



OSD Perspective

**Presentation to the
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The Emerging Global Strike Mission

A capability to deliver rapid, extended range, precision kinetic (nuclear and conventional) and non-kinetic (elements of space and information operations) effects in support of theater and national objectives.

Assigned to the new USSTRATCOM as part of Change 2 to the Unified Command Plan 2002

10 January, 2003



Backdrop for Global Strike Mission

- **Quadrennial Defense Review Report, Sep 2001**
 - Establishes a shift in defense planning from a “threat-based” to a “capability-based” model
 - Advocates a “transformation” to achieve critical operational capabilities (e.g., deny enemy sanctuary)
- **Nuclear Posture Review Report, Dec 2001**
 - Outlines foundation of strategic posture for 21st Century
 - Establishes a new “Triad” composed of offensive strike systems (nuclear and non-nuclear), defensive capabilities, and a revitalized support infrastructure
- **Capstone Requirements Document (CRD) for Hard and Deeply Buried Targets (HDBT), Jan 2001**
 - Calls for family of systems to provide key operational capabilities and defines performance parameters
 - Establishes new paradigm for addressing “Strategic Targets”
- **S&T Master Plan for Defeat of HDBTs, Nov 2001**
 - Defines S&T program responsive to CRD, QDR and NPR



Illustrative “Strategic” Targets

• Target Categories

- Leadership, C2
- WMD capabilities
 - Production
 - Storage
 - Delivery
- Other military
 - E.g., air defense
- Critical infrastructure

• Target Types

- Above-ground structures
 - Hardened
 - Unhardened
- Buried/bermed bunkers
- Tunnel facilities
- Mobile or relocatable
- Infrastructure nodes

Striking Strategic Targets

Some Desired Weapon System Attributes



- **Discriminate lethality**
 - highly lethal tailored effects
 - minimum collateral effects
- **Time sensitive response**
- **High-speed delivery**
- **Robust penetration**
- **All-weather precision**
- **Extended range**
- **Simplified logistics**
- ...



OSD Priorities

OUSD(AT&L) Investments Responsive to QDR, NPR

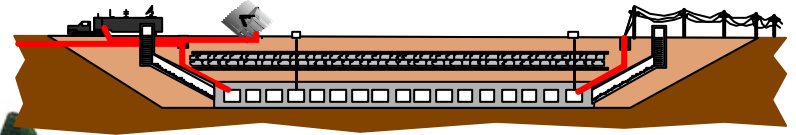
No formal new weapon system starts, but ...

- **Weapon system enhancements and upgrades for hard and deeply buried targets (NPR-driven)**
 - New capabilities to be fielded in 2005 timeframe
- **Post 9/11 accelerations and upgrades to meet special warfighting needs**
 - Five new weapon capabilities fielded (or soon to be) since 9/11
- **Transformational technology initiatives (DDR&E)**
 - National Aerospace Initiative (NAI)
 - Surveillance and Knowledge Systems
 - Energy and Power Technologies

Weapon upgrade programs for HDBT

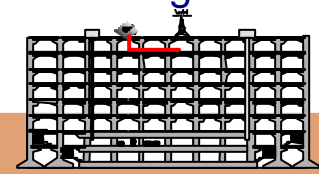


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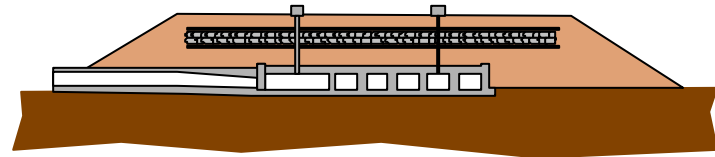


C3I Shallow Underground Bunker

JSOW-C

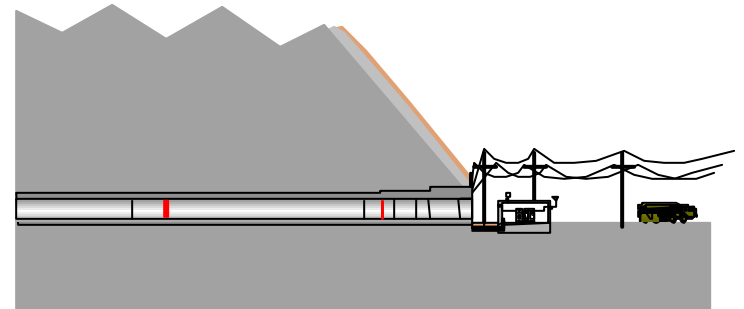


C3I Basement Bunker



CW Bermed Above Ground Bunker

TACMS-P



Missile Tunnel



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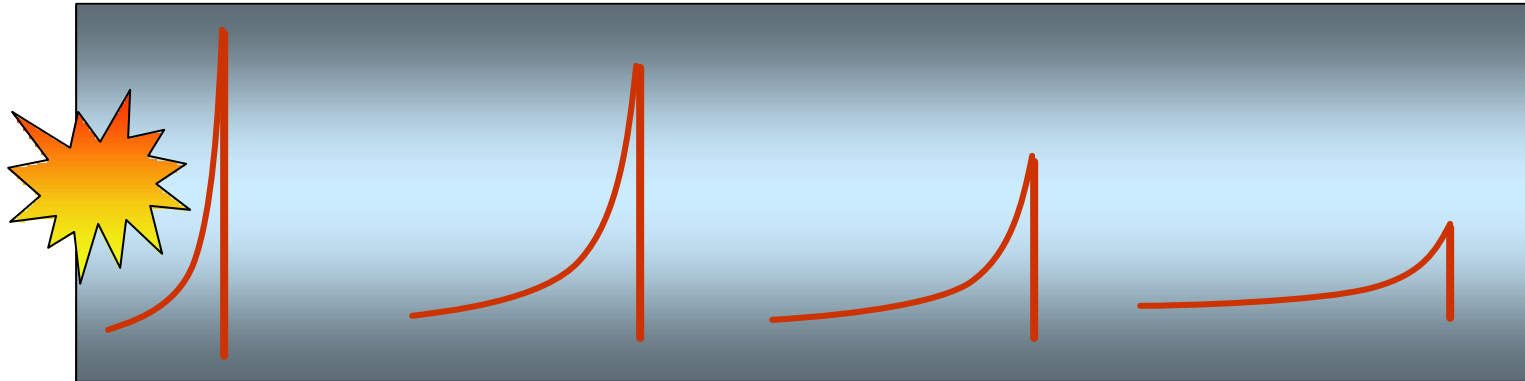
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- Weapon system enhancements and upgrades for hard and deeply buried targets (NPR-driven)
- ➔ • **Post 9/11 accelerations and upgrades to meet special warfighting needs**
 - BLU-118B Thermobaric Penetrator
 - AGM-114M Hellfire Thermobaric Blast/Frag Warhead Upgrade
 - Two Agent Defeat Weapons
 - Massive Ordnance
- Transformational technology initiatives (DDR&E)

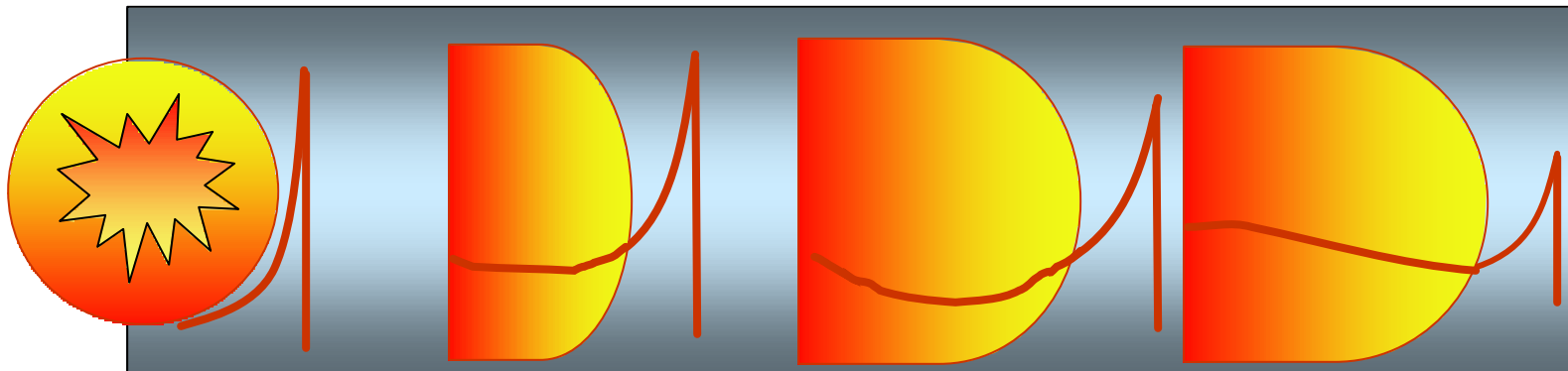


Blast Effects in Tunnels

Standard versus Thermobaric Explosive



Standard explosive releases all energy during detonation. Blast wave attenuates as it propagates down length of tunnel.



Thermobaric explosive continues to release thermal energy from combustion of fuel-rich constituents with air. This energy release increases tunnel pressure/temperature and mitigates attenuation of shock wave in tunnel.

Hard and Deeply Buried Target Defeat BLU-118B Thermobaric Penetrator



- Worldwide proliferation of underground facilities (UGFs)
- UGFs viewed as sanctuaries for assets most valued by our adversaries
 - Leadership
 - WMD
 - Missile Delivery Systems



Post- 9/11 Quick Response Project

- Produced “Thermobaric” explosive fill for BLU-109 penetrator
- Conducted tunnel and open air tests to establish effectiveness
- Conducted flight test at NTS
- Delivered BLU-118B warheads with guidance kits & fuzes to theater



BLU-118B Thermobaric Bomb

90-day transition!

Defeat of Highly Mobile or Relocatable Targets

Hellfire Thermobaric Blast/Frag Warhead Upgrade



Mobile targets demand:

- Wide-to-spot-area search
- Target cueing and fingerprinting
- Unmanned, mobile sensor platforms
- Prompt sensor to shooter linkage
 - Integrated sensor and weapon delivery platform

Predator with 2
Hellfire Missiles



AGM-114M Enhanced Lethality WH

- Warhead/Payload screening
- Warhead qualification tests
- Warhead development/testing
- Limited initial production

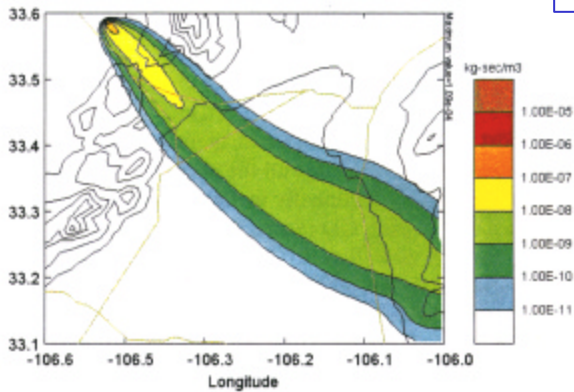
11-month transition!

CW/BW Agent Defeat Weapons

Expulsion from bunker after attack with standard penetrating munitions



DIPOLE ORBIT 1 MINERVE 15 Min, 1 km Winds
Surface Dose



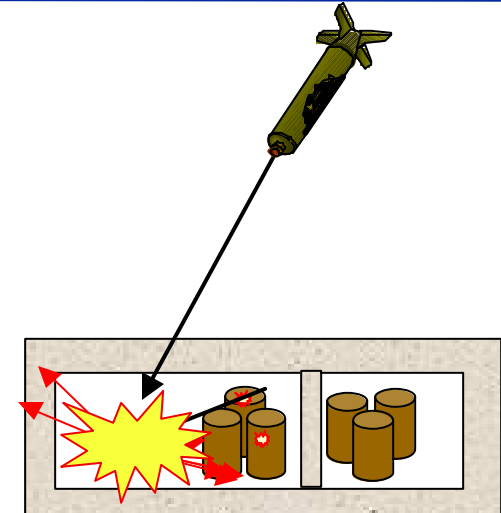
Terrain contours from 1200.0m to 2400.0m by 200.0m



Weapon 1

- Container breach in soft facilities or in the open

58-day transition!

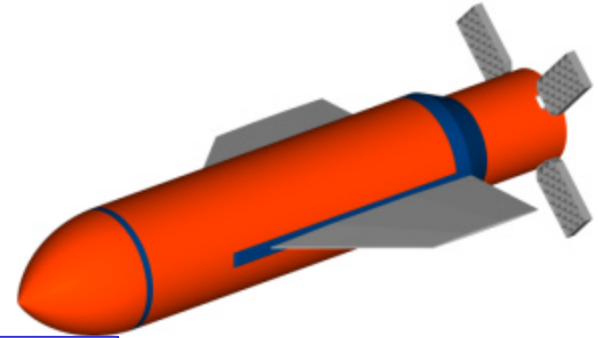


Weapon 2

- Penetration of bunker, container breach, and thermal kill of aerosolized agent

Still counting

Massive Ordnance



- **Weight: 20,000-30,000 lbs**
- **Penetrator and surface burst variants**
- **JDAM-like accuracy**
- **HE payloads: 5,000 - 18,000 lbs**
- **Applications**
 - **Tunnel defeat via adit or penetration**
 - **“Spectacular” effects against distributed above-ground targets**

Under consideration



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NATIONAL AEROSPACE INITIATIVE

NAI

- *Strategic Focus*
- *Technical Coordination*
- *Aerospace Workforce*

High Speed Hypersonics

TCT/NPR

Expendable (Missiles)

Mach < 4

4 < Mach < 15

Long-Range Strike
[Mach 0-7]

Reusable
[Mach 0 - 12]

Air-Breathing
1st Stage (TSTO)
[Mach 0 - 12]

Space Access

DoD/NASA

Reusable Launch Vehicle

2nd Stage Rocket Engine

Space Maneuvering Vehicle

Space Technology

Space Commission

Responsive Payloads

Flexible Comm

ISR

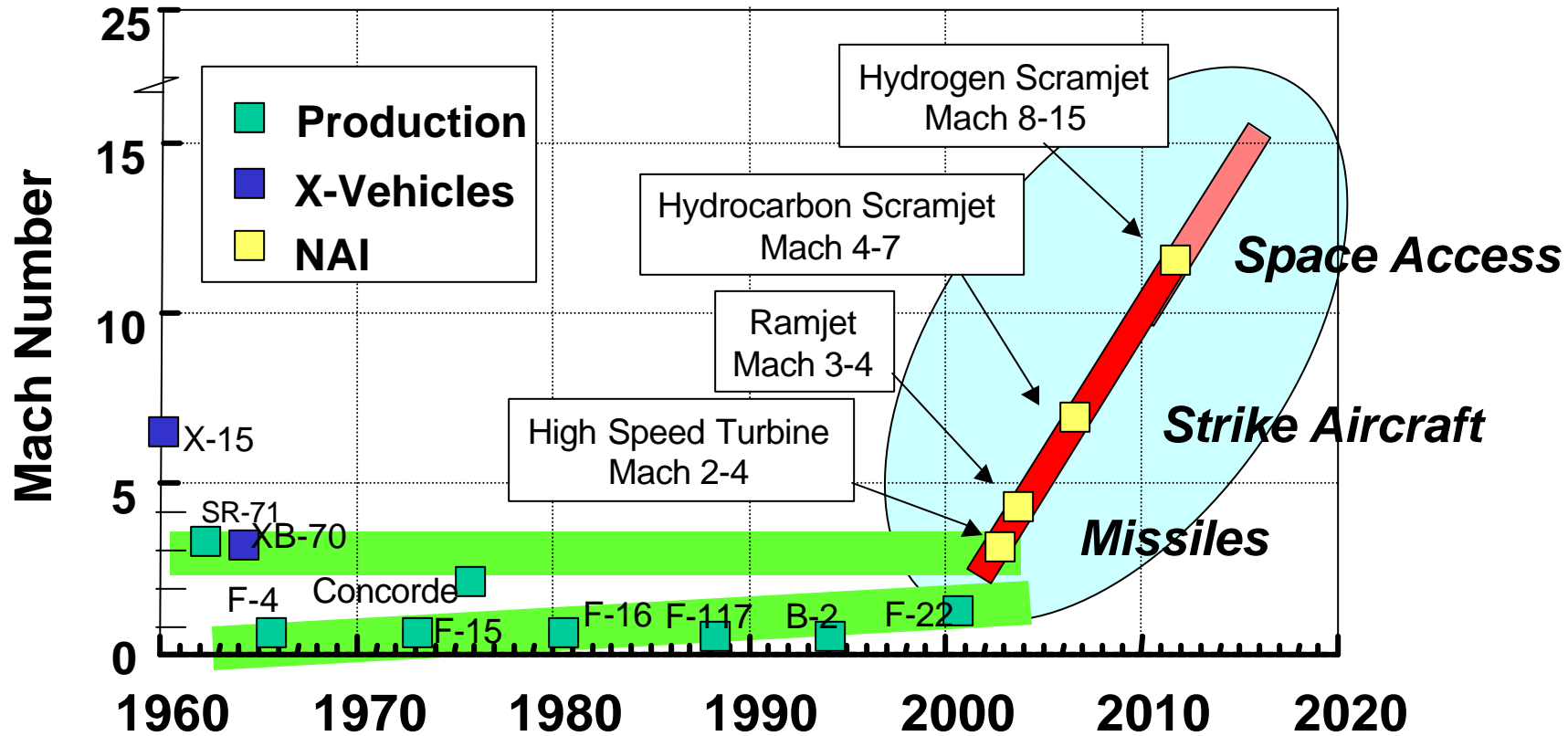
Space Control

Synergy Goal: 1 + 1 + 1 > 3

NATIONAL AEROSPACE INITIATIVE



Mach Number per Year to 2012



FY03 RDT&E Budget Request



**FY03 RDT&E = \$53.9B
requested
(6.1 thru 6.7)**

(6.6 + 6.7 = \$16.7B)

**Development
(6.4 + 6.5 = \$21.6B)**

**Science and Technology
(6.1 + 6.2 + 6.3 = \$9.9B)**

**Technology Base
(6.1 + 6.2 = \$5.2B)**

19% of RDT&E

(\$B)



6.7 Operational Systems Development (\$17.2B)

6.6 RDT&E Management Support (\$2.8B)

6.5 Engineering and Manufacturing Development (\$13.5B)

6.4 Demonstration and Validation (\$10.5B)

6.3 Advanced Technology Development (\$4.7B)*

6.2 Applied Research (\$3.8B)

6.1 Basic Research (\$1.4B)

* Includes \$213M allocated to combating terrorism S&T in a separate DoD transfer account



DoD S&T Funding as % of DoD Topline

