

MIT SECURITY STUDIES PROGRAM SEMINAR

*Corralling the Trojan Horse:
The Challenge of Future Military Urban Operations*

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While Sun Tzu admonished, "The worst policy is to attack cities," throughout the ages nations have occasionally decided, for political and military reasons, that they must do exactly that. The significant challenges of urban operations notwithstanding, there are situations when forcibly removing an enemy from its entrenched position within a city is the best possible strategy. In these situations, what is the best route for U.S. military forces to pursue? Are there changes in tactics and modes of operations that can make this challenge less daunting? What role will there be for technological enhancements to increase our capabilities in this area?

In order to answer these questions it is vital to understand the unique set of challenges posed by an urban battlefield. Three might be noted. First, urban terrain is militarily challenging in a tactical sense. Regardless of whether one is considering the density of non-combatants or shortness of lines of sight, the difficulty of command and control or the restricted availability of fire support, urban operations are more trying than any other terrain type. (By way of contrast, deserts are in most regards the easiest.) Second, while this has to some extent always been true, recent changes make the situation even worse today. Global population is rising, as is the percent of that population that lives in urban areas. Thus, the number of cities is rising, increasing the chances that the United States will need to engage in combat within them. As the sizes of these cities increase, the scope of the challenge for the U.S. forces in any particular urban combat situation increases. Urban operations have traditionally been extremely manpower intensive. This will pose problems for an American military that has experienced steady drops in the numbers of its soldiers and marines since the end of the Cold War. Finally, in today's political environment casualties are a more sensitive issue than ever before. This is true both for American combatants and noncombatants. Unfortunately, urban combat poses significant dangers for both these groups. Political support for many conflicts that the U.S. might find itself in is expected to evaporate in the face of large numbers of either form of casualty.

There are no simple solutions to these problems. In the short term, there is little the U.S. can do other than refine its tactics and ensure the highest quality training for its forces that operate in such an environment. In the middle to long term (10 to 25 years) technology can play an increasing role. However, in neither of these time periods will the solutions be simple or comprehensive. As we look to

the future, enhancing our capability to prevail in these situations will depend on our efforts in six distinct areas: enhancements to 'intelligence, surveillance, and reconnaissance' (ISR); denial of access; nodal operations; control of noncombatants; selective dominance; and post-combat sustainment. Each will be considered in turn.

ISR enhancements are one of the most promising areas from a technological perspective. There are wide ranges of research programs that can be expected to bear fruit here in the upcoming decades. In the next ten years, it may become feasible to rely on slow moving micro-UAVs (unmanned aerial vehicles) to enter alleys and even buildings for preliminary intelligence gatherings. (These might be a mere six inches in size and capable of entering and exiting buildings through windows.) UGVs (unmanned ground vehicles) could perform similar scouting missions on the surface and might also be equipped with some ordinance to perform more deadly missions. A bit further out in time, acoustic sensors and radars might be able to provide 'through wall' intelligence and do so in a briefcase-sized package. These might be able to distinguish not only the presence of a person, but also whether or not that person is carrying a weapon. Overhead satellites might add 3-D mapping of multiple layers of a city (tunnels, buildings, attacks, etc.) that will remove an important asset of a local adversary: unique knowledge of the terrain. Allowing the time frame to move further out, we might consider using "biobots" (insect based sensors) to provide even more information.

A second area that the United States will have to address is denial of access to urban areas. While traditional interdiction tactics will remain quite viable for some time, making maximal use of technological enhancements will also prove fruitful. It will be very important for this interdiction to occur early in a given conflict as urban areas may prove attractive targets for our adversary. Thus, we need to ensure that local allies are both well versed in the strategies for such interdiction operations and that they have access to American technology that will ease this job.

Nodal operations are one way to mitigate the problems posed by the increasing size of cities on the one hand and the shrinking manpower numbers for American forces. If we return to a Clausewitzian approach, we are counseled to focus on the 'centers of gravity' and 'decisive points' of our adversary. In many cases in urban settings, operational centers of gravity may exist and their locations can be determined. Focusing our attention on these particular areas within large urban areas will be vital to avoid spreading ourselves too thin. Markets, police stations, lines of communication, etc. are possible areas that might be relevant here in different conflict situations. Obviously, the demands here on ISR resources are tremendous. Similarly, consideration of our own centers of gravity and decisive points is essential to the security of friendly forces.

Non-combatant control is another area that will benefit dramatically from technological enhancements. Without abandoning our current reliance on PSYOP, civil affairs, and more patently coercive tactics, increasingly we will be able to call upon high-tech solutions. For instance, non-lethal acoustic weapons might incapacitate noncombatants whom we desire to move out of an area. Note that claims regarding non-audible acoustic weapons capabilities have proven unsubstantiated to date. Foams or lubricants can similarly be used to immobilize large groups of people that might otherwise interfere with ongoing military operations.

These various areas need to be incorporated to achieve 'selective dominance' over our adversary. It will be the synergy across all of these areas that will allow the U.S. to reduce its own military casualties, minimize collateral damage and civilian casualties, and still win the engagement. Achieving this synergy will require both new doctrine and adjustment in tactics. The concept of 'hyper-controlled engagements' describes one possible future here. This idea alludes to maximizing accuracy in delivery systems, but also to *controlling* the effects of a particular munition (ala the replacement of high explosive in 2000 pound bombs with concrete as has been recently done by the U.S. Air Force). An ability to choose important sectors of a city, seal them off, limit an adversary's mobility within them, and deny it the ability to observe our own movement will all support this concept of selective dominance.

Finally, we will have to be increasingly aware of post-conflict settlement issues. Urban conflict will almost certainly remain highly destructive. We need to be aware that we will often be called upon to repair these damaged areas. By choosing our 'nodes' of operation carefully we can minimize damage during the conflict, but nevertheless, we will have to be ready to deal with both inadvertent damage that remains, as well as the possibility of intentional damage imposed by an adversary (i.e., the destruction of oil wells by Iraq in the late stages of the Gulf War).

In sum, the goals are to move more and more of our capabilities into a standoff mode: to remove them from the dangers of an urban battlefield as best is possible. Finding tactics and technologies that allow us to reduce the number of soldiers that we have to put into urban areas will allow us to face this important challenge in the coming century.

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