also recalls that the Air Force planned to keep the F-15C viable until the Air Force’s next-generation air dominance aircraft is fielded to avoid a capacity gap in the air superiority mission area. Additionally, the committee is unaware of any warfighting analysis within the Department of Defense that would validate replacing F-15C capability and capacity with upgraded F-16 aircraft to fulfill requirements of the air superiority mission area. The committee does not understand how the Air Force would grow to its desired number of 60 fighter squadrons by retiring a significant number of F-15C aircraft and replacing those with aircraft already in the Air Force inventory. As well, the committee is concerned such a decision would exacerbate the substantial personnel shortage that currently exists within the F-16 maintenance enterprise by having to retrain and qualify F-15C personnel to maintain F-16 aircraft.

Therefore, the committee directs the Secretary of the Air Force to provide a briefing to the House Committee on Armed Services not later than February 28, 2018, that provides detailed information on the following: the Air Force’s weapon system sustainment and service-life plan for the F-15C aircraft, to include EPAWSS integration; when and with which material option(s) the Air Force plans to recapitalize air superiority mission capability provided by modernized F-15C aircraft, without incurring a reduction in capacity, if the F-15C is retired; how and when the Air Force plans to grow, and with which aircraft, to 60 fighter squadrons; any analysis completed by the Department of Defense that validates that the air superiority mission capability and capacity provided by a modernized F-15C can be
supplanted with an upgraded F-16; and forecasted mission transition plans for locations and units that currently possess or support F-15C aircraft, personnel, operations, or maintenance activities if F-15C aircraft are retired.

**Next generation ejection seat acquisition**

The committee notes that section 146(b) of the National Defense Authorization Act for Fiscal Year 2014 (Public Law 113–66) required a report by the Secretary of the Air Force on various aspects of the health and safety risks associated with ejection seats. That report confirmed that, with increased use of helmet-mounted devices, the risks of death or serious injury increases, and increases even more for lighter weight aircrew. The committee also notes that the Joint Explanatory Statement to Accompany the Carl Levin and Howard P. “Buck” McKeon National Defense Authorization Act for Fiscal Year 2015 (Committee Print No. 4) stated that the Air Force should establish a program for increasing the ejection safety and reliability of the Air Force’s fighter and bomber aircraft. Subsequently the Air Force established the Next Generation Escape System (NGES) program of record, and is currently in the market research phase of its next acquisition endeavor to upgrade and modernize ejection seats for aircraft currently in the Air Force inventory. The committee also recognizes that there are a limited number of ejection seat manufacturers qualified to meet Department of Defense egress requirements for high-performance military aircraft.

Concerning the acquisition of NGES, the committee expects the Secretary of the Air Force to design and execute an acquisition strategy that enables fair, open, equitable, and objective consideration of ejection seat technologies. The committee encourages the Air Force to also take into account industrial base considerations that will preserve sufficient access to ejection seat technology for future programs. The committee also expects that any ejection seat proposal assessed during source selection processes will be evaluated in accordance with established Department of Defense policies, regulations, and instructions governing the acquisition of egress systems for military aircraft.

Therefore, the committee directs the Secretary of the Air Force, and a representative from the office of the Under Secretary of Defense for Acquisition, Technology, and Logistics, to provide a briefing to the House Committee on Armed Services not later than September 1, 2017, that explains in detail the acquisition strategy for NGES and how the committee’s aforementioned considerations related to the acquisition strategy will be implemented. Finally, the committee is dissatisfied with the slow pace the Air Force has given this issue since it was initially addressed by the committee over 3 years ago, and expects the Secretary of the Air Force to demonstrate more urgency in providing modernized and safer egress systems for Air Force aircrews.
The committee notes that the collection of information associated with foreign ballistic missile programs remains a priority for the Department of Defense. For many years, the RC-135S Cobra Ball program has served a vital role by providing unique and highly responsive collection on numerous high-priority missions. As one of the smallest aircraft inventories in the Department of the Air Force, the three aircraft of the RC-135S fleet struggle to balance routine and depot maintenance schedules against operations and training requirements. The committee remains concerned that the Department’s ability to conduct responsive technical collection against high-priority items of interest is constrained by the small size of the RC-135S enterprise which must compete fulfilling requirements for operations, training, and maintenance.

Therefore, the committee directs the Secretary of the Air Force to provide a briefing to the House Committee on Armed Services not later than December 1, 2017, on modernization and upgrades to RC-135S aircraft and training facilities. Specifically, the briefing should include what actions the Secretary will take to complete the modernization and upgrade of the remaining two RC-135S aircraft to the newest baseline standard for mission systems and software, as well as what actions the Secretary will take to field an RC-135S ground-based mission trainer to reduce reliance on mission aircraft and increase operational availability of RC-135S aircraft for world-wide deployments.

TITLE II—RESEARCH, DEVELOPMENT, TEST, AND EVALUATION

RESEARCH, DEVELOPMENT, TEST, AND EVALUATION, ARMY

Items of Special Interest

Army Network Integration Evaluations and Joint Warfighting Assessments

The committee acknowledges the importance of the Department of the Army’s Network Integration Evaluation (NIE) exercises conducted at Fort Bliss, Texas, and White Sands Missile Range, New Mexico. The committee notes that, through this program, the Army has been able to test equipment in a realistic battlefield environment in the hands of soldiers so the Army can successfully integrate new technologies. The committee also acknowledges the importance of the Joint Warfighting Assessments (JWA). The committee believes that these exercises help the Army to test emerging concepts, integrate new capabilities and technology, and promote interoperability between the military services and U.S. allies.

While the committee believes that the NIE and JWA should continue to be an integral part of the Army’s modernization strategy, and encourages the Army to pursue both the NIE and JWA, the committee understands that the Army is assessing the most efficient way to test the integration of new concepts and
technologies. The committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services by March 1, 2018, on this assessment.

Cold Temperature and Arctic Protective System development

The committee is aware that the Army is developing an updated cold weather clothing system referred to as the "Cold Temperature and Arctic Protective System" (CTAPS). The committee supports efforts to ensure that soldiers are equipped with organizational clothing and individual equipment for all environments. The committee is aware the CTAPS system would include flame-resistant technology similar to that of the current flame-resistant environmental ensemble. The committee encourages the Army to consider commercial-off-the-shelf technologies, as well as technologies already proven in current Army cold and extreme weather clothing systems as part of the CTAPS development program.

The committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services by November 15, 2017, that includes the development timeline and schedule for CTAPS, as well as addresses the cooperative efforts being taken by the Army, to include the industrial base into the overall design of the CTAPS system.

High Mobility Multipurpose Wheeled Vehicle external fire suppression systems

The committee is aware that in 2008 the Army pursued Work Directive 379 in response to an operational needs statement, and that the purpose of the directive was to explore options for fluid-based fires in the fuel tank and engine compartment of Army High Mobility Multipurpose Wheeled Vehicles (HMMWV). The committee is also aware that one of the recommendations resulting from this effort was to continue testing of fuel tank, engine, and tire improvements that could potentially reduce the risk of fluid-based fires. However, despite this recommendation, the Army chose not to pursue such improvements or validate a requirement for an external fire suppression system (EFSS) for Army HMMWVs.

Given the evolution of fire suppression technology since this evaluation was conducted, the committee believes that the Army should reconsider the potential requirement for an EFSS for Army and Army National Guard HMMWVs. Therefore, the committee directs the Secretary of the Army, in coordination with the Chief, National Guard Bureau, to provide a briefing to the House Committee on Armed Services by September 1, 2017, on the advisability and feasibility of such a system being installed on Army and Army National Guard HMMWVs as part of HMMWV modernization and recapitalization programs.

Lightweight metal matrix composite technology for combat and tactical vehicles

The committee recognizes the versatility and broad application that Metal Matrix Composite (MMC) technology may provide to the armed services through weight reduction of vehicle components by potentially 50 percent, and in turn could
increase the service life of vehicles by three to four times that of vehicles manufactured with traditional steel and armor. The committee understands the U.S. Army Tank and Automotive Research, Development, and Engineering Command (TARDEC) is currently evaluating technologies that can reduce vehicle weight, reduce fuel consumption, increase payload capacity, and extend service life of combat and tactical vehicles, and that MMC technology is part of this ongoing evaluation.

The committee directs the Commanding General of TARDEC to provide a briefing to the House Committee on Armed Services by November 1, 2017, on the progress of development and implementation of Metal Matrix Composite component technology in order to reduce vehicle weight, reduce fuel consumption, increase payload capacity, and extend service life.

Mobile protected firepower

The committee understands that as part of the Army’s modernization strategy, the Army is attempting to improve the tactical mobility and lethality of infantry brigade combat teams (IBCTs). The committee notes the mobile protected firepower (MPF) combat vehicle program would provide the Army’s IBCTs with a mobile and survivable direct fire capability to defeat enemy armored vehicles, hardened fortifications, and dismounted personnel. The committee recognizes that the Army Chief of Staff has made MPF a high priority modernization program, and notes the Army is actively engaging with the industrial base to ensure clarity of requirements. The committee believes the Army is developing strategies to potentially accelerate the MPF schedule given that the current projected schedule has MPF fielding beginning in 2024.

Therefore, the committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services by October 5, 2017, that outlines potential opportunities for MPF program acceleration. The briefing should include a review of testing requirements and potential areas for consolidation; funding required in fiscal year 2018 and beyond to accelerate the program; and any areas of legislative relief that would be required in order to accelerate the program.

Underwater munitions disposal and waterjet technology development

The committee remains concerned that the military services have programmed insufficient resources and attention towards technology that could significantly improve capabilities required for underwater explosive ordnance disposal. The committee notes the Navy continues to be threatened by mines placed in the waters in which they operate, as well as the Army having a requirement to remotely demilitarize obsolete, discarded, and unstable munitions that have become embedded in the undersea habitat, including coral, without damaging the ocean environmental habitat. As such, the committee understands the Department of Defense has a requirement for a feasible technological approach to recover a munition’s chemical and explosive ordnance without removing the munition from
the ocean environment that would both render a munition safe by removing the fuse, recovering the explosive material while also leaving the munitions body in place. The committee believes additional targeted research is needed to demonstrate technology capable of both remotely defeating mines threatening U.S. Naval forces, as well as providing the capability to demilitarize underwater munitions without damaging critical ocean habitat.

Therefore, the committee directs the Secretary of the Army, in coordination with the Secretary of the Navy, to provide a briefing to the House Committee on Armed Services by December 1, 2017, on research and development efforts by the Army and the Navy to further develop a prototype for underwater munition explosive ordnance disposal for the purpose stated above.

**Research, Development, Test, and Evaluation, Navy**

**Items of Special Interest**

*F/A-18 noise reduction research*

The committee understands that Navy testing to date on F/A-18E/F Super Hornet noise reduction concluded that engine chevron attachments achieved significant noise reduction in a limited area of the F/A-18's engine's power settings. However, the committee has also been informed by the Navy that further research is likely needed to determine if chevron attachment technology can be improved to cover a wider range of F/A-18 engine power settings, and in particular the range of settings most relevant to high-noise flight operations near naval air stations.

Therefore, the committee directs the Secretary of the Navy to provide a briefing to the House Committee on Armed Services not later than September 1, 2017, on the results of all noise reduction research complete as of the date of the briefing, its plans for continued testing of noise reduction technologies for the F/A-18E/F Super Hornet, and any possible funding needed to pursue such testing efforts in the future.

*Marine Corps and Navy small unmanned aircraft system and capability development*

The committee supports the U.S. Marine Corps pursuit of nano-sized vertical takeoff and landing small unmanned aircraft systems at the squad level to help Marines in small units enhance situational awareness. The committee notes that this plan was further supported in the 2017 Marine Corps Land Systems Investment Plan. For squad-level missions, pocket-sized sensors provide soldiers with improved intelligence, situational awareness, and enhanced targeting capability. The committee understands that this technology has been successfully demonstrated by the Army and allied militaries during operations, and believes it holds promising potential for Marine Corps operations. The committee is further aware that the Marine Corps Requirements Oversight Council approved a nano-
sized and vertical takeoff and landing (VTOL) small unmanned aircraft system (SUAS) program.

The committee also recognizes that the Navy and Marine Corps are taking advantage of and increasing reliance on the many capabilities that SUAS have to offer. The committee understands that computer vision and machine learning algorithms have been used by other agencies of the federal government for the past decade for various applications ranging from face recognition to three-dimensional surface modeling. Until recently, these algorithms have required significant computational resources, and therefore, power consumption. However, because of recent technological advancements, it is now possible to place an embedded processor on a SUAS and perform a number of computer vision tasks onboard. Technologies developed by Small Business Innovative Research in the specialty of object detection, tracking, and recognition have high potential for addressing Department of Defense intelligence community surveillance and reconnaissance challenges. Automated object detection and tracking (AODT) capability for SUAS platforms applied to airborne computer vision technology have the potential to provide seamless, secure, and scalable SUAS deployed systems in support our Nation’s surveillance and reconnaissance efforts.

The committee encourages the Navy and Marine Corps to advance development and implementation of nano-sized VTOL SUAS capability at the squad level, to include researching AODT integration opportunities. Therefore, the committee directs the Secretary of the Navy to provide a briefing to the House Committee on Armed Services not later than December 15, 2017, providing the status of the nano-sized and VTOL SUAS programs, a detailed discussion of the technologies being reviewed, and the acquisition strategy for potentially implementing this capability into the Department of the Navy.

Marine Corps female body armor

The committee commends the Marine Corps for updating its guidance for body armor sizes to better fit Marines at both ends of the size distribution scale. Whereas before the standard for body armor sizes was to cover Marines from the 5th to 95th percentile in size, the new guidance goes further to cover the 2nd to 98th percentile in order to provide better form, fit, and function to a greater range of male and female Marines. The committee also notes that the Marine Corps made other changes to its plate carrier system to improve the fit for both smaller and larger Marines. The committee understands that the Marine Corps believes that this new sizing approach is the best way to ensure female Marines have body armor that fits properly. The committee supports these efforts.

In the committee report (H. Rept. 114-537) accompanying the National Defense Authorization Act for Fiscal Year 2017, the committee directed the Secretary of Defense to provide a briefing to the committee outlining plans to provide personal protective equipment (PPE) and organizational clothing and individual equipment developed specifically for female service members. The
committee notes that this briefing was supposed to be presented by March 1, 2017; however, the Department of Defense requested additional time and now expects to deliver the briefing in late June 2017. As such, the committee remains concerned that the Marine Corps and the Army continue to take different approaches to the development of PPE, to include body armor, for female service members. Specifically, the committee notes that the Army has fielded female improved outer tactical vests, better designed female protective undergarments, ballistic combat shirts, as well as requiring female variants for the Torso and Extremity Protection System, as part of the overall Soldier Protection System. While the committee recognizes that both military services are trying to provide the best possible protection to their service members, the apparent disconnect on this issue is concerning. The committee expects the Marine Corps to fully coordinate with the Army regarding the Army's development of body armor and PPE to meet specific female needs.

Therefore, the committee directs the Commanding General, Marine Corps Combat Development Command, in coordination with the Principal Military Deputy to the Assistant Secretary of the Army for Acquisition, Logistics, and Technology, to participate in the briefing, as required by H. Rept. 114-537, to address the Marine Corps' views on the Army's female PPE efforts, as well as the Marine Corps' position on the appropriateness of adopting the Army's approach to PPE and body armor development for female service members. The committee further directs that the Secretary of Defense provide the briefing no later than September 1, 2017.

Research, Development, Test, and Evaluation, Air Force

Items of Special Interest

Advanced pilot training program

As the Department of the Air Force continues to recapitalize its combat aircraft with fifth generation fighters and bombers, the committee is becoming increasingly concerned with the T-38C's inability to safely and affordably train the Department of the Air Force's incoming pilots. In the committee report (H. Rept. 114-537) accompanying the National Defense Authorization Act for Fiscal Year 2017, the committee noted that the average age of aircraft in the T-38C fleet is 50 years, with an average of over 16,000 flight hours on each aircraft. As a result, the committee believes that the T-38 is reaching the end of a safe and viable service life, and is increasingly unable to provide the modern pilot training required by the Department of the Air Force. The committee notes that the APT program office is currently engaged in the in-source selection phase to evaluate proposals received by the submission deadline of March 30, 2017, and that contract award is anticipated to occur late in 2017. Upon contract award, the committee understands that the program will enter a limited development phase to finalize and verify system design prior to a production decision planned for fiscal year 2022. The committee also understands that the Air Force plans to make a full rate production decision and
declare initial operating capability in 2024. Further, the Department of the Air Force plans to attain full operating capability of the APT system in 2034. The committee notes that the costs of sustaining the T-38C fleet are growing even as aircraft availability is decreasing, and that the T-38C was originally intended to undergo replacement in the mid-1990s. Accordingly, the committee continues to believe that any delay to the APT program will place the Department of the Air Force combat readiness at risk, and that maintaining or accelerating the current APT program schedule is required to ensure safe and effective training of Department of the Air Force combat pilots.

Therefore, the committee recommends the full amount requested in PE 64233F to continue the T-X program. The committee also directs the Secretary of the Air Force to provide a briefing to the House Committee on Armed Services not later than January 15, 2018, on potential options to accelerate the APT program, subsequent to contract award.

RESEARCH, DEVELOPMENT, TEST, AND EVALUATION, DEFENSE-WIDE

Items of Special Interest

Deployable assured position, navigation, and timing systems

The committee notes that the Department of Defense has several urgent research and development efforts underway to ensure that critical position, navigation, and timing (PNT) systems remain effective into the future as part of an assured PNT (A-PNT) program of record. The committee supports these efforts and believes that the threat to PNT capability is increasing and likely warrants an aggressive approach by the Department to stay ahead of the problem. The committee notes that the Army Rapid Capabilities Office is exploring a range of potential A-PNT alternatives in which existing technologies could efficiently meet near-term operational needs in the European theater. As the A-PNT program of record continues to progress, the committee expects that manufacturers of existing technologies will have the opportunity to bid on A-PNT contracts for the development of materiel solutions as part of the program of record.

Therefore, the committee directs the Under Secretary of Defense for Acquisition, Technology, and Logistics to provide a briefing to the House Committee on Armed Services by September 1, 2017, that includes the following: a summary of the Department's current programs related to assured PNT; the current requirements for the programs in terms of size, weight, power, resilience against kinetic and non-kinetic effects, and other factors; the current schedule and cost estimates for such programs; and any opportunities for potential acceleration of these efforts.
Section 317 of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111-84) required the Secretary of Defense to submit a report to the Committees on Armed Services of the Senate and House of Representatives regarding the use of open-air burn pits. The report submitted by the Secretary stated that "the introduction of incinerators, plus other thermal (to include waste-to-energy) and non-thermal waste disposal options, are intended to eventually displace the use of burn pits." The report concluded, "The Department of Defense must continue to explore viable technical solutions for waste reduction and waste disposal in all categories—solid, medical, and hazardous—and then make such solutions available through easily acquired commercial or Department of Defense provided equipment."

The committee directs the Under Secretary of Defense for Acquisition, Technology, and Logistics to provide a briefing to the House Committee on Armed Services by November 15, 2017, that provides an update on the progress made toward achieving the goals stated in the report required by section 317 of Public Law 111-84, as well as an update regarding how the Department is implementing lessons learned regarding waste-disposal technologies in overseas contingency operations.