



*NDIA  
48<sup>TH</sup> ANNUAL FUZE CONFERENCE  
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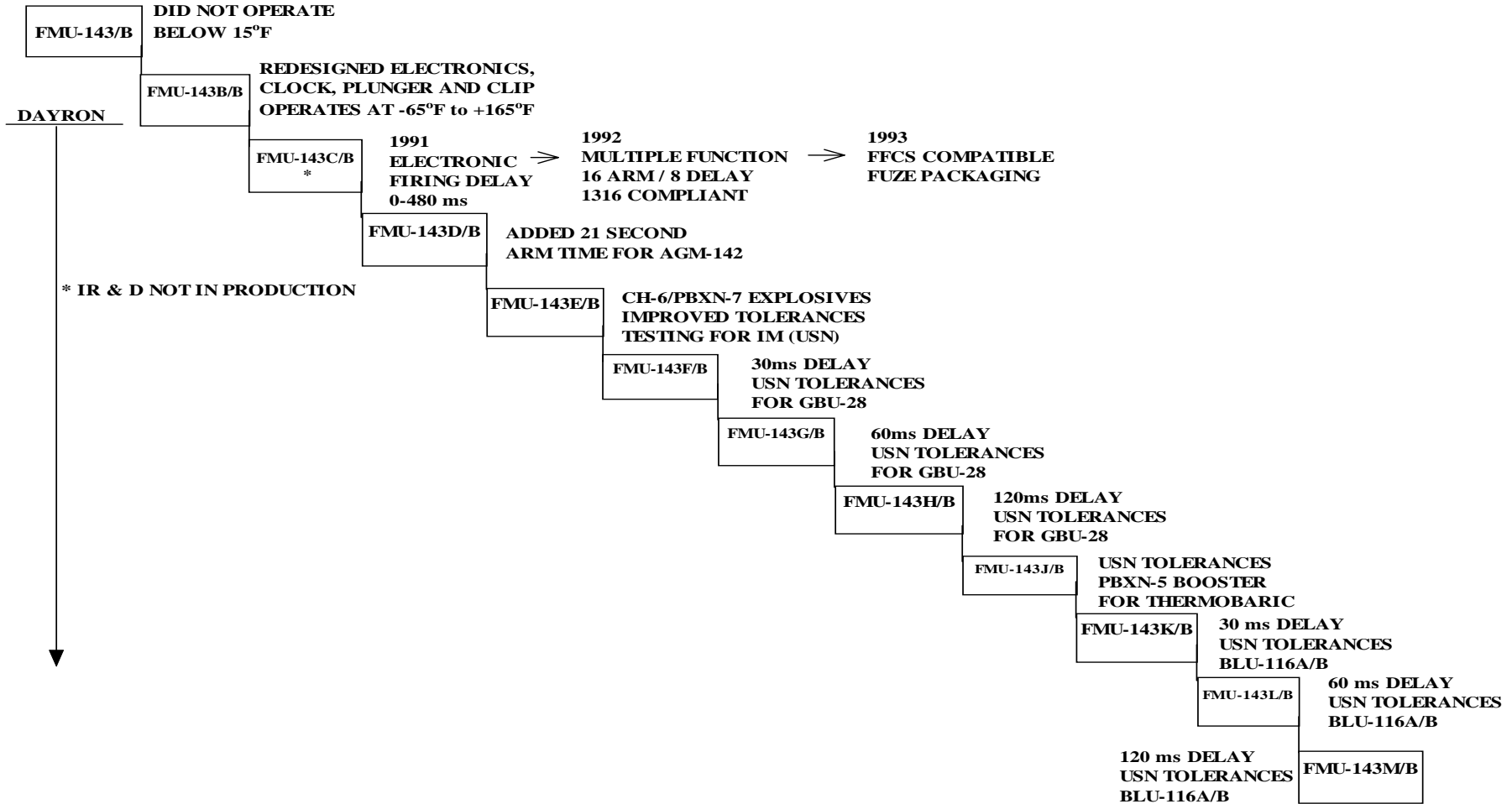
*EVOLUTION OF THE FMU-  
143 FUZE FAMILY*



# *EVOLUTION OF THE FMU-143 FUZE FAMILY*

**The FMU-143B/B fuze was developed for the U.S. Air Force for Hard Target Penetration when used with the BLU-109 and Precision Guided Munitions (PGM) systems. Over the last eight years, the FMU-143 has been modified to meet customer requirements for several different systems. This presentation will cover variations and approach as the family evolved.**

# EVOLUTION OF THE FMU-143 FUZE FAMILY





# ***EVOLUTION OF THE FMU-143 FUZE FAMILY***

- **The FMU-143C/B was developed, during a company IR&D program, encompassing electronic selectable delays.**
  - ▶ **1991 the B/B was modified for electronic firing delays from 0 to 480 ms.**
  - ▶ **1992 changes to incorporate multiple functions, 16 arm time settings and 8 delay time settings, also 1316 compliant.**
  - ▶ **1993 FFCS compatibility was added and fuze packaging finalized.**
  - ▶ **The C/B never made it to production.**



# *EVOLUTION OF THE FMU-143 FUZE FAMILY*

- **The FMU-143D/B developed in conjunction with the U.S. Air Force and RAFAEL for use in the AGM-142 Have Nap missile.**
  - ▶ **Arming selections changed from 5.5/12.0 to 12.0/21 seconds for high altitude releases.**
  - ▶ **Improved tolerancing from the FMU-143E/B configuration were also incorporated.**



# ***EVOLUTION OF THE FMU-143 FUZE FAMILY***

- **FMU-143E/B created to meet the Navy Insensitive Munitions (IM) compatibility requirements as well as improved tolerances in the rotor to lead/booster cup interface for better firing reliability.**
  - ▶ **Explosive lead material changed from tetryl to CH-6 and enlarged.**
  - ▶ **Booster material was changed from tetryl to PBXN-7.**
  - ▶ **FMU-143B/B configuration picked up all the changes except the booster material (remains tetryl).**



# ***EVOLUTION OF THE FMU-143 FUZE FAMILY***

- **FMU-143F/B, G/B and H/B configurations created during Desert Storm to be used in the 5,000 pound GBU-28 “Bunker Buster” weapon.**
  - ▶ **Improved tolerancing from the FMU-143E/B configuration were also incorporated.**
  - ▶ **The arming selections changed from 5.5/12.0 to 12.0/21 seconds for high altitude releases.**
  - ▶ **The F/B replaced the 60 ms delay detonator with a 30 ms delay detonator,**
  - ▶ **the H/B replaced the 60 ms delay detonator with a 120 ms delay detonator**
  - ▶ **Giving the Air Force a 30, 60 or 120 ms delay option.**



# ***EVOLUTION OF THE FMU-143 FUZE FAMILY***

- **FMU-143J/B configuration developed for the U.S. Air Force for use in the Thermo baric weapons used in Afghanistan.**
  - ▶ **Improved tolerancing from the FMU-143E/B configuration were also incorporated.**
  - ▶ **Booster material changed from tetryl to PBXN-5.**
  - ▶ **Delay detonator changed from 60 msec to 120 msec.**





# ***EVOLUTION OF THE FMU-143 FUZE FAMILY***

- **The latest modifications made for the Navy, result in the FMU-143K/B, L/B, and M/B fuzes used in the HTSF AUP BLU-116A/B weapon system.**
  - ▶ **Improved tolerancing from the FMU-143E/B configuration were also incorporated and the PBXN-7 booster material to meet the Navy IM requirements.**
  - ▶ **The arming selections changed from 5.5/12.0 to 12.0/21 seconds.**
  - ▶ **The K/B replaces the 60 ms delay detonator with a 30 ms delay detonator.**
  - ▶ **M/B replaces the 60 ms delay detonator with a 120 ms delay detonator.**
  - ▶ **Giving the Navy a 30, 60 or 120 ms delay option.**



# *EVOLUTION OF THE FMU-143 FUZE FAMILY*

## **FMU-143 PRODUCTION FUZE CONFIGURATIONS**

<b>FUZE NOMENCLATURE</b>	<b>USER</b>	<b>ARM TIME OPTIONS</b>	<b>FUZE DETONATOR DELAY</b>	<b>BOOSTER PELLET</b>
FMU-143B/B	AIR FORCE	5.5/12 SEC	60 MSec	TETRYL
FMU-143D/B	AIR FORCE	12/21 SEC	60 MSec	TETRYL
FMU-143E/B	NAVY	5.5/12 SEC	60 MSec	PBXN-7
FMU-143F/B	AIR FORCE	12/21 SEC	30 MSec	TETRYL
FMU-143G/B	AIR FORCE	12/21 SEC	60 MSec	TETRYL
FMU-143H/B	AIR FORCE	12/21 SEC	120 Msec	TETRYL
FMU-143J/B	AIR FORCE	5.5/12 SEC	60 Msec	PBXN-5
FMU-143K/B	NAVY	12/21 SEC	30 MSec	PBXN-7
FMU-143L/B	NAVY	12/21 SEC	60 MSec	PBXN-7
FMU-143M/B	NAVY	12/21 SEC	120 Msec	PBXN-7



**KAMANDAYRON  
FMU-143M/B**

**SLEDTEST**