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THE HOUSE ARMED SERVICES COMMITTEE  
STRATEGIC FORCES SUBCOMMITTEE

STATEMENT

OF

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BEFORE THE

SUBCOMMITTEE ON STRATEGIC FORCES

OF THE

HOUSE ARMED SERVICES COMMITTEE

ON

FY 2024 BUDGET HEARING ON

U.S. AND ADVERSARY HYPERSONIC PROGRAMS

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## **Introduction**

Chairman Lamborn, Ranking Member Moulton, and distinguished Members of the subcommittee, thank you for this opportunity to discuss the development of the Navy's Conventional Prompt Strike (CPS) hypersonic weapon. It is an honor to represent the Navy's Strategic Systems Programs (SSP) and the contributions the Navy provides to our national and global security. Hypersonic systems – capable of flying at speeds greater than five times the speed of sound (Mach 5) – provide a combination of speed, maneuverability and altitude that enables highly survivable, intermediate-range, rapid defeat of time-critical, heavily-defended and high value targets. Hypersonic technologies are one of 14 critical technology areas that the Department of Defense is focused on to accelerate development consistent with the 2022 National Defense Strategy (NDS) and Joint Warfighting Concepts. Advancing both offensive and defensive hypersonic technologies directly contributes to the three pillars of the NDS: integrated deterrence; campaigning; and building enduring advantage. Potential strategic competitors have rapidly developed highly capable systems to challenge our dominance on the battlefield. They have spent two decades investing in capabilities and modernizing their militaries. The need for offensive hypersonic capability is driven by the adversaries' decade-long investment in creating a highly contested environment through the deployment of anti-access, area denial technologies and the existence of high-value targets, which are time-critical, deep-inland, heavily defended, and/or mobile. These targets are often simply not vulnerable to less capable, traditional, subsonic strike assets. US hypersonic investment is necessary to defeat these high-end capabilities designed to challenge our battlefield dominance in the air, on land, at sea, and in space. Hypersonic weapons are maneuverable and operate at varying altitudes, providing the warfighter with an ability to strike targets hundreds and even thousands of miles away, in a matter of minutes. These conventional weapons provide the Joint Force with a credible, intermediate-range capability to strike key targets. They counter our adversary's modernization efforts by providing highly survivable, rapid defeat of deep-inland, time-critical, heavily-defended and high value targets, as a complement to other U.S. conventional strike capabilities.

## **Joint System**

Hypersonics is one of the highest priority critical technology areas the Department of Defense is pursuing to ensure our continued battlefield dominance. To achieve that goal, the Department

has developed a National Hypersonics Strategy that accelerates the development and delivery of transformational warfighting capabilities based on hypersonic systems. This strategy includes air, land, and sea launched, highly-survivable, intermediate-range, conventionally armed hypersonic strike weapons that can defeat time-critical maritime, coastal, and inland targets of critical importance. The U.S. Navy's Strategic Systems Programs (SSP) Conventional Prompt Strike (CPS) Program is developing a non-nuclear hypersonic weapon system to provide the longest range, prompt, conventional strike capability of those the department is pursuing. The U.S. Navy CPS Program and the U.S. Army's Rapid Capabilities and Critical Technologies Office (RCCTO) are partnered to field this hypersonic weapon system through use of a Common Hypersonic Glide Body (CHGB), common booster stack, and joint test opportunities. This Navy designed, developed, and produced hypersonic missile will enable precise and timely strike capability in contested environments. The Services will leverage an ambitious joint flight test schedule to assess and improve the weapon system design and demonstrate performance against requirements. The Navy/Army team will field transformational hypersonic weapon systems to deliver unmatched capability in relevant timeframes to meet critical joint warfighting needs.

### **Fielding**

The Navy-developed common hypersonic missile will be fielded by both Services and each will develop their respective weapon system on corresponding sea- or land-based launch platforms. The missile will be delivered to the Army as the Long Range Hypersonic Weapon (LRHW) prototype capability beginning in Fiscal Year (FY) 2023. The capability will then be fielded by the Navy as a sea-based capability onboard ZUMWALT Class destroyers (DDGs) starting in the mid-2020's and on Block V VIRGINIA Class submarines (SSNs) starting in the early 2030's. While the Army's LRHW is road mobile and air transportable, the Navy's surface and submerged platforms add the elements of stealth, responsiveness, and mobility to the Commanders' strategic and tactical options. Combining CPS capability with the mobility and stealth of the sea-based platforms adds the most survivable, intermediate-range, time-critical conventional hypersonic strike capability that, combined with LRHW, provides our Combatant Commanders with flexible strike options.

### **Workforce**

The common hypersonic missile design for sea and land-based applications provides economies of scale for production and relies upon a growing U.S. hypersonics industrial base. The Department of Defense is making significant investments to facilitate rapid development and testing of related technologies in order to enable affordable production at scale and accelerate the delivery of these capabilities. CPS industry partners continue to work diligently with the government national team to transition science and technology hypersonic projects to industry for production, platform integration, and delivery of capability into the hands of warfighters. There is no single company that can provide hypersonic capability alone; so, CPS is also fostering the creation of a new hypersonic industrial base for our country, in partnership with the Office of the Secretary of Defense (OSD). Because this is a critical national priority, our industry partners are making a collaborative investment of intellectual property and resources to deliver these weapon systems. By moving the production of hypersonic weapons from our national labs over to industry, we transitioned to production at scale, which will drive down costs and accelerate delivery of capability into the hands of the warfighter. The work and investments these companies and the government national team are making, both monetarily and in terms of relationships, are laying a strong foundation for success that will positively affect the future of our country. The CPS and LRHW programs will continue to support the development of the industrial base and plan to advance the Nation's hypersonic capabilities with future upgrades for the Common Hypersonic Glide Body. The innovation and cooperation that is happening across industry, government, Army, and Navy during this demanding time is truly energizing and critically important to the country.

### **Test Infrastructure**

The Department of Defense is making significant investment in ground and flight test infrastructure to ensure that there is sufficient test capability and capacity for current and future programs. For example, the Naval Surface Warfare Center - Crane recently awarded a contract for the Multi-Service Advanced Capability Hypersonics Test Bed (MACH-TB) to increase the capacity for hypersonic flight testing. The program was initiated by CPS and will demonstrate the ability to affordably prototype a test bed, leveraging multiple commercially-available launch vehicles for ride-along hypersonic payloads. This hypersonics flight test bed will bring to fruition a centralized hypersonic testing capability that can be leveraged by hypersonics programs across

the Department of Defense, industry, and academia stakeholders. Additionally, CPS has coordinated with the 45th Space Wing at Cape Canaveral Air Force Station to generate range requirements and provide funding for infrastructure upgrades necessary to establish the first Atlantic hypersonic flight test corridor. The CPS program has also been working in close coordination with the OSD Research and Engineering (R&E) Test Resource Management Center (TRMC), which is responsible for ensuring the readiness of the Department of Defense's test infrastructure. Department of Defense investments include increased capability and throughput at important ground test facilities as well as enhanced airborne test instrumentation platforms to improve flight test data collection and throughput.

### **Recent Milestones**

In March 2020, the CPS/LRHW teams completed a successful flight test that demonstrated that CHGB technology is mature and can provide desired warfighting capability. The Services have continued to work with Sandia National Laboratories to refine the design of that glide body and support the transition of glide body production from our national labs to industry. In April 2022, the first glide body produced by our industry partners was delivered. The Services have conducted numerous static fire tests of the first and second stage Solid Rocket Motors (SRM) which make up the common missile booster stack that supports both CPS and LRHW. These successful SRM tests were critical milestones leading up to the first flight test of the integrated Common Hypersonic Glide Body and missile booster stack in June 2022. That test demonstrated numerous firsts, including successful first and second stage missile booster flight.

Additionally, across the nation, a broad government and industry team is conducting various levels of testing towards a common goal of fielding LRHW to the Army in FY23 and then CPS onto Navy platforms in following FYs. The Navy program has been diligently planning and executing engineering and test efforts to prepare for sea-based fielding. Utilizing an In-Air Launch test facility designed to support the development of the CPS launcher system, the program has successfully completed a series of test campaigns to validate the cold-gas eject approach that will be used in Navy sea-based platform fielding. To prepare for the underwater use of the CPS launcher, we are currently building an Underwater Test Facility in Crane, Indiana. This facility will conduct submerged tests to ensure we understand how the missile flies through the water to support fielding CPS capability on Block V VIRGINIA Class submarines.

Supporting the warfighter is at the core of the CPS mission and as such, the Navy has executed several Operational Exercise events to inform development of the weapon system by putting Sailors in front of functional consoles in an operationally representative environment to execute CPS scenarios. This effort focuses on evaluating operator interfaces for on-platform CPS mission planning and execution.

Finally, the Navy and Army teams, along with numerous government, industry, and academic partners, have conducted two successful High Operational Tempo for Hypersonics flight campaigns from the NASA Wallops Flight Facility that consisted of precision sounding rocket launches demonstrating advanced hypersonic technologies, capabilities, and prototype systems in a realistic operating environment. The data learned from these sounding rocket tests has already informed the future development of the common hypersonic capability.

### **Upcoming Milestones**

The CPS and LRHW programs plan to jointly conduct numerous hypersonic flight tests of the common hypersonic missile, focusing on range, environmental extremes, use of multiple launch platforms, and operational considerations. These flight tests will capture performance data and continue to mature the design and development of the common hypersonic missile. The Navy will continue pressing forward with developmental testing in preparation for the first flight test to utilize the Navy's cold-gas eject launch. To lean forward on our ZUMWALT Class DDG integration, we will soon be deploying a weapon system prototype and missile simulator to the ship as an early validation event for the CPS weapon system. This technical demonstration event will provide early warfighter engagement, validation of weapon system interfaces, and allow the program to demonstrate a digital kill chain. Of course, the work on this weapon system is not over when the Army fields the first prototype. The Navy has implemented a program plan that includes a series of recurring Technology Insertions. This will allow the program to routinely iterate the weapon system design, integrate affordability initiatives to reduce material costs, leverage additive manufacturing and other new production processes, and perform obsolescence management activities. The Technology Insertion process ensures that the Army and Navy can affordably deliver a capable hypersonic system to support the nation's continued battlefield dominance.

## **Conclusion**

The development of hypersonic technologies will deliver additional cutting-edge capabilities and strategic options to our armed forces, supplementing our existing unparalleled capabilities. This conventional hypersonic capability will ensure the Department of Defense maintains the ability to deter potential adversaries and to defeat aggression, if necessary. I am privileged to represent this unique organization as we work to serve the best interests of our great Nation. I thank the committee for the opportunity to speak with you about the Navy's conventional hypersonic weapon system and the vital role it plays in our national and global security.