NOT FOR PUBLICATION UNTIL RELEASED BY
HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON STRATEGIC FORCES
UNITED STATES HOUSE OF REPRESENTATIVES

PRESENTATION TO THE
HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON STRATEGIC FORCES
UNITED STATES HOUSE OF REPRESENTATIVES

HEARING DATE/TIME: March 12, 2024, at 3:00pm

SUBJECT: Department of the Air Force Hypersonics Programs

STATEMENT OF:

Lt. Gen. Dale R. White
Military Deputy
Assistant Secretary of the Air Force
(Acquisition, Technology & Logistics)

NOT FOR PUBLICATION UNTIL RELEASED BY
HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON STRATEGIC FORCES
UNITED STATES HOUSE OF REPRESENTATIVES

INTRODUCTION

Chairman Lamborn, Ranking Member Moulton, and distinguished members of the subcommittee, thank you for the opportunity to provide testimony on the Department of the Air Force hypersonic programs. Several countries, in particular China and Russia, are developing and testing their own hypersonic capabilities, which complicates our ability to generate combat airpower. Extensive war-gaming and analysis demonstrate that the limited capability, capacity, and upgradability of our munitions inventory creates risk for our forces; therefore, the Air Force is investing in munitions production and development, both hypersonic and non-hypersonic, to address this risk.

AIR FORCE HYPERSONIC PROGRAMS

The Department of the Air Force is developing and fielding air-launched, long-range, hypersonic strike weapons. Hypersonics is an attribute being pursued for advanced munitions to rapidly overcome the tyranny of distance in the Pacific and enable the U.S. to hold high value, time-sensitive targets at risk in contested environments from standoff distances. The survivability of these systems enables attacks on well-defended targets, their range allows for employment at an acceptable level of risk to our fighters and bombers, and their responsiveness eases pressures on kill-chains in denied environments and minimizes the time between weapons employment and operational effects. When integrated with the broader munitions portfolio, these weapons are one of the tools Airmen will use in future conflicts as we employ pulsed airpower to "kick down" the door, and concentrate airpower in time and space to create windows of opportunity for the joint force, as described in our Service's future operating concept. The Air Force's hypersonic portfolio consists of three major thrusts: boost-glide missiles; air-breathing cruise missiles; the foundational science and technology (S&T) hypersonics portfolio. These areas are supported by investments in the hypersonics industrial base and our test and evaluation infrastructure.

ARRW (AGM-183A)

The Air-Launched Rapid Response (ARRW) program is a hypersonic boost glide weapon that provides a long range, conventional air-to-surface, precision guided prompt strike capability from standoff ranges in contested environments. It consists of a Solid-Rocket Motor (SRM) booster, a protective shroud, and a glider containing a fragmenting warhead. The Air

Force is developing ARRW using the Middle Tier Acquisition (MTA) rapid prototyping authority.

ARRW is undergoing the final test of the All-Up Round (AUR) with a planned test program completion by the end of 2QFY24. This test will launch a full prototype of the operational hypersonic missile and focused on the ARRW's end-to-end performance. While future ARRW decisions are pending final analysis of all flight test data, the service is pleased to report that the ARRW rapid prototyping program has a categorical success to date.

Though specific test objectives and the complexities of the program cannot be provided in an unclassified forum, these tests acquired valuable, unique data and were intended to further a range of hypersonic programs. It also validated and improved the Air Force's test and evaluation capabilities for continued development of advanced hypersonic systems, and reinforces their strategic value across the DAF.

Hypersonic Attack Cruise Missile (HACM)

The Hypersonic Attack Cruise Missile (HACM) is an air launched, air breathing weapon that can be integrated on current and future fighters, as well as provide expanded capacity on bombers. As a self-powered cruise missile, HACM provides complementary trajectories to boost glide system such as ARRW, imposing additional cost on our strategic competitors by increasing complexity, while simultaneously supporting integrated deterrence with a key ally, Australia. The Air Force awarded the HACM contract in FY22 and is developing the weapon using the MTA rapid prototyping authority.

HACM leveraged and significantly expands the Office of the Under Secretary of Defense, Research and Engineering funded Southern Cross Integrated Flight Research Experiment, a bilateral U.S. / Australian hypersonic air breathing, cruise missile prototyping effort. The concept is a derivative of the joint Air Force / Defense Advanced Research Projects Agency (DARPA) Hypersonic Air-breathing Weapon Concept (HAWC) that demonstrated event-based learning, multiple successful flight tests, and risk reduction activities, matured preliminary designs and accelerated development. War-gaming and analysis indicates HACM

provides significantly improved operational capability over current weapon inventories when integrated on current and advanced platforms.

Science & Technology

The Air Force Research Laboratory (AFRL) has made many enduring contributions to the field of hypersonics, including aerodynamics and aerothermodynamics; airbreathing propulsion; solid and liquid rocket propulsion; high temperature materials, weapon effects, structures, and manufacturing; guidance and control; and ordnance systems. The AFRL high-speed systems technology portfolio focuses on maturing air-launched high-speed weapon and future reuseable platform technologies in synchronization with the OSD Hypersonics S&T Roadmap. AFRL high-speed weapon S&T programs are developing long lead, critical technologies for HACM to enable the rapid fielding of hypersonic weapon capabilities. Additionally, AFRL has a number of S&T investments improving the manufacturability and affordability of materials used for high speed and hypersonic systems.

In FY24, the High Speed Strike Weapon 2 program is facilitating development and transition of technologies to enable next-generation standoff strike weapons with significantly increased capability and military utility. AFRL Technology Development efforts continue to work toward hypersonic multi-mission intelligence, surveillance, and reconnaissance (ISR) and strike capabilities, while laying the groundwork for future hypersonic platforms.

Industrial Base and Test Infrastructure

In addition to these foundational investments in science and technology, the Air Force has investigated our supply chains and understands the investments that are needed in the hypersonic portion of our Defense Industrial Base. In concert with Defense Production Act Title III, the Air Force is investing in critical segments that will accelerate the delivery of hypersonic systems to the warfighter. Further, the Air Force Test Center continues to partner with OSD's Test Resource Management Center to expand the capacity and capabilities of our ground and flight-test infrastructure to support hypersonic testing for all DoD programs.

CLOSING

Thank you again for the opportunity to testify. We look forward to working with this subcommittee to ensure the Department of the Air Force maintains the military advantage to secure our vital national interests and support our allies and partners.