

Hypersonics and the States

ASA Policy Summit

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Hypersonics: Past, Present, and Future



X-15



National Aerospace Plane



X-43A



X-51A



Starship Reentry

Hypersonics: Is the USA Falling Behind?



Russian Kh-47M2 Kinzhal Hypersonic Air
Launched Ballistic Missile



Chinese DF-ZF Hypersonic Glide Vehicle

The New Hypersonics Age: Military

- **Speed: the new stealth**
- **Time urgent targets**
- **Survivability**
- **Deep strike**
- **Air and Missile Defense – Counter hypersonics**
- **Anti Ship**
- **ISR**
- **Space Access and Operations**
- **Cargo and Personnel Transport**

The New Hypersonics Age: Commercial and Civil

- **Passenger and cargo transport**
 - **Hermeus (GA, CA)**
 - **Venus (TX)**
- **Space access**
 - **Velontra (OH)**
 - **Specter (MA)**
- **Space science and exploration**
- **The new space economy**
- **Importance of Reusability**



Hermeus Halcyon



Venus Stargazer

Hypersonics and the States

- **Research: universities and laboratories**
- **Design and Development**
- **Testing**
 - **Ground Test: wind tunnels, materials testing**
 - **Flight Test : inland and over water**
 - **DoD Multi-Service Advanced Capability Hypersonic Test Bed (MACH-TB): \$2B+ program to reduce hypersonic risks and swiftly transition innovative technologies**
 - **Routine, high cadence testing in multiple states**
- **Education and Workforce Development: engineers, scientists, advanced manufacturing**
- **Manufacturing and supply chain**
- **Industrial base**

President Biden Presidential Determination 23-05, March 1, 2023

“Ensuring a robust, resilient, and competitive domestic defense industrial base that has the capability, capacity, and workforce to meet the hypersonic warfighting mission is essential to our national security. Therefore, by the authority vested in me as President by the Constitution and the laws of the United States of America... I hereby determine... airbreathing engines, advanced avionics position navigation and guidance systems, and constituent materials for hypersonic systems are essential to the national defense”

Hypersonics: A Growth Opportunity for the States

- **Vision: dual use spaceports/hypersonics ports in the states offering flights to anywhere in the world in a few hours**
- **Good, highpaying jobs in the hypersonics enterprise**
- **Support a National Hypersonics and Spaceplane Initiative to help ensure continued US leadership in space and hypersonics**
- **ASA and the states should work with Congress, NASA, the Federal Departments, and the private sector to grow the national hypersonics and space economy**