

The Conduct of Modern Warfare

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The action within Syria and particularly Aleppo is an oscillating adventure with first the incumbents and then the rebels advancing followed by a retreat to the status quo. Modern tactical warfare encapsulates the same procedures as those practiced by Alexander, Hannibal and Caesar, albeit technology has changed. The impact of technology of course modifies the execution of tactics as practiced in previous times. But fundamentally five elements of conflict comprise events that a commander must address:

- 1) Persistent surveillance and attack: Overhead sensors identify all high-value targets within Aleppo. Strike drones are assigned to each target and continue to deploy weapons until all objects of interest are reduced to a prescribed level of destruction.
- 2) Resistance: The current Syrian regime will consolidate and perhaps withdraw into safety zones that offset drone performance.
- 3) Boots on the ground: Air attacks are a precursor to victory. They pave the way for armed rebels to root out and destroy concealed Syrian forces. Any serious resistance is met with additional drone strikes.
- 4) Closing the net: Major armies perhaps dedicated by Turkey, Saudi Arabia or other Persian Gulf and Levant nations overwhelm any remaining Syrian resistance.
- 5) Negotiations: A new government is formed which represents the people of Syria.

No US forces; except SOCOM advisors, drone managers and maintenance personnel, and system planners; are engaged in conflict. Battles are swift. The tactics apply to multiple objectives such as the Yemen engagement, undertakings in the African continent, and Mexican drug interdictions.

In order to respond to asynchronous events, a decision support system (DSS) is mandatory. Drones are assigned to targets. Logistics are coordinated with tactics and appropriate sensors and weapons are selected for drone payloads. All functions are optimized and decisions are revised in near real-time to reckon solutions for a dynamically changing environment.

The NBS battle management tool suite provides a quantitative decision support system for many functions of anti-terrorism and modern warfare:

- 1) Persistent surveillance: Assign unattended vehicles to areas of interest while considering time of flight and endurance, time on station, sensor performance, environment and desired results.
- 2) Weapon-target pairing: Using the information collected from persistent surveillance, assign weapons and platforms to targets of interest.
- 3) Battle damage assessment: Report the results of targeting.

- 4) Logistics: In response to rapid requests, distribute supplies to expeditionary forces in the battlefield.
- 5) Communications: Manage communications in the battlefield while considering information requirements, optimal routing and destructions and failures.
- 6) Maintenance: Coordinate scheduled and asynchronous maintenance so that overall mission effectiveness is maximized.
- 7) Sensor selections: Select the best of available sensors for use during a mission of interest.
- 8) Weapon selections: Select the best weapons for a mission objective.
- 9) Additional mission support: Address other missions such as rescue, medevac and troop deployment.
- 10) Mission planning: Synchronize logistics support and tactical assets to justify that a mission is possible.
- 11) Fuel reduction: Minimize the amount of fuel consumed during operations, as well as optimizing the supply chain for fuel delivery to mission vehicles.
- 12) Battlefield command and control: Provide decision support for commanders in the battlefield.
- 13) Response to detection: Transition the resources from an objective of detection to an interdiction requirement.

The NBS algorithms scale up to optimal assignments for hundreds of platforms and areas of interest while considering the constraints of resources, threat and environment.