Backgrounder

Defense, Space & Security
P.O. Box 516
St. Louis, MO 63166
www.boeing.com

Small Diameter Bomb Increment I (SDB I)

Description and Purpose:
The Small Diameter Bomb (SDB) system is the next generation of low-cost and low collateral-damage precision strike weapons for internal and external carriage. With a range greater than 60 nautical miles, SDB's precision guidance and compact size allow today's warfighters to surgically prosecute more targets per sortie. The pneumatic SDB carriage allows four weapons to be carried in one aircraft weapon station. The SDB Focused Lethality Munition (FLM) variant incorporates a carbon fiber composite warhead case and an advanced multiphase blast explosive for precision engagements with ultra-low collateral damage outside the blast zone.

Externally, SDB is employed on F-15E, F-16 Block 30/40/50, Gripen, and GR4 Tornado smart stations. Internally, integrated in the bays of the F-22A, F-35A, and Unmanned Combat Air Vehicles and planned for B-1 and B-2 bombers.

GBU-39/B Weapon:
SDB is a 250-pound class weapon with an Advanced Anti-Jam Global Positioning System aided Inertial Navigation System (AJGPS/INS) to provide guidance to the coordinates of a stationary target. The payload is a very effective multipurpose penetrating and blast-and-fragmentation warhead coupled with a cockpit selectable electronic fuse.

BRU-61/A Carriage System:
The four-place smart carriage system has its own avionics system and four pneumatic weapon ejectors with selectable end of stroke velocity settings to adjust weapon separation characteristics. The pneumatic system eliminates the typical explosive cartridges and attendant installation/removal and cleaning required by conventional carriage racks. This design results in high performance, low maintenance, and low life-cycle cost to operate.

Customers:
SDB is used by the U.S. Air Force and eight foreign military allies.

General Characteristics:

- **GBU-39/B Weapon**: multi-purpose, insensitive munition, penetrating, blast-fragmentation warhead for stationary targets; equipped with deployable wings for extended standoff range

- Dimensions: (L x W): 70.8" x 7.5" (1.8 m x 19 cm)
- Weapon Weight: 285 lbs. (130 kg)
- Warhead: 206 lb. (93 kg) penetrating blast fragmentation
- Warhead penetration: >3 feet of steel reinforced concrete
- Fuze: electronic safe/arm fuze (ESAF) cockpit selectable functions, including air burst and delayed burst options
- Standoff maximum range: more than 60 nautical miles
- Precision inertial navigation system/global positioning system (INS/GPS)
- Anti-jam GPS and selective-ability anti-spoofing module (SAASM)

- **BRU-61/A Carriage System:**
  - Payload capacity: four weapons
  - Weight: 320 lbs. (145 kg) empty, 1,460 lbs. (664 kg) loaded
  - Dimensions (L x W x H): 143" x 16" x 16" (3.6 m x 40.6 cm x 40.6 cm)
  - Fits nearly all delivery platforms, including internal/external carriage in the F-15E, F-16, F-22A, F-35, B-1, B-2, B-52, and Unmanned Combat Air System (UCAS).

Background:
In August 2003, following a two-year competitive phase, the Air Force selected Boeing to develop and build the SDB system. The Boeing and Air Force SDB I Team completed the most successful development program in recent history and delivered the SDB system to the warfighter at cost and ahead of schedule. The Air Force declared initial operational capability in October 2006, and has been in combat use on the F-15E since October 2006. SDB integration on the F-22A, F-16, AC-130W and F35A is under way.

In November 2010, Boeing was awarded a $106 million Lot 7 contract extension from the U.S. Air Force for nearly 2,700 Small Diameter Bomb Increment I (SDB I) munitions and approximately 380 BRU-61 carriages. Boeing delivered the munitions and carriages starting in January 2012. Lots 1 through 7 comprise a total of 12,379 munitions and 2,059 carriages.

In total, Boeing has produced approximately 17,000 SDBs.

# # #

Contact:
Katie Kelly
Boeing Global Strike
Weapons & Missile Systems
Office: +1-314-232-3947
Mobile: +1 314-288-4619
kathleen.a.kelly@boeing.com

September 2015