Sustaining Affordable and Effective Hypersonic Capabilities

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DEPUTY UNDER SECRETARY OF DEFENSE FOR ACQUISITION AND SUSTAINMENT

July 30, 2019
Hypersonic Vehicles

Game Changers for Future Warfare?

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ACQUISITION & SUSTAINMENT (A&S)

Mission
The Office of the Under Secretary of Defense for Acquisition and Sustainment provides policy and governance, for the Department of Defense and the national security innovation base, that enables the delivery and sustainment of critical capabilities to U.S. Service Members and allies.

Best Possible Operational Capability for the Taxpayer Dollar
NATIONAL DEFENSE STRATEGY (NDS)

- Line of Effort (LOE) 1 - Increase Lethality
- LOE 2 - Strengthen Alliances and Attract New Partners
- LOE 3 - Reform the Department

“As we continue to advance the Nation’s security, let me reaffirm our path forward. The National Defense Strategy remains our guiding document and everything we do should support its stated objectives.” – Mark Esper, Defense Secretary June 24, 2019

Shift From Counterinsurgency to Competition of Great Powers
COMPETITION OF GREAT POWERS

▪ Simultaneous Factors

➢ Rise of Competitor Capabilities

➢ Competition For Investment
  • Nuclear Deterrent Modernization
  • Missile Defense Review (MDR)
  • Counter ISIS
  • Counter UAS….. Etc.
Behind a clean, white, columned facade sits Moscow’s Manezh Exhibition Hall, a stately gathering place for Russia’s political, social, and religious elites, just a short stroll from Red Square. It was here, during his March 1, 2018 state of the nation address, President Vladimir Putin unveiled Russia’s wonder weapons: hypersonic missiles and supermaneuverable gliders capable of dispatching intercontinental targets at speeds exceeding Mach 5 (five times the speed of sound) in two hours or less. With his reelection only a few weeks away, the president pinned Russia’s very existence to staying one step ahead of the Americans. “Technological changes are happening at an increasing speed,” “and those who take advantage of this new technology will launch forward. Those, said Putin, who are unable to do that will be buried under this tide of technological progress.”
– National Interest, 8 June 2019
COMPETITION FOR INVESTMENT

CHINA

- Investing Heavily in Hypersonic Cruise Missiles (HCMs) and Hypersonic Glide Vehicles (HGVs)

- Chinese Competition Three Dimensional
  - Illegal – Theft of Intellectual Property
  - Intense – Good Products For Less
  - Unfair – Demanding Firms Give Away Technology for China’s Vast Market

Source: The Economist, 23 September 2017
ACQUISITION & SUSTAINMENT

LOE 1 - INCREASE LETHALITY

- Improve F-35 Program Execution
- Modernize the Nuclear Deterrent
LOE 1 - INCREASE LETHALITY

- Provide Real-Time Response to COCOMS

- Strengthen Supply Chain Operations

- Implement Executive Order 13806 – Assessing and Strengthening the Manufacturing and Industrial Base
LOE 2
STRENGTHEN ALLIANCES AND ATTRACT NEW PARTNERS

▪ UK Collaboration on Chem/Bio Elimination & Nuclear Modernization

▪ Expand Collaboration with Emerging Partners
LOE 3 - REFORM THE DEPARTMENT

- Enhance DoD Acquisition Workforce Talent Management
- Refine Internal A&S Business Processes
What Materials Enable Hypersonics
- Heat Resistant Materials
- Ultra High and High Temperature Composites
- Aeroshells
- High Temperature Windows/Radomes
- Others?

Infrastructure
- Test Facilities

Tools
- Defense Production Act Title III
REFINE INTERNAL BUSINESS PROCESS
Adaptive Acquisition Framework - Enable Execution at the Speed of Relevance

Tenets of the Defense Acquisition System
1. Simplify Acquisition Policy
2. Tailor Acquisition Approaches
3. Empower Program Managers

DoDD 5000.01: The Defense Acquisition System
DoDI 5000.02: Operation of the Adaptive Acquisition Framework

Urgent Operational Needs
DoDI 5000.xx

Middle Tier of Acquisition
DoDI 5000.xx

Major Capability Acquisition
DoDI 5000.xx

Software Acquisition
DoDI 5000.xx

Defense Business Systems
DoDI 5000.75

Acquisition of Services
DoDI 5000.74

Legend:
DD: Disposition Decision
OD: Outcome Determination
MDD: Material Development Decision
MS: Milestone
IOC: Initial Operational Capability
FOC: Full Operational Capability
S: Sprint
MVP: Minimum Viable Product
MVCR: Minimum Viable Capability Release
R: Release
ATP: Authority to Proceed

July 2019
While Developed As A Prototype, Several “Sustainment” Questions Need to be Addressed Early

- Prototyping is Good, Prototyping While Addressing Production Factors is Better
- Detailed Test Plan With Availability Data
- Intellectual Property – Who Owns What
- Supply Chain – What Materials are on Critical Path – What is the Supply Chain
- Embedded Sensors / Condition Based Maintenance
- Interfaces – It’s Not Just the Missile
- Modularity: Upgrade? Repair?
HYPERSONICS

- Very Cool
- A Leap Forward
- Must Plan for
  - Production
  - Sustainment
Road to Dominance

Defeat Adversary Near Space Hypersonic Threats

Comprehensive Layered Defeat of Hypersonic Systems

Intermediate Range Hypersonic Strike

Battlefield Dominance by 2028 and Beyond

Robust Strike Kill Chain

Defeat Time Critical And Heavily Defended Land and Sea Targets From Survivable Standoff Range

Hypersonics

Responsive Global Reach

Responsive Access to Space

Leverage Near Space For Global Reach And Space Control

Medium Range Hypersonic Strike
# OUSD R&E/AD, Hypersonics Leadership Team

## Thrust Area Owners

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