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SENATE

{ REPORT
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**NATIONAL DEFENSE AUTHORIZATION
ACT FOR FISCAL YEAR 2017**

REPORT

[TO ACCOMPANY S. 2943]

ON

TO AUTHORIZE APPROPRIATIONS FOR FISCAL YEAR 2017 FOR
MILITARY ACTIVITIES OF THE DEPARTMENT OF DEFENSE AND
FOR MILITARY CONSTRUCTION, TO PRESCRIBE MILITARY PER-
SONNEL STRENGTHS FOR SUCH FISCAL YEAR, AND FOR OTHER
PURPOSES

TOGETHER WITH

ADDITIONAL AND MINORITY VIEWS

**COMMITTEE ON ARMED SERVICES
UNITED STATES SENATE**



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gateway nodes to defend DOD networks against malicious hidden activity in web traffic. The committee believes it makes little sense to filter web traffic for previously unknown threats while leaving email traffic unprotected against the same types of threats. Congress provided additional funds in the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92) to assist DISA and the Sharkseer program office in the National Security Agency in getting started on this extension of zero day net defense to email. The committee recommends an increase of \$11.7 million in DISA’s Defense-wide Operations and Maintenance account, and \$16.3 million in Defense-wide Research, Development, Test and Evaluation (program element 33140K) to sustain this initiative.

Items of Special Interest

Active protection systems

The committee encourages the Army, in cooperation with the United States Marine Corps, to rapidly acquire effective active protection systems (APS) to protect ground combat forces and weapon systems from projectiles including rocket propelled grenades and anti-tank, wire guided missiles. Key armored fighting vehicles such as M1 main battle tanks, Bradley fighting vehicles, Stryker vehicles, and armored assault vehicles should be given first priority for APS due to their mission profiles. The committee understands that APS technology is mature and fielded by some of our allies. The committee encourages the Army to acquire non-developmental, mature designs for integration and testing with our vehicles. The committee believes that such an effort will increase both force protection and combat power of our close combat maneuver forces.

Advanced airlift airship technology

The committee has maintained an ongoing interest in advanced lighter-than-air (LTA) airship technology that has the potential to add much needed cutting-edge capabilities for the Department of Defense. Among other things, airship technology can enhance logistics, Intelligence, Surveillance, and Reconnaissance (ISR), Humanitarian Assistance/Disaster Relief (HA/DR), and Non-Combatant Evacuation Operations (NEO).

The committee is aware that multiple advanced airship technology efforts during the past 20 years have all failed to establish conclusively the value of advanced lighter-than-air technology by not demonstrating clear proofs of technical viability and the benefits of superior operating utility. The National Defense Authorization Act for Fiscal Year 2012 (Public Law 112–81), recognizing that Department of Defense airship development appeared disparate, directed the Secretary of Defense to designate a senior official with responsibility for Department airship programs, to delineate this official’s responsibilities and to submit reports on Department hybrid airship operational concepts and future development strategies. The National Defense Authorization Act for Fiscal Year 2014 (Public Law 113–66) further recognized the failure to consolidate a structured path forward and re-affirmed the committee’s belief in the transformational potential of advanced technology airships. That legislation noted U.S. Transportation Command’s stated opin-

ion that airships possess the nascent capability to enhance mobility substantially.

While some have advanced the idea of waiting for commercial firms to develop airship logistics capability, the committee is concerned that this strategy would allow the Department to evade development responsibility. However, the committee notes that several failed attempts by the commercial sector argue for the involvement of the expertise of the Department. The committee understands that properly identified, the required technologies already exist or are near final states of development. Within the purview of the Department of Defense, these technologies could be demonstrated en route to a successfully executed advanced airship program. Engaged leadership and full program involvement of the Department is essential for advanced airship success.

The committee also understands that there are obstacles to a successful commercial initiative including development risk, fiscal investment requirements, and the potential for disruptive change to existing airlift technologies. Nevertheless, the committee believes that the rewards of exemplar government technology investments are, today, ubiquitous within the commercial arena and clearly show how timely involvement may have later broad-based national benefits.

The committee believes that a new advanced airship program must address two primary risk areas. First, for airship outsize airlift, the most pressing discrete problem remains cargo off-loading without the airship instantly becoming too light for safe operation. Development of a robust, responsive and wide bandwidth buoyancy-ballast system that supports full vertical flight capability is essential and must be demonstrated convincingly and early. Second, a system of systems, involving lift, control and unique lighter-than-air flight technology, represents a demanding integration challenge and should be resolved before committing to final airship design and development.

An incremental early "iron bird" demonstration with proving metrics and appropriate program off-ramps may provide the best way to establish core program viability and a path towards a full airship demonstration. This would be more soundly based than previous program strategies and could resolve the most critical risks before committing to the full flight demonstration.

The committee believes that there is a strong justification to pursue airlift airship concepts and encourages the Air Force, Army, United States Transportation Command, and other appropriate defense organizations to become more proactive in developing advanced airship mobility needs and capability requirements that both lead and stimulate emerging demonstration plans.

The committee directs that no later than 180 days after the date of enactment of this Act, the Secretary of Defense shall:

- (1) Reaffirm leadership and responsibilities for airship technical initiatives within the Department of Defense;
- (2) Develop a strategy for future Department airship technologies that takes ownership of maturation efforts consistent with airship outsize airlift capability to identify:
 - (a) Critical technology challenges (in addition to the aforementioned) and methods to demonstrate viability;

- (b) Development risks and lessons learned;
- (c) Impediments to successful demonstration, including an assessment of in-house understanding of airship technology;
- (3) Develop notional estimates for time, costs and other necessary resources to conduct an incremental demonstration for technical viability with suitable decision points and off-ramps.

Advanced weapons technology

The committee recognizes the increased risk of exposure to chemical and biological agents faced by deployed U.S. and coalition forces. The committee believes it is critical to have the ability to expedite collection and characterize these agents in near real time. To meet this requirement, the committee encourages the Secretary of the Air Force to accelerate the fabrication, prototyping and testing of capabilities to detect and classify chemical and biological agents that will provide needed battlefield intelligence and increase the protective posture of U.S. and coalition forces.

Assessment of status of little used research and development infrastructure assets

The committee is concerned that certain research and development infrastructure assets employed by the military services are prematurely decommissioned or otherwise dismantled prior to a general accounting and assessment of the value and utility of such assets to the Department of Defense as a whole. Given the immense expense involved in establishing and standing up infrastructure assets, it is critical that decision on the final disposition of such assets not be made on parochial, short-term considerations. The committee believes that these assets may still have broader defense-wide and national utility and that such utility needs to be assessed before any decisions are made.

To help alleviate this concern, the committee directs the Secretary of Defense to identify such "orphan" assets that support Research and Development and Test and Evaluation. The definition of these assets shall be the same as the definition developed for the study provided to the Congress in October 2010 pursuant to the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111-84) to address "Orphan Assets". The committee directs the Secretary to submit a list of these assets, along with a description of the need for these assets, to the congressional defense committees no later than one year after the enactment of this Act.

Bradley Fighting Vehicle Transmission Competition

The committee is aware that the U.S. Army is testing an alternative transmission for the family of Bradley Fighting Vehicles, which includes the Armored Multipurpose Vehicle (AMPV) and Paladin Integrated Management (PIM) programs. Assuming a successful test, the committee understands that the Army will assess the cost and benefits of an alternative transmission and then conduct a full and open competition to integrate a new transmission into the family of Bradley Fighting Vehicles. The committee notes that the Fiscal Year 2017 budget request does not include funding to support the alternative transmission strategy. Therefore, the com-