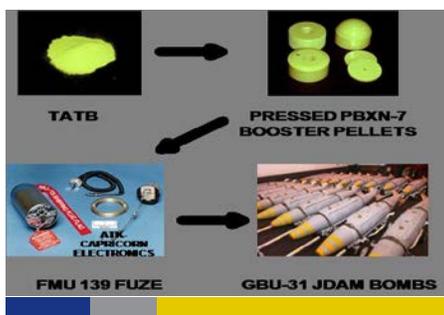


# Reliable CONUS TATB Production



## A0983-1-2 — Alternative Manufacture of Energetic Material TATB Phase 1 and Phase 2

### Objective

Triamino-Triamino--Trinitrobenzene (TATB) is one of the least sensitive explosive materials known and is a critical ingredient used to meet Insensitive Munitions (IM) requirements in the booster explosive PBXN-7 and PBXW-14. PBXN-7 is used in bomb and missile fuzes. All U.S. sources for this material ceased production in 1993, primarily due to demand and environmental issues. In 1999, the demand for TATB/PBXN-7 soared when the Navy began to re-booster over 80,000 FMU-139 bomb fuzes. The objectives of this project are to investigate and evaluate several alternative TATB chemical synthesis processes, determine the best approach, scale-up, and demonstrate the process at full-production scale.

### Payoff

The project culminated in demonstrated alternative domestic manufacturing processes at ATK Launch Systems and the BAE Systems, OSI, Holston Army Ammunition Plant (AAP) to produce TATB explosive. However, during the qualification test program, both alternative TATB products were determined not to be suitable “drop-in replacements” for traditional TATB explosive in the PBXN-7 formulation. As a result, OUSD (AT&L) LW&M established a DOD/DOE Joint Integrated Program Team (IPT) to determine the path forward and establish a CONUS supplier for TATB explosive. The IPT recommendation was to re-establish TATB production using the traditional and proven Benziger synthesis process. A coordinated Memorandum of Agreement (MOA) between DOD and DOE National Nuclear Security Agency (NNSA) was established.

### Implementation

Under the new DOD PEO Ammunition and DOE collaborative program initiative, ATK Energetics Systems at Radford AAP and BAE Systems, OSI Holston AAP were selected to reestablish the Benziger process and demonstrate synthesis capability in both bench-scale and pilot-scale reactor systems. While both contractors were successful under the bench/pilot-scale program, BAE Systems at Holston AAP was ultimately selected for TATB facilitization based on its qualified infrastructure capability and cost. The TATB production facility is located in the Agile Manufacturing Facility at Holston AAP and became operational in November 2012. Qualification was completed in April 2013, and TATB/PBXN-7 and PBXW-14 is now available to the Warfighter.

TATB is needed to sustain current acquisition programs for FMU-139 and FMU-152 fuzes used in Navy and Air Force bombs (BLU-110, BLU-111, BLU-113, BLU-117, BLU-126, MK82, and MK84). Other users of PBXN-7 include FMU-143 (BLU-116, BLU-109), FMU-148A/B (Tomahawk), FMU-155/B (SLAM ER), MK436 fuze (MK146 warhead 2.75) and JSOW. TATB is also utilized in auxiliary boosters in 81/120MM mortars and fuze booster in M935 fuze for the Army and the U.S. Marine Corps.

### PERIOD OF PERFORMANCE:

November 2000 to January 2008  
(Phase 1)  
September 2009 to April 2013  
(Phase 2)

### PLATFORM:

Energetics

### AFFORDABILITY FOCUS AREA:

Not Applicable

### CENTER OF EXCELLENCE:

EMTC

### POINT OF CONTACT:

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(301) 744-6772

### STAKEHOLDER:

PMA 201

### TOTAL MANTECH INVESTMENT:

\$3,485,000



Please visit the EMTC Web site: <http://www.navsea.navy.mil/nswc/indianhead/codeCA/EMTC/main.aspx>

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