Conclusions

Options for Developing Rapid-Reaction Capability

LOOKING BACK ON RECENT HISTORY, if Kosovo serves as any example (and Operation Desert Storm before that), there seems to be little doubt in the minds of policymakers that the U.S. Army can be improved to better address the initial phases of combat. In particular, the Army can be made ready to respond with virtuosity to rapid-reaction missions within an increasingly complex geopolitical climate; this is especially the case for situations that mandate immediate reaction and in which hostile mechanized forces are present.[1] It is apparent that the overall *magnitude* of the mechanized threat in any given scenario will be smaller than what was faced during the Cold War, but it is also quite evident that the total *number* of different threats that may have to be addressed has increased substantially. Essentially, it can be argued that the threat has "globalized," meaning that the U.S. Army may need to deal with a much broader range of opponents, in many diverse locations, and through many kinds of missions, perhaps more so than at any other point in its history.

Such a threat globalization forces us to look hard at the U.S. Army's shortfall in rapid-reaction capability. The Army today is configured largely as it was for the Cold War: mostly heavy-mechanized units designed to defend against a massive armor invasion, augmented with some light infantry-based units designed for a variety of contingencies.[2] As the uncertainty of the threat has grown, much of the heavy-mechanized force is now unlikely to be in a place where it is needed. Prepositioning heavy-mechanized forces, whether land- or sea-based, may serve as a hedge for some situations, but certainly not all. And projections of airlift capability suggest that it will take too long to move heavy forces to distant locations to allow for early participation (or deterrence) in the developing phase of a conflict.

While some have argued that tactical air power is a viable alternative for addressing future rapid-reaction needs in lieu of ground forces, this kind of response has its own key limitations. In some instances, air power can coerce an adversary to take alternate approaches to warfare, but even recent history suggests that air power alone lacks the potential to provide a decisive effect below the strategic level.[3] This inability mandates the development of other rapid-reaction capabilities.

Examination of the various options implies by default that rapid-reaction capability will still need to reside within light ground forces that can be airlifted quickly to trouble spots. But the current light forces have inadequate firepower, mobility, and protection for many missions.[4] On the surface, given all the changes occurring in the geopo-

litical arena, basic planning suggests that the Army should reshape light forces along the following critical mission parameters:

- The kind of missions it will need to address;
- The environment it will need to operate in;
- The level of threat it will need to defeat;
- The kind or nature of threat it will have to address;
- The responsiveness with which it will need to deploy.

Although each parameter listed poses a significant challenge by itself, the parameters are often interwoven. In some sense, while the overall magnitude of the threat may have been decreasing, the number and complexity of threats have been on the rise. The loss of clarity has compounded the rapid-reaction challenge.

How can we respond to this challenge? Much of this book has been focused on exploring how ground forces, in particular light airborne forces, might adapt to meet future rapid-reaction needs. In general, these efforts fell into one of three different paths:

- Path 1: Enhancing the current light forces.
- Path 2: Making light forces smaller and more dispersed.
- Path 3: Introducing maneuver to light forces.

Each of these paths has its own advantages, risks, and costs, as summarized below. Nevertheless, one or more of these options may have to be acted on to ensure that the United States remains fully capable for future conflicts.

Path 1: Enhancing the Current Light Forces

The first path postulates improving rapid-reaction capability forces by enhancing current light airborne forces. These forces must be trained with a new operational concept and equipped with some new combination of systems. The technologies used to enable the concept may be similar to ones explored in the recent Rapid Force Projection Initiative (RFPI) Advanced Concept Technology Demonstration (ACTD). This option would keep the structure of today's light forces basically intact, but it would increase survivability and lethality by adding various RSTA, C2, and precision-guided weapons to the existing organizations.

Major advantages of this force over a current light airborne force were found to include the following:

- Substantially greater lethality and survivability against a larger armor force.
- Greater likelihood of accomplishing traditional defensive missions.

Major disadvantages were as follows:

- Vulnerability of light units to enemy artillery fire and massed direct-fire systems because of the lack of organic armor protection and mobility.
- High constraints on light-unit offensive capability, and the enemy's ability to bypass the force because of its lack of mobility.

Path 2: Making Light Forces Smaller and More Dispersed

The second major path is more revolutionary and will mean restructuring the units themselves, making them even lighter and smaller and giving them technology that lets them operate in a highly dispersed mode through the use of advanced sensors and communications systems. The role of light forces in this option would be to disperse and fight primarily by calling in long-range, "reachback" fires provided by the Army and other elements of the joint force. This force would survive by being small and stealthy. The most noteworthy aspect of this option is its responsiveness: forces can get into position quickly, probably 24 to 48 hours sooner than a light airborne brigade with its vehicles and personnel. Even a couple of days can mean the difference between defending a threatened region and having to expel an entrenched attacker.

Major advantages of this option include the following:

- Ability of the force to get in place sooner than a light airborne force.
- Greater degree of dispersion thus minimizing the force's susceptibility to being attacked and attrited.

Major disadvantages of this option include the following:

- Greater degree of dispersion, which makes holding ground an unlikely prospect.
- Limits on offensive capability.
- Possibility that the enemy will be able to bypass widely dispersed elements.
- Lack of tactical mobility, potentially resulting in "local" force vulnerabilities if the area is overrun.

Path 3: Introducing Maneuver to Light Forces

The third path calls for an increase in the tactical mobility and firepower of light airliftable forces by giving them advanced combat vehicles. These combat vehicles would make use of aggressive survivability and lethality technologies, but they would also be lighter.[5] Among the three paths explored in this research, this one would require by far the most significant change to current forces. Not only would it mean a complete reequipping of at least a portion of today's ground forces, it would also entail a reorganization of how such a force would need to fight, including changes in training and doctrine.[6] Another, perhaps less taxing, method to achieve the same end would be to convert a selected heavy force. That is, instead of trying to make a light force more maneuverable, make a heavy force dramatically lighter and, thus, more deployable. In the end, the same goal of having a rapid-reaction capability with a significant amount of maneuverability would be attained.

Regardless of how such a capability is ultimately achieved, major advantages of this option include the following:

- A rapid-reaction force that can achieve a much larger number of missions and that has greater offensive ability because of the enhanced mobility and firepower conferred by advanced vehicles.

- Greater flexibility to operate in different environments and situations, many of which could only be accomplished previously with dismounted forces.
- Greater capability to take on both small-scale contingencies and major operations, because of the protection from small arms and artillery provided by the force's vehicle armor and mobility.
- Enhanced leveraging of precision long-range weapons when linked to vehicles equipped with advanced RSTA and C2 technologies.

Major disadvantages of this option include the following:

- Increased strategic airlift requirement or longer time to deploy the unit, compared with other light force options;
- The need for significant changes in force structure and training because of the addition of a sophisticated family of vehicles into the force.

Acquisition-Related Implications

Each of the paths comes not just with different force effectiveness implications, as discussed above, but also different acquisition-related ones. These implications include the *cost* of creating and maintaining the unit, the *schedule* or time required to develop and train the force, and the *risk* associated with acquiring the new capabilities. Ultimately, such fiscal constraints will weigh on determining which, if any, paths are taken.

From an acquisition standpoint, path 1 seems the easiest to implement. It has the fewest structural implications, since it essentially means enhancing current light airborne forces with a new concept and associated technologies. Structure would change very little, but resources would have to be reallocated to buy the new weapons and RSTA systems that this option requires.

Path 2 would require modest changes. It would involve reorganizing at least a portion of today's light units. Regular training on the more dispersed tactics and reliance on indirect-fire reachback systems would be key to this option. The Army could either reorganize one or more of its light divisions (including the 82nd Airborne) to achieve the capabilities called for in this option or create new light units of battalion or greater size located at corps level. Additionally, the type of light force called for in this option would probably have to rely heavily on both overhead sensing and reachback fires provided by the Navy and Air Force. Therefore, the modernization programs of those services would be particularly important to this option.

Path 3 would be the most significant and capital-intensive course of action because it requires developing and fielding new light- or medium-weight combat vehicles, along with changes to organization, tactics, training, and support. The overall cost would, of course, depend on the number of units created. For example, an Army decision to convert two armored cavalry regiments would have far fewer resource implications than a plan to convert the 82nd Airborne, the 10th Mountain, and the 25th Light Infantry.

Table 7.1—Relative Impact of Different Paths for Improving Light Forces (Over Current Light Forces)

Critical Rapid Reaction Parameters	Path 1: Enhancing Current Light Forces	Path 2: Making Light Forces Smaller and More Dispersed	Path 3: Introducing Maneuver to Light Forces
Kind of mission (e.g., Peace ops, force entry, area defense, local attack)	No change in capability	Decrease in capability	Significant increase in capability
Type of environment (e.g., Open, close, urban, contaminated)	No change in capability	No change in capability	Increase or decrease in capability
Level of threat (e.g., Size, level of sophistication)	Increase in capability	No change in capability	Significant increase in capability
Kind of threat (e.g., Militia, light infantry, mechanized, combined arms)	Increase in capability	Decrease in capability	Significant increase in capability
Responsiveness into theater (e.g., Few days, weeks, few weeks)	No change in capability	Significant increase in capability	Decrease in capability

Framework for Assessing Force Applicability

As noted earlier, we identified five critical parameters that helped to define future rapid-reaction needs: kind of mission, type of environment, level of threat, kind of threat, and responsiveness into theater. On the whole, while all three paths offer significant benefits over a current airborne light force, they also come with some drawbacks in relation to these five parameters, as shown in Table 7.1.

Kind of mission. By adding maneuver, the capability associated with path 3 addresses head-on the fundamental issue of threat "globalization." Our assessment reveals that path 2, despite its revolutionary form, would result in a decrease in mission robustness over current light airborne forces. In particular, the path 2 option might have to sacrifice mission objectives to minimize casualties. The research also illustrated the difficulty for such a force to hold terrain—an element that may be of greater, not less, importance in the future.

Type of environment. All three paths provided only marginal improvements in the emerging environments to be faced by U.S. forces—complex terrain, low-intensity conflict, and so forth. The only exception was path 3, which could improve force applicability in MOUT or a contaminated environment because of the added protection offered by the advanced, highly mobile vehicles. At the same time, however, the advanced vehicles associated with this force could well be ineffective in constrictive terrain,

such as jungle environments. There, dismounted infantry aided by dispersed sensors and relatively short-range, personal weapons might represent the primary option.

Level and kind of threat. With regard to the level and kind of threat that can be addressed, both path 1 and path 3 provided improvements to current light forces. (Path 3 was deemed to offer considerably more improvement.) To some extent, path 2 might actually reduce the level of threat that could be addressed, since "reachback" weapons involved in the concept leverage precision-guided weapons and, thus, tend to be less appropriate for handling threats other than massed armor. That is, this concept has marginal ability to address infantry-based threats or enemy forces that can operate with short exposure to top attack weapons.

Responsiveness into theater. In considering responsiveness into theater, path 2 forces offered substantial improvement over current light airborne forces because of their smaller overall size and weight. Path 1 mimics current airborne responsiveness. Path 3 would likely result in a force that has greater airlift burden and, thus, longer timelines into theater. On the other hand, path 3 would minimize one of the major shortfalls of today's light units—their lack of tactical mobility and protection. Current light forces cannot fully exploit successes of indirect-fire systems by applying maneuver to decisively defeat an enemy. This advanced maneuvering force would take maximum advantage of innovations as they emerge: directed-energy weapons, ubiquitous sensing, hybrid (powered and/or buoyant) airlifters, robotic vehicles, stealth treatments, and so forth. It could also streamline the vertical organization of today's forces, in which information and commands tend to move up and down many echelons, leading to a more horizontal organization that allows faster response and greater efficiency in calls for fire.[7]

The issue of how the Army would reallocate force structure and resources to realize any of the paths presented in this book is also a contentious topic. For the foreseeable future, it is unlikely that the Army can count on any significant increase in either its budget or its force structure. Therefore, any of the paths or options presented here, and especially any combination of them, would likely require the Army to reprioritize its resources.

Although for analytic reasons we have treated the three paths to a better rapid-reaction capability as distinct options, they should not be seen as mutually exclusive for implementation. As brought out earlier, the idea of employing a *combination* of the paths to resolve a very wide range of growing rapid-reaction needs may be the most prudent way to go. However, pursuing multiple paths would likely burden an already stressed Army budget. As a result, pursuit of the respective options may have to come at the sacrifice of some current and planned programs. In particular, programs that represent strengthening the "counteroffensive" capability of today's heavy-mechanized forces might have to be weighed with respect to bringing such new capabilities on-line. In addition, programs of other services, such as fighter improvements, carrier developments, and ballistic missile defense, may all be less necessary with a more capable rapid-reaction force.

Developing a Strategy

Using a Combination of Paths

Each of the three paths explored offers both relative strengths and relative weaknesses over a present-day light airborne force. In many ways, such dissimilar concepts have characteristics that complement each other. A capability designed for meeting the wide range of tomorrow's rapid-reaction challenges might take on a form that embodies all three paths, provided the affordability issue can be resolved.

If all three paths were pursued, the notional rapid-reaction capability would consist of three major components. It would include a stealthy, small, and very-fast-deploying force that would rely on nonorganic fire support, an enhanced airborne force similar to the 82nd DRB that would be equipped with substantial organic precision fires, and a mounted force equipped with highly agile maneuvering vehicles that can provide both indirect- and direct-fire capability. By our assessment, the technology either already exists or can be developed to create all three components. In fact, even though the three components have different end capabilities, the underlying tactics and technologies used to build them would have considerable overlap, possibly yielding an *economies of scale* effect.

Example Application: Stopping an Enemy Invasion

In theory, the range of capabilities could be designed to accomplish a wide range of different missions. As an example, we consider how these capabilities could be used in one of the more difficult missions that currently exists: stopping an enemy invasion.

The application of this force would require the following phases. The first phase would be to insert the stealthy, small force as soon as possible, perhaps as soon as 24 to 48 hours after notification (see Figure 7.l for a notional picture of force deployment over time); this force would be used to both gather intelligence and deny an encroaching enemy control of terrain. Such a stealthy and small force could initially be colocated with its equipment onboard prepositioned ships and require relatively little overall peacetime commitment. The forward positioning should normally allow for more rapid deployment to trouble spots than for a CONUS-based force. Nonetheless, no matter where it is based, this force would be easily deployed at the beginning of hostilities because of its light infantry composition (equipped with high-tech sensors, C2 capability, and access to remote weapons), as described in Chapter Four.

As far as tasks go, the force would use a wide range of resources to gather intelligence about the situation as it develops. At the same time, the force would have the capability to slow any advance by the enemy. While previous analysis described in this book shows that such a force would be unlikely to be able to control terrain, it could be used to deny the enemy control and use of the terrain. Effectively, through the application of remote, long-range fires (such as allied, USAF, and/or Navy aircraft or long-range missiles), it could partially attrit the enemy. If deployed early enough in the de-

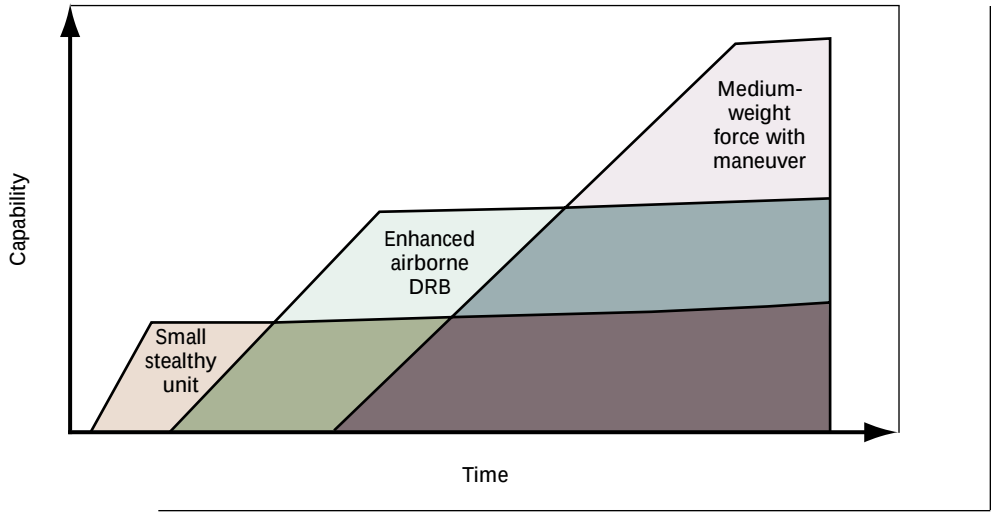

Figure 7.1—Notional Deployment of the Three Types of Units for Stopping Enemy Invasion

velopment of the crisis, these forces could also be used to organize local forces and coordinate air operations.

The second phase of the mission would involve deploying a force based on an enhanced 82nd Airborne DRB, as described in Chapter Three. This force would be deployed perhaps as soon as 3 or 4 days after notification. Its objective would be to create a forward defensive position much like that of the DRB. However, this position could be farther forward than usual because the application of the initial stealthy and small force will have slowed the enemy advance and provided some level of protection that would not otherwise have existed. The enhanced DRB would also be used to create a lodgment or airhead from which to expand operations.

The third phase of the mission entails using a maneuver force in offensive operations against the attacker. The forward lodgment created by the enhanced DRB would allow the light mechanized force, or "medium-weight" force (described in Chapter Five) to land safely and build up unit strength. When enough capability was established (perhaps 6 or 7 days after notification), this force would then conduct lightning-fast maneuver strikes against the already partially attrited enemy force. Because the enemy would have been engaged by both the remote fires of the small stealthy force and the advanced organic precision fires of the DRB, it would be vulnerable to attack by the relatively light maneuvering force. Since the maneuver force would have superior tactical mobility over the enemy, it would be used less in a "toe-to-toe" fight and more in ambush, flanking, or swarming operations.[8] More research is being conducted to explore other ways to fight with faster but relatively less-protected vehicles.

Other Considerations

Global urbanization trends ensure that MOUT will be an increasingly likely prospect for ground forces in coming years. Unless proper decisions are made about equipment, training, and organization, U.S. rapid-reaction forces could see many of their advantages in technology and technique diminished in a MOUT environment. Research has also introduced the possibility of new operational concepts, focusing on standoff fires, sealing off areas, and use of unmanned systems to help deal with the unique conditions of urban operations. The potential difficulties of operations in heavily forested or jungle areas should also be considered in developing any new capability.

Many of the sensors and weapons upon which U.S. forces are placing great stock can be either severely degraded or even negated in heavily foliated areas. It is not obvious that technology will be able to quickly overcome this problem, and the enemy is likely to capitalize on this weakness. Finally, as changes and enhancements to the light forces are made in coming years, the reality is that smaller contingencies and missions involving noncombatants will populate the overall mission spectrum and should be addressed in current planning.

Although the research described in this book has covered a wide range of issues, particularly with force effectiveness, there are still many questions that should be answered as the Army moves toward change. Is technology the primary answer, or is it the human component (organization, selection, training, and motivation) that makes the difference? Will specialized, uniquely trained units for each type of mission (MOUT, small-scale contingencies, high-intensity warfare) ultimately be needed, or can one or a few types of forces be tailored as necessary? How can multi-service, joint, and coalition operations be linked with new Army concepts, and how can these operations be facilitated? How will the enemy operate to defeat new innovations, and how can these countermeasures be countered? What is the cost of change, and what is the metric that reflects reduced casualties, better responsiveness, and improved deterrence?

Clearly, there are many questions that need to be resolved as the Army remakes itself into a more responsive force, with greater rapid-reaction capability. Some of these can benefit from additional study and analysis. Others may require experimentation. Still others may require field testing, training, and implementation to be fully understood. With regard to becoming more prepared for the new millennium with greater rapid-reaction capability, the Army *is* at a crossroads, and the time to select a direction is now.

CHAPTER SEVEN ENDNOTES

1 U.S. light airborne forces were referred to disparagingly as a "speed bump" or a "trip wire" among soldiers and planners during the Operation Desert Shield build-up, as they were perceived to have only a minimal effect against an Iraqi armor attack.

2 The Army consists of six "heavy-mechanized" divisions versus four "light" divisions, which include the 101st Air Assault Division.

3 Modern aircraft equipped with the latest in advanced technology, via both sensors and weapons, proved on the whole to be unsuccessful at engaging critical targets at the tactical level in Kosovo in 1999.

4 There are major opportunities for improving light forces. Technology is making enormous strides in computer processing and graphics, communication networks, sensor capabilities, robotic systems, and precision-guided weapons. Some of these technologies originate from commercial spinoffs, and, in many other cases, they are deliberate initiatives within the military.

5 Although the vehicles might weigh from 10 to 20 tons, they would have offensive capability that is not present in the other two options.

6 In fact, because this force has added protection and mobility, it might be better suited than the other options for MOUT, stability operations, and low-intensity conflict. Doctrine and training should include entirely new procedures for tailoring the force and changing its tactics for these types of operations.

7 Of special interest might be use of light- to medium-weight vehicles with common chassis and interchangeable payloads. Various concepts have considered families of vehicles with a common platform, but this would extend the notion to one of reconfiguring vehicle types during deployment as a means of tailoring the force.

8 Swarming here refers to the use of a relatively large number of vehicles to conduct rapid cycles of concomitant attack and disengagement (e.g., while some vehicles are attacking others are disengaging). These operations are highly dependent on information dominance.