H.R. 6395—FY21 NATIONAL DEFENSE AUTHORIZATION BILL

SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES

SUMMARY OF BILL LANGUAGE

Table Of Contents

DIVISION A—DEPARTMENT OF DEFENSE AUTHORIZATIONS

TITLE I—PROCUREMENT

LEGISLATIVE PROVISIONS

SUBTITLE C—AIR FORCE PROGRAMS

Section 122—Modification of Limitation on Availability of Funds for Retirement of E-8 JSTARS Aircraft

This section would amend section 147(a) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115–232) to prohibit any use of funds authorized to be appropriated in fiscal year 2021 or any subsequent year for the Air Force to retire, or prepare to retire, any E-8 Joint Surveillance Target Attack Radar System aircraft until the date on which the Secretary of Defense certifies to the congressional defense committees that there is a replacement capability identified that meets or exceeds the current capability and capacity of the 16-aircraft E-8 fleet to meet global combatant command requirements.

Section 123—Limitation on Availability of Funds for the Advanced Battle Management System Pending Certification Relating to RQ-4 Aircraft

This section would limit obligation or expenditure of 50 percent of the funding available for the Advanced Battle Management System until one of three conditions is met: (1) the Secretary of the Air Force certifies that the Air Force will not retire any RQ-4 Global Hawk aircraft during fiscal year 2021; (2) the Under Secretary of Defense for Acquisition and Sustainment certifies that the validated operating and sustainment costs of any capability developed to replace the RQ–4 aircraft are less than the validated operating and sustainment costs for the RQ–4 aircraft on a comparable flight-hour cost basis, and the Chairman of the Joint Requirements Oversight Council certifies that any replacement capability for the RQ-4 aircraft would result in equal or greater capability available to the commanders of the combatant commands and would not result in less capacity available to the commanders of the combatant commands; or (3) the Secretary of Defense certifies that a replacement capability for the RQ–4 aircraft is worth increased operating and sustainment costs.

Section 124—Extension of Limitation on Availability of Funds for Retirement of RC-135 Aircraft

This section would prohibit the Air Force from retiring, or preparing to retire, any RC-135 aircraft through fiscal year 2025 until 60 days after the date on

which the Secretary of Defense certifies to the congressional defense committees that equivalent RC-135 capacity and capability exists to meet combatant commander requirements for indications and warning, intelligence preparation of the operational environment, and direct support to kinetic and non-kinetic operations.

Section 126—Modernization Plan for Airborne Intelligence, Surveillance, and Reconnaissance

This section would require the Secretary of the Air Force to provide a comprehensive strategy for Air Force airborne intelligence, surveillance, and reconnaissance (ISR) to ensure alignment between requirements, future Air Force budget submissions, and authorization of appropriations. The required plan would cover current steady-state, contingency, and future multidomain operations for Air Force ISR. This section would also require the Air Force to submit a classified annex to the report as necessary.

The Air Force fiscal year 2021 budget request included several significant changes to ISR force mix and modernization. The request proposed immediate divestment of all RQ-4 Global Hawk Block 30 multi-intelligence aircraft, as well as an end to the MQ-9 Reaper production line in fiscal year 2020 without any time to allow for adequate supply chain management planning. While these changes may align with long-term Air Force strategy, the absence of such a strategy incorporating both current and future capabilities concerns the committee. The committee expects the directed strategy to address required capabilities and capacities, to identify anticipated gaps in both areas, and to cover both manned and unmanned ISR capabilities.

SUBTITLE D—DEFENSE-WIDE, JOINT, AND MULTISERVICE MATTERS

Section 131—Documentation Relating to the F-35 Aircraft Program

This section would require the Secretary of Defense to provide the congressional defense committees with certain information and certifications by the Secretary regarding cost, schedule, risk, program execution and significant deficiency resolution plans in the areas of production, Block 4 hardware and software development, modernization, upgrades and training systems for the F-35 program before entering full-rate production and a Milestone C acquisition award can be granted by the Secretary.

Section 132—Notification on Software Regression Testing for F-35 Aircraft

This section would require the Under Secretary of Defense for Acquisition and Sustainment, in consultation with the Director, Operational Test and Evaluation, to provide the congressional defense committees with a notification not later than 30 days after F-35 air vehicle or mission systems production software is

released to units under the F-35 program's continuous capability development and delivery process. The notification would include information regarding:

(1) what type and method of regression testing was completed prior to production release of the software to ensure compatibility and proper functionality with the F-35 fire control radar system and any weapons currently certified for carriage and employment for each variant of F-35 aircraft;

(2) which entities, U.S. Government entities or U.S. Government contractors, performed the production software regression testing;

(3) a list of deficiencies discovered during the production software regression testing and what software modifications were completed to resolve or mitigate any software deficiencies noted; and

(4) a list of deficiencies discovered during the software regression testing that may or may not be corrected in later F-35 production software releases.

Section 133—Notification on Efforts to Replace Inoperable Ejection Seat Aircraft Locator Beacons

This section would require the Under Secretary of Defense for Acquisition and Sustainment to provide the congressional defense committees a semiannual written notification about the efforts being undertaken by the senior acquisition executives of the Department of the Air Force and the Department of the Navy to replace emergency locator seat beacons in ejection-seat equipped aircraft that have been found to be inoperable in water, and the funding budgeted for such efforts. The Under Secretary would be required to report on the issue until locator beacons are replaced in all affected ejection-seat equipped aircraft, or a period of 5 years has elapsed since the date the initial report is received by the congressional defense committees.

TITLE II—RESEARCH, DEVELOPMENT, TEST, AND EVALUATION

LEGISLATIVE PROVISIONS

SUBTITLE B—PROGRAM REQUIREMENTS, RESTRICTIONS, AND LIMITATIONS

Section 221—Accountability Measures Relating to the Advanced Battle Management System

This section would require the Secretary of the Air Force to provide additional information on the Advanced Battle Management System (ABMS) family of systems. This section would amend section 147(g) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115-232) to include as part of the quarterly briefings a detailed briefing on each on-ramp demonstration conducted during that quarter, to encompass: objectives achieved; the realism of the exercise, including which portions were scripted and which were

not, and the technical workarounds or substitute technologies employed; composition of and sustainment plan for "leave-behind" interim capabilities provided to a combatant commander; and the costs spent on technology solutions, range access and testing resources, personnel, and logistics, including travel costs.

This section would also require the Secretary to report on planned ABMS capabilities, technologies needed to implement and achieve these capabilities, and a timeline for technology maturation and notional fielding schedule across the future years defense program. The committee expects this report to outline how ABMS intends to transition demonstrated capabilities into sustainable Programs of Record. This section would further require reports on ABMS acquisition authorities, coordination between the ABMS Architect Office and the Common Mission Control Center, and the ABMS security plan. Finally, this section would require the Director of Cost Assessment and Program Evaluation to conduct an independent cost estimate of any ABMS cost estimate prepared by the Air Force.

Section 223—Limitation on Availability of Funds Pending Review and Report on Next Generation Air Dominance Capabilities

This section would limit the Secretary of the Air Force and the Secretary of the Navy from obligating more than 85 percent of funding authorized to be appropriated for fiscal year 2021 for the Next Generation Air Dominance capabilities until the Director, Cost Assessment and Program Evaluation performs a non-advocate review and submits a report to the congressional defense committees that assesses the separate efforts of the U.S. Air Force and the U.S. Navy regarding the Next Generation Air Dominance portfolio of capabilities being developed by each Secretary.

SUBTITLE C—PLANS, REPORTS, AND OTHER MATTERS

Section 232—Repeal of Quarterly Updates on the Optionally Manned Fighting Vehicle Program

This section would repeal section 261 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116-92). The committee notes that the Optionally Manned Fighting Vehicle (OMFV) Program is delayed and the Army's original solicitation has been cancelled making quarterly updates on the program unnecessary.

The committee appreciates the Army's efforts over the last 20 years and current commitment to develop a next generation combat vehicle to replace the M2 Bradley Infantry Fighting Vehicle in armored formations today. Although the committee shares the Army's disappointment with the recent cancellation of the solicitation for the OMFV, the committee is nonetheless encouraged that the Army appears better positioned to take a thoughtful, measured, and realistic approach to development of next generation armored fighting vehicle technology. This is evident in the Army's efforts at this time to learn up-front from industry what new

technologies could make a next generation combat vehicle significantly more capable than the M2 Bradley, and at the same time, achievable and affordable.

In this regard, the committee understands the Army's new development concept includes three or more phases, of which the first is solicitation of digital engineering designs from up to five commercial vendors for production design review by a source selection evaluation board, followed by a down-select to three vendors for an engineering and manufacturing development, critical design review, and production prototyping phase, and finally down-select to two offerors or possibly a single awardee for low-rate initial production. The committee is interested to see if this process, while taking somewhat longer, will attract the widest competitive field of offerors with the widest technological diversity, and at the same time achieve the benefits of such competition including enhanced technology, lower cost, and potentially an expanded armored vehicle industrial capacity.

Although this section would repeal the requirement for a quarterly update on the OMFV program, the committee expects that the Secretary of the Army or designee will, upon request, provide the committee with briefings that address the elements of the update as originally enacted in section 261 of Public Law 116-92.

Section 233—Reports on F-35 Physiological Episodes and Mitigation Efforts

This section would require the Under Secretary of Defense for Acquisition and Sustainment to conduct a root cause analysis study of all physiological episodes (PEs) that have been reported by F-35 pilots as of the date of the enactment of this Act, and to provide a report to the congressional defense committees not later than 180 days after the date of the enactment of this Act. The report would describe:

(1) all reported instances of F-35 PEs;

(2) all findings and recommendations of the root cause analysis study; and

(3) resources required to resolve issues contributing to F-35 PEs.

Finally, this section would require the Under Secretary to describe in the annual report required by section 224(d) of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328) what funding and corrective actions are being implemented to mitigate F-35 PEs.

TITLE X—GENERAL PROVISIONS

LEGISLATIVE PROVISIONS

SUBTITLE E—MISCELLANEOUS AUTHORITIES AND LIMITATIONS

Section 1044—Battlefield Airborne Communications Node Certification Requirement

This section would prohibit the Secretary of the Air Force from divesting the EQ-4 aircraft until the Chairman of the Joint Requirements Oversight Council

and the Commander, U.S. Central Command, certify in writing to the congressional defense committees that the replacement capability to be fielded in place of the EQ-4 would result in equal or greater capability available to the combatant commanders of the combatant commands and would not result in less airborne capacity or on-station time. This section would also require the Under Secretary of Defense for Acquisition and Sustainment to certify to the congressional defense committees that the validated operating and sustainment costs of the capability developed or fielded to replace an equivalent capacity the EQ-4 aircraft currently provides is less than the validated operating and sustainment costs for the EQ-4 aircraft on a comparable flight-hour cost basis.

BILL LANGUAGE

SEC. 122 [Log 71272]. MODIFICATION OF LIMITATION ON AVAILABILITY OF FUNDS FOR RETIREMENT OF E–8 JSTARS AIRCRAFT.

Section 147(a) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115–232; 132 Stat. 1669) is amended by striking ''certifies to the congressional defense committees that Increment 2 of the Advanced Battle-Management System of the Air Force has declared initial operational capability as defined in the Capability Development Document for the System'' and inserting ''certifies to the congressional defense committees that—

''(1) the Secretary has identified a replacement capability for the E-8 Joint Surveillance Target Attack Radar System aircraft; and

''(2) such replacement delivers capabilities that are comparable or superior to the capabilities delivered by such aircraft.''.

SEC. 123 [Log 71039]. LIMITATION ON AVAILABILITY OF FUNDS FOR THE ADVANCED BATTLE MANAGEMENT SYSTEM PENDING CERTIFICATION RELATING TO RQ–4 AIRCRAFT.

(a) LIMITATION.—Of the funds authorized to be appropriated by this Act or otherwise made available for fiscal year 2021 for the Department of the Air Force for the Advanced Battle Management System, not more than 50 percent may be obligated or expended until—

(1) the Secretary of the Air Force certifies, in writing, to the Committees on Armed Services of the Senate and the House of Representatives that the Secretary will not retire, or prepare to retire, any RQ–4 aircraft during fiscal year 2021;

(2)(A) the Under Secretary of Defense for Acquisition and Sustainment certifies, in writing, to such Committees that, with respect to the RQ–4 aircraft, the validated operating and sustainment costs of any capability developed to replace the RQ–4 aircraft are less than the validated operating and sustainment costs for the RQ–4 aircraft on a comparable flight-hour cost basis; and

(B) the Chairman of the Joint Requirements Oversight Council certifies, in writing, to such Committees that any such capability to be fielded at the same time or before the retirement of the RQ–4 air-

craft would result in equal or greater capability available to the commanders of the combatant commands and would not result in less capacity available to the commanders of the combatant commands; or

(3) the Secretary of Defense—

(A) certifies, in writing, to such Committees that the Secretary has determined, after analyzing sufficient and relevant data, that a capability superior to the RQ–4 aircraft is worth increased operating and sustainment costs; and

(B) provides to such Committees analysis supporting such determination.

(b) CONSULTATION REQUIREMENT.—Before issuing a certification under subsection (a), the official responsible for issuing such certification shall consult with the combatant commanders on the matters covered by the certification.

(c) ADVANCED BATTLE MANAGEMENT SYSTEM DEFINED.—In this section, the term ''Advanced Battle Management System'' has the meaning given that term in section 236(c) of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92; 133 Stat. 1281).

SEC. 124 [Log 71466]. EXTENSION OF LIMITATION ON AVAILABILITY OF FUNDS FOR RETIREMENT OF RC–135 AIRCRAFT.

Section 148(a) of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92; 133 Stat. 1243) is amended by striking ''for fiscal year 2020'' and inserting ''for any of fiscal years 2020 through 2025''.

SEC. 126 [Log 71043]. MODERNIZATION PLAN FOR AIRBORNE INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE.

(a) MODERNIZATION PLAN.—

(1) IN GENERAL.—The Secretary of the Air Force shall develop a comprehensive plan for the modernization of airborne intelligence, surveillance, and reconnaissance, which shall—

(A) ensure the alignment between requirements, both current and future, and Air Force budget submissions to meet such requirements; and

(B) inform the preparation of future defense program and budget requests by the Secretary, and the consideration of such requests by Congress.

(2) ELEMENTS.—The plan required by paragraph (1) shall include the following:

(A) An assessment of all airborne intelligence, surveillance, and reconnaissance missions, both current missions and those missions necessary to support the national defense strategy.

(B) An analysis of platforms, capabilities, and capacities necessary to fulfill such current and future missions.

(C) The anticipated life-cycle budget associated with each platform, capability, and capacity requirement for both current and future requirements.

(D) An analysis showing operational, budget, and schedule trade-offs between sustainment of currently fielded capabilities, modernization of currently fielded capabilities, and development and production of new capabilities.

(b) REPORT TO CONGRESS.—

(1) IN GENERAL.—Not later than March 30, 2021, the Secretary of the Air Force shall submit to the congressional defense committees a report that includes—

(A) the comprehensive modernization plan required by subsection (a); and

(B) a strategy for carrying out such plan through fiscal year 2030.

(2) FORM.—The report required under paragraph (1) shall be submitted in unclassified form but may include a classified annex.

Subtitle D—Defense-wide, Joint, and Multiservice Matters

SEC. 131 [Log 70985]. DOCUMENTATION RELATING TO THE F–35 AIRCRAFT PROGRAM.

(a) LIMITATION.—The Secretary of Defense may not grant Milestone C approval for the F–35 aircraft program pursuant to section 2366c of title 10, United States Code, or enter into a contract for the full-rate production of F–35 aircraft, until a period of 30 days has elapsed following the date on which the Secretary has submitted to the congressional defense committees all of the documentation required under subsection (b).

(b) DOCUMENTATION REQUIRED.—The Secretary of Defense shall submit to the congressional defense committees the following documentation with respect to the F–35 aircraft program:

(1) A certification from the Under Secretary of Defense for Acquisition and Sustainment that all alternative supply contractors for parts, required for the airframe and propulsion prime contractors of the F–35 program as a result of the removal of the Republic of Turkey from the program—

(A) have been identified and all related undefinitized contract actions have been definitized (as described in section 7401 of part 217

of the Defense Federal Acquisition Regulation Supplement);

(B) the parts produced by each such contractor have been qualified and certified as meeting applicable technical design and use specifications; and

(C) each such contractor has reached the required rate of production to meet supply requirements for parts under the F–35 aircraft program.

(2) A cost analysis, prepared by the joint program office for the F–35 aircraft program, that assesses and defines —

(A) how the full integration of Block 4 and Technical Refresh 3 capabilities for each lot of Block 4 production aircraft beginning after lot 14 will affect the average procurement unit cost of United States variants of the F–35A, F–35B, and F–35C aircraft; and

(B) how the establishment of alternate sources of production and sustainment supply and repair parts due to the removal of the Republic of Turkey from the F–35 program will affect such unit cost.

(3) All reports required under section 167 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92; 133 Stat. 1250).

(4) An independent cost estimate, prepared by Director of Cost Assessment and Program Evaluation, that defines, for each phase of the F–35 aircraft program, the cost to develop, procure, integrate, and retrofit F–35 aircraft with all Block 4 capability requirements that are specified in the most recent Block 4 capabilities development document.

(5) A plan to correct or mitigate any deficiency in the aircraft, identified as of the date of enactment of this Act—

(A) that may cause death, severe injury or occupational illness, or major loss or damage to equipment or a system, and for which there is no identified workaround (commonly known as a ''category 1A deficiency''); or

(B) that critically restricts combat readiness capabilities or results in the inability to attain adequate performance to accomplish mission requirements (commonly known as a ''category 1B deficiency'').

(6) A software and hardware capability, upgrade, and aircraft modification plan that defines

the cost and schedule for retrofitting F–35 aircraft that currently have Technical Refresh 2 capabilities installed to ensure compatibility with Block 4 and Technical Refresh 3 aircraft capabilities.

(7) The following reports for the F–35 aircraft program, as prepared by the Director of Operational Test and Evaluation:

(A) A report on the results of the realistic survivability testing of the aircraft, as described in section 2366(d) of title 10, United States Code.

(B) A report on the results of the initial operational test and evaluation conducted for program, as described in section 2399(b)(2) of such title.

(8) A mitigation strategy and implementation plan to address each critical deficiency in the F–35 autonomic logistics information system that has been identified as of the date of enactment of this Act.

(9) A certification that the F–35A meets the required mission reliability performance using an average sortie duration of 2 and one-half hours.

(10) A certification that the Secretary has developed and validated a fully integrated and realistic schedule for the development, production and inte-

gration of Block 4 Technical Refresh 3 capabilities, that includes a strategy for resolving all software technical debt that has accumulated within the F–35 operational flight program source code during development, production, and integration of Technical Refresh 1 and Technical Refresh 2 capabilities.

(11)(A) A complete list of hardware modifications that will be required to integrate Block 4 capabilities into lot 16 and lot 17 production aircraft.

(B) An estimate of the costs of any engineering changes required as a result of such modifications.

(C) A comparison of those engineering changes and costs with the engineering changes and costs for lot 15 production aircraft.

SEC. 132 [Log 70982]. NOTIFICATION ON SOFTWARE REGRESSION TESTING FOR F–35 AIRCRAFT.

(a) NOTIFICATION REQUIRED.—The Under Secretary of Defense for Acquisition and Sustainment, in consultation with the Director of Operational Test and Evaluation, shall notify the congressional defense committees, in writing, not later than 30 days after the date on which mission systems production software for the F–35 aircraft is released to units operating such aircraft under the F–35 continuous capability development and delivery program.

(b) ELEMENTS.—The notification required under subsection (a) shall include, with respect to the mission systems production software for the F–35 aircraft, the following:

(1) An explanation of the types and methods of regression testing that were completed for the production release of the software to ensure compatibility and proper functionality with—

(A) the fire control radar system of each variant of the F–35 aircraft; and

(B) all weapons certified for carriage and employment on each variant of the F–35 aircraft.

(2) Identification of any entities that conducted regression testing of the software, including any de-

velopment facilities of the Federal Government or contractors that conducted such testing.

(3) A list of deficiencies identified during regression testing of the software or by operational units after fielding of the software, and an explanation of—

(A) any software modifications, including quick-reaction capability, that were completed to resolve or mitigate the deficiencies;

(B) with respect to any deficiencies that were not resolved or mitigated, whether the deficiencies will be corrected in later releases of the software; and

(C) any effects resulting from such deficiencies, including—

(i) any effects on the cost and schedule for delivery of the software; and

(ii) in cases in which the deficiencies resulted in additional, unplanned, software releases, any effects on the ongoing testing of software capability releases.

SEC. 133 [Log 70980]. NOTIFICATION ON EFFORTS TO REPLACE INOPERABLE EJECTION SEAT AIRCRAFT LOCATOR BEACONS.

(a) NOTIFICATION.—Not later than 180 days after the date of the enactment of this Act and on a semi-annual basis thereafter until the date specified in subsection (b), the Under Secretary of Defense for Acquisition and Sustainment shall submit to the congressional defense committees a written notification that describes, with respect to the period covered by the notification—

(1) the efforts of the service acquisition executives of the Department of the Air Force and the Department of the Navy to replace ejection seat aircraft locator beacons that are—

(A) installed on covered aircraft; and

(B) inoperable in water or in wet conditions; and

(2) the funding allocated for such efforts.

(b) DATE SPECIFIED.—The date specified in this subsection is the earlier of—

(1) the date on which the Under Secretary of Defense for Acquisition and Sustainment determines that all ejection seat aircraft locator beacons installed on covered aircraft are operable in water and wet conditions; or

(2) the date that is five years after the date of the enactment of this Act.

(c) DEFINITIONS.—In this section:

(1) The term ''covered aircraft'' means aircraft of the Air Force, the Navy, and the Marine Corps that are equipped with ejection seats.

(2) The term ''service acquisition executive of the Department of the Air Force'' does not include the Service Acquisition Executive of the Department of the Air Force for Space Systems and Programs described in section 957 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92; 10 U.S.C. 9016 note).

SEC. 221 [Log 71042]. ACCOUNTABILITY MEASURES RELATING TO THE ADVANCED BATTLE MANAGEMENT SYSTEM.

(a) INDEPENDENT COST ESTIMATE.—

(1) IN GENERAL.—The Director of Cost Assessment and Program Evaluation shall—

(A) review any cost estimate of the Advanced Battle Management System prepared by the Department of the Air Force; and

(B) conduct an independent cost estimate of the full life-cycle cost of the Advanced Battle Management System.

(2) SUBMITTAL TO CONGRESS.—At the same time as the budget of the President for fiscal year 2022 is submitted to Congress pursuant to section 1105(a) of title 31, United States Code, the Director of Cost Assessment and Program Evaluation shall submit to the congressional defense committees a report on the results of the review and independent cost estimate conducted under paragraph (1).

(b) AIR FORCE BRIEFING REQUIREMENT.—Section 147(g) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115–232; 132 STAT. 1670) is amended by adding at the end the following: ''Each briefing shall include a detailed explanation of any on-ramp exercise of the Advanced Battle

Management System conducted during the quarter covered by the report, including an explanation of—

''(1) the objectives achieved by the exercise;

''(2) the realism of the exercise, including identification of the portions of the exercise that were scripted and unscripted and any technical workarounds or substitutes used for purposes of the exercise;

''(3) the interim capabilities provided to combatant commanders after the conclusion of the exercise (commonly known as 'leave behind' capabilities) and a plan for the sustainment or upgrade of such capabilities; and

''(4) the total cost of the exercise and a breakdown of the costs with respect to technology, range and demonstration resources, personnel, and logistics.''.

(c) REPORTS.—Not later than December 20, 2020, the Secretary of the Air Force shall submit to the congressional defense committees the following reports on the Advanced Battle Management System:

(1) REPORT ON PLANNED CAPABILITIES.—A report on the planned product line capabilities of the Advanced Battle Management System, including—

(A) a description of the technologies needed to implement and achieve such product line capabilities;

(B) a timeline for the technical maturation of such product line capabilities; and

(C) a notional schedule for fielding such product line capabilities over the period covered by the current future-years defense program under section 221 of title 10, United States Code.

(2) REPORT ON ACQUISITION AUTHORITIES.—A report on the allocation of responsibilities among the individuals and entities responsible for acquisition for the Advanced Battle Management System, including an explanation of how decision-making and governance of the acquisition process is allocated among the Chief Architect Integration Office and other entities that are expected provide capabilities for the System.

(3) REPORT ON ALIGNMENT WITH COMMON MISSION CONTROL CENTER.—A report, which may be submitted in classified or unclassified form, that explains how, and to what extent, the Advanced Battle Management System will be aligned and coordi-

nated with the Common Mission Control Center of the Air Force.

(d) REPORT ON SECURITY MEASURES.—At the same time as the budget of the President for fiscal year 2022 is submitted to Congress pursuant to section 1105(a) of title 31, United States Code, the Secretary of the Air Force shall submit to the congressional defense committees a report that describes how the Secretary plans to ensure the security of the Advanced Battle Management System, including a description of any information assurance and anti-tamper requirements for the System.

(e) ADVANCED BATTLE MANAGEMENT SYSTEM DEFINED.—In this section, the term ''Advanced Battle Management System'' has the meaning given that term in section 236(c) of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92; 133 Stat. 1281).

SEC. 223 [Log 71067]. LIMITATION ON AVAILABILITY OF FUNDS PENDING REVIEW AND REPORT ON NEXT GENERATION AIR DOMINANCE CAPABILITIES.

(a) LIMITATION ON AIR FORCE FUNDS.—Of the funds authorized to be appropriated by this Act or otherwise made available for fiscal year 2021 for the next generation air dominance initiative of the Air Force, not more than 85 percent may be obligated or expended until the date on which the Director of Cost Assessment and Program Evaluation submits the report required under subsection (d)(1).

(b) LIMITATION ON NAVY FUNDS.—Of the funds authorized to be appropriated by this Act or otherwise made available for fiscal year 2021 for the next generation air dominance initiative of the Navy, not more than 85 percent may be obligated or expended until the date on which the Director of Cost Assessment and Program Evaluation submits the report required under subsection (d)(2).

(c) REVIEWS.—

(1) IN GENERAL.—The Director of Cost Assessment and Program Evaluation shall conduct—

(A) a non-advocate review of the next generation air dominance initiative of the Air Force; and

(B) a non-advocate review of the next generation air dominance initiative of the Navy.

(2) ELEMENTS.—Each review under paragraph (1) shall include an assessment of—

(A) all risks associated with cost, schedule, development, integration, production, fielding, and sustainment of next generation air dominance capabilities;

(B) the technological maturity of significant hardware and software efforts planned or carried out as part of the development of such capabilities; and

(C) affordability goals that the Air Force and the Navy (as the case may be) will be required to achieve during development, production, and sustainment activities for such capabilities that will not jeopardize or otherwise be detrimental to other high-priority future capabilities being developed and procured to support and execute other primary core competencies and missions.

(d) REPORTS.—The Director of Cost Assessment and Program Evaluation shall submit to the congressional defense committees—

(1) a report on the results of the review conducted under subsection (c)(1)(A) with respect to the Air Force; and

(2) a report on the results of the review conducted under subsection (c)(1)(B) with respect to the Navy.

SEC. 232 [Log 70957]. REPEAL OF QUARTERLY UPDATES ON THE OPTIONALLY MANNED FIGHTING VEHICLE PROGRAM.

Section 261 of the National Defense Authorization Act for Fiscal Year 2020 (Public law 116–92; 133 Stat. 1294) is repealed.

SEC. 233 [Log 70983]. REPORTS ON F–35 PHYSIOLOGICAL EPISODES AND MITIGATION EFFORTS.

(a) STUDY AND REPORT.—

(1) IN GENERAL.—The Under Secretary of Defense for Acquisition and Sustainment shall conduct a study to determine the underlying causes of physiological episodes affecting crewmembers of F–35 aircraft.

(2) ELEMENTS.—The study under subsection (a) shall include—

(A) an examination of each physiological episode reported by a crewmember of an F–35 aircraft as of the date of the enactment of this Act; and

(B) a determination as to the underlying cause of the episode.

(3) REPORT.—Not later than 180 days after the date of the enactment of this Act, the Under Secretary of Defense for Acquisition and Sustainment shall submit to the congressional defense committees a report that includes—

(A) the results the study conducted under subsection (a), including a description of each physiological episode examined under the study and an explanation of the underlying cause of the episode;

(B) a description of any actions that may be taken to address the underlying causes of such episodes, including any resources that may be required to carry out such actions; and

(C) any other findings and recommendations of the study.

(b) ANNUAL REPORTS ON MITIGATION EFFORTS.—The Secretary of Defense, in consultation with the Under Secretary of Defense for Acquisition and Sustainment, shall include with the annual report required by section 224(d) of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328; 130 Stat. 2059), a detailed description of—

(1) the efforts of the Department of Defense to address physiological episodes affecting crewmembers of F–35 aircraft; and

(2) the funding allocated for such efforts.

SEC. 1044 [Log 70986[. BATTLEFIELD AIRBORNE COMMUNICATIONS NODE CERTIFICATION REQUIREMENT.

(a) LIMITATION.—The Secretary of the Air Force may take no action that would prevent the Air Force from maintaining or operating the fleets of EQ-4 aircraft in the configurations and capabilities in effect on the date of the enactment of this Act, or in improved configurations and capabilities, before the date on which each of the three individual certifications described in subsection (b) have been submitted to the congressional defense committees.

(b) CERTIFICATIONS REQUIRED.—The certifications described in this subsection are the following;

(1) The written certification of the Chairman of the Joint Requirements Oversight Council that the replacement capability for the EQ-4 aircraft will—

(A) be fielded at the same time or before the divestment of the EQ-4 aircraft;

(B) result in equal or greater capability available to the commanders of the combatant commanders; and

(C) not result in less airborne capacity or on-station time available to the commanders of the combatant commands.

(2) The written certification of the Commander of United States Central Command that the replace-

ment capability for the EQ-4 aircraft will not result in less airborne capacity or on-station time available for mission taskings that the EQ-4 provides, as of the date of the enactment of this Act, in the United States Central Command area of responsibility.

(3) The written certification of the Under Secretary of Defense for Acquisition and Sustainment that the validated operating and sustainment costs of the capability developed or fielded to replace an equivalent capacity the EQ-4 aircraft provides is less than the validated operating and sustainment costs for the EQ-4 aircraft on a comparable flight-hour cost basis.

(c) CALCULATION OF FLIGHT-HOUR COST BASIS.—For purposes of calculating the flight-hour cost basis under subsection (b)(3), the Under Secretary shall include all costs for—

(1) Unit level manpower;

(2) Unit operations;

(3) maintenance;

(4) sustaining support; and

(5) system improvements.

DIRECTIVE REPORT LANGUAGE

Table Of Contents

DIVISION A—DEPARTMENT OF DEFENSE AUTHORIZATIONS

TITLE I—PROCUREMENT

AIRCRAFT PROCUREMENT, ARMY

Items of Special Interest

Army intelligence, surveillance, and reconnaissance programs

The committee recognizes that airborne intelligence, surveillance, and reconnaissance (AISR) capability has become an integral aspect of modern military operations. Each military service has fielded its own AISR, often optimized for service-specific mission requirements. The committee is aware that the Army ISR Task Force is examining AISR requirements and available options for fulfilling these requirements in a cost-efficient manner. Long range precision fires, the Army's highest modernization priority, depends upon deep sensing provided by ISR assets.

Available information from the Army indicates that long-term modernization plans for the Airborne Reconnaissance Low-Enhanced (ARE-L), the Guardrail Common Sensor, and the Enhanced Medium Altitude Reconnaissance and Surveillance System are unclear beyond the Future Years Defense Program. The committee further notes that while the Army's budget briefings depict data link and avionics upgrades to the MQ-1 Gray Eagle unmanned aircraft system, the Army has yet to outline plans for a service life extension program or a follow-on medium-altitude ISR aircraft.

The committee is concerned about the tendency of each military service to construct acquisition plans without accounting for the role of the joint force and capability overlap between military services. Elsewhere in this Act, the committee requires the Department of the Air Force to submit a comprehensive plan on AISR modernization and replacement. The committee is aware of Army ISR Task Force discussions with other military services and encourages the Task Force to continue this collaboration across the military services to ensure the Army invests in the critical and service-specific capabilities it will need to support the joint force.

Therefore, the committee directs the Secretary of the Army, in consultation with the Chief of Staff of the Army, to provide a briefing to the House Committee on Armed Services by November 1, 2020, on plans for modernization of the Army's airborne intelligence, surveillance, and reconnaissance capability. This briefing should cover the entire Army AISR enterprise, demonstrate how the Army intends to meet ISR requirements through fiscal year 2034, and detail which requirements the Army expects other services to provide.

Short Range Reconnaissance Small Unmanned Aircraft System

The committee notes that the Army is conducting a rapid prototyping procurement for a Short Range Reconnaissance (SRR) Small Unmanned Aircraft System (sUAS) and that an acquisition decision for the first tranche of systems is scheduled for the third quarter of fiscal year 2020. The committee acknowledges that the Army could benefit from a platoon-level intelligence, surveillance, and reconnaissance asset and supports the Army's use of a rapid acquisition process focused on available mature systems that could be ready for fielding during fiscal year 2021.

However, the committee is concerned that the Army's expedited process could potentially introduce vulnerabilities into the SRR program. The committee understands that the SRR Tranche I acquisition consisted of several non-traditional vendors and did not necessarily incorporate costs of compliance with Department of Defense cybersecurity policy. The committee commends the Army for seeking innovative solutions but expects the service to consider and fully address security concerns in critical systems intended for operation at the tactical edge.

Therefore, the committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services by December 1, 2020, on the acquisition strategy for all future SRR sUAS tranches. The briefing should include how the Army intends to allow for established domestic sUAS manufacturers with existing full-scale production capability to compete in the prototype phase, SRR compliance with Department of Defense cybersecurity policy and statutory and regulatory bans on Chinese sUAS components in the prototyping phase, and SRR compliance with all applicable Defense Federal Acquisition Regulation Supplement domestic content laws.

UH-72 Lakota helicopter commercial-off-the-shelf modifications

The committee understands the UH-72A Lakota helicopter performs a variety of missions including flight training, medical evacuation, border security, VIP transport, and disaster response. The committee understands there are commercial-off-the-shelf (COTS) technologies that could potentially improve UH-72A communications and health monitoring systems by providing a digital, lightweight, beyond-line-of-sight, push-to-talk radio, with Voice over Internet and real-time fleet health monitoring, recording, and next-generation satellite communications. The committee believes that these same COTS solutions could also potentially improve training on the UH-72A.

The committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services by October 30, 2020, on the status of UH-72A health monitoring capabilities and an assessment of existing COTS solutions that could improve the effectiveness and lifecycle sustainment of the UH-72A fleet.

PROCUREMENT OF WEAPONS AND TRACKED COMBAT VEHICLES, ARMY

Items of Special Interest

M240 medium machine gun modernization and sustainment

The committee remains concerned that the Army has neither planned nor requested sufficient resources to ensure long-term viability of the M240 family of medium machine guns and the associated industrial base. The committee notes that Congress has provided resources to sustain the M240 production line, which the Army has utilized successfully to maintain the program to date. However, the committee requires additional information in response to ongoing concerns related to M240 lifecycle sustainment and management of the associated industrial base. The committee remains concerned over the absence of funding in future years which may result in a shutdown in the M240 production line, which would significantly limit the Army's ability to procure additional weapons as well as lead to reduced capability to maintain existing weapons.

Accordingly, the committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services not later than October 30, 2020, that includes, but is not limited to:

(1) the projected service life of the current M240B inventory and the overall readiness of these machine guns both in the field and in inventory;

(2) the Army's plan and schedule to replace the current M240B inventory either with newer M240 models or an entirely new system;

(3) an updated cost and risk analysis for restarting the M240 production line if allowed to shut down;

(4) a coordinated description and assessment of the M240 production industrial base; and

(5) the advisability, feasibility, and cost of transitioning the Army's entire existing inventory of M240B medium machine guns to the lighter weight M240L model.

PROCUREMENT OF AMMUNITION, ARMY

Items of Special Interest

Shoulder-launched munitions

The committee understands shoulder-launched munitions are used extensively by all branches of the military services including special operation forces in order to defeat a wide variety of targets such as light vehicles, bunkers, and enemy personnel. The committee also notes this wide array of targets has often required unique munitions and weapon system platforms tailored to specific mission requirements. The committee is aware that special operation forces and the Marine Corps both use a variety of shoulder-launched munitions to deliver the necessary battlefield effects, reduce weight on the soldier, and allow for increased mobility. However, the committee requires additional information regarding the Army's strategy and plans for developing and procuring shoulder-launched munitions for brigade combat teams. The committee expects the Army to leverage

and coordinate with the Marine Corps and U.S. Special Operations Command (USSOCOM) regarding the development and procurement of shoulder-launched munitions.

Therefore, the committee directs the Secretary of the Army, in consultation with the Commanding General of Army Futures Command, to provide a briefing to the House Committee on Armed Services by January 31, 2021, on the Army's shoulder-launched munitions acquisition strategy to include how the Army is coordinating jointly with the other military services including USSOCOM.

OTHER PROCUREMENT, ARMY

Items of Special Interest

All-terrain cranes

The budget request contained $70.5 million for all-terrain cranes.

The family of all-terrain cranes (Type I medium and Type II heavy) are critical logistic systems necessary for large-scale combat operations and provide the ability to assemble, disassemble, and maintain bridges for wet or dry gap crossings, as well as provide capabilities to rapidly offload critical supplies such as weapons, ammunition, artillery pieces, fuel, and water. The committee notes these systems are also considered critical dual-use systems supporting both the Active and Reserve Components in title 10 and title 32 operations. The committee supports the budget request; however, the committee does have concerns over the projected funding levels for these critical logistical systems across the Future Years Defense Program.

The committee directs the Program Executive Officer for Combat Support and Combat Service Support to provide a briefing to the House Committee on Armed Services not later than October 30, 2020, on the long-term acquisition strategy for all-terrain crane systems.

The committee recommends $70.5 million, the full amount requested, for all-terrain cranes.

AIRCRAFT PROCUREMENT, NAVY

Items of Special Interest

Department of the Navy Strike-Fighter management

The budget request contained $2.97 billion for the procurement of 24 F/A-18E/F new aircraft, and ongoing modifications, upgrades, and improvements for the existing fleet of Department of the Navy F/A-18 aircraft. However, the budget request did not include the fiscal year 2020 planned advance procurement funding of $28.1 million for fiscal year 2021 that would support the previously planned procurement of 12 F/A-18E/F new aircraft in fiscal year 2022 for the U.S. Navy. The

Navy's budget also eliminated procurement of 24 new aircraft planned in fiscal years 2023 and 2024.

The committee notes that the Navy's decision to eliminate 36 new aircraft from its fiscal year 2022 to 2025 future years defense plan incurs greater risk for combatant commanders and increases the Navy's strike-fighter deficit in fiscal year 2021 from -49 to -58 aircraft. The committee notes this is equivalent to greater than one aircraft carrier air-wing (CVW) quantity of aircraft short of inventory requirements. Additionally, the Navy currently plans its strike-fighter inventory without including traditional margin for attrition reserve aircraft that would supplement forces in cases of training or contingency operational losses of aircraft. The Navy should budget for 54 aircraft per CVW, but instead only budgets for 44 aircraft per CVW. Consequently, the Navy has an actual deficit of -148 strike-fighter aircraft when including attrition reserve planning factors.

The Navy hopes to resolve its strike-fighter deficit in 2030 with initial fielding of its next-generation fighter, FA-XX, which is in the concept development stages of execution. The committee recalls the Navy curtailed F/A-18 procurement approximately 10 years ago with aspirational goals to maintain strike-fighter inventory levels with planned procurement of F-35C. That plan was not realized due to F-35 program execution and subsequently required the Navy to procure additional F/A-18E/F aircraft to reduce operational risk. The committee expects a similar outcome may occur with the Navy's current plan for FA-XX due to affordability and technological challenges, as well as initial results from the F/A-18E/F Service Life Modification (SLM) program. Due to the Navy's non-compliance with field maintenance procedures, practices and tooling recommended by the original equipment manufacturer, compounded by the Navy's inability to consolidate scheduled unit-level maintenance inspections and repairs, the Navy has encountered widespread corrosion in unpredicted areas on F/A-18E/F aircraft causing a 135 percent increase in costs for the initial two aircraft finishing the SLM program. The Navy subsequently reduced the planned induction quantity of aircraft in fiscal year 2021 from 18 to 10 aircraft.

Therefore, the committee supports and encourages the Navy to procure additional F/A-18E/F new aircraft beyond fiscal year 2021. Additionally, the committee directs the Chairman of the Joint Chiefs of Staff to provide a briefing to the House Committee on Armed Services not later than March 1, 2021, that assesses the operational risk incurred for regional combatant commanders to meet steady-state and contingency requirements as a result of the Navy not budgeting for attrition reserve aircraft in its strike-fighter force planning. Finally, the committee directs the Department of Defense Inspector General to provide a report to the congressional defense committees not later than September 30, 2021, that assesses all Active and Reserve Navy and Marine Corps F/A-18C/D/E/F/G aircraft squadrons regarding adherence to organizational and unit-level maintenance and repair technical orders and procedures prescribed by the original equipment manufacturer, in particular those processes and procedures designed to mitigate

damage and degradation to the aircraft and structural components due to corrosion incurred by operations in harsh sand and salt-water environments.

VH-92A Executive Helicopter training aircraft

The VH-92A program is the replacement for the current fleet of executive helicopters flown by Marine Helicopter Squadron One (HMX-1) in support of the Presidential world-wide vertical-lift mission. Despite the importance of the VH-92 mission, the program currently has no dedicated training aircraft for pilot or maintainer flight training and aircraft familiarization. The committee is aware the Department of the Navy is reviewing a requirement for five CH-92A training aircraft to supplement the VH-92A fleet. The committee understands that if the requirement change is validated, the CH-92A aircraft would facilitate Fleet Marine Force pilot and maintainer transition training as well as provide logistic mission support for the executive flight detachment.

Helicopter pilots assigned to HMX-1 go through an extensive pilot conversion training syllabus prior to flying the Presidential missions. The committee recognizes that adding the CH-92A aircraft would enable pilots to maintain monthly and annual flight time minimums without impacting operational Presidential lift assets. The committee also notes that newly assigned aircraft crew chiefs and maintenance personnel could start training on the CH-92A while awaiting their security clearances, a process that can take up to a year to complete.

Accordingly, the committee directs the Secretary of the Navy to provide a report to the House Committee on Armed Services by November 1, 2020, on training requirements for the VH-92A aircraft. This report should encompass flight and maintenance training requirements and should examine the need for dedicated CH-92A trainer aircraft for both training and augmentation of HMX-1 "greenside" operations. The committee expects this report to provide a cost/benefit analysis of acquiring CH-92A aircraft and an assessment of the risk that potential industrial base changes, including a manufacturing facility closure, would pose to the ability to meet a validated trainer aircraft requirement. The National Defense Authorization Act for Fiscal Year 2020 (Public Law 116-92) directed an assessment of risks to the VH-92A industrial base, but the response received from the Secretary of the Navy provided none of the requested information or analysis.

PROCUREMENT, MARINE CORPS

Items of Special Interest

Marine Corps vertical lift munitions

The committee is aware that during fiscal year 2019, the Army conducted a successful test of an allied munition system to demonstrate increased standoff and lethality for the AH-64 Apache helicopter. The committee supports the Army's initiative to field an interim long-range precision munition capability for current

attack helicopters and believes that this capability could potentially provide greater standoff combat capability to similar military platforms, such as the Marine Corps AH-1W SuperCobra or AH-1Z Viper attack helicopter.

Therefore, the committee directs the Secretary of the Navy to provide a briefing to the House Committee on Armed Services by January 15, 2021, on vertical lift munitions capabilities gaps and potential commercial-off-the-shelf solutions that could serve as an interim solution for meeting future Department of the Navy vertical lift demands. The briefing should include an analysis of requirements and costs to test any relevant domestic or allied commercial-off-the-shelf munitions from an AH-1W SuperCobra or AH-1Z Viper Marine Corps attack helicopter.

PROCUREMENT, DEFENSE-WIDE

Items of Special Interest

Commonality and cost efficiencies in degraded visual environment systems

The committee supports recent efforts by the military services to prioritize acquiring enhanced systems to assist aircraft navigating degraded visual environments (DVE). The committee report accompanying the National Defense Authorization Act for Fiscal Year 2020 (H. Rept. 116-120) directed the Secretary of Defense to examine available DVE capabilities and brief the committee on efforts to develop and procure systems to improve safety of flight. The committee understands that U.S. Special Operations Command and the Army plan to field a DVE Quick Reaction Capability on 15 medical evacuation and 25 special operations aircraft deploying to U.S. Central Command. Further, the committee understands that the Air Force awarded a contract last year to install a DVE system on the HH-60G Pave Hawk helicopter.

The committee believes that enhanced DVE should remain a priority for rotary aviation communities and encourages the military services to continue collaborating with the goal of developing and acquiring common joint systems where possible. To that end, the committee directs the Secretary of the Army, in coordination with the Secretary of the Navy and the Secretary of the Air Force, to provide a report to the congressional defense committees, not later than December 1, 2020, on DVE development and acquisition, to include systems in procurement or under consideration for procurement, planned fielding schedules for these systems, identify systems being integrated on multiple programs, as well as identify service- or platform-specific needs requiring unique capability solutions.

TITLE II—RESEARCH, DEVELOPMENT, TEST, AND EVALUATION

RESEARCH, DEVELOPMENT, TEST, AND EVALUATION, ARMY

Items of Special Interest

Auxiliary power units for armored and tactical vehicles

The committee is aware that armored and tactical vehicles may lack enough electrical power to accommodate the weapons, sensors, and payloads needed for effective operations in current and future combat environments. The committee understands that some of these power generation shortfalls could be addressed using auxiliary power units (APU), however, existing APU's are often impractical for use on Army vehicles due to their large size and weight.

The committee understands that there are research and development efforts to develop innovative small generators and APUs that could provide significant improvements in size, weight, and fuel efficiency. The committee encourages the Army to explore these innovative systems for potential use on current armored and tactical vehicles as well as the next generation combat vehicles, such as the Optionally Manned Fighting Vehicle and Robotic Combat Vehicles.

Accordingly, the committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services by October 30, 2020, on efforts to address power generation requirements for its current and future ground combat and tactical vehicle fleets. The report shall include, but not be limited to:

(1) an overview of current ground combat and tactical vehicles demonstrating significant power generation problems, and the resulting operational impacts;

(2) an analysis of expected power generation requirements for the systems contemplated as part of the Next Generation Combat Vehicle Program; and

(3) any current or planned efforts to explore innovative small form factor auxiliary power units for armored or tactical vehicles.

Electrification of Army combat and tactical vehicles

The committee understands that electric or hybrid-electric powertrains could increase performance, allow relatively silent operation, generate significant on-board power generation, and reduce the logistical burden associated with transporting and storing fuel. The committee notes the Army has for several years been working on electrification and has experimented with hybrid-electric tactical wheeled vehicles to include successful efforts to integrate on-board vehicle electric power through a Transmission Integral Generator for the Army's Terminal High Altitude Air Defense launcher. The committee is not aware, however, of any plans for the further development or integration of electrification technologies into combat and tactical vehicles and believes the Army should continue to invest and consider the potential military applications of this technology given rapidly advancing commercial industry developments.

Accordingly, the committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services by December 15, 2020, on the

status of its electrification research and development strategy for combat and tactical vehicles. The briefing should include, but not be limited to:

(1) current and future requirements and opportunities for electrification of combat and tactical vehicles, including such vehicle capabilities that could be related and necessary based on the 2018 National Defense Strategy, operational plans, or to satisfy concepts for Multi-Domain Operations;

(2) the current and future priorities for electrification of combat and tactical vehicles including plans, if any, to spiral hybrid-electric powertrains into existing combat and tactical vehicles;

(3) a description and assessment of potential Army timelines for initial, partial, and full electrification of existing and future combat and tactical vehicles; and

(4) details of ongoing science and technology initiatives that involve hybrid-electric propulsion and full-electric drive of combat and tactical vehicles to include plans, if any, to further develop integrated electric axle technology, motors and generators, power electronics, inverters, converters, energy storage systems, and transmissions.

Future Vertical Lift sensor payloads

The committee expects the Army's Future Vertical Lift (FVL) program to field advanced sensor payloads capable of detecting, tracking, and countering threats in the future operational environment. The committee notes that the Army has yet to define the acquisition strategy for FVL mission equipment payloads and sensors, despite an accelerated platform development schedule. The committee understands that fielding mission equipment that is as advanced and capable as the platforms themselves will require investment and development in the coming years. The committee is concerned that without a well-defined acquisition strategy and risk reduction effort for mission equipment payloads and sensors, industry will be unable to make the investments necessary to deliver advanced capabilities on time for FVL programs.

Therefore, the committee directs the Secretary of the Army to submit a report to the Committees on Armed Services of the Senate and the House of Representatives by December 1, 2020, on Future Vertical Lift mission equipment payloads and sensors. The report should include:

(1) the acquisition strategy for FVL mission equipment payloads and sensors, including radar, electronic warfare, 360 degree distributed aperture, missile warning, and advanced electro-optical infrared;

(2) planned risk reduction activities for the sensor payloads; and

(3) an estimate of the cost and schedule for the development and production of required sensor payloads.

Next generation Integrated Visual Augmentation System

The committee is aware that the Integrated Visual Augmentation System (IVAS) is due to begin delivering first units to the Army in the fourth quarter of fiscal year 2021. The committee is further aware that a decision point for second generation of IVAS (IVAS 2.0) development is due to occur early in fiscal year 2023. Following the IVAS 2.0 decision point, development of the next generation of the program is projected to start at the beginning of fiscal year 2024.

However, due to the large quantity of hardware, software, and funds allocated for the program, as well as an aggressive development schedule, the committee expects the Army to utilize this technology in developing any new heads-up displays for air and ground vehicles. Therefore, the committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services not later than December 1, 2020, on how the Army plans to integrate IVAS technology across major Army platforms, including but not limited to air and ground vehicle operators.

Stryker weapons station commonality

The committee is aware of and supports current Army efforts to modify Stryker infantry carriers to improve anti-armor and air defense capabilities and capacities. These programs include integration of a 30mm cannon in a Medium Caliber Weapon System (MCWS) for anti-armor and Stinger missiles, as well as other weapons, in an Initial Maneuver Short-Range Air Defense (IM-SHORAD) system for air defense. The committee notes and supports that the Army is currently conducting a full and open competition for the MCWS. The committee also notes both of these systems would be based upon an unmanned but accessible turreted vehicle weapons station. In this regard, the committee is interested to know what advantages, if any, the Army could gain by developing as much commonality as possible between both systems with turret hardware and fire control software. Commonality has the potential to reduce the overall acquisition and life cycle management costs of both weapons systems.

Accordingly, the committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services not later than February 1, 2021, on the potential and plans, if any, for achieving commonality of the MCWS and IM-SHORAD weapons stations.

RESEARCH, DEVELOPMENT, TEST, AND EVALUATION, AIR FORCE

Items of Special Interest

Assessment of the Air Force Test Center enterprise

The committee recognizes the importance of the Air Force Test Center (AFTC) and the invaluable developmental test and evaluation of air, space, and cyber systems conducted throughout the AFTC enterprise. The committee understands that as threats evolve and the complexity of integrating technology

increases, the AFTC faces unique and unprecedented challenges in fulfilling its mission. These challenges include funding for critical sustainment, restoration, and modernization of relevant test capabilities; development and growth of hypersonic infrastructure and sufficient testing capabilities; and, increasing workforce recruitment, retention and expertise. The committee identified several of these challenges in the committee report accompanying the National Defense Authorization Act for Fiscal Year 2018 (H. Rept. 115-200) and directed an assessment of the AFTC enterprise by the Secretary of the Air Force. Accordingly, the committee acknowledges that given the current growth of requirements and advanced weapon system development capabilities needed, the previous AFTC assessment should be updated to provide relevant information on the challenges confronting the AFTC enterprise.

Therefore, the committee directs the Secretary of the Air Force to provide a report to the congressional defense committees not later than December 1, 2020, that updates the information contained in the report submitted by the Secretary that was required by H. Rept. 115-200.