H.R. 2500—FY20 NATIONAL DEFENSE AUTHORIZATION BILL

SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES

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This section would require the Secretary of Defense to designate the F-15EX program as a major subprogram and subject it to relevant reporting requirements and criteria pertinent to a major subprogram. The section would allow the Secretary of the Air Force to procure two F-15EX aircraft for prototype development but would prohibit the procurement of any additional aircraft until 30 days after the Secretary submits F-15EX program plans for development, acquisition, and fielding to the congressional defense committees.

Section 126—Limitation on Availability of Funds for Retirement of RC-135 Aircraft

This section would prohibit any use of funds authorized to be appropriated in fiscal year 2020 for the Air Force to retire, or prepare to retire, any RC-135 aircraft 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 127—Report on Aircraft Fleet of the Civil Air Patrol

This section would require the Secretary of the Air Force to submit a report to the congressional defense committees not later than 90 days after the date of the enactment of this Act on the Civil Air Patrol (CAP) that identifies and assesses the suitability of the current CAP aircraft fleet size, types of aircraft, and operating locations to meet mission requirements.

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This section would authorize the Secretary of Defense to procure economic order quantities of material and equipment for the F-35 program. This section would also authorize the Secretary to procure F-35 aircraft exceeding the quantity otherwise authorized by this Act if procurement of additional aircraft would not require additional funds to be authorized or appropriated.

Section 132—Program Requirements for the F-35 Aircraft Program

This section would require the Secretary of Defense to designate Block 4 capability as a major subprogram of the F-35 program and subject Block 4 to relevant reporting requirements and criteria pertinent to a major subprogram. This section would require the Secretaries of the Air Force and the Navy to develop a joint service cost position for F-35 life-cycle costs, and require the Director, Cost Assessment and Program Evaluation to develop an independent life-cycle cost estimate for comparison. This section would also require the Secretary of Defense to revise the Department of Defense's program element structure for F-35 beginning with the fiscal year 2021 President's budget request and subsequent budget requests to provide sufficient transparency regarding future F-35 costs. Finally, this section would require the Comptroller General of the United States to provide an annual report for five consecutive years, submitted each year not later than 30 days after the President's annual budget submission to Congress, that reviews the F-35 program.

Section 133—Reports on F-35 Aircraft Program

This section would require the Secretary of Defense to provide reports to the congressional defense committees on F-35 reliability and maintainability metrics, Block 4 capability development and fielding activities, and modernization and upgrade plans for the F-35 Autonomic Logistics Information System.

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Section 213—Sensor Data Integration for Fifth Generation Aircraft

This section would require the Secretary of Defense to ensure fifth generation aircraft such as the F-35, F-22, and B-21 can share and disseminate data collected by on-board sensors with other joint service users and platforms. This section would further require the Comptroller General of the United States to assess and provide an interim briefing to the congressional defense committees within 180 days after the date of the enactment of this Act, the Department's doctrinal, organizational, and technological methods of managing sensor data collected by fifth generation aircraft and the ability of fifth generation aircraft to share information collected in real-time with other joint service users and platforms.

Section 214—Documentation Relating to Advanced Battle Management System

This section would require the Secretary of the Air Force to provide program documentation for the Advanced Battle Management System (ABMS) family of systems.

The fiscal year 2019 budget request for the Air Force cancelled the long-planned Joint Surveillance Target Attack Radar System recapitalization and included a small amount of funding in existing programs as a bridge to a new concept for comprehensive battle management command and control. The committee notes that this concept, the Advanced Battle Management System, envisions several existing airborne and ground intelligence, surveillance, and reconnaissance (ISR) and command and control systems connected by resilient, protected communications and data links.

The budget request provided limited programmatic details on ABMS. The committee is concerned with the lack of discernible benchmarks to assess and measure progress. The committee understands that the ABMS Analysis of Alternatives (AOA) will conclude in 2019. At that time, the committee expects the Air Force to complete the documentation requested by this section and submit it to the congressional defense committees not later than 180 days after completion of the AOA.

The committee also notes that Air Force modernization plans rely on introducing artificial intelligence and machine learning into a range of major weapon systems. Given the intended capability of ABMS, the committee believes the Air Force should consider prototyping and demonstrating the utility of artificial intelligence and automated sensor fusion as part of the ABMS concept.

SUBTITLE C—REPORTS AND OTHER MATTERS

Section 227—Quarterly Updates on the Optionally Manned Fighting Vehicle Program

This section would require the Assistant Secretary of the Army for Acquisition, Logistics, and Technology to provide quarterly briefings, beginning October 1, 2019, to the congressional defense committees on the status and progress of the Optionally Manned Fighting Vehicle program.

TITLE X—GENERAL PROVISIONS

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Section 1067—Army Aviation Strategic Plan and Modernization Roadmap

This section would require the Secretary of the Army to provide a comprehensive strategy to the congressional defense committees by March 30, 2020, for Army aviation to ensure alignment between requirements, future Army budget submissions, and authorization of appropriations. The required strategy would cover both current and future multi-domain operations for Army aviation.

The fiscal year 2020 budget request for the Army included several significant changes to aviation modernization programs. While these changes may align with the long-term Army aviation strategy, the committee is concerned with the absence of such a strategy that incorporates both current and future capabilities.

Section 1068—Report on Ground-Based Long-Range Artillery to Counter Land and Maritime Threats

This section would require the Secretary of Defense to provide a report to the congressional defense committees not later than March 1, 2020, on the integration of emerging long range ground-based fires to counter land and maritime threats, particularly those in the U.S. Indo-Pacific Command and U.S. European Command areas of responsibility.

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SEC. 116 [Log 69560]. LIMITATION ON AVAILABILITY OF FUNDS PENDING QUARTERLY UPDATES ON THE CH–53K KING STALLION HELICOPTER PROGRAM.

(a) LIMITATION.—Of the funds authorized to be appropriated by this Act or otherwise made available for fiscal year 2020 for aircraft procurement, Navy, for the CH–53K King Stallion helicopter program, not more than 50 percent may be obligated or expended until a period of 30 days has elapsed following the date on which the Secretary of the Navy provides the first briefing required under subsection (b).

(b) QUARTERLY BRIEFINGS REQUIRED.—

(1) IN GENERAL.—Beginning not later than October 1, 2019, and on a quarterly basis thereafter through October 1, 2022, the Secretary of the Navy shall provide to the Committee on Armed Services of the House of Representatives a briefing on the progress of the CH–53K King Stallion helicopter program.

(2) ELEMENTS.—Each briefing under paragraph (1) shall include, with respect to the CH–53K King Stallion helicopter program, the following:

(A) An overview of the program schedule.

(B) A statement of the total cost of the program as of the date of the briefing, includ-

ing the costs of development, testing, and production.

(C) A comparison of the total cost of the program relative to the approved acquisition program baseline.

(D) An assessment of flight testing under the program, including identification of the number of test events have been conducted on-time in accordance with the joint integrated program schedule.

(E) An update on the correction of technical deficiencies under the program, including—

(i) identification of the technical deficiencies that have been corrected as of the date of the briefing;

(ii) identification of the technical deficiencies that have been discovered, but not corrected, as of such date;

(iii) an estimate of the total cost of correcting technical deficiencies under the program; and

(iv) an explanation of any significant deviations from the testing and program schedule that are anticipated due to the

discovery and correction of technical deficiencies.

SEC. 123 [Log 69528]. F–15EX AIRCRAFT PROGRAM.

(a) DESIGNATION OF MAJOR SUBPROGRAM.—In accordance with section 2430a of title 10, United States Code, the Secretary of Defense shall designate the F–15EX program as a major subprogram of the F–15 aircraft program.

(b) LIMITATION.—Except as provided in subsection (c), none of the funds authorized to be appropriated by this Act or otherwise made available for fiscal year 2020 for the Air Force may be obligated or expended to procure an F–15EX aircraft until a period of 30 days has elapsed following the date on which the Secretary of the Air Force submits to the congressional defense committees the following documentation relating to the F–15EX program:

(1) A program acquisition strategy.

(2) An acquisition program baseline.

(3) A test and evaluation master plan.

(4) A life-cycle sustainment plan.

(5) A post-production fielding strategy.

(c) EXCEPTION FOR PRODUCTION OF PROTOTYPES.—

(1) IN GENERAL.—Notwithstanding subsection (b), the Secretary of the Air Force may use the funds described in paragraph (2) to develop, produce, and test not more than two prototypes of the F–15EX aircraft.

(2) FUNDS DESCRIBED.—The funds described in this paragraph are funds authorized to be appropriated by this Act or otherwise made available for fiscal year 2020 for the Air Force for any of the following:

(A) Research and development, non-recurring engineering.

(B) Aircraft procurement.

(d) F–15EX PROGRAM DEFINED.—In this section, the term ''F–15EX program'' means the F–15EX aircraft program of the Air Force as described in the materials submitted to Congress by the Secretary of Defense in support of the budget of the President for fiscal year 2020 (as submitted to Congress under section 1105(a) of title 31, United States Code).

SEC. 126 [Log 69668]. LIMITATION ON AVAILABILITY OF FUNDS FOR RETIREMENT OF RC–135 AIRCRAFT.

(a) LIMITATION.—Except as provided in subsection (b), none of the funds authorized to be appropriated by this Act or otherwise made available for fiscal year 2020 for the Air Force may be obligated or expended to retire, or prepare to retire, any RC–135 aircraft until a period of 60 days has elapsed following the date on which the Secretary of Defense certifies to the congressional defense committees that—

(1) technologies other than the RC–135 aircraft provide capacity and capabilities equivalent to the capacity and capabilities of the RC–135 aircraft; and

(2) the capacity and capabilities of such other technologies meet the requirements of combatant commanders with respect to indications and warning, intelligence preparation of the operational environment, and direct support for kinetic and non-kinetic operations.

(b) EXCEPTION.—The limitation in subsection (a) shall not apply to individual RC–135 aircraft that the Secretary of the Air Force determines, on a case-by-case basis, to be no longer mission capable because of mishaps, other damage, or being uneconomical to repair.

SEC. 127 [Log 69740]. REPORT ON AIRCRAFT FLEET OF THE CIVIL AIR PATROL.

(a) REPORT.—Not later than 90 days after the date of the enactment of this Act, the Secretary of the Air Force shall submit to the congressional defense committees a report on the aircraft fleet of the Civil Air Patrol.

(b) ELEMENTS.—The report required by subsection (a) shall include an assessment of each of the following:

(1) Whether the number of aircraft, types of aircraft, and operating locations that comprise the Civil Air Patrol fleet are suitable for the missions and responsibilities assigned to the Civil Air Patrol, including—

(A) flight proficiency and training;

(B) operational mission training; and

(C) support for cadet orientation and cadet flight training programs in the Civil Air Patrol wing of each State.

(2) The ideal overall size of the Civil Air Patrol aircraft fleet, including a description of the factors used to determine that ideal size.

(3) The process used by the Civil Air Patrol and the Air Force to determine the number and location of aircraft operating locations and whether State Civil Air Patrol wing commanders are appropriately involved in that process.

(4) The process used by the Civil Air Patrol, the Air Force, and other relevant entities to determine the type and number of aircraft that are needed to support the emergency, operational, and training missions of the Civil Air Patrol.

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

SEC. 131 [Log 69520]. ECONOMIC ORDER QUANTITY CONTRACTING AND BUY-TO-BUDGET ACQUISITION FOR F–35 AIRCRAFT PROGRAM.

(a) ECONOMIC ORDER QUANTITY CONTRACT AUTHORITY.—

(1) IN GENERAL.—Subject to paragraphs (2) through (5), from amounts made available for obligation under the F–35 aircraft program for fiscal year 2020, the Secretary of Defense may enter into one or more contracts, beginning with the fiscal year 2020 program year, for the procurement of economic order quantities of material and equipment that has completed formal hardware qualification testing for the F–35 aircraft program for use in procurement contracts to be awarded for such program during fiscal years 2021, 2022, and 2023.

(2) LIMITATION.—The total amount obligated under all contracts entered into under paragraph (1) shall not exceed $574,000,000.

(3) PRELIMINARY FINDINGS.—Before entering into a contract under paragraph (1), the Secretary of Defense shall make each of the following findings with respect to such contract:

(A) The use of such a contract will result in significant savings of the total anticipated costs of carrying out the program through annual contracts.

(B) The minimum need for the property to be procured is expected to remain substantially unchanged during the contemplated contract period in terms of production rate, procurement rate, and total quantities.

(C) There is a reasonable expectation that, throughout the contemplated contract period, the Secretary will request funding for the contract at the level required to avoid contract cancellation.

(D) That there is a stable, certified, and qualified design for the property to be procured and that the technical risks and redesign risks associated with such property are low.

(E) The estimates of both the cost of the contract and the anticipated cost avoidance through the use of an economic order quantity contract are realistic.

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

(4) CERTIFICATION REQUIREMENT.—Except as provided in paragraph (5), the Secretary of Defense may not enter into a contract under paragraph (1) until a period of 30 days has elapsed following the date on which the Secretary certifies to the congressional defense committees, in writing, that each of the following conditions is satisfied:

(A) A sufficient number of end items of the system being acquired under such contract have been delivered at or within the most recently available estimates of the program acquisition unit cost or procurement unit cost for such system to determine that the estimates of the unit costs are realistic.

(B) During the fiscal year in which such contract is to be awarded, sufficient funds will be available to perform the contract in such fiscal year, and the future-years defense program submitted to Congress under section 221 of title 10, United States Code, for that fiscal year will include the funding required to execute the program without cancellation.

(C) The contract is a fixed-price type contract.

(D) The proposed contract provides for production at not less than minimum economic rates given the existing tooling and facilities.

(E) The Secretary has determined that each of the conditions described in subparagraphs (A) through (F) of paragraph (3) will be met by such contract and has provided the basis for such determination to the congressional defense committees.

(F) The determination under subparagraph (E) was made after the completion of a cost analysis performed by the Director of Cost Assessment and Program Evaluation for the purpose of section 2334 of title 10, United States Code, and the analysis supports that determination.

(5) EXCEPTION.—Notwithstanding paragraph (4), the Secretary of Defense may enter into a contract under paragraph (1) on or after March 1, 2020, if—

(A) the Director of Cost Assessment and Program Evaluation has not completed a cost analysis of the preliminary findings made by the Secretary under paragraph (3) with respect to the contract;

(B) the Secretary certifies to the congressional defense committees, in writing, that each of the conditions described in subparagraphs (A) through (E) of paragraph (4) is satisfied; and

(C) a period of 30 days has elapsed following the date on which the Secretary submits the certification under subparagraph (B).

(b) BUY-TO-BUDGET ACQUISITION.—Subject to section 2308 of title 10, United States Code, using funds authorized to be appropriated by this Act for the procurement of F–35 aircraft, the Secretary of Defense may procure a quantity of F–35 aircraft in excess of the quantity authorized by this Act if such additional procurement does not require additional funds to be authorized to be appropriated because of production efficiencies or other cost reductions.

SEC. 132 [Log 69521]. PROGRAM REQUIREMENTS FOR THE F–35 AIRCRAFT PROGRAM.

(a) DESIGNATION OF MAJOR SUBPROGRAM.—In accordance with section 2430a of title 10, United States Code, the Secretary of Defense shall designate F–35 Block 4 as a major subprogram of the F–35 aircraft program.

(b) COST ESTIMATES.—

(1) JOINT COST ESTIMATE.—The Secretary of the Air Force and the Secretary of the Navy shall jointly develop a joint service cost estimate for the life-cycle costs of the F–35 aircraft program.

(2) INDEPENDENT COST ESTIMATE.—The Director of Cost Assessment and Program Evaluation shall develop an independent cost estimate for the life-cycle costs of the F–35 aircraft program.

(3) SUBMITTAL TO CONGRESS.—The cost estimates required under paragraphs (1) and (2) shall be submitted to the congressional defense committees not later than 180 days after the date of the enactment of this Act.

(c) REVISION OF PROGRAM ELEMENTS.—

(1) REVISION REQUIRED.—The Secretary of Defense shall revise the program elements applicable to the F–35 aircraft program as follows:

(A) RESEARCH AND DEVELOPMENT.—The program element for research and development

costs (as that element was specified in the materials submitted to Congress by the Secretary of Defense in support of the budget of the President for fiscal year 2020 (as submitted to Congress under section 1105(a) of title 31, United States Code)) shall be separated into the following individual program elements:

(i) System development and demonstration closeout.

(ii) F–35 Block 4.

(iii) Autonomic logistics information system development and upgrades.

(iv) Dual-capable aircraft.

(v) Test infrastructure.

(vi) Additional program budget elements, as required, for each modernization or upgrade effort initiated after F–35 Block 4.

(B) PROCUREMENT.—The program element for procurement costs (as that element was specified in the materials submitted to Congress by the Secretary of Defense in support of the budget of the President for fiscal year 2020 (as submitted to Congress under section 1105(a) of title 31, United States Code)) shall

be separated into the following individual program elements:

(i) Recurring fly-away and ancillary equipment.

(ii) Non-recurring fly-away and ancillary equipment.

(iii) F–35 Block 4.

(iv) Autonomic logistics information system.

(v) Dual-capable aircraft.

(vi) Engineering support.

(vii) Aircraft retrofit and modification.

(viii) Depot activation.

(ix) Initial spares.

(x) Production support.

(2) INCLUSION IN BUDGET MATERIALS.—The Secretary of Defense shall ensure that each revised program element described in paragraph (1) is included, with a specific dollar amount, in the materials relating to the F–35 aircraft program submitted to Congress by the Secretary of Defense in support of the budget of the President (as submitted to Congress under section 1105(a) of title 31, United States Code) for fiscal year 2021 and each

fiscal year thereafter until the date on which the F–35 aircraft program terminates.

(d) COMPTROLLER GENERAL REPORTS.—

(1) ANNUAL REPORT REQUIRED.—Not later than 30 days after the date on which the budget of the President is submitted to Congress under section 1105(a) of title 31, United States Code, for each of fiscal years 2021 through 2025, the Comptroller General of the United States shall submit to the congressional defense committees a report on the F–35 aircraft program.

(2) ELEMENTS.—Each report under paragraph (1) shall include, with respect to the F–35 aircraft program, the following:

(A) An assessment of the progress of manufacturing processes improvement under the program.

(B) The business case analysis of the Department of Defense for F–35 Block 4 follow-on modernization efforts.

(C) The progress and results of F–35 Block 4 and other follow-on modernization development and testing efforts.

(D) The Department's schedule for delivering software upgrades in six-month, scheduled increments.

(E) The progress and results of any other significant hardware development and fielding efforts necessary for F–35 Block 4.

(F) Any other issues the Comptroller General determines to be appropriate.

(e) F–35 BLOCK 4 DEFINED.—In this section, the term ''F–35 Block 4'' means Block 4 capability upgrades for the F–35 aircraft program as described in the Selected Acquisition Report for the program submitted to Congress in March 2019, pursuant to section 2432 of title 10, United States Code.

SEC. 133 [Log 69523]. REPORTS ON F–35 AIRCRAFT PROGRAM.

(a) REPORT ON F–35 RELIABILITY AND MAINTAINABILITY METRICS.—The Secretary of Defense shall submit to the congressional defense committees a report on the reliability and maintainability metrics for the F–35 aircraft. The report shall include the following:

(1) The results of a review and assessment, conducted by the program office for the F–35 aircraft program, of the reliability and maintainability metrics for the aircraft as set forth in the most recent operational requirements document for the program.

(2) A determination of whether the reliability and maintainability metrics for the aircraft, as set forth in the most recent operational requirements document for the program, are feasible and attainable, and what changes, if any, will be made to update the metrics.

(3) A certification that the program office for the F–35 aircraft program has revised the reliability and maintainability improvement plan for the aircraft—

(A) to identify specific and measurable reliability and maintainability objectives in the improvement plan guidance; and

(B) to identify and document which projects included in the improvement plan will achieve the objectives identified under subparagraph (A).

(b) REPORT ON F–35 BLOCK 4.—

(1) IN GENERAL.—The Secretary of Defense shall submit to the congressional defense committees a report on F–35 Block 4. The report shall include the following:

(A) The results of an independent cost estimate for F–35 Block 4 conducted by the Director of Cost Assessment and Program Evaluation.

(B) A test and evaluation master plan, approved by the Director of Operational Test and Evaluation, that addresses testing resources, testing aircraft shortfalls, and testing funding.

(C) A technology readiness assessment of all technologies and capabilities planned for F–35 Block 4 conducted by the Under Secretary of Defense for Research and Engineering.

(D) A review of the feasibility of the continuous capability development and delivery strategy for fielding F–35 Block 4 technologies

conducted by the Under Secretary of Defense for Research and Engineering.

(2) F–35 BLOCK 4 DEFINED.—In this subsection, the term ''F–35 Block 4'' has the meaning given that term in section 132(e).

(c) REPORT ON F–35 AUTONOMIC LOGISTICS INFORMATION SYSTEM.—The Secretary of Defense shall submit to the congressional defense committees a report on the autonomic logistics information system of the F–35 aircraft. The report shall include a description of each of the following:

(1) All shortfalls, capability gaps, and deficiencies in the system that have been identified as of the date of the enactment of this Act.

(2) The strategy and performance requirements that will be implemented to improve the system.

(3) The strategy, implementation plan, schedule, and estimated costs of developing and fielding—

(A) the next generation of the system; or

(B) future increments of the system.

(d) DEADLINE FOR SUBMITTAL.—The reports required under subsections (a) through (c) shall be submitted to the congressional defense committees not later than 180 days after the date of the enactment of this Act.

SEC. 213 [Log 69666]. SENSOR DATA INTEGRATION FOR FIFTH GENERATION AIRCRAFT.

(a) F–35 SENSOR DATA.—The Secretary of Defense shall ensure that—

(1) information collected by the passive and active on-board sensors of the F–35 Joint Strike Fighter aircraft is capable of being shared, in real time, with joint service users in cases in which the Joint Force Commander determines that sharing such information would be operationally advantageous; and

(2) the Secretary has developed achievable, effective, and suitable concepts and supporting technical architectures to collect, store, manage, and disseminate information collected by such sensors.

(b) GAO STUDY AND REPORT.—

(1) STUDY.—The Comptroller General of the United States shall conduct a study of the sensor data collection and dissemination capability of fifth generation aircraft of the Department of Defense.

(2) ELEMENTS.—The study required by paragraph (1) shall include an assessment of the following—

(A) the extent to which the Department has established doctrinal, organizational, or technological methods of managing the large

amount of sensor data that is currently collected and which may be collected by existing and planned advanced fifth generation aircraft;

(B) the status of the existing sensor data collection, storage, dissemination, and management capability and capacity of fifth generation aircraft, including the F–35, the F–22, and the B–21; and

(C) the ability of the F–35 aircraft and other fifth generation aircraft to share information collected by the aircraft in real-time with other joint service users as described in subsection (a)(1).

(3) STUDY RESULTS.—

(A) INTERIM BRIEFING.—Not later than 180 days after the date of the enactment of this Act, the Comptroller General shall provide to the congressional defense committees a briefing on the preliminary findings of the study conducted under this subsection.

(B) FINAL RESULTS.—The Comptroller General shall provide the final results of the study conducted under this subsection to the congressional defense committees at such time and in such format as is mutually agreed upon

by the committees and the Comptroller General at the time of the briefing under subparagraph (A).

SEC. 214 [Log 69556]. DOCUMENTATION RELATING TO ADVANCED BATTLE MANAGEMENT SYSTEM.

(a) DOCUMENTATION REQUIRED.—Not later than the date specified in subsection (b), the Secretary of the Air Force shall submit to the congressional defense committees the following documentation relating to the Advanced Battle Management System:

(1) A list that identifies each program, project, and activity that comprises the System.

(2) The final analysis of alternatives for the System.

(3) An acquisition strategy for the System, including—

(A) an outline of each increment of the System; and

(B) the date on which each increment will reach initial operational capability and full operational capability, respectively.

(4) A capability development document for the System.

(5) An acquisition program baseline for the System.

(6) A test and evaluation master plan for the System.

(7) A life-cycle sustainment plan for the System.

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

(1) the date that is 180 days after the date on which the final analysis of alternatives for the Advanced Battle Management System is completed; or

(2) April 1, 2020.

(c) ADVANCED BATTLE MANAGEMENT SYSTEM DEFINED.—In this section, the term ''Advanced Battle Management System'' means the Advanced Battle Management System of Systems capability of the Air Force, including each program, project, and activity that comprises such capability.

SEC. 227 [Log 70116]. QUARTERLY UPDATES ON THE OPTIONALLY MANNED FIGHTING VEHICLE PROGRAM.

(a) IN GENERAL.—Beginning not later than October 1, 2019, and on a quarterly basis thereafter through October 1, 2025, the Assistant Secretary of the Army for Acquisition, Logistics, and Technology, in consultation with the Commander of the Army Futures Command, shall provide to the Committee on Armed Services of the House of Representatives a briefing on the progress of the Optionally Manned Fighting Vehicle program of the Army.

(b) ELEMENTS.—Each briefing under subsection (a) shall include, with respect to the Optionally Manned Fighting Vehicle program, the following elements:

(1) An overview of funding for the program, including identification of—

(A) any obligations and expenditures that have been made under the program; and

(B) any obligations and expenditures that are planned for the program.

(2) An overview of the program schedule.

(3) A description of each contract awarded under the program, including a description of the type of contract and the status of the contract.

(4) An assessment of the status of the program with respect to—

(A) the development and approval of technical requirements;

(B) technological maturity;

(C) testing;

(D) delivery; and

(E) program management.

SEC. 1067 [Log 69482]. ARMY AVIATION STRATEGIC PLAN AND MODERNIZATION ROADMAP.

(a) STRATEGIC PLAN AND MODERNIZATION ROADMAP.—

(1) IN GENERAL.—The Secretary of the Army shall develop a comprehensive strategic plan for Army aviation, which shall be designed to—

(A) ensure the alignment between requirements, both current and future, and Army 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 missions for Army aviation, both current missions and those missions necessary to support the national defense strategy and the U.S. Army in Multi-Domain Operations 2028 concept.

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

(C) The required 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.—Not later than March 30, 2020, the Secretary of the Army shall submit to the congressional defense committees a report containing—

(1) the comprehensive strategic plan required by subsection (a); and

(2) a sustainment and modernization plan for carrying out such strategic plan through fiscal year 2028.

SEC. 1068 [Log 69667]. REPORT ON GROUND-BASED LONG-RANGE ARTILLERY TO COUNTER LAND AND MARITIME THREATS.

(a) IN GENERAL.—Not later than March 1, 2020, the Secretary of Defense shall submit to the Committees on Armed Services of the Senate and House of Representatives a report on the efforts by the Army and Marine Corps to develop and deploy ground-based long-range rocket and cannon artillery to counter land and maritime threats.

(b) ELEMENTS.—The report required by subsection (a) shall include each of the following:

(1) An assessment of ongoing and future Army and Marine Corps efforts to develop and deploy ground-based long-range rocket and cannon artillery to counter land and maritime fires in the areas of operations of United States Indo-Pacific Command and United States European Command.

(2) An assessment of and recommendations for how the Department of Defense can improve the development and deployment of such artillery.

(3) An analysis and assessment of how such artillery employed in support of the Armed Forces of the United States and allied forces would be deployed, positioned, and controlled to operate effectively against potential adversaries throughout the

depth of their tactical, operational, and strategic formations, including any recommendations of the Secretary regarding how such support could be enhanced.

(c) FORM OF REPORT.—The report required by subsection (a) shall be submitted in unclassified form, but may contain a classified annex.

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Items of Special Interest

UH-72A Light Utility Helicopter

The committee understands the UH-72A Lakota helicopter provides general aviation support for aviation units in the Active and Reserve Components. The committee supports the requirement to conduct mid-life sustainment and product improvement activities for the UH-72A, and supports funding to conduct the analysis, engineering, certification, and risk reduction activities necessary to update the UH-72A Life Cycle Support Plan. The committee also recognizes that the UH-72A was initially fielded without aircraft survivability equipment, which could potentially limit the Active Component and Army National Guard utilization of the UH-72A platform. As reflected in division D of this Act, the committee recommends additional funding for the National Guard and Reserve Component Equipment Account (NGREA). The committee understands that while no requirements have been formally identified for UH-72A Lakota ballistic armor or aircraft survivability equipment by the National Guard Bureau, should a requirement be put forth, the committee expects the Army National Guard to utilize NGREA funds.

The committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services by February 1, 2020, on the Army's long-term sustainment strategy for the UH-72A Lakota helicopter fleet.

MISSILE PROCUREMENT, ARMY

Items of Special Interest

Indirect Fire Protection Capability Increment 2 system of systems

The committee understands that the Indirect Fire Protection Capability Increment 2 system of systems (IFPC Inc 2) is a mobile, ground-based weapon system intended to defend fixed and semi-fixed sites and address numerous capability gaps for cruise missile defense (CMD), counter-unmanned aerial systems (C-UAS), and counter-rocket, artillery, and mortar (C-RAM). The committee notes that since March 2018, the Army has evaluated existing air defense systems in order to rapidly acquire and field an interim capability while concurrently evaluating solutions for an enduring IFPC Inc 2 system to meet the full spectrum of requirements and threats. The committee understands that based on the Army's analysis of cost, schedule, and performance, as well as the fielding requirements for

an interim CMD capability required by section 112 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115-232), the Army will field two interim IFPC batteries of Iron Dome in fiscal year 2020, while concurrently developing and evaluating a launcher and interceptor solution for an enduring IFPC capability.

The committee supports the Army's IFPC system acquisition strategy, including the immediate procurement of two Iron Dome batteries to meet the statutory schedule requirements for an interim capability. The committee encourages the Army to continue with current experimentation plans for the enduring IFPC system to better understand the complexity of integration of potential launcher and interceptor solutions. Accordingly, the committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services by November 1, 2019, on the progress of fielding an Iron Dome interim IFPC system for CMD, as well as an update on the status of development of an enduring capability for IFPC Inc 2.

TOW 2B missile system

The committee is aware that the Army is developing the next version of its TOW 2B tactical missile system that will serve as the primary anti-armor weapon for the Optionally Manned Fighting Vehicle (OMFV) program. The committee also understands that the Army wants to accelerate development and fielding of the OMFV, but it is not clear that the development and fielding schedule for the new TOW 2B missile is aligned with the schedule for OMFV.

Accordingly, the committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services by February 3, 2020, on the current plans for development and fielding of the TOW 2B missile, including how the Army will synchronize the availability of a new TOW 2B missile with fielding of the OMFV.

PROCUREMENT OF WEAPONS AND TRACKED COMBAT VEHICLES, ARMY

Items of Special Interest

Vehicle active protection systems

The committee understands the Army is working quickly to procure and field non-developmental item (NDI) vehicle active protection systems (V-APS) for combat and tactical vehicles to address immediate operational needs. The committee notes for example the Army will procure equipment sets of Trophy APS for installation on the M1 Abrams tanks of four armored brigades, including a brigade set for U.S. European Command's prepositioned stocks. While the committee supports the Army's NDI V-APS efforts and is encouraged by the successful testing, integration, and operational effectiveness of Trophy on Abrams tanks, the committee is concerned that the Army has no strategy to develop or

acquire training devices related to Trophy or other V-APS systems under consideration for the Bradley and Stryker armored vehicles.

The committee also understands the Army is concurrently developing an objective, long-term V-APS solution that would field an open architecture compliant V-APS system with other vehicle protection capabilities, and that current NDI V-APS systems, such as Trophy, are potential candidates for further development and integration. The committee expects the Army to benefit from the data collected during this expedited NDI V-APS effort to better inform their long-term strategy as well as look for ways to accelerate development and procurement.

Accordingly, the committee directs the Assistant Secretary of the Army for Acquisition, Logistics, and Technology to provide a briefing to the House Committee on Armed Services not later than November 29, 2019, on the requirements and acquisition strategy for both near-term and long-term V-APS efforts, including technology, schedule, and funding profiles associated with development and acquisition of training devices for the various V-APS being developed, installed, or planned for installation on combat and tactical vehicles. The briefing should also include courses of action for accelerating the development of the objective V-APS long-term solution and options for expanding the fielding of NDI APS solutions to additional current or future combat vehicles.

PROCUREMENT OF AMMUNITION, ARMY

Items of Special Interest

Army vertical lift munitions

The committee expects that the Army's future vertical lift systems will be equipped to operate successfully against peer and near-peer adversaries. Such systems will need new weapon capabilities and munitions that can effectively engage adversary targets from standoff ranges that are beyond line-of-sight or over-the-horizon. To be successful, these munitions must operate despite adversary technologies for jamming, spoofing, and GPS denial.

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 February 1, 2020, on Army vertical lift munition range and operating environment capabilities gaps, if any, and potential developmental and off-the-shelf solutions associated with those gaps. The report shall include the following:

(1) an identification and assessment of current U.S. vertical lift munition capabilities and capabilities gaps, if any, against near-peer adversaries;

(2) an identification and assessment of U.S. and allied off-the-shelf and developmental solutions to meet these capability gaps, if any, including munitions that the United States has tested or will test;

(3) an identification and assessment of any completed or planned testing of developmental munitions in calendar years 2019 and 2020, including: an

assessment of the effectiveness and suitability of the tested munitions; an assessment of whether the tested munitions could replace, supplement, or duplicate current capabilities; a comparison of the tested munitions capabilities to relevant currently fielded munitions; and plans, if any, to do a near-term fielding or operational evaluation of the tested munitions; and

(4) an estimate of the cost and schedule for the Army to develop and produce new capabilities, and acquire and field as an interim solution any existing capabilities that have been tested and would provide an acceptable solution for capability gaps.

M58 Mine Clearing Line Charge

The committee encourages the Army to accelerate modifications and upgrades to the M58 Mine Clearing Line Charge (MICLIC) system. The committee notes the current fielded MCLIC system has been operational since the 1970s and continues to be employed by the Army and Marine Corps. Furthermore, according to the report submitted to the committee by the Army, as required in the committee report accompanying the National Defense Authorization Act for Fiscal Year 2019 (H. Rept. 115-676), the MICLIC's system operational readiness rate is 73 percent, which is below the requirement of 78 percent. The committee also notes that employment success rates are only 50 percent based on data from units rotating through Combat Training Centers. The committee notes with concern that the MICLIC has not seen any significant upgrade in capability since its introduction, and does not meet the mission readiness and employment requirements.

The committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services by November 1, 2019, on the Army's plan for upgrading or replacing the M58 MICLIC system. The briefing should include:

(1) the updated capability requirements for a solution that addresses the readiness and reliability concerns of the current MICLIC;

(2) a plan and timeline to upgrade the current system or field a newer variant; and

(3) a funding profile over time for costs associated with the research, development, test, and production of a new system.

OTHER PROCUREMENT, ARMY

Items of Special Interest

AN/PEQ-15 Pointer, Illuminator, Aiming Laser capability enhancement/upgrade strategy

The committee is aware of the Army's Soldier Lethality Cross-Functional Team's efforts to enhance the capability of the AN/PEQ-15 Pointer, Illuminator, Aiming Laser. The committee is concerned, however, that the AN/PEQ-15 is approaching obsolescence, is no longer under a formal sustainment program of

record, and is not optimized for use with the Army's new ENVG-B night vision device. A solution is needed that will provide a capability bridge until a new family of weapons sights is developed, tested, produced, and fielded. The committee is aware that the Army has tested a possible AN/PEQ-15 replacement through a limited user evaluation that distributed 700 test items to selected brigade combat teams. The committee supports the Army's rapid development and acquisition approach for such a bridge capability and directs the Assistant Secretary of the Army for Acquisition, Logistics, and Technology to provide a briefing to the House Committee on Armed Services not later than November 1, 2019, on the strategy for development and replacement of the AN/PEQ-15.

Global Positioning System denied environments

The committee recognizes the need to improve the capability of U.S. forces to operate in denied environments where access to the Global Positioning System (GPS) is not assured. Potential adversaries are using advanced air defense systems and GPS-jamming and spoofing systems to deny or disrupt U.S. forces access, information gathering, precision strike, and navigation.

The committee notes that section 1239 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-91) required the Secretary of Defense to develop a strategy to counter this specific threat. The committee recognizes that the Department of Defense has made progress with GPS satellite-related GPS III and M-Code development. The committee is concerned, however, that U.S. forces should avoid becoming reliant on a single solution or technology, especially with increasing ground-based threats to satellites.

The committee is also concerned about an apparent capability gap in which current air-to-ground weapon programs do not provide adequate range or precision-strike capabilities needed for operating environments in which access to GPS is not assured. The committee encourages the Department of Defense to consider available off-the-shelf systems to meet this capability gap quickly.

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

AIRCRAFT PROCUREMENT, NAVY

Items of Special Interest

MH-53E modernization and sustainment strategy

The committee is concerned with the readiness and modernization trajectory of the Navy MH-53E fleet. Without sufficient resources and attention,

MH-53E readiness levels will continue to decline. The committee notes that the Marine Corps CH-53E reset program has improved readiness levels and that the Army has achieved similar success using similar reset programs for a variety of rotorcraft platforms. 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, 2019, on the MH-53E fleet modernization and sustainment strategy. This briefing shall include an assessment of the feasibility and cost of reversing MH-53 readiness declines through a reset program similar to the Marine CH-53E reset program.

PROCUREMENT, DEFENSE-WIDE

Items of Special Interest

Mitigation of military aviation physiological incidents

The budget request for the Department of the Navy contained $278.0 million to address physiological episode (PE) mitigation and repairs for the Naval Aviation Enterprise, and the total funding included in the 2020 to 2024 Future Years Defense Program for the Department of the Navy is $788.4 million. The budget request for the Department of the Air Force contained $6.9 million in PE64706F for life support systems to address physiological episode mitigation for the Air Force aviation enterprise. The committee understands the Air Force plans to request reprogramming authority during fiscal year 2019 to realign $87.1 million for procurement of the Enhanced On-Board Oxygen Generation System for 445 T-6 training aircraft.

The committee commends the ongoing efforts of the Department of the Navy to address modifications to F/A-18 aircraft to mitigate PEs and notes that it has been designated as the number one safety priority to resolve within the Naval Aviation Enterprise. The committee notes these efforts include replacement of the F/A-18 cockpit altimeter; upgrade of the F/A-18 On-Board Oxygen Generation System (OBOGS); redesign of the F/A-18 aircraft life support systems required to meet OBOGS input specifications; and installation of equipment associated with improved F/A-18 physiological monitoring and alert systems.

The committee is aware that since approximately 2010, the Air Force has experienced increases in the rate of physiological episodes affecting aircrew in the F-22, F-15C, F-35A, and T-6A aircraft. The committee notes the Air Force Physiological Episodes Action Team assessed that for more than a decade, the Air Force has underinvested in basic aerospace physiology science, research, and development. While the Air Force has made progress in some areas of human-machine-environment interface during that time period, other areas were not as well studied, which left gaps in Air Force data resulting in limited understanding of aircrew life support requirements related to PE for aircrew flying high-performance tactical aircraft.

Therefore, the committee directs the Secretary of the Air Force, in consultation with the Secretary of the Navy, to provide a briefing to the House Committee on Armed Services not later than March 1, 2020, that determines the availability and feasibility of procuring PE sensor devices in pilot helmets that warn of imminent incapacitation and can also collect and report data on human performance during flight.

TITLE II—RESEARCH, DEVELOPMENT, TEST, AND EVALUATION

RESEARCH, DEVELOPMENT, TEST, AND EVALUATION, ARMY

Items of Special Interest

Accelerated integration to counter emerging threats

The committee supports the accelerated integration capability to counter emerging threats being initiated by the Program Executive Office, Missiles and Space. The Army is developing a Government-owned capability to provide cyber-robust, networked new missile capabilities into the Army Integrated Air and Missile Defense systems designed to operate within rapidly evolving threat environments and timelines. The committee understands this is being accomplished through a unique approach to adapt and respond to real-time threats, dramatically accelerating the timeline to employ resilience in networked weapon systems. Therefore, the committee directs the Secretary of the Army to provide a briefing to the Committee on Armed Services of the House of Representatives by March 2, 2020, on the status of progress being made through this accelerated program.

Carbon fiber wheels and graphitic foam for Army vehicles

The committee notes the evolution of the Army's testing and evaluation of Lightweight Metal Matrix Composite Technology as outlined in the report by the Assistant Secretary of the Army for Acquisition, Logistics, and Technology submitted to the congressional defense committees in accordance with the committee report accompanying the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (S. Rept. 115-262). The Army's report makes clear that its interest with respect to new materials for lightweight wheels and associated brake systems has transitioned to a more viable dual-use carbon fiber and graphite byproduct suitable for brake pads and liners throughout the tactical wheeled vehicle fleet.

The committee encourages the Army to continue to develop, prototype, and test affordable mesophase pitch carbon fiber and graphitic carbon foam components for the Next Generation Combat Vehicle and the tactical wheeled vehicle fleet to confirm their potential to reduce vehicle weight and improve fuel consumption and payload capacity over standard aluminum and steel designs. Accordingly, the

committee directs the Assistant Secretary of the Army for Acquisition, Logistics, and Technology to provide a briefing to the House Committee on Armed Services not later than November 29, 2019, on the progress of the Army's development and testing efforts related to mesophase pitch carbon fiber and graphitic carbon foam vehicle components.

Foamable celluloid material

The committee is aware that the Army has made investments and achieved progress in developing modern ammunition material and manufacturing technologies that have the potential to improve ammunition performance and reduce life-cycle costs. Given this progress, the committee encourages the Army to rapidly transition technologies when ready from development to production for operational use availability. For example, the committee understands there could be substantial performance improvement and cost savings derived from advanced technologies such as foamable celluloid combustible propellant cases for tank, artillery, and mortar ammunition. The committee, therefore, encourages the Army to complete the development and qualification of this new capability in order to make a timely production and fielding decision. Further, the committee directs the Assistant Secretary of the Army for Acquisition, Logistics, and Technology to provide a briefing to the House Committee on Armed Services not later than August 15, 2019, on plans for the continued development and potential for production and fielding of new ammunition technology, such as foamable celluloid combustible propellant cases, for tanks, artillery, and mortars.

Heavy Equipment Transporter System Trailer development

The committee encourages the Army to continue development and procurement of a Heavy Equipment Transporter (HET) Trailer solution for current and future combat vehicles. The committee notes that the Army's current trailer is rated for 70 tons, but modernized M1A2 Abrams Main Battle Tanks will weigh in excess of 80 tons. Given the gross vehicle weight limitations on current trailer systems, the committee is concerned that these trailers cannot transport the most modern version of the Abrams tank. The committee believes the Army requires a new, more capable trailer and therefore encourages the Army immediately to begin to plan, program, and fund the accelerated modification of fielded HET trailers. The committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services by November 1, 2019, that details courses of action to accelerate needed modernization of current HET trailers.

Multi-mission Medium Range Railgun Weapon System and Integrated Power and Thermal Management System

The committee recognizes progress made by the Army to mature the multi-mission medium range railgun weapon system (MMRRWS) and the Integrated

Power and Thermal Management System (IPTMS). The committee understands that MMRRWS, if successful, would support integrated air missile defense, mobile short-range air defense, and indirect and direct fires applications. This capability would launch a guided projectile significantly farther and with more lethality than traditional systems, and will address critical gaps in U.S. air defense against growing threats from peer and near-peer competitors. The committee further understands IPTMS was developed specifically to support the Army's Maneuver-Short Range Air Defense (M-SHORAD) requirement. Adopting IPTMS could potentially accelerate development of a directed energy capable M-SHORAD capability as early as 2021. The committee encourages the Army to continue to leverage internal investments in developing MMRRWS and IPTMS in order to fully evaluate the potential of railgun technology on mobile platforms.

Therefore, the committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services not later than February 1, 2020, on the current capability of MMRRWS and IPTMS, ongoing development and technology maturation of these systems, the results of any technology demonstrations of these capabilities, and the integration of MMRWS and IPTMS and their components with existing or planned M-SHORAD systems.

National Academies review of technologies related to Army Strategic Long-Range Cannon

The committee notes that modernization of long-range precision fires is the Army's highest priority for meeting the requirements of the National Defense Strategy and the operational challenges associated with peer and near-peer potential adversaries. One of the technologies the Army is pursuing is a Strategic Long-Range Cannon capable of firing a projectile at hypersonic speed up to 1,000 miles. The committee is interested to learn more about this imaginative concept and the technical challenges associated with development of such a capability especially with respect to propellant, projectiles, and cannon. Accordingly, the committee directs the Secretary of the Army to enter into an arrangement with the Board on Army Research and Development of the National Academies of Sciences, Engineering, and Medicine to conduct a study that identifies and evaluates the technology approaches, policies, and concepts of operations of the Strategic Long-Range Cannon (SLRC) program. The study shall include:

(1) an identification and evaluation of attributes of potential peer or near-peer adversaries operating environments and concepts that would enhance or reduce the effectiveness of SLRC;

(2) an identification and evaluation of limitations and vulnerabilities of current ground-based capabilities for long-range fires as well as existing and proposed countermeasures;

(3) an identification and evaluation of key and essential technologies needed to achieve documented goals and capabilities of SLRC along with associated technologies required to support manufacturability and sustainability; and

(4) provide a technology maturation roadmap, including an estimated funding profile over time, needed to achieve an effective operational SLRC that describes both the critical and associated supporting technologies, systems integration, prototyping and experimentation, and test and evaluation.

The Secretary shall submit the study to the congressional defense committees not later than August 31, 2020. The study submitted shall be classified at levels appropriate to and sufficient for access to data necessary for a comprehensive review of the subject and related technologies but must include an unclassified summary of findings and recommendations. The Secretary may submit comments, if any, to accompany the study's classified or unclassified findings and recommendations.

RESEARCH, DEVELOPMENT, TEST, AND EVALUATION, AIR FORCE

Items of Special Interest

Digital twinning

The committee notes that "digital twin" technology has the ability to combine numerous technologies within a weapon system, such as the F-35 Joint Strike Fighter, to create a full-scale digital replica of the original weapon system. This digital replica could assist the Department of Defense in conducting predictive analyses to determine and more fully comprehend performance, reliability, and maintenance requirements before issues impact a weapon system's performance during development and manufacturing, or after the system is fielded.

Therefore, the committee directs the Secretary of Defense to provide a briefing to the House Committee on Armed Services not later than March 1, 2020, that explains how the F-35 program is implementing the use of digital twinning technology across the F-35 system enterprise.

Light attack and armed reconnaissance experimentation

The budget request contained $35.0 million in PE27100F for continuation of Light-Attack Armed Reconnaissance (LAAR) experimentation.

The committee notes that the Air Force plans to apply $100.0 million in fiscal year 2018 appropriated funding, and plans to request reprogramming authority to realign $25.0 million in fiscal year 2019 appropriated funding, to purchase six test article LAAR platforms (three AT-6 and three A-29 aircraft) to continue Phase 3 experimentation activities.

The committee notes that the Air Force is not ready to make a decision on a potential procurement for LAAR without completing additional analyses on all potential solutions in order to find a solution that fits tactical, operational, and strategic requirements for a wide variety of allies and partners. The Air Force determined after the conclusion of Phase 2 experimentation that the results gained thus far have not provided enough information, nor has the LAAR experiment

strategy explored other platforms that could fill lesser contingency and international partner mission requirements. The committee further notes that the Air Force believes continued experimentation during Phase 3 will allow for additional consideration of current and emerging unmanned, rotorcraft, and turbojet technologies to assess cost-effectiveness and capability sufficiency to ensure that a future LAAR platform or platforms will maximize meeting a diverse set of mission requirements and capability gaps.

The committee appreciates the deliberate and methodical approach the Secretary of the Air Force is taking through experimentation and data analysis to fully inform a future procurement decision for LAAR capabilities and this new mission area. However, prior to entering Phase 3 experimentation activities, the committee expects the Secretary to establish and document the Phase 3 experimentation strategy, design, goals, objectives, and metrics. The committee also expects the Secretary to consult with the Commander, Special Operations Command to assess how both general purpose forces and special operations forces can leverage experimentation activities. The committee directs the Secretary of the Air Force to provide a briefing to the House Committee on Armed Services not later than September 1, 2019, on the scope and plans for Phase 3 experimentation.

OC-135B Open Skies Treaty aircraft recapitalization

The committee notes that the current fleet of OC-135B aircraft conducting the Open Skies Treaty flights are over 55 years old and experience significant sustainment and reliability issues, resulting in an average mission completion rate of 65 percent between 2007 and 2017. Further, the range of the legacy OC-135 aircraft is insufficient to fully execute mission options within the treaty's 96-hour in-country observation period. In addition to maintenance and range limitations, the current wet-film imaging used to collect data will become obsolete sometime around 2022. To avoid any gap in Open Skies Treaty collection capability, the committee supports the Air Force's plan to upgrade the fleet with digital visual imaging systems (DVIS) for the near-term, and ultimately replace the OC-135 Open Skies aircraft with two commercially-available small airliner class aircraft with integrated DVIS sensors.

The committee supports recapitalization of the OC-135 but remains concerned about the Air Force's ability to stay on schedule and meet the fiscal year 2022 aircraft certification and treaty compliance date. Unanticipated technical challenges with the DVIS sensors have already affected the schedule and could cause additional delays if not remedied soon.

Therefore, the committee directs the Secretary of the Air Force to provide a report to the House Committee on Armed Services by October 1, 2019, on the Open Skies Treaty aircraft recapitalization. The report shall include:

(1) an assessment of the DVIS data technical package maturity and the cost and feasibility of integrating it onto the replacement commercial aircraft;

(2) the plan for and status of developing or acquiring associated ground processing systems;

(3) the plan for management of programmatic risk and an assessment of the ability to meet the fiscal year 2022 deadline for an upgraded, treaty-compliant system;

(4) existing or planned mitigation options should the Air Force not be able to achieve current DVIS and treaty compliance milestones, and should there be any future delay to the upgrade or replacement of the OC-135; and

(5) a copy of any assessment conducted by an independent organization employed by the program for technical assistance.

Wide area motion imagery

The committee notes that the Gorgon Stare wide area surveillance capability continues to support daily operations in both Afghanistan and Iraq with critical intelligence, surveillance, and reconnaissance (ISR), and that other combatant commands have requested the Gorgon Stare capability. The committee is concerned that, despite daily operational tasking and despite the Air Force's designation of Gorgon Stare as a program of record in 2014, there is still no formal budget request for this combat-proven ISR system. The committee notes that prior year congressional funding has resulted in the system developing beyond line-of-sight communications and multi-intelligence capabilities.

Accordingly, the committee directs the Chairman of the Joint Chiefs of Staff to provide a briefing to the House Committee on Armed Services by November 1, 2019, on the plan for apportionment of Gorgon Stare into the Department's ISR forces and the full extent of combatant command requirements for Gorgon Stare ISR wide-area support to worldwide operations.

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

Items of Special Interest

Hybrid and electric air vehicle power and propulsion systems

The committee understands that hybrid and electric power and propulsion systems and vehicles hold the potential to significantly increase range and endurance for military aviation. The committee believes such aviation capabilities could support the National Defense Strategy. The Department of Defense requires a process to certify airworthiness to allow flight testing of these systems. However, the committee notes that the Department lacks adequate design, test, and certification procedures and facilities for aviation-purposed electric motors, motor controllers, traction bus systems, and large primary power battery systems. The committee is concerned that without a certification process in place, the military may miss the opportunity to capitalize on these advanced systems to reduce logistical requirements and costs.

Therefore, the committee directs the Secretary of Defense to provide a report to the House Committee on Armed Services by February 1, 2020, on establishing procedures and facilities for airworthiness certification of hybrid and electric power and propulsion aviation systems. The report should include estimated cost and schedule to implement a certification process.

Military rotorcraft safety

The committee recognizes that military rotorcraft operate in hazardous conditions using special tactics, techniques, and procedures that can lead to increased risk for pilots and their crews. The committee is aware of the significant risk that uncharted wires and obstacles pose to military rotorcraft, especially those flown by special operations forces and combat search and rescue elements. The committee also notes that military rotorcraft face safety and readiness challenges stemming from excessive aircraft vibration. The committee further understands that current vibration mitigation efforts often seek to mask or absorb vibrations without resulting in an actual decrease in vibration. The committee is concerned that there is insufficient focus on developing and fielding effective technology for detecting uncharted wires and obstacles, as well as insufficient focus on developing materiel solutions to help mitigate excessive vibration in legacy rotorcraft platforms.

The committee directs the Secretary of Defense, in coordination with the Secretaries of the Army, Navy, and Air Force, to provide a briefing to the House Committee on Armed Services by February 1, 2020, on Department-wide efforts to identify, develop, and procure capabilities related to the detection and avoidance of uncharted wires and obstacles, as well as efforts to mitigate excessive vibration in rotorcraft. The briefing should include to the maximum extent practicable an evaluation of current commercially available systems for obstacle detection and analysis of any tools, processes, software, or methodologies currently being evaluated towards mitigating vibration levels.

Tactical data links

The committee remains concerned with the lack of a Department of Defense-wide, comprehensive effort to achieve a resilient and survivable network for 5th and 4th generation systems data sharing in a highly contested operational environment. Section 234 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91) directed the then-Under Secretary of Defense for Acquisition, Technology, and Logistics to coordinate with the Secretary of the Navy and the Secretary of the Air Force to develop a competitive acquisition plan for low probability of detection/low probability of intercept (LPD/LPI) datalink network capability. The committee notes, however, that the Department's plan was not sufficient or comprehensive.

The National Defense Strategy's shift to peer and near-peer threats requires joint force capabilities for operations in highly contested environments.

The F-22 and the F-35 aircraft possess LPD/LPI datalinks, but their two systems, the Intra-Flight Data Link and the Multifunction Advanced Data Link (MADL), cannot share information between aircraft. The Department identified F-35's MADL as the preferred airborne datalink to meet the requirement, but the associated form, fit, and function changes required rendered this unaffordable and the effort was cancelled. Additionally, the Air Force's concept for an Advanced Battle Management System (ABMS) for battle management and command and control (BMC2) also depends upon LPD/LPI datalinks to exchange intelligence, surveillance, and reconnaissance (ISR) and BMC2 information between current and future sensor network nodes.

The committee believes LPD/LPI networked communications must be a priority, and therefore, directs the Under Secretary of Defense for Acquisition and Sustainment, in coordination with the Secretaries of the Air Force and Navy, to provide a report to the congressional defense committees by December 1, 2019, on plans to ensure LPD/LPI communications among and between 5th and 4th generation airborne platforms as well as other network nodes for command, control, communications, and intelligence, surveillance, and reconnaissance. The report shall include:

(1) all current and planned LPD/LPI data link developments, with requirements, technology specifications and readiness levels, and applicability to specific platforms and network-enabled weapon systems;

(2) a plan and schedule for flight testing the data links in operationally relevant environments; and,

(3) estimated cost and schedule to implement each solution.