

Small Diameter Bomb



Small Diameter Bomb

Increment I **(SDB I)**

Precision Strike Association Annual Program Review 19 April 2006

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SDB Increment I

GBU-39/B, BRU-61/A



Small Diameter Bomb

Mission:

All-weather, Autonomous, Precision Strike

Decrease Collateral Damage

Increased Loadout for Multiple Strikes Per Sortie at Standoff Ranges



Description:

IM Compliant 250 Lb Class Multipurpose Warhead

Diamond-back Wing Provides Increased Range

4-place Pneumatic Carriage System

Cockpit Selectable Electronic Fuze - Impact, Height Of Burst, & Delay



Guidance:

INS/GPS Augmented by Differential GPS

Anti-Jam GPS with SAASM



Platforms:

Threshold: F-15E

Objective: F-22A, F-35, F-16, F-117, A-10, B-1, B-2, B-52, MQ-9



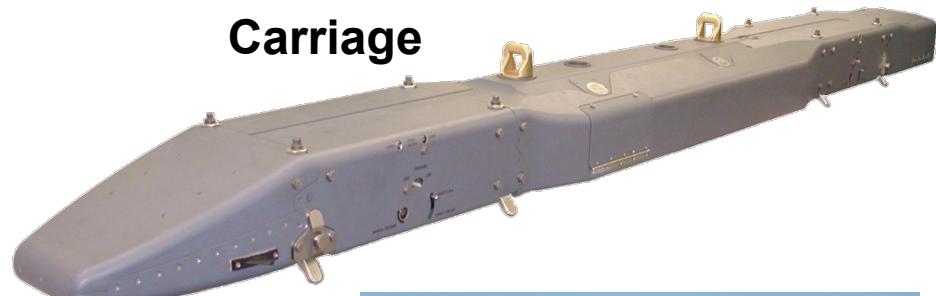
SDB I Weapon System



Small Diameter Bomb



Carriage



Accuracy Support Infrastructure



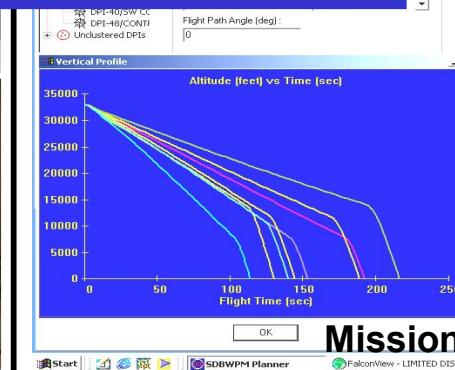
DMS



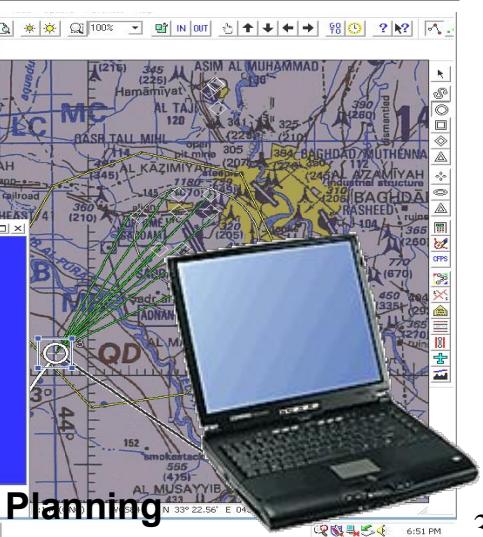
RSU



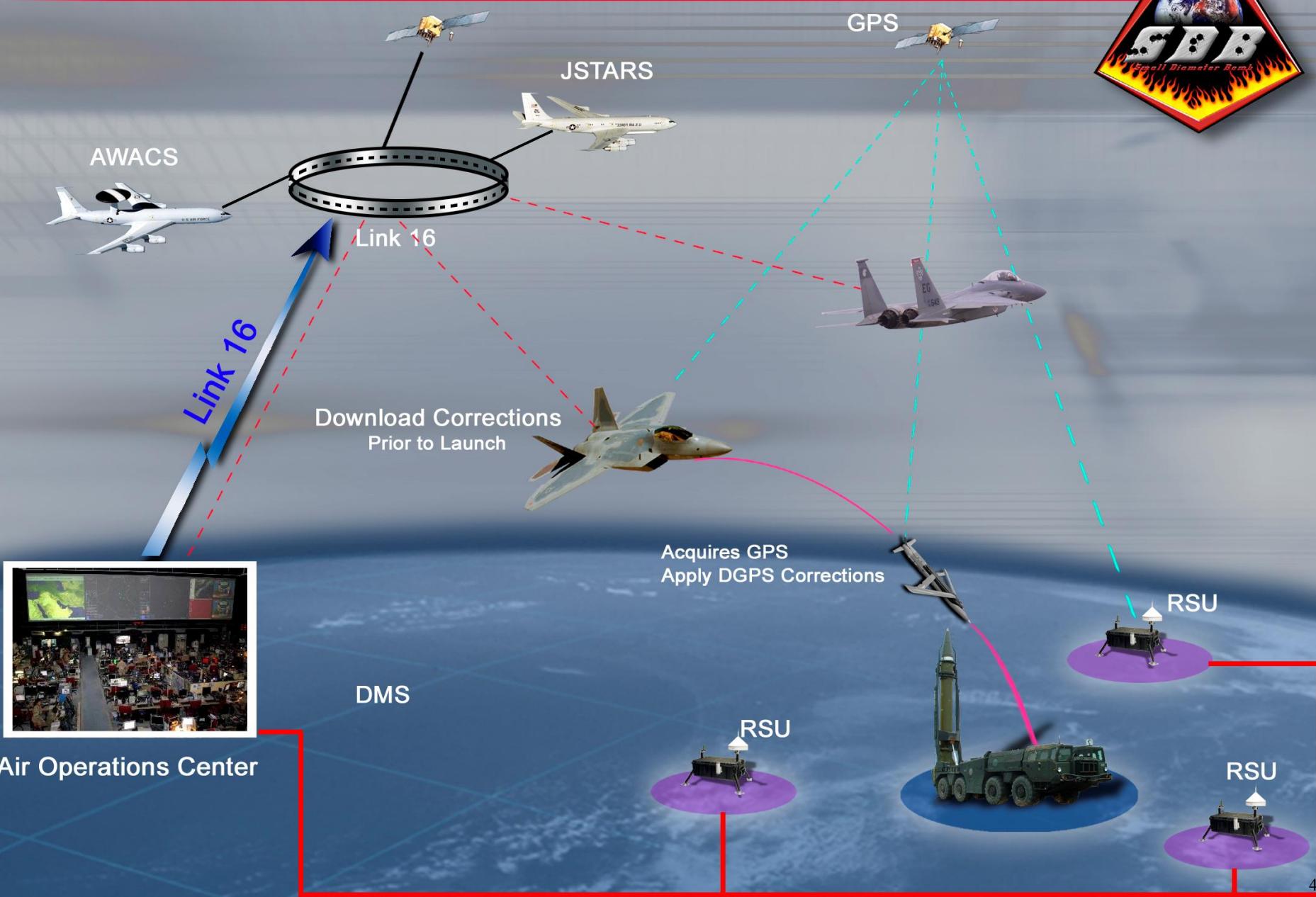
Logistics



Mission Planning



SDB Accuracy Support Infrastructure





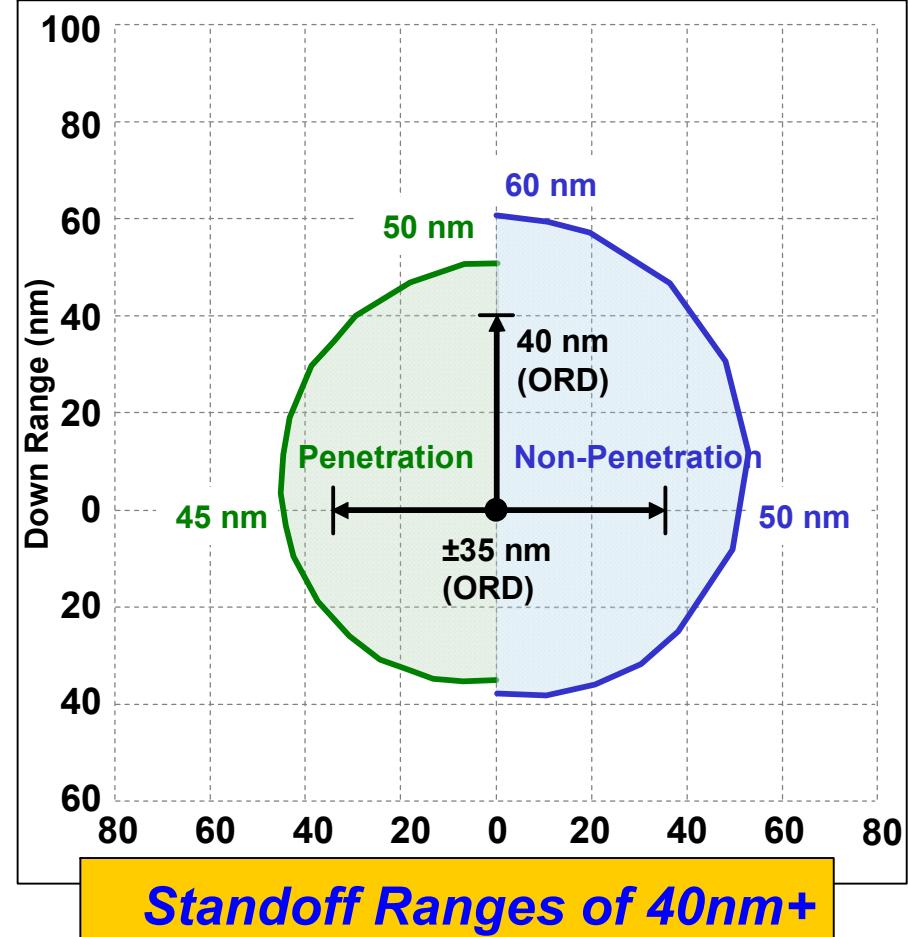
Increased Loadout / Standoff



Small Diameter Bomb



4 Weapons per 1760 Station



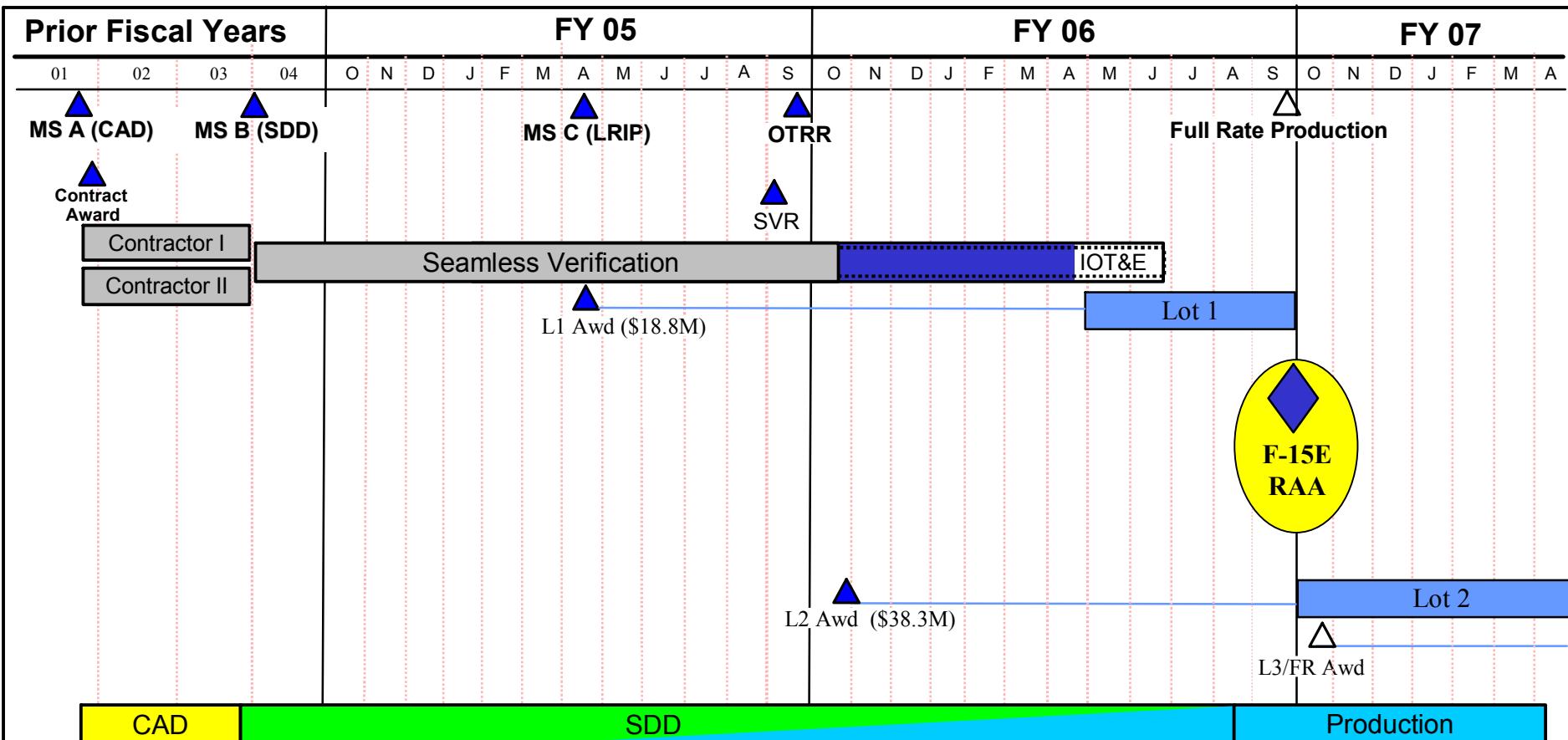
Loadout Balanced vs Weapon Effects: 250 lb Class SDB I₁₃



SDB I Schedule

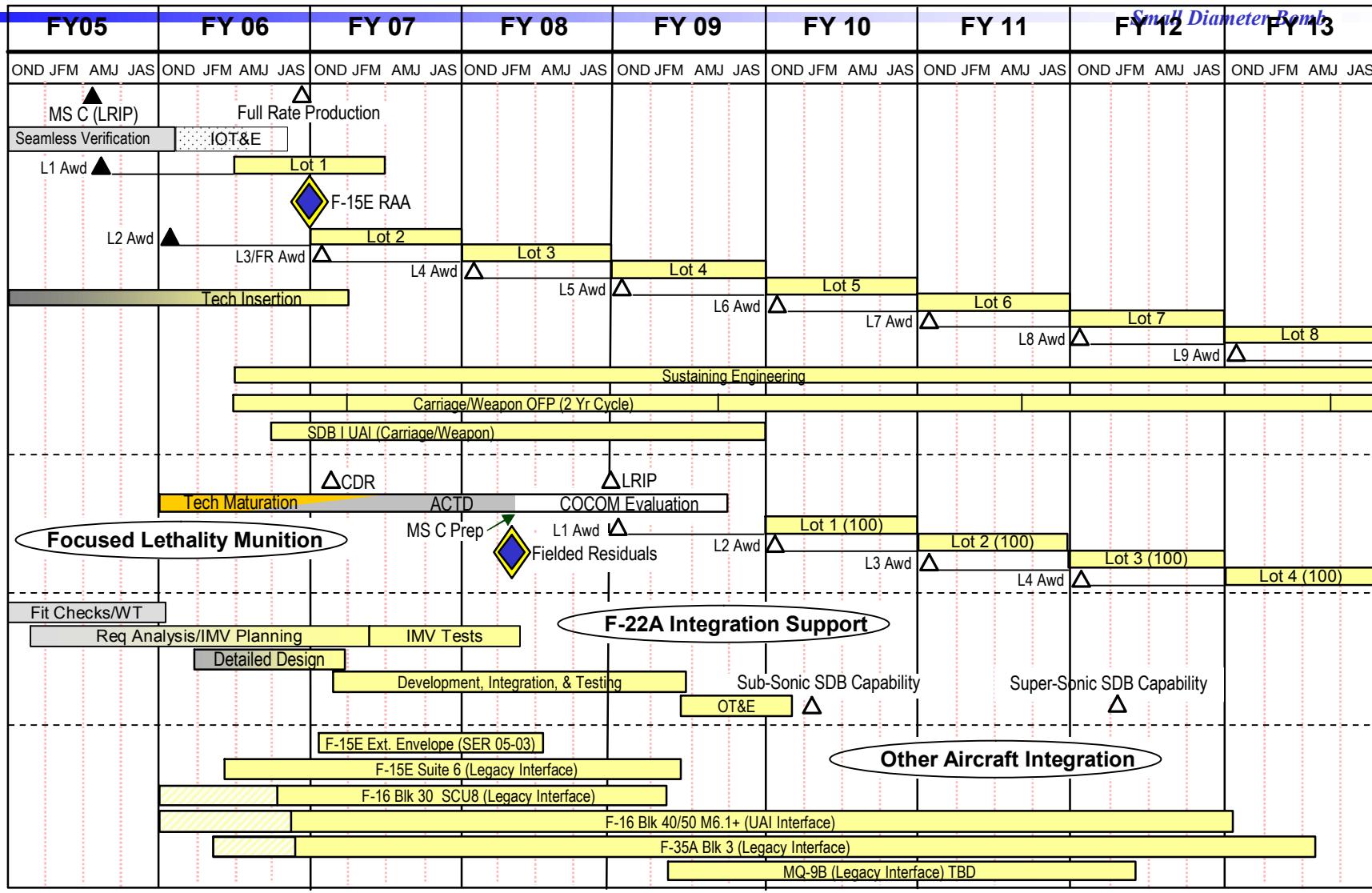


Small Diameter Bomb





SDB I Schedule



Integrity - Service - Excellence



History...Why SDB I?

Commander's Intent: You Will Deliver Small Diameter Bomb (SDB) to the Warfighter in FY06. Schedule Is Paramount



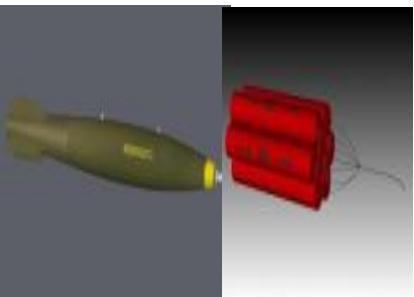
Small Diameter Bomb



- Fewer Aircraft
- Fewer Crews
- ...More Effect from Less



- Diminishing Sources
- Changing Laws, Ops



- Tactics
- Laws of Armed Conflict
- "Combat" JAG

• Global News Coverage



- Increase Number of Kills Per Pass
- Enhance Weapon Stand-off Range
- Combat Effective in Adverse Weather
- Provide Weapon Penetration Capability
- Minimize Collateral Damage
- Provide Autonomous Target Attack
- Reduce Logistics Footprint
- Reduce Aircraft Generation Times
- Achieve Battlefield Effects Against
 - Fixed Covered,
 - Fixed Concealed,
 - Fixed Hardened



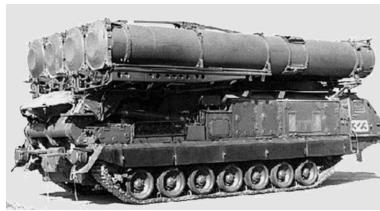
SDB I Target Set



- **C3 Sites**
 - Communication Facility
 - Antenna, Park Drive SATCOM
- **Air Defense Sites**
 - Radar, Revetted, EW/GCI Site
 - Radar, Grill Pan
- **POL Sites**
 - POL Refinery
 - POL, Large Partially Underground Tanks
- **Airfield Targets**
 - Aircraft, Fighter – Revetted
 - Aircraft Shelter, Large Concrete Arch
 - Airfield Maintenance Complex w/ Machine Tool



Bomb





SDB I Target Set (Con't)



Small Diameter Bomb

- **Infrastructure Targets**

- Transformer Yard



- **Missile Sites**

- SCUD Missile in Travel Mode, Stationary
 - BM-21 Rocket Launcher, 122mm, Stationary



- **Artillery Sites**

- ARTY, 152mm Towed Field Gun/Howitzer



- **AAA Sites**

- ZSU-23-4, Stationary

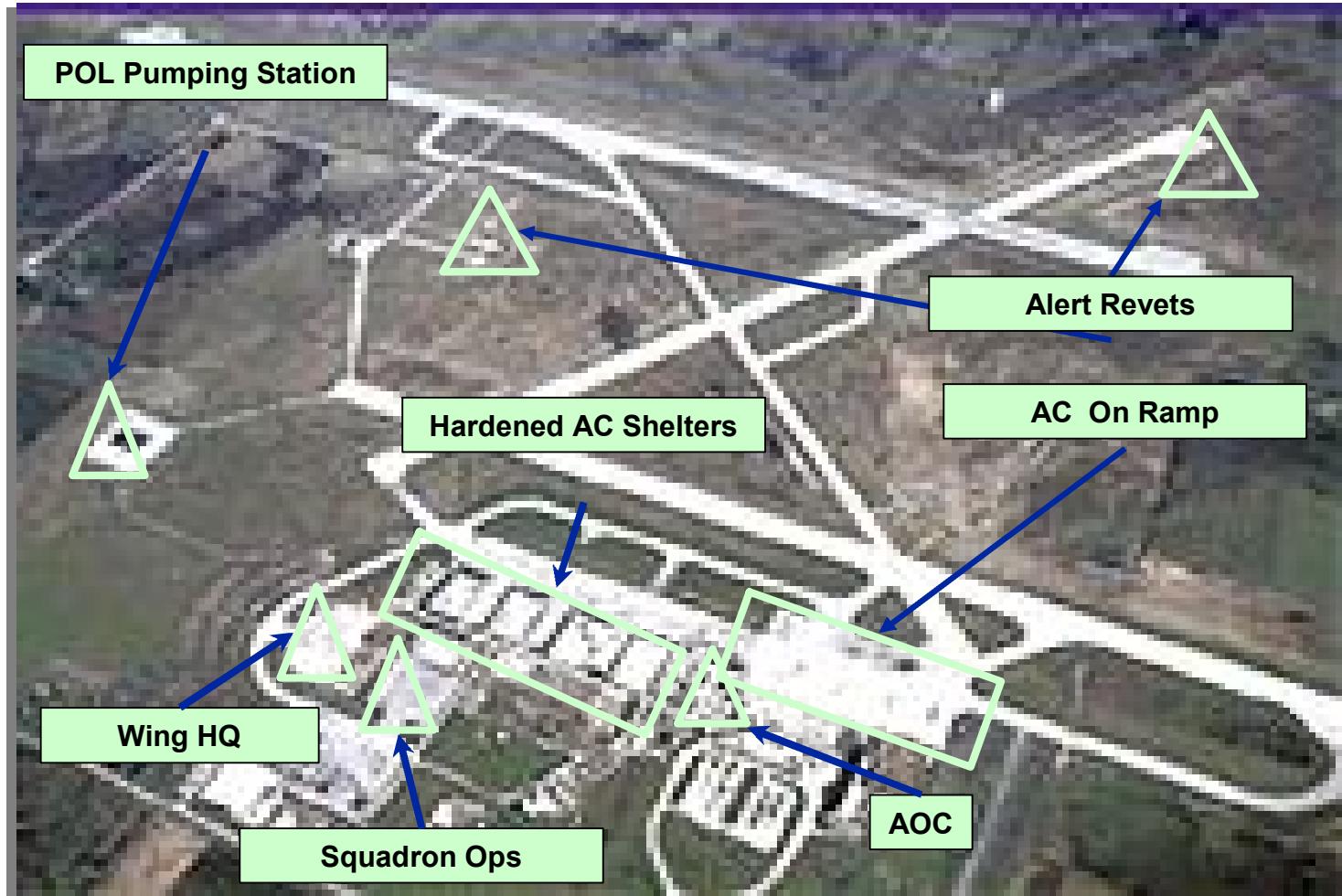




One F-15E Loadout with SDB I Kills This Airfield... Single Sortie



Small Diameter Bomb





“Small” Can be Lethal

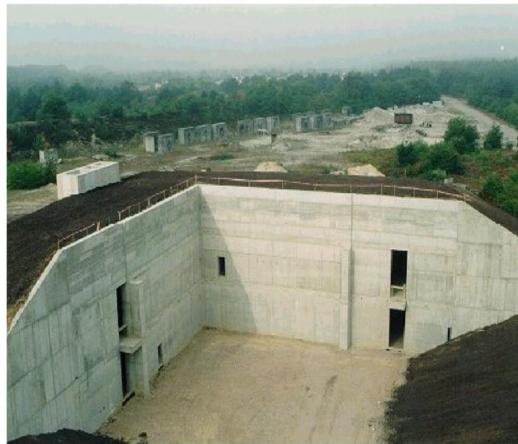


Small Diameter Bomb

- **MMTD Warhead**
 - Small, Well-Placed, Well Designed Warheads Do Damage



- **SDB I Size Warhead Test**





SDB I Test Status



- Development Portion of Seamless Verification Complete
 - 35 for 37 Successful Flight Tests (CAD & SDD)



- Insensitive Munitions Testing Completed
- IM Certified by AF



Bullet Impact

Fragment Impact

Slow Cook-Off

Fast Cook-Off

Sympathetic Detonation

- Operational Testing Ongoing



SDB I Executive Summary



Small Diameter Bomb

KPPs		
Requirement	Criteria	Status
Weapon Loadout	4 SDB Weapons per SDB I Carriage	✓
Net-Ready (GPS Interoperability)	100% of Top-Level IERs Designated Critical. NAV Data From GPS to SDB I	✓
Thresholds		
Requirement	Criteria	Status
Range (40kft, 0.8m)	40nm	50nm
Weapon Effectiveness	17 Weapons for 14 Targets	15 for 14
F-15E Integration	4QFY06 RAA	✓
AUPP Cost of \$64K (BY01\$) (\$41K Objective)	<u>\$24,000 Weapons</u> + <u>\$2,000 Carriage Systems</u> 24,000 Weapons	< \$30K
A/C Loadout	F-15E - 12 Weapons F-22A - 8 Weapons	✓



SDB I Meeting Commitments On Track for RAA 4QFY06



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