



Department of the Air Force
Scientific Advisory Board

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Munitions for the 2025 Environment and Force Structure Study

Abstract

The 2025 battlefield environment will require the Air Force to be able to engage an increasingly difficult target set to include: moving and repositionable elements of the threats' integrated air defense system; hardened and buried structures; targets in urban areas; high-value ground and air targets, radiating and non-radiating; 4th and 5th generation fighters with reduced signatures; advanced air defense systems; and long-range weapons fired against U.S. surface targets.

In the future, this target set may need to be engaged by a significantly reduced force structure of 4th and 5th generation manned and remotely-piloted aircraft employing both internal and external carriage. The operating environment will extend from operations within a fully integrated air defense system with long-range surface-to-air missiles and 4th and 5th generation fighters, to operations in an urban environment where minimizing civilian casualties and collateral damage require restrictive rules of engagement.

New weapons concepts and technologies are required to maintain force effectiveness against air and surface targets and these new weapons concepts and technologies should be considered in concurrence with the development of future delivery platforms.

The study will:

- 1) Assess the effectiveness of current and planned munitions in the 2025 environment (force structure, target sets, threat environment) against air and surface targets.
- 2) Identify gaps or shortfalls in capability, accounting for constraints and characteristics (carriage, payload, targeting capability, etc.) of current and new delivery platforms, survivability, likely threat environment and rules-of-engagement.
- 3) Recommend necessary new operational concepts, munitions development activities, and enabling Science and Technology (S&T) including:
 - a. Required S&T and timeline
 - b. Required Pre-Planned Product Improvement (P3I) for existing munitions accompanied by a roadmap
 - c. Required new munitions development
 - d. Provide guidance for munitions S&T and munitions development to achieve lethality and force effectiveness in the 2025 environment.
 - e. Identify opportunities to shape characteristics of future munitions and future delivery platforms in order to achieve increased operational effectiveness.