SUMMARY

BACKGROUND AND PURPOSE

The Army After Next (AAN) project was designed to link Force XXI to a long-term vision of the Army and to ensure that this vision informs Army research and development efforts. As part of the AAN project, TRADOC is conducting a series of high-level wargames to identify and explore issues affecting the development of the Army in the next century.

RAND’s Arroyo Center is assisting TRADOC in three ways. First, it is providing a framework, based on RAND’s “strategies-to-task” methodology, to evaluate the AAN. Second, it is identifying issues to explore in the wargames. Finally, it is helping manage the collection of data from the wargames and assessing the results.

This report focuses on the wargame conducted in the winter of 1997 or the Winter Wargame (to distinguish it from a series of preparatory wargames played in the fall of 1996 to provide input for the winter game). It has four purposes. It evaluates the implications of the game design and execution for strategic-level analysis, it identifies issues and insights from the game, it suggests improvements to the AAN wargame design, and it articulates the role of wargaming in supporting the broader aims of the AAN study.

ISSUES

The Winter Wargame produced a large number of issues. These fall into two general categories, those that challenge assumptions about...
concepts of operation and those that challenge assumptions about the capabilities and concepts for the Army After Next.

**Issues Pertaining to Concepts of Operation**

These combine into four issue sets:

- Combat in space
- Nature of cyberwar
- The effect of "soft kills"
- Tempo of combat operations

**Combat in space.** The Winter Wargame provided a glimpse into a future where military operations occur in an uninterrupted spectrum from beneath the ocean surface to outer space. Blue's military posture depended heavily on space assets (too much so, in the view of some observers). Both sides had a number of weapons for attacking objects in space or terrestrial targets from space, and military operations aimed at controlling space dominated the game. This intense focus raises issues about how much the United States should rely on space assets, about policies for attacks on space systems or ground support assets, and policies for the use of private, foreign, or international assets during wars.

Game participants concluded that the United States depended too much on space assets because their loss had such a catastrophic effect on Blue Battle Forces. Arroyo Center observers, however, were unwilling to go this far; few potential adversaries will have the capabilities to launch a massive attack against U.S. satellites, and the few that do will probably be reluctant to risk U.S. retaliation for anything less than truly vital interests. Furthermore, fiscally feasible alternatives may not be possible. The United States needs to pursue a multifaceted strategy involving arms control measures, passive defense, and offensive systems.

**Nature of cyberwar.** Military planners are only beginning to come to grips with conflict in "cyberspace," the interconnected net of computers that stretches across the globe. The wargame provided a good opportunity to think through some of the problems associated with
war in a virtual world. Issues emerging in this area include the characterization of cyberwar operations: Are they deterrent or offensive? What constitutes an unambiguous indication of a cyberwar attack? Issues on organization for and integration of cyberwar into military operations, including the nature of their effects, also emerged.

Game players had an ambivalent attitude toward cyberwar operations. Some viewed them as possible adjuncts to sanctions that could be imposed in an attempt to end a conflict short of war. Others regarded them as clearly offensive operations and were concerned that they could wreak such havoc that they would escalate hostilities rapidly. Part of this ambivalence stems from the lack of knowledge about the effects of such attacks. Players might be willing to accept the risk of escalation or reprisal if they were assured of gaining a significant advantage, e.g., neutralizing an enemy’s anti-satellite capability. Risking the reprisal while being uncertain of the success caused players to avoid attacks until after the outbreak of hostilities. This was true even though the players could not specify what they would regard as unambiguous evidence of a cyber attack.

Much work remains to be done in this area, both on the technical side of understanding the effects of such attacks and on the policy side of deciding how to respond.

The effect of “soft kills.” Typically, military planners rely on explosive blast and shock to destroy enemy systems. But other types of destruction are possible. The effects of an electromagnetic pulse from a nuclear weapon have long been understood, lasers have considerable destructive potential, and computer viruses can disable communications systems. A number of issues emerged from considering the effects of weapons that destroy equipment with effects other than blast or shock. One was whether such kills can be decisive or have to be followed up by traditional attacks. Another issue revolved around the likelihood of such attacks escalating the conflict. Players were also interested in the vulnerability of their forces to such attacks.

Some of the same difficulties affecting cyber operations pertain here. Players generally concluded that soft kills would not be decisive on their own and would have to be accompanied by traditional attacks to accomplish military objectives. Blue players tended to regard such
attacks as less threatening than conventional ones, but Red opted not to use them because they saw potential for escalation. Again, this area requires more analysis, particularly as U.S. perceptions differ from those of potential antagonists.

**Tempo of combat operations.** Traditional conflicts have moved at a pace that allowed political leaders to formulate policies on the aim and conduct of the conflict. When coalitions of allies are involved, cycles are even slower. During the wargame, technology allowed the pace of conventional operations to outstrip the political decision-making cycle. For example, intercepting a missile attacking U.S. satellites in the boost phase of its trajectory requires a decision within minutes. Failure to act could cost one side or the other all of its space-based assets.

This increased tempo raises complex issues about delegation of authority. For example, the Blue National Command Authority refused to delegate authority to attack Red submarines off the east coast of the United States if they were detected preparing for hostilities. The players concluded that this was a matter of educating the command authority. The Arroyo Center team suggests an alternative approach, one of designing forces in light of the political reality that the command authority will not further delegate decision authority. Thus, U.S. forces may need to be able to withstand an initial strike and still be able to respond.

**Assumptions About the Army After Next Force**

The Army After Next is not a planned force; it is, rather, a conceptual force that embodies technologies likely to be available in 2020. Nonetheless, several assumptions have been made about this force that the wargame challenged. These pertain to its structure, its unique capability, its role, its mission, and its operational concept.

**Force structure.** Generally, it is assumed that capable forces deter hostilities. The Winter Wargame revealed a more complex picture. Red’s view of the AAN Blue force as highly capable led it to adopt almost a “circuit breaker” mentality: either avoid war (and likely defeat) at all costs, or, if war seems inevitable, attack massively and preemptively with the hope of evening the odds. On the Blue side, the presence of very effective forces almost created a demand for
their use, regardless of the situation. In both cases, these attitudes led to a rapid escalation and expansion of conflicts.

**Capability.** The key capability of the AAN force is its ability to destroy enemy ground forces. It does this through very mobile light forces supported by sophisticated information systems that enable it to engage enemy forces with precision and at long range. These capabilities overlap those of the other services in the AAN period. This duplication is not undesirable per se, but it does suggest that AAN capabilities are not unique.

**Role.** Traditionally, a key role for Army forces has been the holding of terrain. However, the AAN force is ill suited for this role. Heavier forces that will comprise 70 percent of the 2020 force could support the AAN force in this role, but the AAN force might have to slow its pace of operations and advance so that the heavier forces could keep up.

**Mission.** The game assumed that operations in urban terrain was not part of the AAN force’s mission. However, the rapid-deployment capability of the force tempts policymakers to use it in fast-breaking crises, regardless of its suitability for the mission. Rapid arrival alone is not enough; the force needs to be able to carry out the mission.

**Operations.** The Winter Wargame suggests an assumption that U.S. forces will increasingly be CONUS-based. However, a modest improvement in opponent deployment capabilities bestows on them the option for a quick grab of territory close to their own border. Whether CONUS-based forces can deploy quickly enough to stop such an attempt is problematic.

**A BROADER CONTEXT**

The ultimate goal of the AAN study is to design and field a force and develop operational concepts for the 2020 period. The issues selected for the game are explored against a postulated force structure, operational concept, and scenarios. TRADOC conducts a variety of activities, such as seminars and studies, to inform the structures, concepts, and scenarios. But the connection is not as tight as it could be. Needed is an overarching strategy that embeds the AAN wargames into the study process.