

RAND Research Brief

Lightning Over Water 20001208 038 Assessing Options for Future Light Forces

As the world continues its post-Cold War thaw, fears of major theater-level war have given way to a reality of increased numbers of smaller regional conflicts and crises. And as these conflicts and crises continue to grow in number and frequency, there is a growing need for a quickly deploying, rapid-reaction capability—in particular, U.S. Army light forces—to directly respond to, and intervene within, these situations. From the Gulf War through strife in the Balkans to subsequent challenges, one of the roles such light ground forces are being asked to play is that of defender against a much heavier enemy force until the heavier, more capable forces can arrive in theater; this raises the issue of how such light forces can be made both survivable and lethal enough in these missions.

In this work, the authors draw on research conducted in the past few years on the topic of improving light, air-deployable forces—research grounded in a sophisticated simulation-based modeling environment and in a framework that addresses the process of designing such a force, with a focus on analyzing both new operational concepts and the underlying enabling technologies.

THREE PATHS FOR IMPROVING LIGHT FORCES

RAND analysts examined three paths for improving light forces' rapid-reaction capability. Path 1 examined what might be considered an evolutionary change from current rapidly deployable forces, such as the Division Ready Brigade (DRB) of the 82nd Airborne. The force remains a small, mostly self-contained unit structured much like the DRB, but it is given the capability to fight and survive in a mission that might otherwise require a larger, heavier force. This is accomplished through modified operational concepts that include an indirect-fire capability much greater than what exists now.

Path 2 removes the notion of area control by massed ground forces almost entirely, with a very small, highly dispersed force deployed in a threatened region. These

virtually independent dismantled teams would be equipped with advanced sensor systems for establishing on-site intelligence and would have advanced command and control to call in remotely located long-range fires.

Path 3 makes a major adjustment to the nature of the force itself. More specifically, new ideas and technologies are emerging that can enable some level of operational and tactical maneuver combined with rapid deployment. Vertical envelopment concepts being explored out of the U.S. Army Training and Doctrine Command (TRADOC) are one example of such a major shift.

ASSESSING THE THREE PATHS

The three paths were assessed in terms of the applicability of the light forces they create along a number of critical mission parameters:

- The kind of missions the force must address (e.g., peace operations, forced entry, area defense, local attack).
- The environment in which it must operate in (e.g., open, closed, urban, contaminated).
- The level of threat it must defeat (e.g., size, level of sophistication) and kind of threat (e.g., militia, light infantry, mechanized, combined arms).
- The responsiveness into theater (e.g., few days, week, few weeks).

The table summarizes the assessment of the three paths in terms of whether the light forces created have more, less, or about the same capability as the current light force. While all three paths offer significant benefits over a current light force, they also come with some drawbacks in terms of the parameters.

Kind of mission. By adding maneuver, path 3 addresses head-on the fundamental issue of the "globalization" of threats. Although path 2 is revolutionary in

Parameters	Path 1	Path 2	Path 3
Kind of mission	NC	-	++
Type of environment	NC	NC	- or +
Level of threat	+	NC	++
Kind of threat	+	-	++
Responsiveness into theater	NC	++	-

NC = no change; - = decrease; + = increase; ++ = significant increase.

form, it would result in a decrease in mission robustness over current light airborne forces. In particular, it might require sacrificing mission objectives to minimize casualties, and the path 2 force might have difficulty holding terrain—an element that may be of greater, not less, importance in the future.

Type of environment. All three paths offered only marginal improvements in this area. The only exception was path 3, which could improve force applicability in military operations on urban terrain (MOUT) or in a contaminated environment, because the advanced, highly mobile vehicles that would be integral to this force offer added protection. However, the same vehicles could well be ineffective in constrictive terrain, such as jungle environments, where dismounted infantry aided by dispersed sensors and relatively short-range, personal weapons might be the primary option.

Level and kind of threat. Both path 1 and path 3 improved current light forces in this area, the latter considerably more than the former. 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, such as infantry-based threats or enemy forces that can operate with short exposure to top attack weapons.

Responsiveness into theater. Path 2 offered substantial improvement over current light airborne forces because of the proposed force’s smaller overall size and weight. Path 1 mimics current airborne responsiveness, while path 3 would likely result in a force that has greater airlift burden and, thus, longer timelines into theater.

DEVELOPING A STRATEGY TO IMPROVE RAPID-REACTION CAPABILITY

A capability designed for meeting the wide range of tomorrow’s rapid-reaction challenge might take on a form that embodies all three paths, provided affordability issues can be resolved. For the foreseeable future, the Army cannot count on any significant increase in either its budget or force structure. Thus, any combination of paths would most likely require the Army to reprioritize its resources. 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.

If all three paths were pursued, the notional rapid-reaction capability would consist of three components: (1) a stealthy, small, and very-fast-deploying force that would rely on nonorganic fire support; (2) an enhanced airborne force similar to the 82nd DRB that would be equipped with substantial organic precision fires; and (3) 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, although the end capabilities of the components differ, the underlying tactics and technologies would have considerable overlap, possibly yielding an economies of scale effect.

Regardless of the choice, many questions must be resolved as the Army transitions to a more responsive force with greater rapid-reaction capability. Is technology the primary answer, or is it more the human component (organization, selection, training, and motivation) that makes the difference? Will specialized, uniquely trained units for each type of mission (e.g., MOUT) 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 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? Many of these questions will have to be answered before an effective future force design can be finalized.

RAND research briefs summarize research that has been more fully documented elsewhere. The research summarized in this brief is documented in Lightning Over Water: Sharpening America’s Light Forces for Rapid-Reaction Missions, by John Matsumura, Randall Steeb, John Gordon IV, Tom Herbert, Russell W. Glenn, and Paul Steinberg, MR-1196-A/OSD, 2000, 248 pp., \$40.00, ISBN: 0-8330-2845-6, available from RAND Distribution Services (Telephone: toll free 877-584-8642; FAX: 310-451-6915; or Internet: order@rand.org). Abstracts of all RAND documents may be viewed on the World Wide Web (<http://www.rand.org>). Publications are distributed to the trade by NBN. RAND® is a registered trademark. RAND is a nonprofit institution that helps improve policy and decisionmaking through research and analysis; its publications do not necessarily reflect the opinions or policies of its research sponsors.

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