USAF Scientific Advisory Board

Summer Study

FY 2005

Air Force Operations in Urban Environments

Terms of Reference

Background

Recent conflicts illustrate that the role of the U.S. Air Force in all phases of urban operations is evolving. This evolving role necessitates increased coordination of air, space and ground operations. Future operations will also face increased challenges of real time information operations, highly flexible electronic warfare as well as the need to detect, locate and negate an evolving set of enemy weapons. Combat simulations of Combined Force strategies/tactics to predict potential outcomes, which include all aspects of air, space and ground operations, will be essential to understanding and predicting adversary actions and achieving desired effects. While current conflicts focus on finding hidden bombs, future conflicts in urban environments may involve entrenched urban forces with WMD or equally sophisticated weapons. Of special significance are Air Force actions in support of Stability And Security Operations (SASO), which have become a major challenge to coalition forces in Afghanistan and Iraq.

The Air Force must operate in this difficult joint environment in conjunction with ground forces to provide 24/7 persistent surveillance and reconnaissance, rapid timely detection, accurate identification, robust command, control, communication, and the capability to impair, incapacitate, or destroy fixed and mobile targets (while minimizing collateral damage) and provide accurate BDA.

Study Products

Briefing to SAF/OS & AF/CC in October 2005. Publish report in December 2005.

Charter

The study should identify and provide recommendations on the following issues:

- The evolving role of the Air Force air, space, and information forces in all phases of urban operations including non-lethal operations and considering a broad range of adversary weapons.
- Methods to provide timely and persistent ISR in difficult urban conditions.
- Lethal and non-lethal capabilities to impair, incapacitate, or destroy fixed or mobile targets while minimizing collateral damage.
- The use of information operations and electronic attacks in urban operations.
- Means for accurate lethal and non-lethal attacks effects assessment, including Battle Damage Prediction (BDP) and Assessment (BDA), in urban operations.

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- Command, control, and communications networking among land and air forces in support of future urban operations.
- Modeling air, space, and ground forces to predict potential outcomes that can provide enhanced understanding of mission effectiveness by predicting the desired effects on adversaries and their courses of actions.
- Identification of specific SASO support activities that could be accomplished by the Air Force, including predictive ISR, rapid target identification and swift engagement of insurgent forces in an urban environment.
- This study will build on recent DSB studies, a 2004 ASB Study on Future Combat System - Urban Operations, and 1999 AF SAB Operations Other Than Conventional War Study.