Fiscal Year 2018 National Defense Authorization Act (NDAA) Section 1064 Study

Aircraft Inventories for the Air Force

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Executive Summary

- The National Defense Strategy (NDS) calls us to compete, deter, and win long-term, strategic competitions
- Analysis of operational plans and scenarios shows the Air Force must:
  - Modernize, develop new operational concepts, and field advanced capabilities
  - Grow from 312 to 386 operational squadrons
  - Integrate effectively with the Joint Force, allies, and partners
- This report provides an unclassified discussion of the supporting analyses. A separate classified report goes into far greater detail on the aircraft inventories that make up the recommended growth to 386 operational squadrons

1. Introduction

This report provides unclassified discussion on aircraft inventories in response to the Fiscal Year 2018 (FY18) National Defense Authorization Act (NDAA), Section 1064 (included at Appendix A). It provides a USAF force-sizing construct and an associated number of recommended aircraft squadrons through 2030 in consultation with the Director, the Office of Net Assessment. A separate classified report goes into greater detail and provides associated aircraft inventories. The force-sizing construct considers the National Defense Strategy demands to compete, deter, and win during day-to-day competition and war. The aircraft squadrons provided herein give an analytic answer for why the USAF through 2030 will responsibly grow in capacity from 312 to 386 operational squadrons to compete globally. Over this same period, the USAF will need to modernize, develop new operational concepts, field advanced capabilities, and integrate effectively with the Joint Force, allies, and partners.

2. Strategic Environment

The National Defense Strategy marks the reemergence of long-term, strategic competition with China and Russia. The rise of great power competition means our adversaries are investing in their militaries and advanced technologies. The threat is rapidly evolving. We must develop a military capability and capacity to deter adversaries, reassure allies, and maintain our competitive advantage.

The Air Force We Need takes…

- National long-term commitment to Air Force growth with a shared understanding of the rationale behind this growth
- Support from Congress which will lead to budget predictability and stability
- Airmen who are trained, equipped, and ready

Figure 1: The Air Force We Need Objectives

3. Analytic Approach

The Air Force We Need is a strategy-driven, rather than a budget-constrained, analysis. In accordance with direction from Congress, this study originated from the National Defense Strategy which drives how we must size and shape the force to compete long-term with China and Russia, deter and counter rogue regimes, and defeat terrorist threats to the United States. It was built on Combatant Commanders' requirements, war games, and joint force simulations. Furthermore, it focused on defining the inventories required to conduct joint operations with the highest demands on the Air Force component in various scenarios. Finally, it examined how combatant commanders intend to employ the Air Force using force structure analyses, war games and simulations designed to replicate future demands on our Airmen.

As part of this analysis, the following key assumptions were made:

- We assumed the Active, Reserve, and Guard Component ratios would remain the same. As we grow our forces, the Air Force will continue to evaluate which missions are more suited to each component. The Air Force will need more active, guard and reserve Airmen to fully enable our operational squadrons.
- We assumed Programs of Record and the Nation will and can deliver as planned to either fill capacity or capability gaps in the current force. Air Force We Need follow-on tasks will continue to refine our recommended approach and optimize the way every taxpayer dollar is spent to build a more lethal and ready total force.
- We assumed all operational units can be described as operational squadrons. A squadron is the basic building block of the Air Force, our core unit. Not all squadrons are the same size, and not all squadrons fly airplanes. Operational squadrons are our core fighting units, the clenched fist of American resolve. Operational squadrons provide combat power and depend on the entire Air Force structure to ensure they are trained, equipped

and ready to fight. Air Force We Need follow-on tasks will continue to refine our approach to fully support our operational squadrons.

- We assumed joint forces, allies, and partners were able to contribute as described in future scenarios. Integrating with these force elements will ensure coordination, command, and communication among all elements and reduce the need for an even larger force.

The study developed the force-sizing construct and filled demands using:

- Combatant Command (COCOM) operational plans and jointly-developed scenarios
- The latest intelligence estimates to assess potential threats
- Global Operating Model and Dynamic Force Employment concepts to set posture
- Over 3,000 simulations against strategic competitors to assess force capability and risk
- Workshops to fill modeling gaps with operational expertise

This analysis made reasonable assumptions required to size the force while considering all available planning documents and analytical techniques. Although game-changing technologies or operational approaches could redefine the relationship between inventories and requirements, envisioning new solutions was beyond the scope of this assessment. We currently believe that accelerating and fielding game-changing technologies by 2030 would not require less commitment to a strong national defense than building the Air Force We Need with Programs of Record. As technologies mature, we will continue to reassess the Air Force We Need requirements, force structure, and force sizing construct.

4. Force-Sizing Construct

The Air Force We Need study developed and used a force-sizing construct based directly on the National Defense Strategy (Figure 2).

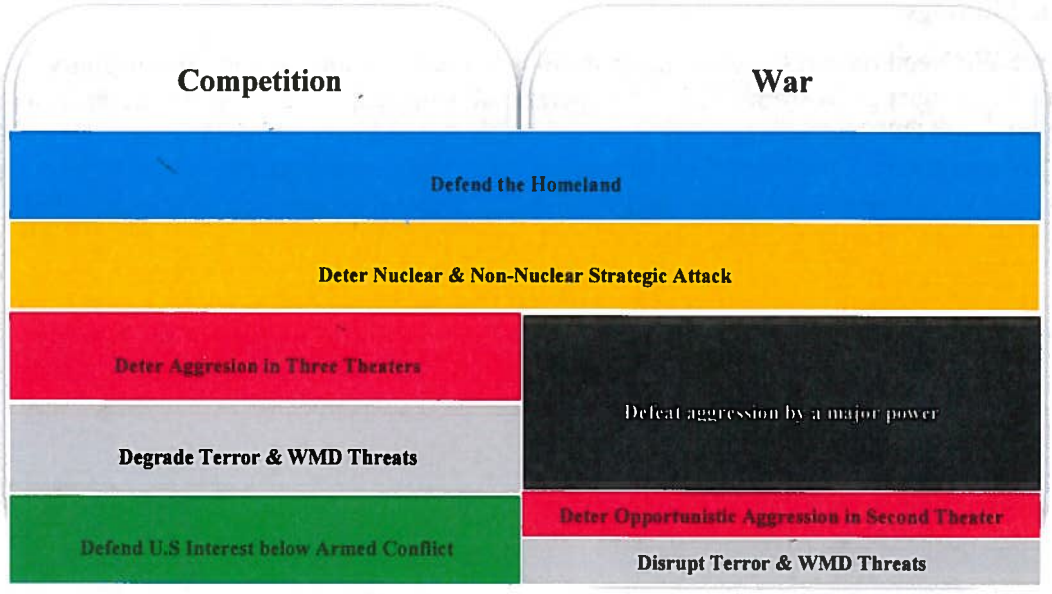

Figure 2: Competition and War Force-Sizing Construct

According to the NDS commission report, the Air Force is central to addressing the current and future threats laid out in the National Defense Strategy, which directs us to:

- Compete long-term with China and Russia
- Deter and counter rogue regimes like North Korea and Iran
- Deter opportunistic aggression elsewhere
- Defeat terrorist threats to the United States
- Defend our interests from challenges below the level of armed conflict

The operational demands for each of the operational squadron categories (Airlift, Bombers, Combat Search and Rescue, Command and Control (C2), Intelligence, Surveillance and Reconnaissance (ISR), Cyber, Fighters, Missile, Strike/Reconnaissance, Space, Special Operations, and Tankers) were assessed during competition and war. Inventory assessments used common DoD definitions of acceptable risk, ensuring balance between all COCOM demands and national security priorities. Risk still exists in the Air Force We Need but at a manageable level given global demands placed on our Air Force while competing long-term with China and Russia.

The maximum of the two stacked demands (competition or war) determined the peak demand for each operational squadron category. All operational squadrons were then aggregated to determine the Air Force We Need.

The Air Force must be sized to do all of the following things:

- Meet the current demands of Combatant Commands
- Build on our recent gains in unit readiness
- Increase our lethality and resilience against future threats
- Integrate seamlessly with joint, ally and partner forces across all domains

5. Analytic Findings

The Air Force We Need requires advanced capabilities to counter robust competitor military modernization and must grow from 312 to 386 operational squadrons, a 24 percent increase, to execute the National Defense Strategy. For comparison, at the end of the Cold War, the Air Force had 401 operational squadrons. This increase to 386 operational squadrons, outlined in Figure 3, is based on the expected threats and warfighting challenges assessed in the years 2025 through 2030.

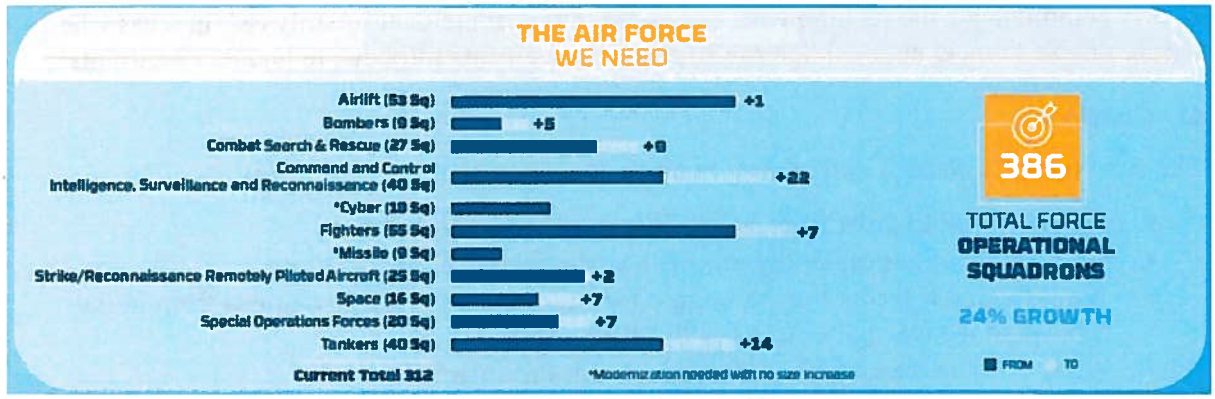

Figure 3: The Air Force We Need

The Air Force We Need will need to be more lethal, resilient and ready to operate seamlessly across all domains with joint and allied partners than our force today. We require a larger proportional increase for bombers and other longer range capabilities. In the Mobility Air Forces, we see aerial refueling as the biggest capacity shortfall. We need proportionally larger increases in what we have traditionally called our "high demand, low supply assets" in ISR, command and control and electronic warfare. We see a need for significant growth in space superiority (also known as Indications and Warning and Space Control). Our cyber forces will leverage commercial information technology support services which will enable cyber operations growth within the existing number of squadrons.

We will also take advantage of efficiencies and advances in computational capabilities, such as artificial intelligence, which allows for mission capability growth through technology-enabled tools. Finally, the increases in capacity do not mean buying more of the same. In some cases, such as ISR and command and control, it means developing a more integrated, multi-domain family of capabilities better suited for operating in future threat environments than some of the existing legacy platforms we operate now.

These capacity increases are not more of the same. We need to:

- Modernize our nuclear deterrent capabilities
- Increase lethality against diverse, challenging targets in contested environments
- Develop integrated, multi-domain C2/ISR capabilities suited to contested battle spaces
- Re-orient cyber forces to focus on operations while we out-source information technology support services

The specific aircraft inventories linked to national defense strategy are available in a classified report. Most increases proportionally align with squadron increases; however, there are exceptions. A thorough understanding of aircraft increases can only occur at the classified level since demands are linked to national security priority missions, which are driven by competition.

The Air Force We Need also informed the creation of several alternative concepts to meet the National Security Strategy war fighting demand. Some of these alternative approaches are still in the early phases of concept development using advanced technology and operational design. These approaches were not fully understood and integrated within our first year of analyses, and as breakthroughs are made with these approaches, we will clearly communicate any changes to

our force sizing approach. Starting with the FY21 program objective memorandum, we will clearly communicate the requirements and assumptions of national security risk in areas where we are unable to meet national defense strategy requirements fully due to budget constraints.

6. Conclusion

The Air Force We Need is more than a number. It's about quality and quantity.

- We'll commit to grow from 312 to 386 operational squadrons
- We'll improve our capability mix with cost-effective modernization
- We'll field new technology through efforts to bring innovative solutions from initial concept to the warfighter faster with better results
- We'll draw on the combined strength of allies and partners

Our Air Force is ready to fight and win today, but our competitive advantage is at risk. We must grow and modernize our force--and we must do it smarter and faster.

APPENDIX A: NDAA Study Language

SEC. 1064. STUDIES ON AIRCRAFT INVENTORIES FOR THE AIR FORCE.

(a) INDEPENDENT STUDIES.—

(1) IN GENERAL.—The Secretary of Defense shall provide for the performance of three independent studies of alternative aircraft inventories through 2030, and an associated force-sizing construct, for the Air Force.

(2) SUBMITTAL TO CONGRESS.—Not later than March 1, 2019, the Secretary shall submit the results of each study to the congressional defense committees.

(3) FORM.—The result of each study shall be submitted in unclassified form, but may include a classified annex.

(b) ENTITIES TO PERFORM STUDIES.—The Secretary shall provide for the studies under subsection (a) to be performed as follows:

(1) One study shall be performed by the Secretary of the Air Force, in consultation with the Director of the Office of Net Assessment.

(2) One study shall be performed by a federally funded research and development center.

(3) One study shall be conducted by an independent, nongovernmental institute which is described in section 501(c)(3) of the Internal Revenue Code of 1986 and exempt from taxation under section 501(a) of such Code, and has recognized credentials and expertise in national security and military affairs.

(c) PERFORMANCE OF STUDIES.—

(1) INDEPENDENT PERFORMANCE.—The Secretary shall require the studies under this section to be conducted independently of one another.

(2) MATTERS TO BE CONSIDERED.—In performing a study under this section, the organization performing the study, while being aware of current and projected aircraft inventories for the Air Force, shall not be limited by such current or projected aircraft inventories, and shall consider the following matters:

(A) The national security and national defense strategies of the United States.

(B) Potential future threats to the United States and to United States air and space forces through 2030.

(C) Traditional roles and missions of the Air Force.

(D) Alternative roles and missions for the Air Force.

(E) The force-sizing methodology and rationale used to calculated aircraft inventory levels.

(F) Other government and nongovernment analyses that would contribute to the study through variations in study assumptions or potential scenarios.

(G) The role of evolving technology on future air forces, including unmanned and space systems.

(H) Opportunities for reduced operation and sustainment costs.

(I) Current and projected capabilities of other Armed Forces that could affect force structure capability and capacity requirements of the Air Force.

(d) STUDY RESULTS.—The results of each study under this section shall—

(1) identify a force-sizing construct for the Air Force that connects national security strategy to aircraft inventories;

(2) present the alternative aircraft inventories considered, with assumptions and possible scenarios identified for each;

(3) provide for presentation of minority views of study participants; and

(4) for the recommended inventories, provide—

(A) the numbers and types of aircraft, the numbers and types of manned and unmanned aircraft, and the basic capabilities of each of such platforms;

(B) describe the force-sizing rationale used to arrive at the recommended inventory levels;

(C) other information needed to understand the aircraft inventories in basic form and the supporting analysis; and

(D) options to address aircraft types whose retirement commences before 2030.

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