

**H.R. 2670—NATIONAL DEFENSE
AUTHORIZATION ACT FOR FISCAL YEAR
2024**

**SUBCOMMITTEE ON TACTICAL AIR
AND LAND FORCES**

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DIVISION A—DEPARTMENT OF DEFENSE AUTHORIZATIONS

TITLE I—PROCUREMENT

LEGISLATIVE PROVISIONS

SUBTITLE C—AIR FORCE PROGRAMS

Section 122—Modification of Minimum Inventory Requirements for A-10 Aircraft

This section would reduce the minimum A-10 aircraft primary mission aircraft inventory requirement to 135 total aircraft, and would repeal a duplicate A-10 aircraft primary mission aircraft inventory requirement contained in section 142(b) of the National Defense Authorization Act for Fiscal Year 2016 (Public Law

114-92). This section would also require the Secretary of Defense to evaluate any A-10 aircraft that is retired, during fiscal year 2023 or later fiscal years, for potential transfer to military forces of an ally or partner nation of the United States.

TITLE II—RESEARCH, DEVELOPMENT, TEST, AND EVALUATION

LEGISLATIVE PROVISIONS

SUBTITLE B—PROGRAM REQUIREMENTS, RESTRICTIONS, AND LIMITATIONS

Section 215—Next Generation Air Dominance Family of Systems Development Program Accountability Matrices

This section would require the Secretary of the Air Force and the Secretary of the Navy to annually submit, concurrently with the President's budget request, development and technology maturation progress reports regarding each Department's Next Generation Air Dominance and Collaborative Combat Aircraft acquisition programs. This section would also require each Secretary to establish, for each piloted fighter aircraft program of the Next Generation Air Dominance program, threshold and objective key performance parameters regarding flyaway unit cost, gross/weapon system unit cost, aircraft cost-per-tail-per-year, and aircraft cost-per-flight-hour. Finally, this section would set maximum cost limitations for each category of Collaborative Combat Aircraft each Secretary would plan to procure.

Section 216—Continuous Capability Development and Delivery Program for F-35 Aircraft

This section would require the Secretary of Defense to designate the F-35 continuous capability and development and delivery program as a major subprogram of the F-35 acquisition program. This section would also require the F-35 Program Executive Officer to designate and manufacture six developmental testing and evaluation aircraft to adequately support future activities of the F-35 testing and evaluation program.

Section 219—Limitation on Availability of Funds pending Documentation on Future Attack Reconnaissance Aircraft Program

This section would limit the funds authorized to be appropriated or otherwise made available for fiscal year 2024 for the Office of the Secretary of the Army for travel of persons, of which not more than 70 percent may be obligated or expended until the date on which the Secretary of the Army submits to the congressional defense committees the analysis of alternatives document for the Future Attack Reconnaissance Aircraft program.

SUBTITLE C—ENERGETICS AND OTHER MUNITIONS MATTERS

Section 233—Pilot Program on Incorporation of CL20 Compound in Certain Weapon Systems

This section would require the Secretary of Defense to carry out a pilot program under which the Secretary incorporates CL20 energetic compound as the energetic source in three weapon systems that are under development by the Department of Defense.

Section 234—Assessment of Energetics Industrial Base

This section would require the Deputy Secretary of Defense to conduct an assessment of the supply chains for energetic materials and the status of the energetics industrial base.

TITLE X—GENERAL PROVISIONS

LEGISLATIVE PROVISIONS

SUBTITLE E—STUDIES AND REPORTS

Section 1062—Air Force Plan for Maintaining Proficient Aircrews in Certain Mission Areas

This section would require the Secretary of the Air Force to provide a report on the Secretary's plan to maintain sufficient capability, capacity, and proficient aircrews to support geographical combatant commanders' requirements for close air support, forward air controller-airborne, and combat search and rescue missions during contingency operations.

BILL LANGUAGE

1 **SEC. 122 [Log 77809]. MODIFICATION OF MINIMUM INVEN-**
2 **TORY REQUIREMENTS FOR A-10 AIRCRAFT.**

3 (a) IN GENERAL.—Section 134(d) of the National
4 Defense Authorization Act for Fiscal Year 2017 (Public
5 Law 114–328; 130 Stat. 2038), as amended by section
6 141(b)(1) of the James M. Inhofe National Defense Au-
7 thorization Act for Fiscal Year 2023 (Public Law 117–
8 263), is amended by striking “153 A–10 aircraft” and in-
9 serting “135 A–10 aircraft”.

10 (b) POTENTIAL TRANSFER OF CERTAIN AIR-
11 CRAFT.—In the case of any A–10 aircraft that is retired,
12 prepared to retire, or placed in storage using funds au-
13 thorized to be appropriated by this Act or by the National
14 Defense Authorization Act for Fiscal Year 2023 (Public
15 Law 117–263), the Secretary of Defense shall ensure that
16 such aircraft is evaluated for potential transfer to the mili-
17 tary forces of a nation that is an ally or partner of the
18 United States.

19 (c) REPEAL.—Section 142 of the National Defense
20 Authorization Act for Fiscal Year 2016 (Public Law 114–
21 92; 129 Stat. 755) is amended—

22 (1) by striking subsection (b);

23 (2) by redesignating subsections (c) through (e)

24 as subsections (b) through (d), respectively; and

1 (3) in subsection (c), as so redesignated, by
2 striking “subsection (e)” and inserting “subsection
3 (b)”.

1 **SEC. 215 [Log 77442]. NEXT GENERATION AIR DOMINANCE**
2 **FAMILY OF SYSTEMS DEVELOPMENT PRO-**
3 **GRAM ACCOUNTABILITY MATRICES.**

4 (a) SUBMITTAL OF MATRICES.—Concurrent with the
5 President’s annual budget request submitted to Congress
6 under section 1105 of title 31, United States Code, for
7 fiscal year 2025—

8 (1) the Secretary of the Air Force shall submit
9 to the congressional defense committees and the
10 Comptroller General of the United States the mat-
11 rices described in subsection (b) relating to the Next
12 Generation Air Dominance piloted fighter aircraft
13 and the autonomous, uncrewed Collaborative Com-
14 bat Aircraft programs of the Air Force; and

15 (2) the Secretary of the Navy shall submit to
16 the congressional defense committees and the Comp-
17 troller General of the United States the matrices de-
18 scribed in subsection (b) relating to the Next Gen-
19 eration Air Dominance piloted fighter aircraft and
20 the autonomous, uncrewed Collaborative Combat
21 Aircraft programs of the Navy and the Marine
22 Corps.

23 (b) MATRICES DESCRIBED.—The matrices described
24 in this subsection are the following:

25 (1) ENGINEERING MANUFACTURING AND DE-
26 VELOPMENT GOALS.—A matrix that identifies, in six

1 month increments, key milestones, development and
2 testing events, and specific performance goals for
3 the engineering manufacturing and development
4 phase (referred to in this section as the “EMD
5 phase”) of the programs described in subsection (a),
6 and which shall be subdivided, at a minimum, ac-
7 cording to the following:

8 (A) Technology readiness levels of major
9 components and subsystems and key dem-
10 onstration and testing events.

11 (B) Design maturity.

12 (C) Software maturity.

13 (D) Subsystem and system-level integra-
14 tion maturity.

15 (E) Manufacturing readiness levels for
16 critical manufacturing operations and key dem-
17 onstration and testing events.

18 (F) Manufacturing operations.

19 (G) System verification, validation, and
20 key flight test events.

21 (H) Reliability.

22 (I) Availability for flight operations.

23 (J) Maintainability.

24 (2) COST.—A matrix expressing, in six month
25 increments, the total cost for the Secretary’s service

1 cost position for the EMD phase and low initial rate
2 of production lots of the programs described in sub-
3 section (a) and a matrix expressing the total cost for
4 the prime contractor's estimate for such EMD phase
5 and production lots, both of which shall be phased
6 over the entire EMD period and subdivided accord-
7 ing to the costs of the following:

- 8 (A) Air vehicle.
- 9 (B) Propulsion.
- 10 (C) Mission systems.
- 11 (D) Vehicle subsystems.
- 12 (E) Air vehicle software.
- 13 (F) Systems engineering.
- 14 (G) Program management.
- 15 (H) System test and evaluation.
- 16 (I) Support and training systems.
- 17 (J) Contract fee.
- 18 (K) Engineering changes.
- 19 (L) Direct mission support, including Con-
20 gressional General Reductions.
- 21 (M) Government testing.
- 22 (N) Ancillary aircraft equipment.
- 23 (O) Initial spares.
- 24 (P) Contractor support.
- 25 (Q) Modifications.

1 (c) SEMIANNUAL UPDATE OF MATRICES.—

2 (1) IN GENERAL.—Not later than 180 days
3 after the date on which the Secretaries concerned
4 submit the matrices required by subsection (a), con-
5 current with the submittal of each annual budget re-
6 quest to Congress under section 1105 of title 31,
7 United States Code, thereafter, and not later than
8 180 days after each such submittal, each Secretary
9 concerned shall submit to the congressional defense
10 committees and the Comptroller General of the
11 United States updates to the matrices described in
12 subsection (b).

13 (2) ELEMENTS.—Each update submitted under
14 paragraph (1) shall detail progress made toward the
15 goals identified in the matrix described in subsection
16 (b)(1) and provide updated cost estimates as de-
17 scribed in subsection (b)(2).

18 (3) TREATMENT OF INITIAL MATRICES AS
19 BASELINE.—The initial matrices submitted pursuant
20 to subsection (a) shall be treated as the baseline for
21 the full EMD phase and low-rate initial production
22 of the programs described in subsection (a) for pur-
23 poses of the updates submitted pursuant to para-
24 graph (1) of this subsection.

1 (d) ASSESSMENT BY COMPTROLLER GENERAL OF
2 THE UNITED STATES.—Not later than the date that is
3 60 days after the date on which the Comptroller General
4 of the United States receives an update to a matrix under
5 subsection (c)(1), the Comptroller General shall review the
6 sufficiency of such matrix and submit to the congressional
7 defense committees an assessment of such matrix, includ-
8 ing by identifying cost, schedule, or performance trends.

9 (e) KEY PERFORMANCE PARAMETER REQUIRE-
10 MENTS.—

11 (1) IN GENERAL.—Each Secretary concerned
12 shall develop key performance parameters (referred
13 to in this section as “cost KPPs”) for the threshold
14 and objective costs of the programs described in sub-
15 section (a) under the jurisdiction of such Secretary
16 and shall include those values as program perform-
17 ance requirements in any capability development
18 document or system requirements document for the
19 program involved. Each cost KPP shall include, for
20 each cost category specified in paragraph (2)—

21 (A) a threshold value indicating the high-
22 est acceptable cost for that category, as deter-
23 mined by the Secretary concerned; and

1 (B) an objective value indicating the lowest
2 cost expected to be achieved for that category,
3 as determined by the Secretary concerned.

4 (2) COST CATEGORIES SPECIFIED.—The cost
5 categories specified in this paragraph are the fol-
6 lowing:

7 (A) Flyaway unit cost.

8 (B) Gross/weapon system unit cost.

9 (C) Aircraft cost-per-tail-per-year.

10 (D) Aircraft cost-per-flight-hour.

11 (f) COST LIMITATIONS FOR COLLABORATIVE COM-
12 BAT AIRCRAFT.—

13 (1) CATEGORIZATION OF AIRCRAFT.—Each Sec-
14 retary concerned shall categorize each Collaborative
15 Combat Aircraft to be procured by such Secretary
16 into one of following categories:

17 (A) EXPENDABLE CCA.—An aircraft shall
18 be categorized as “expendable CCA” if it is an
19 aerospace vehicle that is designed not to return
20 to a basing location after its mission sortie pro-
21 file is executed and is characterized as an ac-
22 ceptable combat loss.

23 (B) ATTRITABLE CCA.—An aircraft shall
24 be categorized as “attritable CCA” if it is an
25 aerospace vehicle that is designed to be used for

1 multiple mission sortie profiles but may not re-
2 turn to a basing location after a mission sortie
3 profile is flown and is characterized as an occa-
4 sional combat loss.

5 (C) EXQUISITE CCA.—An aircraft shall be
6 categorized as “exquisite CCA” if it is an aero-
7 space vehicle designed to be used for multiple
8 mission sortie profiles and is intended to return
9 to a basing location after each sortie profile is
10 flown and is not considered an acceptable com-
11 bat loss.

12 (2) COST LIMITATIONS BY CATEGORY.—Each
13 Secretary concerned shall ensure that the flyaway
14 unit cost (including the cost of any onboard mission
15 systems)—

16 (A) for an aircraft categorized as expend-
17 able CCA under paragraph (1)(A), does not ex-
18 ceed \$3,000,000.00;

19 (B) for an aircraft categorized as attritable
20 CCA under paragraph (1)(B), does not exceed
21 \$10,000,000.00; and

22 (C) for an aircraft categorized as exquisite
23 CCA under paragraph (1)(C), does not exceed
24 \$25,000,000.00.

1 (g) DEFINITIONS.—In this section, the term “Sec-
2 retary concerned” means—

3 (1) the Secretary of the Navy, with respect to
4 aircraft programs of the Navy and the Marine
5 Corps; and

6 (2) the Secretary of the Air Force, with respect
7 to aircraft programs of the Air Force.

1 **SEC. 216 [Log 77810]. CONTINUOUS CAPABILITY DEVELOP-**
2 **MENT AND DELIVERY PROGRAM FOR F-35**
3 **AIRCRAFT.**

4 (a) DESIGNATION OF MAJOR SUBPROGRAM.—In ac-
5 cordance with section 4203 of title 10, United States
6 Code, the Secretary of Defense shall designate all Block
7 4 and Technical Refresh-3 elements of the F-35 aircraft
8 acquisition program, collectively, as a single major subpro-
9 gram of the F-35 aircraft acquisition program.

10 (b) PROCUREMENT OF F-35 DEVELOPMENTAL TEST-
11 ING AIRCRAFT.—

12 (1) IN GENERAL.—From the aircraft described
13 in paragraph (2), the Program Executive Officer for
14 the F-35 aircraft program shall designate for Lot
15 18 production, two F-35A aircraft, two F-35B air-
16 craft, and two F-35C aircraft to be manufactured
17 and delivered in a necessary configuration that
18 would adequately support future F-35 develop-
19 mental testing activities.

20 (2) AIRCRAFT DESCRIBED.—The aircraft de-
21 scribed in this paragraph are F-35 aircraft author-
22 ized to be procured using funds made available for
23 fiscal year 2024.

1 **SEC. 219 [Log 77362]. LIMITATION ON AVAILABILITY OF**
2 **FUNDS PENDING DOCUMENTATION ON FU-**
3 **TURE ATTACK RECONNAISSANCE AIRCRAFT**
4 **PROGRAM.**

5 Of the funds authorized to be appropriated by this
6 Act or otherwise made available for fiscal year 2024, and
7 available for the Office of the Secretary of the Army for
8 the travel of persons, not more than 70 percent may be
9 obligated or expended until the date on which the Sec-
10 retary submits to the congressional defense committees
11 the analysis of alternatives document for the Future At-
12 tack Reconnaissance Aircraft program.

1 **SEC. 233 [Log 78100]. PILOT PROGRAM ON INCORPORATION**
2 **OF THE CL20 COMPOUND IN CERTAIN WEAP-**
3 **ON SYSTEMS.**

4 (a) PILOT PROGRAM REQUIRED.—The Secretary of
5 Defense shall carry out a pilot program under which the
6 Secretary incorporates the CL20 compound as the ener-
7 getic material for the main fill in the warheads or propel-
8 lants of three weapon systems under development by the
9 Department of Defense.

10 (b) ADDITIONAL REQUIREMENT.—Each of the three
11 weapon systems selected under subsection (a) shall be a
12 weapon system that does not, as of the date of the enact-
13 ment of this Act, already incorporate the CL20 compound
14 as the energetic material for the main fill in the warhead
15 or propellant of the system.

16 (c) BRIEFING.—Not later than one year after the
17 date of the enactment of this Act, the Secretary of Defense
18 shall provide to the congressional defense committees a
19 briefing on progress of the Secretary in carrying out the
20 pilot program under this section, including a timeline for
21 incorporating the CL20 energetic compound into each of
22 the weapon systems selected under subsection (a).

1 **SEC. 234 [Log 78098]. ASSESSMENT OF ENERGETICS INDUS-**
2 **TRIAL BASE.**

3 (a) ASSESSMENT.—The Deputy Secretary of Defense
4 shall conduct an assessment of the supply chains for ener-
5 getic materials and the status of the energetics industrial
6 base to identify opportunities—

7 (1) to accelerate the development of critical en-
8 ergetic materials; and

9 (2) to enhance the ability of the Department of
10 Defense to access such materials for defense pur-
11 poses.

12 (b) ELEMENTS.—The assessment under subsection
13 (a) shall include an analysis of—

14 (1) any shortfalls in the supply chain for ener-
15 getic materials existing as of the date of the assess-
16 ment or that are projected to occur in the future;

17 (2) expansion of the energetics industrial base
18 to include critical subcontractor and supplier limita-
19 tions and options to expand industry participation to
20 alleviate such limitations;

21 (3) options for using the authorities provided
22 under the Defense Production Act of 1950 (50
23 U.S.C. 4501 et seq.) to improve the ability of the
24 Department of Defense to acquire energetic mate-
25 rials, including the potential use of priority ratings
26 (as described in the Defense Priorities and Alloca-

1 tion System pursuant to part 700 of title 15, Code
2 of Federal Regulations (or any successor regula-
3 tion)) for contracts involving energetic materials;
4 and

5 (4) the potential use of Government-owned,
6 contractor-operated ammunition production facilities
7 to support alternative energetics formulations.

8 (c) REPORT.—Not later than one year after the date
9 of the enactment of this Act, the Deputy Secretary of De-
10 fense shall submit to the congressional defense committees
11 a report on the results of the assessment conducted under
12 subsection (a).

13 (d) DEFINITIONS.—In this section:

14 (1) The term “energetic materials” has the
15 meaning given that term in section 4015(e) of title
16 10, United States Code (as added by section **【231**
17 **【Log 78097】】**).

18 (2) The term “energetics industrial base”
19 means—

20 (A) the organizations and elements of the
21 Department of Defense concerned with the re-
22 search and development of energetic materials
23 and technologies; and

24 (B) contractors and suppliers of energetic
25 materials and technologies.

1 **SEC. 1062 [Log 77445]. AIR FORCE PLAN FOR MAINTAINING**
2 **PROFICIENT AIRCREWS IN CERTAIN MISSION**
3 **AREAS.**

4 (a) **PLAN REQUIRED.**— The Secretary of the Air
5 Force shall develop a plan, and the associated actions and
6 milestones for implementing the plan, to designate, equip,
7 and train the number of combat air forces aviation units
8 (in this section referred to as “CAF units”), equipped with
9 fixed-wing or rotorcraft assets, that are required in order
10 to maintain proficient aircrew skills in accordance with the
11 Core Mission Essential Task List and Designed Oper-
12 ational Capability Statement of each such unit in the fol-
13 lowing mission areas:

- 14 (1) Close air support.
15 (2) Forward air controller–airborne.
16 (3) Combat search and rescue.

17 (b) **REPORT.**—The Secretary of the Air Force shall
18 submit to the congressional defense committees a report
19 on the plan required under subsection (a). Such report
20 shall include the following information:

- 21 (1) The number of CAF units required to meet
22 steady-state, contingency, and wartime mission re-
23 quirements for each mission area referred to in sub-
24 section (a).

1 (2) The number of proficient aircrews each unit
2 must maintain in order to be qualified and current
3 in each such mission area.

4 (3) The number of CAF units and aircrew per-
5 sonnel that, as of the date of the enactment of this
6 Act, are trained and equipped to meet steady-state,
7 contingency, and wartime mission requirements for
8 each such mission area.

9 (4) The location of any CAF unit and associ-
10 ated aircraft that have been designated to be pro-
11 ficient in such mission areas.

12 (5) The minimum quantity of initial training
13 and continuation training sorties and events aircrews
14 will be required to achieve monthly and yearly to be
15 qualified as proficient, current, and experienced in
16 such mission areas.

17 (6) Any other information, data, or analyses the
18 Secretary determines relevant.

19 (c) LIMITATION.—The Secretary of the Air Force
20 may not reduce the total inventory of the Air Force of
21 A-10 aircraft below 218 until the date that is 180 days
22 after the date on which the Secretary submits the report
23 required under subsection (b).

1 (d) DEFINITION OF PROFICIENT.—In this section,
2 the term “proficient”, with respect to an aircrew, means
3 that such aircrew—
4 (1) has thorough knowledge but occasionally
5 may make an error of omission or commission;
6 (2) is able to operate in a complex, fluid envi-
7 ronment and is able to handle most contingencies
8 and unusual circumstances; and
9 (3) is prepared for mission tasking on the first
10 sortie in a theater of operations.

DIRECTIVE REPORT LANGUAGE

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DIVISION A—DEPARTMENT OF DEFENSE AUTHORIZATIONS

TITLE I—PROCUREMENT

OTHER PROCUREMENT, ARMY

Items of Special Interest

Air and missile defense

Critical to the Army's vision for future warfare is the ability to protect its combat formations from modern and advanced air- and missile-delivered fires, including drones. Events in the current conflict in Ukraine underscore the need for such capabilities. Providing these capabilities could be challenging as the Army has not focused on the need for air and missile defense in its recent conflicts in Iraq and Afghanistan. Given the emerging tactics of near-peer competitors, however, it is vital that the Army secure these capabilities or risk failing in any future conflict.

Therefore, the committee directs the Comptroller General of the United States to submit a report to the congressional defense committees not later than March 1, 2024, on the Department of the Army's air and missile defense program. At a minimum, the report should address the following elements:

- (1) systems or technologies the Army seeks in the near, mid, and long term to improve air and missile defense;
- (2) analyses the Army has performed to determine these needs, to include an assessment of the joint force;
- (3) to what extent the Army has applied leading practices for acquisitions in air and missile defense programs;
- (4) to what extent lessons learned from the Ukrainian conflict have been incorporated into the air and missile defense portfolio; and
- (5) how the Army has positioned itself with research and development resources, in terms of both funding and personnel, to develop these technologies.

Auxiliary power units for Army ground vehicles

The committee recognizes the need to provide auxiliary power capabilities to relieve the demand on the primary engine to support additional payloads,

applications, silent watch, and other consumers of electrical power on the platform. The committee understands that legacy auxiliary power units (APUs) have been utilized effectively but is concerned that legacy APUs are purpose-built for specific vehicles, which limits scalability and standardization across a ground vehicle fleet that is becoming increasingly diverse.

Accordingly, the committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services not later than December 15, 2023, on next-generation APU development. This briefing should include, at a minimum, an overview of the current next-generation APU effort, including technical achievements and an identification of potential benefits; a transition and integration plan for the application of the next-generation APU across the Program Executive Office Ground Combat Systems fleet; and budgetary outlook for next-generation APU funding across the Future Years Defense Program.

Light Tactical Wheeled Vehicle acquisition strategy and investment plan

The committee understands the Army will continue divestment of many High Mobility Multipurpose Wheeled Vehicle (HMMWV) models as it continues to field modernized light Tactical Wheeled Vehicle (TWV) programs, such as the Joint Light Tactical Vehicle and Infantry Squad Vehicle programs.

Therefore, the committee directs the Assistant Secretary of the Army for Acquisition, Logistics, and Technology, in coordination with the Commanding General, Army Futures Command, to submit a report to the congressional defense committees not later than March 1, 2024, that details the Army's near- and long-term strategy to meet the Army's current and future requirements for light TWVs, specifically the HMMWV. The report should address how the Army will assess and manage risk in the light TWV industrial base, provide details on current and future light TWV development, and outline the acquisition plans to include funding profiles through the Future Years Defense Program.

Long range precision fires

In 2017, the Chief of Staff of the Army announced a new effort to modernize Army capabilities in six priority areas to close perceived gaps in competitive advantage against emerging near-peer adversaries. The top priority within these six capabilities was long range precision fires. The Army is currently considering a wide range of options to modernize its fires capabilities including new missiles and launchers, extended range cannon munitions, and hypersonic weapons. Achieving both the range and precision desired by the Army for these capabilities will be challenging and requires considerable development of both requirements and technologies. Failure to achieve these goals could leave future soldiers outgunned and outranged by potential adversaries.

Therefore, the committee directs the Comptroller General of the United States to submit a report to the congressional defense committees not later than

March 1, 2024, on the Department of the Army's Long Range Precision Fires program. At a minimum, the report should address the following elements:

- (1) the Army's overall acquisition strategy for the systems or technologies it seeks in the near- and long-term to improve its long range precision fires;
- (2) analyses the Army has performed to determine these needs;
- (3) to what extent the Army has applied leading practices for acquisitions in its Long Range Precision Fires Program;
- (4) the applicability of long range precision fires in U.S. Indo-Pacific Command operational plans; and
- (5) how the Army has positioned itself with research and development resources, in terms of both funding and personnel, to develop these technologies.

M240 industrial base

The committee remains concerned that the Army is underestimating risk in the small arms industrial base, particularly with respect to the family of M240 medium machine guns. The committee notes that the Army has programmed no weapons procurement funding for the M240, the Army's only medium machine gun, in fiscal year 2024, instead relying on the replacement of individual parts for sustainment. The committee is concerned that the Army lacks consolidated, detailed information on the state and status of its M240 inventory. Concurrently, the committee notes that a shrinking industrial supply base and a global shortage of raw materials present additional risk to the M240 industrial base. The committee believes that, in addition to further M240 weapons procurement, these risks could be mitigated through product improvements and modifications that enhance service life and incorporate materials that are more widely available. The committee encourages the Army to explore implementing such improvements through mechanisms such as contract modifications or Engineering Change Proposals.

Therefore, the committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services not later than December 22, 2023, on the family of M240 medium machine guns. This briefing should include, at a minimum:

- (1) a detailed evaluation of the current fleet of M240s to establish accurate baseline information on the inventory;
- (2) an assessment of M240 industrial base inputs, to include an evaluation of replacement materials and metals that are more widely available in the U.S. market; and
- (3) an evaluation of potential M240 product improvements that could improve reliability and lengthen the service life of the weapons.

Modernization of main battle tanks

The Army is currently reviewing the modernization strategy for its main battle tank and may recommend discontinuing System Enhanced Package Version 4 modernization as it considers how to develop and acquire an entirely new

platform. This could abandon the investment in Third Generation Forward Looking Infrared and leave tanks and fighting vehicles using Second Generation sights for an indeterminate amount of time. The committee is concerned that this review could delay the acquisition and employment of advanced capabilities that would immediately improve the lethality and survivability of the current M1A2 platforms.

Accordingly, the committee directs the Assistant Secretary of the Army for Acquisition, Logistics, and Technology, in coordination with the Commanding General, Army Futures Command, to submit a report to the House Committee on Armed Services not later than April 30, 2024, on plans to continually modernize and improve the current main battle tanks with capability upgrades, including, but not limited to Third Generation Forward Looking Infrared sights, the Trophy Active Protection System, and the 360 Situational Awareness System.

MQ-1C Gray Eagle National Guard integration and strategic considerations

The committee recognizes the significant contributions of the MQ-1C Gray Eagle unmanned aircraft system to national defense and intelligence capabilities. The MQ-1C Gray Eagle has proven to be a reliable and cost-effective platform for various missions, including intelligence, surveillance, reconnaissance, and strike operations.

To ensure a prudent allocation of resources and maintain operational effectiveness, the committee encourages the Army to conduct a thorough examination of the MQ-1C Gray Eagle's role within the broader defense strategy and to explore further opportunities to integrate the platform into the National Guard. The committee is interested in understanding how integration of the MQ-1C Gray Eagle into the National Guard would provide additional, cost-effective benefits and enhance the overall capabilities of the defense apparatus.

Therefore, the committee directs the Secretary of the Army, in coordination with the Chief of the National Guard Bureau, to submit a report to the House Committee on Armed Services not later than February 1, 2024, on the Army's plans for the MQ-1C Gray Eagle unmanned aircraft system. The report should include, but not be limited to:

- (1) a status update on existing requirements for the integration of the MQ-1C Gray Eagle into the National Guard, including the potential roles, missions, and necessary support infrastructure for such integration;
- (2) a roadmap for the current and future integration process, including timelines, milestones, and estimated costs; and
- (3) the potential benefits and drawbacks of further integrating the MQ-1C Gray Eagle into the National Guard's operational capabilities, as well as the feasibility of such integration in light of current requirements and priorities.

Optionally Manned Fighting Vehicle Modular Open Systems Approach standards

The committee believes the continued use of modular and open systems standards, as well as building of a virtual prototype, is beneficial to reducing cost

and increasing speed of evaluating and integrating new technologies to enhance competition, innovation, and interoperability. As the Army continues its acquisition of the Optionally Manned Fighting Vehicle (OMFV) and modernization of legacy ground vehicles, the committee is confident the Army will continue to integrate Modular Open Systems Approach (MOSA) standards, as required by section 4401 of title 10, United States Code.

Accordingly, the committee directs the Assistant Secretary of the Army for Acquisition, Logistics, and Technology, in coordination with the Commanding General, Army Futures Command, to provide a briefing to the House Committee on Armed Services not later than March 15, 2024, on adherence to MOSA standards on ground vehicle modernization programs, including OMFV.

Predictive maintenance capabilities for medium- and large-caliber weapon systems

The committee understands that the Department of Defense has broadly implemented predictive maintenance capabilities across vehicles, ships, and fixed-wing and rotary aircraft. These capabilities are currently being utilized in the Next Generation Squad Weapon program to improve weapon readiness and situational awareness. The committee believes that artificial intelligence and machine learning (AI/ML)-enabled sensors and data analytics can likewise be utilized to provide critical sustainment insights at the tactical edge for medium- and large-caliber weapon systems.

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, 2023, on plans to utilize AI/ML-enabled sensors and data analytics to achieve operational and lethality benefits for medium- and large-caliber weapon systems, including combat vehicle platforms. The briefing should include, but is not limited to:

- (1) the Army's plans to utilize AI/ML-enabled sensors to provide real-time, echelon-specific transmission of weapon system usage data within an electromagnetic-contested environment;
- (2) the potential for such sensors to optimize survivability, logistics, and maintenance; and
- (3) the potential for such sensors to enable automated resupply while reducing excess tactical ammunition levels.

Short Range Reconnaissance fielding and prioritization

The committee commends the Department of the Army for its Short Range Reconnaissance program, which is designed to rapidly procure and field commercial drone technology at the tactical level. The committee notes that the Army has leveraged expedited acquisition authorities to cut the time for procuring this technology by a significant margin. Despite these advances, the committee remains concerned with the time it takes to get these essential small unmanned aircraft

systems to the warfighter. The conflict in Ukraine has demonstrated that small drones that are employed properly can become strategic assets in the hands of front-line units. However, many Army light infantry units continue to lack small drone capability. As such, the committee supports maximizing contracts under the Army Short Range Reconnaissance program and supporting the rapid integration of tactical-level unmanned aircraft systems across the Department of Defense.

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, 2024, on the Army's plan to prioritize procurement and fielding of small unmanned aircraft systems to Army light infantry units.

Tactical Scalable Mobile Ad-Hoc Networks

The committee is concerned that the Army is failing to address the shortcomings of the Tactical Scalable Mobile Ad-Hoc Network and their impact on Army network modernization efforts. Moreover, the committee is concerned that the Army is not leveraging commercially available, non-developmental technologies to fill capability gaps and bolster the Army's networking capabilities.

Therefore, the committee directs the Secretary of the Army to submit a report to the House Committee on Armed Services not later than February 1, 2024, on the Army's efforts to leverage commercially available capabilities in its network modernization efforts and detail progress made in developing the Army's Tactical Scalable Mobile Ad-Hoc Network capabilities. The report shall address issues including, but not limited to:

- (1) efforts to improve network functionality while moving and data throughput;
- (2) efforts to integrate the Tactical Scalable Mobile Ad-Hoc Network into Project Convergence;
- (3) identification of any impediments that limit the ability of the Army to consider other commercial-off-the-shelf mobile ad-hoc network technologies that have previously been or are currently being assessed;
- (4) an assessment of other mobile ad-hoc network capabilities in use today that are complementary to existing Single Channel Ground and Airborne Radio Systems and legacy, disparate communications-based systems; and
- (5) an assessment of the current fleet of vehicles, aircraft, and tactical operations centers not included in the fiscal year 2023 capability set-aligned units that would benefit from non-developmental mobile ad-hoc networks.

AIRCRAFT PROCUREMENT, NAVY

Items of Special Interest

Ultra-Long Endurance unmanned aircraft system for persistent intelligence, surveillance, and reconnaissance

The committee recognizes the importance of persistent, attritable overhead intelligence, surveillance, and reconnaissance (ISR) capabilities in providing real-time situational awareness to warfighters and continuously monitoring low-intensity, highly dispersed regions where competing global powers are asserting influence. The committee notes that current systems may be limited by payload, endurance, and forward positioning.

The committee is aware of the ongoing development efforts by the Office of Naval Research to create an operational unmanned ISR capability. As such, the committee directs the Secretary of the Navy to submit a report to the House Committee on Armed Services not later than March 1, 2024, detailing the development and implementation of Ultra-Long Endurance unmanned aircraft system (ULE UAS) platforms. The report should include the following elements:

- (1) a description of the current development status of ULE UAS platforms, including demonstrated capabilities and performance metrics;
- (2) a comparison of ULE UAS capabilities, payload capacity, endurance, and operational lifecycle costs with existing Group III systems;
- (3) an analysis of the potential operational benefits and cost savings of deploying ULE UAS systems across various theaters of operation;
- (4) an assessment of any results stemming from ULE UAS experimentation with combatant commands; and
- (5) an assessment of the feasibility of the integration of ULE UAS platforms into the Department of the Navy's ISR capabilities and strategies and any recommendations for further development or procurement of ULE UAS systems.

AIRCRAFT PROCUREMENT, AIR FORCE

Items of Special Interest

Unmanned aircraft system units with geographically separated launch and recovery elements

The committee notes the significantly increased demand in continuation training requirements for the remotely piloted aircraft enterprise currently supplied wholly by Air National Guard launch and recovery elements. Operating a launch and recovery element not co-located with the mission control element produces inefficiencies.

As such, the committee directs the Secretary of the Air Force, in coordination with the Chief of the National Guard Bureau, to submit a report to the House Committee on Armed Services not later than March 1, 2024, on remotely piloted aircraft units with launch and recovery elements that are geographically separated from mission control and maintenance elements. Specifically, this report should assess the potential benefits of co-locating these activities in order to improve efficiencies and reduce operational costs. The report should include both a findings and recommendations section.

PROCUREMENT, DEFENSE-WIDE

Items of Special Interest

Collaborative autonomous systems in support of Joint All-Domain Command and Control

The committee commends the Department of Defense for its investments and technological advances in artificial intelligence-enabled autonomous systems, which have saved lives, reduced operator cognitive load, and extended situational awareness. The committee believes that the next steps of integration of these developing systems with each other and with human operators are critical to speeding problem solving, decision making, and enhancing survivability, resiliency, and lethality.

The committee emphasizes the importance of integrating these autonomous systems and facilitating their communication using the tenets of Joint All-Domain Command and Control (JADC2) enabling concepts such as “Deterrence by Denial” and “Deterrence by Resilience.” The committee urges the Department to continue to expand coordinated development of these systems and their integration, supporting a robust and diverse industrial base in autonomous systems, software-defined autonomy, and joint all-domain communications solutions.

In order to achieve rapid technological advancement and adoption, the committee recommends the Department to:

- (1) support the separation of autonomy capabilities from hardware providers, extending the life cycle and mission-relevance of the hardware;
- (2) continue challenge-based rapid prototyping and procurement programs, ensuring a clear path to integration of successful prototypes into programs of record;
- (3) continue cross-service JADC2 procurement programs, such as Project Overmatch, Advanced Battle Management System, and Project Convergence; and
- (4) promote diversity in the defense industrial base, supporting small and non-traditional businesses leading innovation in these areas.

The committee encourages further investment and focus on the advancement of ongoing efforts, including networked, collaborative autonomous systems; collaborative combat aircraft; and cross-domain artificial intelligence training and development tools.

Therefore, the committee directs the Secretary of Defense to provide a briefing to the House Committee on Armed Services not later than March 1, 2024, detailing a comprehensive plan to resource and advance these critical concepts and technologies.

Operational assessment of installation defense using directed energy capabilities against unmanned aircraft systems and unmanned aircraft system swarms

Reported unmanned aircraft systems (UAS) incidents have increased from 63 in 2020 to 115 in 2022. Rogue and malicious drones have interfered with sporting events, caused airport shutdowns, violated border laws, delivered illegal contraband into prisons, and damaged critical infrastructure. The committee believes high-power microwave systems must continue to advance the effectiveness of waveforms against new UAS software and hardware to effectively counter the escalating UAS and UAS swarm threat.

Therefore, the committee directs the Secretary of Defense to submit a report to the congressional defense committees not later than March 1, 2024, on the operational assessment of its installation defense capabilities to defeat UAS threats and recommendations for required changes or modifications to equipment, procedures, regulations, or existing laws to operationally employ directed energy. The assessment should include the following information:

- (1) operation of high-energy lasers, high-power microwaves, and other emerging directed energy technologies;
- (2) ability to defeat UAS threats at operationally relevant distances;
- (3) ability to integrate with other counter-UAS systems and existing security infrastructure;
- (4) ability to rapidly transport and set up;
- (5) ability to regulate defeat distances;
- (6) ability to safely operate on U.S. installations, to include effects on the spectrum and airspace inside and outside of established defeat distances and human beings and vehicles inside and outside of established defeat distances;
- (7) ease of training and operation;
- (8) maintainability and sustainability;
- (9) cost-effectiveness; and
- (10) scalability.

TITLE II—RESEARCH, DEVELOPMENT, TEST, AND EVALUATION

RESEARCH, DEVELOPMENT, TEST, AND EVALUATION, ARMY

Items of Special Interest

Counter-unmanned aircraft system transition and fielding

The committee supports the rapid transition of leading counter-UAS (c-UAS) capabilities from U.S. Special Operations Command (USSOCOM) to conventional units across the joint force. The committee notes that the Secretary of Defense designated the Secretary of the Army, through the Joint Counter-small Unmanned Aircraft Systems Office (JCO), as the executive agent responsible for testing and evaluating c-UAS capabilities for use across the joint force. The committee understands that since its inception, the JCO has carried out several demonstrations in realistic operational environments and has recommended

systems and capabilities to serve as providers of c-UAS capabilities for the military services.

The committee is concerned that the military services, in particular the Army, have neither transitioned proven systems, specifically systems currently operating in combat environments with USSOCOM or systems that have been recommended by the JCO, to production at scale, nor acquired them for wider deployment across the joint force. The committee commends efforts by USSOCOM to work with the military services, including the Army, to identify fielding opportunities for fully tested and combat-evaluated capabilities, but the committee believes that the JCO can and should drive broader progress toward these objectives.

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, 2023, on the following:

(1) the Army's plan to ensure that JCO-approved c-UAS capabilities are adopted and acquired by the Army and joint forces and integrated with current systems to close critical capability gaps, enhance and adapt technology, and reduce cost;

(2) identification of gaps, if any, in existing authorities that would prevent the Army from carrying out the transition and acquisitions described above;

(3) opportunities for greater integration of JCO equities into the planning, programming, budgeting, and execution process and the Future Years Defense Program, consistent with JCO strategy and DoD Directive 3800.01E; and

(4) recommendations that would speed the transition and acquisition of approved c-UAS capabilities to the joint force. Such recommendations should address whether modifications to the JCO's mandate and authorities are advisable, or whether an alternative structure (other than the JCO) would be better suited to facilitate the transition and fielding of validated technologies.

Passive radar for air defense and counter-unmanned aircraft systems

The committee believes that the Department of Defense must adopt passive radar technology to complement active radar systems and modernize its enemy surveillance capability. Such a passive capability would allow for lower maintenance costs and the undetected tracking of enemy movements without signaling the location of friendly forces.

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, 2024, on passive radar capabilities relating to air defense and counter-unmanned aircraft systems. Specifically, the briefing should include the following:

(1) a review and articulation of existing passive radar solutions available today and an assessment of each identified solution's technology readiness level;

- (2) an assessment of passive radar technology and its viability for operational use, to include teaming with active systems, as well as the cost effectiveness of using it as a standalone capability; and
- (3) any current or planned research, development, test, and evaluation initiatives to further develop passive radar capabilities.

RESEARCH, DEVELOPMENT, TEST, AND EVALUATION, AIR FORCE

Items of Special Interest

Air-based air defense

The Air Force's Agile Combat Employment (ACE) strategy is a major step forward that will ensure the Air Force is at the ready to deter and stop threats. The committee notes that this plan is a major innovation. However, with the proliferation of threats and the Air Force's plan to deploy in remote locations independent from other major service elements, the committee is concerned these critical assets will lack sufficient air defense. The committee appreciates that ACE places expanded pressures on the Army's air defense capabilities.

Therefore, the committee directs the Secretary of the Air Force to submit a report to the congressional defense committees not later than February 1, 2024, on the Secretary's plan to provide expeditionary, mobile air defense to remote and forward-deployed air fields, including estimated costs and schedule to procure such air defense systems. To the extent the Air Force is concerned about lacking authorities to develop or procure air defense systems, the report should provide a summary of authorities that may need updated or changed.

Collaborative Combat Aircraft propulsion systems

The committee remains concerned about reports that China is expanding its exclusive economic zone and recognizes that successful combat air operations in an Indo-Pacific contingency will be increasingly dependent on unmanned Collaborative Combat Aircraft (CCA) to supplement finite numbers of fifth and sixth generation fighter aircraft. The committee encourages continued clarification of manned-unmanned aircraft teaming concepts and investment in cost-effective, limited-life technologies to facilitate this emerging warfighting concept. Additionally, the committee supports the use of these technologies as a sustainable long-term training solution for adversary air applications, which will become increasingly critical as the Department of Defense seeks to resolve its current pilot shortage and pilot training deficiencies.

While Air Force leadership has actively championed this capability, the committee is aware that development poses a uniquely challenging business case for industry, exemplified by the lack of aftermarket services. Without sufficient Department of Defense investment, industry could face delays that could put the 2030 early operational capability goals at risk. As such, the committee is concerned

about the lack of a clear plan for funding and operationalizing key technologies. In particular, a clear plan for cost-effective, large attritable engine technologies is necessary to inform operational concepts, aircraft requirements, and procurement quantities.

Therefore, the committee directs the Secretary of the Air Force to submit a report to the congressional defense committees not later than October 15, 2023, on the schedule and plans for funding, development, testing, and establishment of high-volume manufacturing of large attritable engine technologies for CCA. Additionally, the committee appreciates the use of a unique program element number for CCA technology development and encourages the Secretary of the Air Force to include designated project numbers within CCA program elements in future budget submissions specifically for attritable propulsion developmental activities.

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

Items of Special Interest

Energetics-dedicated manufacturing technology investments

The committee recognizes that energetics-dedicated manufacturing technology investments are needed to restore domestic manufacturing and accelerate the adoption of more flexible and efficient production technologies, techniques, and processes across the U.S. energetics production base. Transitioning new production technologies and processes for high production volume and cost-sensitive materials, such as energetics, to industry requires reducing risk and assessing manufacturing maturity.

To effectively address these complexities, the committee directs the Under Secretary of Defense for Research and Engineering, in coordination with the Navy Manufacturing Technology Program, to submit an implementation plan and provide a briefing to the House Committee on Armed Services not later than March 1, 2024, on program activities designed to support current eligible academic and industry institutions to effectively transition manufacturing technologies to revitalize the domestic industrial base for manufacturing energetic materials essential to U.S. national defense. The implementation plan should include efforts to support fully automated, integrated test beds that can demonstrate and de-risk continuous manufacturing processes for energetic materials designed to improve flexibility, capacity, quality, safety, and capability prior to transitioning to the energetics industrial base.

National Guard Bureau State mission research, development, test, and evaluation enhancement

The committee notes that the National Guard is unique in that it simultaneously serves the Federal Government and State governments. While the

missions in these two areas often overlap, there is a significant array of missions and requirements supporting State operations that do not directly map or overlap Federal requirements. While the National Guard must continue to address evolving and pacing national security threats, it must also address the unique non-Federal threats to the homeland and support domestic operations. In addition, while States take the lead in protecting the homeland and domestic populations, they seldom have the resources or capabilities to perform research, development, test and evaluation (RDT&E) to address current homeland defense and emerging threats.

Given both the National Guard's unique position and the challenges of addressing Federal and non-Federal homeland defense in combination with national security, the committee directs the Director, National Guard Bureau to provide a briefing to the House Committee on Armed Services not later than December 31, 2023, on current gaps in how the National Guard Bureau and the 54 State National Guard organizations would like to better deploy their array of resources (to include funding, equipment, and personnel) to identify, analyze, and develop requirements. The briefing should also address how the National Guard Bureau assesses it could optimally implement plans to address unique State challenges and emerging threats by acting as a liaison and coordinator between national RDT&E assets and State level requirements. This includes the coordination of RDT&E requirements and efforts to ensure that they are leveraged to the maximum extent possible across State boundaries and mission areas. This briefing should specifically reference current challenges and limitations of both State and Federal funding sources, including National Guard and Reserve Equipment Appropriations funding.