H.R. 4350—FY22 NATIONAL DEFENSE AUTHORIZATION BILL

SUBCOMMITTEE ON TACTICAL AIR AND LAND FORCES

SUMMARY OF BILL LANGUAGE

Table Of Contents

DIVISION A—DEPARTMENT OF DEFENSE AUTHORIZATIONS

TITLE I—PROCUREMENT

LEGISLATIVE PROVISIONS

SUBTITLE B—ARMY PROGRAMS

Section 111—Multiyear Procurement Authority for AH-64E Apache Helicopters

This section would authorize the Secretary of the Army to enter into one or more multiyear contracts for AH–64E Apache helicopters beginning in fiscal year 2022, in accordance with section 2306b of title 10, United States Code.

Section 112—Multiyear Procurement Authority for UH-60M and HH-60M Black Hawk Helicopters

This section would authorize the Secretary of the Army to enter into one or more multiyear contracts for UH–60M and HH–60M Black Hawk helicopters beginning in fiscal year 2022, in accordance with section 2306b of title 10, United States Code.

Section 113—Continuation of Soldier Enhancement Program

This section would continue the Soldier Enhancement Program under the responsibility and authority of the Assistant Secretary of the Army for Acquisition, Logistics, and Technology.

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

Section 144—Reports on Exercise of Waiver Authority with Respect to Certain Aircraft Ejection Seats

This section would require the Secretary of the Air Force and Secretary of the Navy to provide a report to the congressional defense committees on a semi-annual basis that would describe the total quantity of ejection seats currently in operational use that are operating with an approved waiver due to deferred maintenance actions or because required parts or components are not available to replace expired parts or components. The committee is aware of two recent aircraft accidents in which ejection seats in operational service malfunctioned during the pilot's ejection sequence due to lack of parts or deferred maintenance actions; one ejection resulted in a fatality.

TITLE II—RESEARCH, DEVELOPMENT, TEST, AND EVALUATION

LEGISLATIVE PROVISIONS

SUBTITLE B—PROGRAM REQUIREMENTS, RESTRICTIONS, AND LIMITATIONS

Section 217—Assessment and Correction of Deficiencies in the F-35 Aircraft Pilot Breathing System

This section would require the Secretary of Defense, in consultation with the Administrator, National Aeronautics and Space Administration, to investigate, assess, and implement, if necessary, effective corrective actions for the F-35 breathing system to address the initial findings and recommendations noted by the National Aeronautics and Space Administration's Engineering and Safety Center Technical Assessment Report on the F-35 pilot breathing system published on November 19, 2020.

Section 218—Prohibition on Reduction of Naval Aviation Testing and Evaluation Capacity

This section would prohibit the Secretary of the Navy from taking any actions to reduce the aviation testing capacity with regards to aircraft divestment or personnel billet changes of the Navy below fiscal year 2021 levels and requires the Director of Operational Test and Evaluation to assess the Navy's planned reductions and mitigation strategy.

SUBTITLE C—PLANS, REPORTS, AND OTHER MATTERS

Section 233—Assessment and Report on Airborne Electronic Attack Capabilities and Capacity

This section would require the Secretary of the Air Force to conduct an assessment of the airborne electronic attack capabilities and capacity of the Air Force and analyze the feasibility of integrating the Department of the Navy's ALQ-249 Next Generation Jammer on Air Force tactical aircraft. This section would require a report on the assessment to be submitted to the Committees on Armed Services of the Senate and the House of Representatives not later than February 15, 2022.

TITLE X—GENERAL PROVISIONS

LEGISLATIVE PROVISIONS

SUBTITLE E—STUDIES AND REPORTS

Section 1055—Geographic Combatant Command Risk Assessment of Air Force Airborne Intelligence, Surveillance, and Reconnaissance Modernization Plan

This section would require each commander of a geographic combatant command to submit to the congressional defense committees not later than March 31, 2022, an assessment of the operational risk to that command posed by the restructuring and inventory divestments projected in the Modernization Plan for Airborne Intelligence, Surveillance, and Reconnaissance for the Department of the Air Force as required by the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 (Public Law 116-283).

Section 1056—Biennial Assessments of Air Force Test Center

This section would require the Secretary of the Air Force to provide a report to the congressional defense committees not later than 30 days after the President's budget request is submitted for fiscal years 2023, 2025, and 2027, that updates the information contained in the reports required by the committee report accompanying the National Defense Authorization Act for Fiscal Year 2018 (H. Rept. 115-200) and the committee report accompanying the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 (H. Rept. 116-442).

The committee continues to recognize the importance of the Air Force Test Center enterprise and its role as a cornerstone for developmental test and evaluation of air, space, and cyber systems. The committee acknowledges that given technology advancements and the emergence of peer competitors globally, innovative and modernized weapons system testing and development capabilities are needed to support development and acquisition of effective deterrence and combat capabilities.

BILL LANGUAGE

Subtitle B—Army Programs

SEC. 111 [Log 72928]. MULTIYEAR PROCUREMENT AUTHORITY FOR AH–64E APACHE HELICOPTERS.

(a) AUTHORITY FOR MULTIYEAR PROCUREMENT.—Subject to section 2306b of title 10, United States Code, the Secretary of the Army may enter into one or more multiyear contracts, beginning with the fiscal year 2022 program year, for the procurement of AH–64E Apache helicopters.

(b) CONDITION FOR OUT-YEAR CONTRACT PAYMENTS.—A contract entered into under subsection (a) shall provide that any obligation of the United States to make a payment under the contract for a fiscal year after fiscal year 2022 is subject to the availability of appropriations for that purpose for such later fiscal year.

SEC. 112 [Log 72929]. MULTIYEAR PROCUREMENT AUTHORITY FOR UH–60M AND HH–60M BLACK HAWK HELICOPTERS.

(a) AUTHORITY FOR MULTIYEAR PROCUREMENT.—Subject to section 2306b of title 10, United States Code, the Secretary of the Army may enter into one or more multiyear contracts, beginning with the fiscal year 2022 program year, for the procurement of UH–60M and HH–60M Black Hawk helicopters.

(b) CONDITION FOR OUT-YEAR CONTRACT PAYMENTS.—A contract entered into under subsection (a) shall provide that any obligation of the United States to make a payment under the contract for a fiscal year after fiscal year 2022 is subject to the availability of appropriations for that purpose for such later fiscal year.

SEC. 113 [Log 73044]. CONTINUATION OF SOLDIER ENHANCEMENT PROGRAM.

(a) REQUIREMENT TO CONTINUE PROGRAM.—The Secretary of the Army, acting through the Assistant Secretary of the Army for Acquisition, Logistics, and Technology in accordance with subsection (b), shall continue to carry out the Soldier Enhancement Program established pursuant to section 203 of the National Defense Authorization Act for Fiscal Years 1990 and 1991 (Public Law 101–189; 103 Sat. 1394).

(b) RESPONSIBLE OFFICIAL.—The Secretary of the Army shall designate the Assistant Secretary of the Army for Acquisition, Logistics, and Technology as the official in the Department of the Army with principal responsibility for the management of the Soldier Enhancement Program under subsection (a).

(c) DUTIES.—The duties of the Soldier Enhancement Program shall include the identification, research, development, test, and evaluation of commercially available off-the-shelf items (as defined in section 104 of title 41, United States Code) and software applications to accelerate the efforts of the Army to integrate, modernize, and enhance weapons and equipment for use by Army soldiers, including—

(1) lighter, more lethal weapons; and

(2) support equipment, including lighter, more comfortable load-bearing equipment, field gear, combat clothing, survivability items, communications equipment, navigational aids, night vision devices, tactical power, sensors, and lasers.

SEC. 144 [Log 73481]. REPORTS ON EXERCISE OF WAIVER AUTHORITY WITH RESPECT TO CERTAIN AIRCRAFT EJECTION SEATS.

Not later than February 1, 2022, and on a semiannual basis thereafter through February 1, 2024, the Secretary of the Air Force and the Secretary of the Navy shall each submit to the congressional defense committees a report that includes, with respect to each location at which active flying operations are conducted or planned as of the date report—

(1) the number of aircrew ejection seats installed in the aircraft used, or expected to be used, at such location;

(2) of the ejection seats identified under paragraph (1), the number that have been, or are expected to be, placed in service subject to a waiver due to—

(A) deferred maintenance; or

(B) the inability to obtain parts to make repairs or to fulfill time-compliance technical orders; and

(3) for each ejection seat subject to a waiver as described in paragraph (2)—

(A) the date on which the waiver was issued; and

(B) the name and title of the official who authorized the waiver.

SEC. 217 [Log 73413]. ASSESSMENT AND CORRECTION OF DEFICIENCIES IN THE F–35 AIRCRAFT PILOT BREATHING SYSTEM.

(a) TESTING AND EVALUATION REQUIRED.—Beginning not later than 120 days after the date of the enactment of this Act, the Secretary of Defense, in consultation with the Administrator of the National Aeronautics and Space Administration, shall commence operational testing and evaluation of the F–35 aircraft pilot breathing system (in this section referred to as the ''breathing system'') to—

(1) determine whether the breathing system complies with Military Standard 3050 (MIL–STD–3050), titled ''Aircraft Crew Breathing Systems Using On-Board Oxygen Generating System (OBOGS)''; and

(2) assess the safety and effectiveness of the breathing system for all pilots of F–35 aircraft.

(b) REQUIREMENTS.—The following shall apply to the testing and evaluation conducted under subsection (a):

(1) The pilot, aircraft systems, and operational flight environment of the F–35 aircraft shall not be assessed in isolation but shall be tested and evaluated as integrated parts of the breathing system.

(2) The testing and evaluation shall be conducted under a broad range of operating conditions,

including variable weather conditions, low-altitude flight, high-altitude flight, during weapons employment, at critical phases of flight such as take-off and landing, and in other challenging environments and operating flight conditions.

(3) The testing and evaluation shall assess operational flight environments for the pilot that replicate expected conditions and durations for high gravitational force loading, rapid changes in altitude, rapid changes in airspeed, and varying degrees of moderate gravitational force loading.

(4) A diverse group of F–35 pilots shall participate in the testing and evaluation, including—

(A) pilots who are test-qualified and pilots who are not test-qualified

(B) pilots who vary in gender, physical conditioning, height, weight, and age, and any other attributes that the Secretary determines to be appropriate.

(5) The F–35A, F–35B, and F–35C aircraft involved in the testing and evaluation shall perform operations with operationally representative and realistic aircraft configurations.

(6) The testing and evaluation shall include assessments of pilot life support gear and relevant

equipment, including the pilot breathing mask apparatus.

(7) The testing and evaluation shall include testing data from pilot reports, measurements of breathing pressures and air delivery response timing and flow, cabin pressure, air-speed, acceleration, measurements of hysteresis during all phases of flight, measurements of differential pressure between mask and cabin altitude, and measurements of spirometry and specific oxygen saturation levels of the pilot immediately before and immediately after each flight.

(8) The analysis of the safety and effectiveness of the breathing system shall thoroughly assess any physiological effects reported by pilots, including effects on health, fatigue, cognition, and perception of any breathing difficulty.

(9) The testing and evaluation shall include the participation of subject matter experts who have familiarity and technical expertise regarding design and functions of the F–35 aircraft, its propulsion system, pilot breathing system, life support equipment, human factors, and any other systems or subject matter the Secretary determines necessary to conduct effective testing and evaluation. At a min-

imum, such subject matter experts shall include aerospace physiologists, engineers, flight surgeons, and scientists.

(10) In carrying out the testing and evaluation, the Secretary of Defense may seek technical support and subject matter expertise from the Naval Air Systems Command, the Air Force Research Laboratory, the Office of Naval Research, the National Aeronautics and Space Administration, and any other organization or element of the Department of Defense or the National Aeronautics and Space Administration that the Secretary, in consultation with the Administrator of the National Aeronautics and Space Administration, determines appropriate to support the testing and evaluation.

(c) CORRECTIVE ACTIONS.—Not later than 90 days after the submittal of the final report under subsection (e), the Secretary of Defense shall take such actions as are necessary to correct all deficiencies, shortfalls, and gaps in the breathing system that were discovered or reported as a result of the testing and evaluation under subsection (a).

(d) PRELIMINARY REPORT.—Not later than one year after the commencement of the testing and evaluation under subsection (a), the Secretary of Defense shall sub-

mit to the congressional defense committees a preliminary report, based on the initial results of such testing and evaluation, that includes findings, recommendations, and potential corrective actions to address deficiencies in the breathing system.

(e) FINAL REPORT.—Not later than two years after the commencement of the testing and evaluation under subsection (a), the Secretary of Defense shall submit to the congressional defense committees a final report that includes, based on the final results of such testing and evaluation—

(1) findings and recommendations with respect to the breathing system; and

(2) a description of the specific actions the Secretary will carry out to correct deficiencies in the breathing system, as required under subsection (c).

(f) INDEPENDENT REVIEW OF FINAL REPORT.—

(1) IN GENERAL.—The Secretary of Defense, in consultation with the Administrator of the National Aeronautics and Space Administration, shall seek to enter into an agreement with a federally funded research and development center with relevant expertise to conduct an independent sufficiency review of the final report submitted under subsection (e).

(2) REPORT TO SECRETARY.—Not later than seven months after the date on which the Secretary of Defense enters into an agreement with a federally funded research and development center under paragraph (1), the center shall submit to the Secretary a report on the results of the review conducted under such paragraph.

(3) REPORT TO CONGRESS.—Not later than 30 days after the date on which the Secretary of Defense receives the report under paragraph (2), the Secretary shall submit the report to the congressional defense committees.

SEC. 218 [Log 73471]. PROHIBITION ON REDUCTION OF NAVAL AVIATION TESTING AND EVALUATION CAPACITY.

(a) PROHIBITION.—During the period beginning on the date of the enactment of this Act and ending on October 1, 2022, the Secretary of the Navy may not take any action that would reduce, below the levels authorized and in effect on October 1, 2020, any of the following:

(1) The aviation-related operational testing and evaluation capacity of the Department of the Navy.

(2) The billets assigned to support such capacity.

(3) The aviation force structure, aviation inventory, or quantity of aircraft assigned to support such capacity, including rotorcraft and fixed-wing aircraft.

(b) REPORT REQUIRED.—Not later than June 30, 2022, the Director of Operational Test and Evaluation shall submit to the congressional defense committees a report that assesses each of the following as of the date of the report:

(1) The design and effectiveness of the testing and evaluation infrastructure and capacity of the Department of the Navy, including an assessment of whether such infrastructure and capacity is sufficient to carry out the acquisition and sustainment

testing required for the aviation-related programs of the Department of Defense and the naval aviation-related programs of the Department of the Navy

(2) The plans of the Secretary of the Navy to reduce the testing and evaluation capacity and infrastructure of the Navy with respect to naval aviation in fiscal year 2022 and subsequent fiscal years, as specified in the budget of the President submitted to Congress on May 28, 2021.

(3) The technical, fiscal, and programmatic issues and risks associated with the plans of the Secretary of the Navy to delegate and task operational naval aviation units and organizations to efficiently and effectively execute testing and evaluation master plans for various aviation-related programs and projects of the Department of the Navy.

SEC. 233 [Log 73202]. ASSESSMENT AND REPORT ON AIRBORNE ELECTRONIC ATTACK CAPABILITIES AND CAPACITY.

(a) ASSESSMENT.—The Secretary of the Air Force shall conduct an assessment of—

(1) the status of the airborne electronic attack capabilities and capacity of the Air Force; and

(2) the feasibility and advisability of adapting the ALQ–249 Next Generation Jammer for use on Air Force tactical aircraft, including an analysis of—

(A) the suitability of the jammer for use on such aircraft; and

(B) the compatibility of the jammer with such aircraft; and

(C) identification of any unique hardware, software, or interface modifications that may be required to integrate the jammer with such aircraft.

(b) REPORT.—Not later than February 15, 2022, the Secretary of the Air Force shall submit to the Committees on Armed Services of the Senate and the House of Representatives a report on the results of the assessment conducted under subsection (a).

SEC. 1055 [Log 73112]. GEOGRAPHIC COMBATANT COMMAND RISK ASSESSMENT OF AIR FORCE AIRBORNE INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE MODERNIZATION PLAN.

(a) IN GENERAL.—Not later than March 31, 2022, each commander of a geographic combatant command shall submit to the congressional defense committees a report containing an assessment of the level of operational risk to that command posed by the plan of the Air Force to modernize and restructure airborne intelligence, surveillance, and reconnaissance capabilities to meet near-, mid-, and far-term contingency and steady-state operational requirements against adversaries in support of the objectives of the 2018 national defense strategy.

(b) PLAN ASSESSED.—The plan of the Air Force referred to in subsection (a) is the plan required under section 142 of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 (Public Law 116–283).

(c) ASSESSMENT OF RISK.—In assessing levels of operational risk for purposes of subsection (a), a commander shall use the military risk matrix of the Chairman of the Joint Chiefs of Staff, as described in CJCS Instruction 3401.01E.

(d) GEOGRAPHIC COMBATANT COMMAND.—In this section, the term ''geographic combatant command'' means each of the following:

(1) United States European Command.

(2) United States Indo-Pacific Command.

(3) United States Africa Command.

(4) United States Southern Command.

(5) United States Northern Command.

(6) United States Central Command.

SEC. 1056 [Log 73534]. BIENNIAL ASSESSMENTS OF AIR FORCE TEST CENTER.

Not later than 30 days after the date on which the President's budget is submitted to Congress under section 1105(a) of title 31, United States Code, for each of fiscal years 2023, 2025, and 2027, the Secretary of the Air Force shall submit to the congressional defense committees an assessment of the Air Force Test Center. Each such assessment shall include, for the period covered by the assessment, a description of—

(1) any challenges of the Air Force Test Center with respect to completing its mission; and

(2) the plan of the Secretary to address such challenges.

DIRECTIVE REPORT LANGUAGE

Table Of Contents

DIVISION A—DEPARTMENT OF DEFENSE AUTHORIZATIONS

TITLE I—PROCUREMENT

MISSILE PROCUREMENT, ARMY

Items of Special Interest

Extended Range Air Defense

The committee notes the Army's efforts to restore its short-range air defense (SHORAD) systems capability and capacity. Of the capabilities tested, the Army is pursuing the Initial Maneuver SHORAD (IM-SHORAD) system consisting of a Stryker vehicle equipped with multiple air defense weapons including its existing air defense missile. The Army plans to begin fielding IM-SHORAD vehicles in fiscal year 2021.

However, the committee is concerned there may be a requirement to engage hostile aircraft at greater ranges to successfully protect U.S. and allied ground forces. Therefore, 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 by December 30, 2021, on the Army's plans for sustaining and improving SHORAD system capability and capacity to meet current and potential air threats. This briefing should address issues including, but not limited to, the technology options under consideration for SHORAD capability improvements, force structure options under consideration for SHORAD capacity improvements, the schedule and funding profiles through the Future Years Defense Program associated with each option, the relative priority for modernizing SHORAD systems in the Army's modernization strategy, and options for mitigation of short-term air defense risk while SHORAD improvements are developed, procured, and fielded.

PROCUREMENT OF WEAPONS AND TRACKED COMBAT VEHICLES, ARMY

Items of Special Interest

M240 medium machine gun

The committee is concerned about the Army's management of risk in the M240 medium machine gun industrial base. The committee understands the Army has achieved the procurement objective for the M240 medium machine gun, and that the current M240 acquisition and sustainment strategy is to end production of new machine guns and rely on replacement of individual parts. The committee's concern is focused on the implications of closing a production line that would be expensive and difficult to reestablish at a later date, risking an industrial base that

lacks the capacity and capability necessary to support current and future military requirements.

Accordingly, the committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services not later than January 28, 2022, that includes details on the state of the small arms industrial base both currently and as planned based on the fiscal year 2022 Future Years Defense Plan; the expected impacts to the small arms industrial base of closing production lines such as the M240; and options to manage risk in the small arms industrial base through the sustainment, upgrade, or replacement of existing weapons.

PROCUREMENT OF AMMUNITION, ARMY

Items of Special Interest

Conventional ammunition demilitarization

The committee is concerned about the growing stockpile of obsolete or expired munitions and the yearlong contract award delay for the ongoing conventional ammunition demilitarization mission. The committee notes that the original award date was planned for September 2020. The committee understands that the dangerous and challenging process of munition demilitarization requires the combination of a proven workforce and highly specialized equipment to safely handle and dispose of explosives and hazardous munitions. The committee is further concerned that continued uncertainty and contract award delays have resulted in poor program execution of previously enacted funds.

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 not later than December 30, 2021, that addresses the Army's obligations and expenditures of the conventional demilitarization budget. The report should include the strategy for the utilization of each government-owned/government-operated, government-owned/contractor-operated, and contractor-owned/contractor-operated activity and include an analysis of the recent cost-benefit and cost trends data, recycling costs, efficiency, and environmental compliance.

Medium caliber ammunition

The committee supports and encourages the Army’s careful management of production capacity, capability, and risk in its medium caliber ammunition industrial base. The committee is also aware that the Army is evaluating the adequacy of and risk associated with medium caliber industrial base production capability and capacity for 20mm to 30mm ammunition. The committee is further aware that adequate production capability and capacity exists today, within a competitive procurement environment, with two North American vendors. Given this ongoing evaluation, the committee directs the Secretary of the Army to provide

a briefing to the House Committee on Armed Services not later than December 30, 2021, on the current medium caliber direct-fire ammunition acquisition strategy and future changes, if any, under consideration. The briefing shall include cost-benefit considerations and potential industrial base impacts to any future medium caliber ammunition acquisitions.

OTHER PROCUREMENT, ARMY

Items of Special Interest

Army modular open systems architecture

The committee notes the Army's progress with the development of Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) Modular Open Suite of Standards (CMOSS). However, the committee is concerned about an apparent lack of sufficient policy and programmatic governance with the research, development, testing, and decision-making associated with these standards, as well as the enforcement of these standards throughout the research, development, acquisition, and sustainment cycles across programs for the upgrade, modernization, or replacement of equipment and weapon systems. Therefore, the committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services by December 30, 2021, on plans for the establishment of a governance system for CMOSS that includes the formal assignment of responsibility, authority, and accountability for the development of CMOSS standards and their enforcement. The briefing should include how such a governance system incentivizes programs of record to ensure their compliance with current and future CMOSS requirements.

High frequency radio infrastructure

The committee supports modernization of high frequency radio infrastructure, including fielding of near-term technology upgrades to infrastructure that provide continued beyond-line-of-sight communications capability in the event of the disruption of primary systems. The committee encourages the Department of Defense to coordinate with other Federal agencies to identify a central coordinating authority for high frequency operational interoperability and modernization planning. Furthermore, 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 December 30, 2021, on high frequency communications infrastructure, including modernization plans, coordination between Federal agencies, and infrastructure resiliency.

High Mobility Multipurpose Wheeled Vehicle rollover mitigation

The committee remains concerned about tactical vehicle accidents resulting in serious injuries and fatalities. A significant number of accidents with the most serious injuries or loss of life appear to be those involving vehicle rollovers based on excessive speed, mishandling, or breaking. Although environmental conditions, operator training, supervision, and discipline are almost always contributing factors in these accidents, there is evidence that for some tactical vehicles, their technical capabilities can be improved to reduce such risks. This is particularly the case with older models of the widely used High Mobility Multipurpose Wheeled Vehicle (HMMWV).

To deal with this challenge for the HMMWV fleet, the Army designed, developed, and validated an antilock brake system and electronic stability control (ABS/ESC) rollover mitigation solution for installation over time onto the existing HMMWV fleet. In 2018, the Army mandated that all new production HMMWVs must have the ABS/ESC installed. Since July 2018, the Army has received approximately 5,000 new production or recapitalized HMMWV vehicles with ABS/ESC installed. In 2019, the Army created an ABS/ESC retrofit kit to upgrade the fielded fleet for installation at either the depot or home station. This dual approach, production and retrofit, will ensure that all HMMWVs in the enduring fleet eventually include installed ABS/ESC rollover mitigation technology.

The committee is concerned, however, that the Army investment in new production and retrofit installations, either at home station or the depot, is not as aggressive as necessary to manage risk in the HMMWV fleet. Given there are over 54,000 HMMWVs in the fielded fleet that are older models without installed rollover kits, the committee is concerned that the fleet upgrade may take longer than prudent risk allows. 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 by December 30, 2021, on the Army's plans, including schedule and funding profiles, for the completion of the installation of rollover mitigation kits onto all HMMWVs the Army plans to retain.

OTHER PROCUREMENT, NAVY

Items of Special Interest

Maritime Augmented Guidance with Integrated Controls for Carrier Approach and Recovery Precision Enabling Techniques

The committee is aware that the Department of the Navy has performed flight testing events with advanced flight control software for the F-35, F/A-18 E/F Super Hornet, and E/A-18G Growler tactical aircraft platforms. The committee supports the Navy's efforts to reduce the workload and improve safety for naval aviators and landing signals officers (LSOs) performing the tasks associated with aircraft carrier approaches and landings. The Maritime Augmented Guidance with Integrated Controls for Carrier Approach and Recovery Precision Enabling Techniques (MAGIC CARPET) software assists aviators in maintaining consistent

and safe glide-slope descent tracking during final approach to landing in all environmental conditions. MAGIC CARPET increases the automation of terminal approach operations and could potentially enable the Navy to reduce training costs for operations related to aircraft carrier operational certifications prior to steaming in support of deployments.

Therefore, the committee directs the Secretary of the Navy to provide a briefing to the House Committee on Armed Services not later than February 1, 2022, on MAGIC CARPET software development, flight testing, and fielding schedule. The briefing should also include the impact on naval aviator and LSO workloads, the potential reduction in training missions and associated cost avoidance, and a notional schedule for implementation and integration of the software to support locations hosting E/A-18G aircraft operations.

PROCUREMENT, MARINE CORPS

Items of Special Interest

High Mobility Engineer Excavator

The Marine Corps budget request does not include any funding for procurement of the High Mobility Engineer Excavator (HMEE). The committee is concerned that stopping procurement of HMEE will leave the Marine Corps with an aging, less capable and sustainable, trailer-transported backhoe loader system that does not meet current or future deployed requirements. Accordingly, the committee directs the Commander, Marine Corps Combat Development Command, to provide a briefing to the House Committee on Armed Services by January 30, 2022, that identifies the current and future requirements for highly mobile engineer excavation capability and how the Marine Corps plans to meet those requirements.

PROCUREMENT, DEFENSE-WIDE

Items of Special Interest

Comptroller General review of tactical fighter aircraft capacity shortfalls and capability gaps

Despite billions of dollars of investment in developing and acquiring tactical fighter aircraft over many years, the Air Force, Navy, and Marine Corps will likely continue to face capability and capacity shortfalls over the upcoming decades. The committee understands that each of the services has begun reevaluating its tactical aircraft force structure requirements and capability needs, with the Air Force and Navy simultaneously planning to heavily invest funding in the upcoming years to develop and field advanced Next Generation Air Dominance (NGAD) capabilities.

The committee notes that the tactical fighter aircraft shortfalls facing the military services did not suddenly appear. As far back as 2010, the Government

Accountability Office (GAO) noted in its report (GAO-10-789) that the Air Force, Navy, and Marine Corps were projecting tactical fighter aircraft shortfalls beginning in the 2020 timeframe. GAO concluded that the services needed to gain a clearer and more comprehensive portfolio-level understanding of their tactical fighter aircraft requirements and forecasted shortfalls in order to ensure that they made well-informed tactical fighter aircraft acquisition investment decisions.

Therefore, given that the services are still facing tactical fighter aircraft inventory and capability shortfalls more than a decade after the last GAO report on the issue, the committee directs the Comptroller General of the United States to submit a report to the congressional defense committees not later than April 1, 2022, that assesses and identifies current Air Force, Navy, and Marine Corps tactical aircraft capability and capacity requirements and forecasted shortfalls. In addition, the report should assess the extent to which the services' tactical aircraft acquisition and modernization investment plans, including NGAD efforts, are likely to meet those requirements and address the shortfalls. Finally, the Comptroller General should, as appropriate, provide the congressional defense committees with periodic briefings on preliminary findings and pertinent information during the compilation and drafting of the final report.

TITLE II—RESEARCH, DEVELOPMENT, TEST, AND EVALUATION

RESEARCH, DEVELOPMENT, TEST, AND EVALUATION, ARMY

Items of Special Interest

Advanced combat engine

The committee is aware of an effort to develop an advanced combat engine with the potential to provide a modular and scalable powertrain solution fitting the needs of the current and next generation of combat vehicles programs, including the Optionally Manned Fighting Vehicle (OMFV). The committee understands that this technology is based upon an innovative opposed piston technology with the potential to provide significant increases in power density and efficiency in a smaller size compared with current engines in armored or combat vehicle applications.

Accordingly, the committee directs the Commander, U.S. Army Futures Command to submit a report to the House Committee on Armed Services not later than December 30, 2021, that provides an assessment of the technical and affordability potential of an advanced combat engine based on opposed piston technology. Such engine's technical assessment should include its potential for application in any current or future combat or tactical vehicle, including OMFV.

Auxiliary power units for Army combat and tactical vehicles

The committee understands that the Army is currently exploring auxiliary power units (APUs) for use on Army combat and tactical vehicles. APUs provide electrical power to the vehicle's on-board systems, such as weapons, sensors, computers, and radios, without draining the batteries or running the engine. The committee understands that the APUs under development could offer significant improvements in size, weight, and fuel efficiency compared to other APU and power generation solutions currently available. The committee encourages the Army to continue to pursue modern, light, efficient APUs to supplement existing on-board vehicle power and maximize mission effectiveness while minimizing fuel consumption in the future.

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 by December 30, 2021, on efforts to develop modern, light, efficient APUs for use on combat and tactical vehicles. This report shall include, but not be limited to, plans to field new APUs on Army combat and tactical vehicles, an overview of current and planned research and development efforts relating to auxiliary power units, and an assessment of which combat and tactical vehicles stand to benefit the most from APUs currently in development.

Battery charging for electric vehicles in tactical environments

The committee is aware of interest and efforts on the part of the military departments and defense agencies toward the development and potential use of electric vehicles and systems throughout an area of operations. Using electric vehicle to replace or supplement the current or future tactical vehicle fleet will require sustained and focused investment in a variety of technical areas not only in fleet electric vehicles but in the capabilities and infrastructure necessary to support them. The committee notes that the Army has started to identify the capabilities required to support and sustain tactical vehicles in an operational environment with particular focus on the capabilities and infrastructure need to recharge those tactical systems that are not hybrid or otherwise capable of recharging themselves with an onboard generator. The concept of tactical charging or recharging is central to feasibility of the electrification of combat or tactical vehicles. The committee is concerned that research and development of electric vehicle charging or recharging technology should keep pace with research and development of the vehicles themselves.

Accordingly, the committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services by December 30, 2021, on research and development plans related to electric vehicle charging and recharging in the tactical environment. This briefing should include, but not be limited to, an overview of the Army's current thinking on electric vehicle operations in a tactical environment and related sustainment requirements including battery charging or recharging; an assessment of existing commercially available battery charging capabilities and their potential for use in a tactical environment; how plans and

schedules for battery charging research and development are synchronized with electric vehicle development; and funding profiles for battery charging research and development support electric vehicle development.

Carbon fiber and graphite foam applications for combat and tactical vehicles

In the committee report accompanying the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 (H. Rept. 116-442), the committee noted that the U.S. Army Ground Vehicle Systems Center (GVSC) and U.S. Special Operations Command (USSOCOM) were conducting developmental research on carbon fiber composite wheels and graphitic carbon foam in support of the Army's and the special operations forces' combat and tactical vehicle programs. The committee took the opportunity in that report to encourage the Army and USSOCOM to ensure that the combat and tactical vehicle industrial base were aware of their potential interest in graphite and carbon fiber technologies as well as to continue to assess their possible application to future combat and tactical vehicles.

The committee now understands that the GVSC and USSOCOM may be interested in a wider application of graphitic composite and graphitic carbon foam components in support of the Army's Next Generation Combat Vehicle and for other vehicle technology purposes. For example, graphitic composites used in batteries and fuel cells may reduce their weight with increased strength. Graphitic carbon foam may have utility in reducing component heat signatures and protecting against blast, directed energy, or electromagnetic pulse weapons.

Given the committee's encouragement in last year's report, and its enduring interest in the testing and demonstration of the potential of graphite composite and graphitic carbon foam vehicle components, the committee directs the Commander, Army Futures Command, in coordination with the Commander, U.S. Special Operations Command, to submit a report to the House Committee on Armed Services not later than December 30, 2021, on efforts to make the combat and tactical vehicle industrial base aware of its interest in graphite composite and graphitic carbon foam vehicle components.

Electrification of combat and tactical vehicles

The committee understands the Army is in the process of developing a tactical and combat vehicle electrification (TaCV-E) initial capabilities document (ICD) to lay out the operational characteristics or requirements for electrification of the Army's ground vehicle fleet. The committee understands the TaCV-E ICD will identify electrification opportunities for both new start and modification of existing vehicle programs. The committee also notes the electric light reconnaissance vehicle (eLRV) program is the Army's rapid prototyping effort to develop an all-electric tactical vehicle with which soldiers can then experiment and demonstrate electrification's potential as well as inform the broader TaCV-E initiative.

The committee is aware that the automotive industry is aggressively moving forward with electrification based on mature commercial technologies, including advanced battery technology, and expects the Army to engage with traditional and non-traditional industry entities to accelerate eLRV prototype development and, looking farther into the future, also inform the broader TaCV-E initiative. Inherent in vehicle electrification is the potential for operational exportable power generation, making modification of existing tactical vehicles, where appropriate and cost effective, part of the TaCV-E initiative. The Army's new Infantry Squad Vehicle and U.S. Special Operations Command's (USSOCOM) light tactical vehicles may be candidates for such consideration.

Accordingly, the committee directs the Secretary of the Army, in coordination with the Commander, U.S. Special Operations Command, to provide a briefing to the House Committee on Armed Services by December 30, 2021, on the status and plans for the TaCV-E and the eLRV rapid prototyping program. The briefing should include, but not be limited to, initial assessment of characteristics or requirements for electrification of combat and tactical vehicles. The briefing should include technology development plans including schedule, technology objectives, test and evaluation strategies, and funding profiles separately for TaCV-E and eLRV. The briefing should identify options for the realistic and achievable acceleration of eLRV to include funding requirements and engagement strategies, if any, with the commercial electric vehicle industrial base. Finally, the briefing should address how the Army and USSOCOM are coordinating on combat and tactical vehicle electrification technology development.

Extended range cannon artillery rate of fire

The committee notes the Army's commitment to its highest priority modernization effort that would develop and field new long range precision fires using both missile and cannon artillery systems. Last year, the Extended Range Cannon Artillery (ERCA) program demonstrated the prototype of a modified M109A7 Paladin self-propelled howitzer that fired a cannon launched projectile nearly 70 kilometers. Although ranges of 70 kilometers or more appear achievable, the Army recognizes that improving ERCA's rate of fire is critically important to its fundamental operational utility.

In this regard, the committee is aware that last year, a test of the Army designed and fabricated automatic loader, intended for later insertion into the ERCA system, failed to demonstrate suitability as a component of the modified M109A7 Paladin chassis and turret. Nonetheless, the Army is committed to exploring other potential technical solutions that will improve ERCA's rate of fire without undermining its operational reliability and supportability. The committee supports this approach.

Accordingly, the committee directs the Commander, Army Futures Command to provide a report to the House Committee on Armed Services by December 30, 2021, on alternative technologies, including an automatic loader, for

increasing the ERCA system's rate of fire. This report should include, but not be limited to a survey and assessment of the artillery systems of NATO allies or other partner nations that evaluates and considers the potential of the technologies they are developing or have developed and fielded to improve cannon rate of fire. This report should also detail the actions taken and planned for identifying technologies relevant to ERCA rate of fire and how the Army will ensure the widest possible participation of relevant and available technologies in a free, fair, and open competition for the collection, evaluation, and selection of these candidates for possible further development. Plans included in this report should include detailed schedules and funding profiles.

Future Vertical Lift

The committee supports the Army's pursuit of a Future Vertical Lift (FVL) program to replace some of the Army's existing portfolio of rotary wing assets. Army operations depend on the capabilities of rotary wing aviation for troop transport, reconnaissance, close air support, and logistics. The committee recognizes that while the Army's current aviation platforms, such as UH-60 Blackhawk, AH-64 Apache, and CH-47 Chinook, have been modified and extensively refurbished, their basic designs have been in service for decades and may be reaching the limits of modernization.

The committee notes that since designating Future Vertical Lift as a top modernization priority in 2017, the Army has shifted its acquisition strategy and now intends to develop and procure two new platforms, the Future Attack Reconnaissance Aircraft and the Future Long Range Assault Aircraft, in parallel. Both programs are scheduled for First Unit Equipped in fiscal year 2030.

The committee believes the magnitude of this program necessitates an independent baseline assessment against which to measure future progress, and that such an examination would assist the committee in conducting appropriate oversight.

Therefore, the committee directs the Comptroller General of the United States to submit a report to the congressional defense committees by April 1, 2022, on the Army's Future Vertical Lift program. The committee further directs the Comptroller General to provide a briefing to the Committee on Armed Services of the House of Representatives by February 1, 2022, on the Comptroller General's preliminary findings. The required report shall include, but not be limited to, the following elements:

(1) the capabilities the Army intends to acquire through the Future Vertical Lift effort and the plan for replacing existing aircraft;

(2) the acquisition approaches and contracting strategies under consideration for the FVL portfolio;

(3) the estimated cost and schedule for development and acquisition of FVL capabilities; and

(4) an assessment of the risk reduction approaches the Army intends to employ to develop technologies, demonstrate designs, and produce aircraft and related FVL capabilities.

Modular approach to combat vehicle lethality

The committee notes that the Army and Marine Corps have related modernization efforts to improve the lethality of their existing and future ground combat vehicles. These efforts are directed at all the combat functions but are particularly noteworthy in the modernization of the direct fire weapons systems for tanks, mechanized and motorized infantry, light and armored reconnaissance, and air defense.

Ground combat vehicle lethality today and well into the future depends upon technologically superior sensors, fire control, and weapons. Current combat vehicles initially developed and fielded decades ago, and upgraded several times since, have a variety of capabilities for each. In the committee report accompanying the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 (H. Rept. 116-442), the committee expressed its interest in the potential of commonality in weapon station configuration for the Stryker infantry carrier. The committee remains interested in the potential opportunity, given the number of combat vehicle development programs underway in the Army and Marine Corps, to focus development efforts for new vehicles on modular, multi-purpose approaches that allow fielding future weapons capabilities in different mixes, across like-vehicle chassis families, and in configurations that allow rapid weapons changes even in a field environment.

Accordingly, the committee encourages the Army and Marine Corps to consider modernization of ground combat vehicle lethality by pursuing modular, multi-purpose sensor, fire control, and weapon configurations capable of hosting a variety of weapons across a vehicle family. Such modular, multi-purpose capability should include capacity for technological growth allowing for the incorporation of advances in sensors, fire control, and weapons as they are fielded.

The committee also directs the Assistant Secretary of the Army for Acquisition, Logistics, and Technology to provide a briefing to the House Committee on Armed Services by December 30, 2021, on an assessment of the potential of combat vehicle lethality that uses modular, multi-purpose approach to sensor, fire control, and weapons configuration. This assessment should include existing or future capabilities, if any, that could provide this capability.

Vehicle protection systems against unmanned aerial systems

The committee has consistently supported the Army's efforts to identify, develop, integrate, and test various active and passive vehicle protection systems (VPS) that would increase armored vehicle survivability and protect crew and passengers. The Army has examined many technologies with the potential to provide such protection from direct fire systems such as missiles, rocket-propelled

grenades, as well as medium and small arms projectiles. The committee is unclear, however, as to VPS research or development efforts related to potential threats from unmanned aerial systems (UAS).

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 January 28, 2022, that addresses the Army's plans and activities related to VPS against UAS threats. This briefing shall include:

(1) an assessment of current and future UAS threats to armored vehicles;

(2) the Army's research, development, test, and evaluation strategy to identify and examine existing or readily available counter-UAS VPS technologies; and

(3) funding profiles for research and procurement though the Future Years Defense Program.

RESEARCH, DEVELOPMENT, TEST, AND EVALUATION, NAVY

Items of Special Interest

Assessment of the Naval Air Warfare Center Division

The committee recognizes the significance of the Naval Air Warfare Center Weapons Division (NAWCWD) and the vital research, development, acquisition, test, and evaluation of U.S. military weapons systems conducted throughout the division. NAWCWD leverages its experienced and diverse military-civilian personnel workforce to deliver critical capabilities to the warfighter that provide tactical advantages and carry out complex development, integration, and testing of weapon systems. The committee understands that as threats grow with the advancement of technology, NAWCWD faces challenges in fulfilling its mission. These challenges include funding for key sustainment, restoration, and modernization of specialized and relevant research and testing capabilities and equipment, and increasing workforce recruitment, retention, and expertise. The committee believes that given the need for advanced and next-generation weapon systems development, a current assessment is necessary to provide relevant information on the challenges confronting NAWCWD.

Therefore, the committee directs the Secretary of the Navy provide a report to the congressional defense committees not later than December 30, 2021, that assesses the key enabling issues and items supporting NAWDC's mission to determine what capacity, resources, and infrastructure is required to support advanced and next-generation weapon systems development and testing activities into the future.

RESEARCH, DEVELOPMENT, TEST, AND EVALUATION, AIR FORCE

Items of Special Interest

Digital engineering design and manufacturing expansion

The committee supports the Air Force's continued development of its advanced manufacturing techniques and processes that are predicted to reduce cost and time needed to develop, test, and field new weapon systems and capabilities. The committee acknowledges the positive impacts that "e-Design" digital engineering initiatives had on the new T-7A trainer by nearly eliminating manufacturing rework and touch-labor hours to assemble the first aircraft. The committee believes e-Design and advanced manufacturing processes and techniques will allow the Air Force to exchange real-world activities with the digital environment, increasing speed and agility.

Therefore, the committee directs the Secretary of the Air Force to provide a briefing to the House Committee on Armed Services not later than February 15, 2022, on the Air Force's ability to expand digital engineering capabilities to a wider range of programs, high-cost structural parts, mission systems, and component subsystems. The committee expects the briefing to include verifiable information that describes how e-Design methodologies and processes will reduce a program's maintenance, sustainment, and operations costs during the life-cycle of the program.

Enhanced connectivity with RC-135 aircraft

The committee continues to be concerned about networked data sharing between intelligence, surveillance, and reconnaissance (ISR) aircraft and current and advanced next generation tactical platforms. The committee is aware of disparate efforts aimed at equipping existing tactical and ISR aircraft with resilient, low probability of intercept, low probability of detection (LPI/LPD) data links for information sharing but is unaware of any comprehensive, near-term plan for incorporation on existing systems.

As a high-demand, low-density airborne signals intelligence collection platform, the RC-135V/W Rivet Joint is a critical node in the Air Force sensing grid, providing sensor processing at the tactical edge, electromagnetic support, and tactical and beyond line of sight communications capabilities. The committee notes that despite the RC-135's expanded tactical role delivering time-sensitive situational awareness information directly to the warfighter, the Air Force has yet to consider utilizing available LPI/LPD data links on the aircraft for connectivity with 5th generation systems. Given that the Air Force's ISR 2030 plan includes maintaining RC-135 in the inventory into the next decade, the committee believes the Air Force should prioritize modernized data links for the aircraft to ensure maximum interoperability with key weapons systems.

Accordingly, the committee directs the Secretary of the Air Force to provide a briefing to the House Armed Services Committee not later than December 15, 2021, on efforts to enhance collaboration between the RC-135 system and current 4th and 5th generation platforms and future next generation platforms. At a minimum, the briefing shall include:

(1) an assessment of the existing LPI/LPD networking data links in use or technologically suitable for any ISR aircraft in the Air Force inventory;

(2) current communication and information sharing capability between RC-135 and 4th and 5th generation aircraft, to include types and amount of data able to be shared and an assessment of the security and resiliency of each capability;

(3) any planned future connectivity and data sharing capabilities between RC-135 and 5th generation or advanced next generation platforms, to include a description of the technical requirements, cost, and timeline for integration onto the RC-135; and

(4) an analysis of the feasibility, technical requirements, and estimated cost of integrating the multifunction advanced data link onto the RC-135.

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

Items of Special Interest

Advanced electronic warfare capabilities

The committee is aware that the Department of Defense views advanced electronic warfare techniques, such as adaptive and cognitive capabilities, as key attributes of future electronic warfare (EW) systems. Adaptive EW applies artificial intelligence and machine learning to EW systems to identify unknown signals and generate a counter response to those characterized as threats. Cognitive systems aim to condense the detection-to-response timeline significantly through near-real time learning and response. A true cognitive EW capability will be able to identify previously unknown signals and generate near-real time countermeasures as these new signals are characterized. It is the committee's understanding that it may take months to incorporate emerging threat detection capability into current airborne EW systems.

The Department of the Air Force Electromagnetic Spectrum Superiority Strategy, released publicly in April 2021, states that anticipatory cognitive systems and platform-agnostic applications comprise the core of the service's modernization plan. While the Navy has yet to update its own electromagnetic spectrum strategy, the committee is aware of ongoing research and development of adaptive EW capabilities within the Navy. The committee is concerned, however, with the pace of development of true cognitive electronic warfare capabilities. While the committee understands and supports the effort to field near-term improved EW systems to Navy and Air Force airborne fleets, the committee believes greater emphasis should be placed on cognitive and other advanced techniques.

Therefore, the committee directs the Secretary of the Air Force, in coordination with the Secretary of the Navy, to submit a report to the congressional defense committees by April 1, 2022, on current research, development, and procurement programs in progress with the goal of fielding advanced or cognitive EW capabilities to their respective airborne fleets. The report should include, at a minimum: descriptions of the cognitive and advanced EW technologies and

techniques in research, development, and acquisition; the intended or potential application of these technologies and techniques; the estimated Technology Readiness Level of each project; costs already invested and the planned budget through the Future Years Defense Program for each project; and any identified technology or resource challenges associated with integration and implementation in the airborne fleet.

Aircraft ejection seat spinal injuries assessment

The committee understands Department of Defense Military Handbook-516C (MIL-HNBK-516C) defines modern ejection related injury criteria and that change-notice five to that publication, issued in 2016, established abbreviated index scale (AIS) level-two as the standard which provides aircrew the ability to successfully escape and evade post-ejection. Injuries which preclude post-ejection aircrew the ability to escape and evade are classified as AIS level-three.

The committee notes that spinal injuries sustained during the ejection and escape sequence and subsequent landing can result in hospitalization, chronic pain and mobility limitations, and permanent disability that adversely affects long-term quality of life. In combat scenarios, certain types of ejection related spinal injuries could pose a serious challenge for aircrew trying to escape and evade enemy capture. The committee expects that any ejection system technology in development or production should strive to eliminate lower-back spinal fractures and lumbar compression injuries to escaping aircrews. However, the committee notes that fulsome ejection-related injury data is difficult to ascertain by ejection seat manufacturers because of data-sharing policy differences and mechanisms in place by each military service and how the services categorize and assess ejection seat injuries, thereby complicating a comprehensive evaluation of ejection system performance across the Department.

Therefore, the committee directs the Secretary of Defense, in coordination with the Secretary of the Air Force and Secretary of the Navy, to submit a report to the congressional defense committees not later than March 1, 2022, that analyzes and summarizes spinal-fracture and lumbar compression injuries that have occurred during ejections from Department of Defense aircraft between 1985 and present day. The report should also contain a comparison of performance between different ejection and escape systems, including an analysis of AIS level-2 and level-3 injuries, and information regarding future acquisition and ejection seat upgrades for ejection and escape systems that will minimize injury and increase survivability. The committee also expects the Department to implement standardized policies that facilitate inter-service exchange of ejection event safety and injury-related data and information.