

On the Future of Air and Space Power

An Interview with Barbara M. Barrett

Secretary of the Air Force

Conducted 28 September 2020

SSQ: Air Force recommendations in the 2021 National Defense Authorization Act (NDAA) focus on divestiture. Was the outcome aggressive or ambitious enough?

SECAF: Overall, yes. The FY21 president's budget reflects balance. Prior to submission, the Department of the Air Force conducted a comprehensive review of each portfolio and made hard decisions to align with the National Defense Strategy (NDS). Planners wargamed complex scenarios to assess effectiveness and recommended required investments to prevail in a peer fight. In the budget, the Department accepts calculated, modest, short-term risk to achieve the Secretary of Defense's goal of irreversible momentum toward NDS implementation.

SSQ: Are you comfortable with the level of R&D funding within the 2021 NDAA?

SECAF: I think it is reasonable. R&D investment is fundamental to enabling the Department of the Air Force to fulfill the NDS. The FY21 R&D budget includes robust support of the Advanced Battle Management System, the Next-Generation Overhead Persistent Infrared constellation, Vanguard programs, quantum science, advanced communications, directed energy, 5G, microelectronics, and hypersonics. This funding will ensure the Air and Space Forces stay competitive.

SSQ: Based on your vast experience in the defense industry, how would you characterize the state of Air Force–industry relations?

SECAF: The Air Force and Space Force have strong relationships with industry. Still, the COVID-19 pandemic instigated manufacturing challenges that no one anticipated. Concurrently, we jump-started innovation to accomplish missions. Our industry partners often delivered military capabilities despite the challenges encountered this year.

SSQ: Do you have any concerns about the defense industrial base and its ability to support our National Defense Strategy?

SECAF: To meet the demands of the NDS, the Air Force and Space Force depend on reliable, responsive industry that produces and sustains systems. The pandemic has stressed many elements of the defense industry; however, many partners found ingenious ways to mitigate stresses and risks. Importantly, we are accelerating the shift to digital engineering, agile software development, and open systems architectures. Additionally, we are working with the industrial base to reduce dependence on foreign sources of raw materials and microelectronics. Finally, to broaden our collaboration with the defense industry, we are building new partnerships with companies that have never before worked with the Department of the Air Force.

SSQ: Are the services organized, trained, and equipped adequately to support the era of great power conflict, particularly the rebalance to Asia?

SECAF: The NDS calls on the Department of Defense to deter and, if deterrence fails, to defend against adversarial behavior. With the support of Congress, the force has grown over the past three budget years by 7,820 Airmen. Nonetheless, three congressionally mandated reports—one internal and two conducted independently—conclude that the Air Force is too small to meet all the demands of the NDS. The FY21 president's budget will help by adding 1,500 personnel to the F-35, refueling operations, maintenance, and combat support.

SSQ: Given the state of artificial intelligence (AI), autonomous weapons, and nanotechnology, what do you see as the greatest opportunities?

SECAF: Technology presents impactful opportunities for faster, cheaper, and more efficient capabilities. Artificial intelligence, autonomous weapons, and nanotechnology each offer greater flexibility and lethality to Air Force and Space Force operations. Our Vanguard programs use prototyping and experimentation to improve weapons systems and warfighting concepts.

Three Vanguard programs—Skyborg, Golden Horde, and Navigation Technology Satellite-3 (NTS-3)—push boundaries by integrating technology components to deliver new capabilities across multiple domains. The Skyborg initiative integrates AI with autonomous unmanned aerial vehicles to enable manned-unmanned teaming. Golden Horde uses on-board radios to develop networked and collaborative weapons that share

data, interact, and execute coordinated actions with other systems (including manned aircraft). The NTS-3 flight experiment examines field capabilities across the ground, space, and user segments to enhance space-based positioning, navigation, and timing.

Finally, the Air Force and Space Force are leveraging domestic and international partnerships with industry, academia, allies, and partners to advance technological advantages.

SSQ: What challenges remain to fully incorporate the U.S. Space Force?

SECAF: The U.S. Space Force is a good-news story. Logically, space capabilities should be aligned under Space Force. Senior leaders throughout the Department of Defense are analyzing which missions and personnel should transfer into the Space Force to align the organizations with space missions. Simultaneously, we are adapting myriad existing departmental systems to the new service. We are committed to building an agile, innovative, and bold Space Force.

SSQ: Where do you see the Space Force 25 years from now?

SECAF: Twenty-five years from now, systems and technologies employed in space will have advanced unrecognizably. Still, the fundamental mission of Space Force will endure: protecting American interests and preserving free access to, and use of, the space domain for all benevolent actors.

SSQ: Madam Secretary, on behalf of Team SSQ and the entire SSQ audience, thank you for sharing your views on the bright future of the U.S. Air and Space Forces. **SSQ**

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