Increasingly, it is possible to divide U.S. military professionals and defense planners into two schools of thought regarding future theater warfare. In fact, many of the issues debated within DoD over the past few years—such as the calibration of combat simulation models, the proper allocation of airlift assets among different force elements, appropriate future force size and mix, and weapons investment priorities—are, to a large degree, manifestations of underlying differences between these two schools of thought. This chapter reviews this emerging debate to set the context for the analysis that follows.

Figure 3.1 illustrates, in simplified fashion, a traditional approach to theater warfare. Forces are arrayed opposite one another on the battlefield prior to the initiation of conflict. The attacker chooses the time and place of attack.

The defender, unsure of his ability to anticipate where the main blow will come and unwilling or unable to give up ground while he sizes up the situation, is compelled to distribute his forces forward in a linear fashion. The mission of the forward defending units is to slow and attrit the attacking forces, to direct longer-range fires in support of the defense, and to confirm the location of main thrusts and potential enemy breakthroughs. Operational reserves in the defender’s rear area plug gaps where breakthroughs have occurred and threaten “counterstroke” attacks.

This operational concept, which is reminiscent of Europe’s Central Front during much of the Cold War but broadly representative of land combat for centuries, is imposed upon the defender by two main factors:
• The first (which has already been mentioned) is the defender’s inability to know with confidence where and when the enemy might strike with his main thrust(s), thus compelling the defender to be prepared to fight along a broad front.

• Second, the bulk of the firepower used to destroy enemy formations is fielded in short-range, direct-fire weapons, such as tank guns and antitank guided missiles, which are effective only at line-of-sight ranges. Longer-range fires, such as those provided by artillery and aircraft, are seen as useful in suppressing enemy activities, delaying movement, and so forth, but not in attriting enemy armor. For this reason, the close battle is necessarily seen as the decisive point in conflicts. Longer-range fires have been confined to a supporting role.

When applied to the United States’ strategic situation, such an approach to warfare demands that large numbers of U.S. heavy ground forces (or capable allied ground forces) be deployed abroad in areas
threatened by short-notice attack. This approach also demands that the population and leadership of the United States be prepared to accept fairly heavy casualties in the event of war. As countless battles between armored opponents have shown, close battles are inherently dangerous for participants on both sides when undertaken by forces of roughly equal capability.

This approach to theater warfare was appropriate for the United States during the Cold War. Interests of sufficient gravity were at stake to merit the stationing of more than six U.S. heavy divisions in Central Europe. Likewise, all sides recognized that war in Europe, if it came, would entail heavy casualties and incalculable risks. NATO was never able to approach the Warsaw Pact in terms of numbers of troops and weapons deployed, and so relied on the advantages of the defender and the possibility of escalation to nuclear use to deter serious attempts at aggression or coercion by Moscow. In any case, there was no realistic alternative: NATO could not afford to trade much space for time. As long as friendly forces were not able both to conduct effective reconnaissance deep behind enemy lines and to rapidly apply effective firepower against enemy armored forces at extended ranges, a credible defense posture depended upon having heavy forces based forward.

Today, however, almost everything has changed. The United States no longer routinely stations massive forces abroad in the regions where its interests are most exposed to threats of aggression—the Persian Gulf and Korea. In the Gulf, this results in part from the need to respect the views of host country governments that wish to minimize the impact of the U.S. military presence on their cultural and political institutions. In Korea, it results in part from the impressive and growing defensive capabilities of our ally, the Republic of Korea. In both cases, it results also from economic considerations: Stationing large numbers of forces abroad, especially ground forces, is manpower intensive, and manpower is expensive. Equally important, neither U.S. leaders nor the electorate seem prepared to accept the necessity of taking heavy casualties in order to defeat aggression in these or other theaters.

The problem is that readily available U.S. forces may not be capable of defeating a large-scale, combined-arms offensive under some conditions. With current operational strategy and investment pri-
Forces, DoD is, in effect, applying a traditional approach to defeating armored attacks when fundamental elements of that approach—heavy forward stationing and casualty tolerance—are missing. The disjuncture between U.S. means and ends is especially pronounced in the Gulf, where indigenous friendly forces are badly outnumbered and, hence, may not be sufficient to mount a large-scale defensive effort of their own.

Figure 3.2 shows what happens when a traditional approach to warfare and a traditional means of assessing combat outcomes are applied to a fundamentally new situation. The line marked “Enemy advance” shows the rate at which enemy ground forces could advance under our scenario assumptions when moving over fairly open terrain and against forces that might be encountered in the Persian Gulf region. Their progress, as marked on the left vertical
axis, shows they might be capable of overrunning Ras Tenura, Dhahran, and other critical economic objectives in less than two weeks.

One reason for this outcome is that U.S. forces are judged unable to attrit leading elements of the attacking force rapidly enough to allow the sparse U.S. and allied ground forces to compel them to halt in a close battle.¹

Fortunately, key factors bearing on the outcome of this hypothetical battle are changing in favor of the United States. Emerging technologies are supporting new systems and concepts that can allow U.S. forces both to “see deep” (that is, into the opponent’s operational second echelon) and to “kill deep.” Future U.S. and allied commanders should be able to know with a high degree of confidence when and where large-scale enemy armored forces are moving. Armed with that knowledge, commanders should be able to direct highly effective firepower assets not only to slow and disrupt enemy columns but also to rapidly impose high levels of attrition.

This emerging concept of operations is sketched in Figure 3.3. Here, information and firepower perform many aspects of the roles formerly played by mechanized defensive ground forces in the defense. Most significantly, the lion’s share of the enemy’s maneuver forces is engaged and destroyed not in the close battle but by longer-range fires. Rather than acting as the primary means of reconnaissance and attrition, defending armored formations in the opening “halt” phase of a theater campaign now perform three main tasks:

- By their very presence in the theater in peacetime (through prepositioning or, preferably, forward stationing), the formations ensure that the enemy cannot seize critical objectives without committing sizable mechanized forces to the offensive. Heavily armored forces, along with their accompanying logistics train, move more slowly than lighter forces can.

¹Note that the allied forces are assessed as being able to destroy or damage some 2400 of the enemy’s nearly 10,000 attacking armored vehicles in 12 days. This is not a bad result by historical standards, but it would clearly be insufficient in this scenario if the enemy were determined to press the attack.
• Terrain is covered by surveillance and firepower
• Longer-range fires do not just disrupt, they attrit
• Ground forces compel the enemy to commit large mechanized forces and provide blocking when force ratios are favorable

**Figure 3.3—Emerging Concept for Halting Invasions**

• The formations provide a “backstop” function, preparing to engage enemy units that might be reconstituted or slip through allied fires intact.

• And, if necessary, friendly ground forces can employ delay and retrograde tactics, exploiting superior battlefield information and mobility to block temporarily the advance elements of the attacking force. Such operations can be risky, but they can compel the attackers to slow down at points well short of their objectives and may create more lucrative targets for allied fires.

Before we examine this emerging approach as it applies to theater warfare, Figure 3.4 provides a glimpse at some key capabilities that have been fielded to make this concept a reality. The lowest line on the figure shows our assessment of the effectiveness of 1970s-era fixed wing aircraft and weapons in locating and destroying enemy maneuver forces. Using route reconnaissance tactics and cued by reports from friendly ground forces, aircraft such as the F-4E would rely chiefly on the human eye to locate and engage moving armor,
resulting in many sorties that failed to locate and engage enemy ground forces. Those sorties that did engage valid armored targets would, in a high-threat environment, deliver an unguided antiarmor cluster weapon, such as the Mk-20 Rockeye. Under these conditions and given the limitations of those weapons, several sorties would be required, on average, to achieve a high degree of confidence of killing a single armored vehicle. At night or in poor weather, sortie effectiveness—already quite low—declined markedly.

Contrast that operational concept with the capabilities of forces and assets being fielded today: Airborne surveillance platforms—such as the E-8 Joint Surveillance and Target Attack Radar System (JSTARS) carrying moving target indication (MTI) and other radar sensors—can detect moving vehicles at ranges of one hundred miles or more. Soon these assets will be supplemented by other platforms, such as unmanned aerial vehicles (UAVs) carrying multispectral imaging sensors. Together, such sensors will give commanders and control centers an accurate picture of the movements of large-scale mecha-
nized formations in near-real time. Controllers can use this information to direct attack assets rapidly to the most important and lucrative targets. Weapons such as the wind-corrected munitions dispenser (WCMD) and the Army Tactical Missile System (ATACMS) can accurately deliver large numbers of smart, antiarmor submunitions, such as the BLU-108 sensor fuzed weapon (also called SFW or “Skeet”) and the Brilliant Anti-Tank (BAT) weapon. Such weapons have demonstrated a level of lethality against moving armor that is an order of magnitude or more greater than earlier-generation area munitions, such as Rockeye.

Thus, compared with our capabilities of a decade or more ago, many more of our long-range attack assets will find their targets, and those attacks will be vastly more effective. Moreover, because the new long-range sensors and specialized munitions are not degraded in conditions of poor visibility, enemy maneuver forces will have no sanctuary at night or in bad weather.

These emerging capabilities could fundamentally transform the way that U.S. forces fight wars against mechanized opponents. Under many conditions, enemy maneuver forces now can be engaged and neutralized before those forces have the chance to close with friendly ground forces. And with rapidly deployable firepower assets, such as fighter and bomber aircraft, playing a major role in destroying enemy armored forces, the United States should be able to protect its interests and its allies with relatively modest forces stationed and deployed abroad in peacetime.

Naturally, concepts relying upon standoff surveillance and advanced firepower are best suited to situations in which enemy forces must move across fairly open or channelized terrain in large numbers to achieve their objectives. Other situations will arise, particularly in smaller-scale conflicts, where enemy forces—perhaps infantry or irregular troops on foot and in urban or heavily forested terrain—would be far less vulnerable to this sort of approach.2 Nevertheless, deterring and defeating attacks by large-scale armored forma-

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2For an in-depth assessment of the roles that modern air forces can play in defeating smaller-scale aggression, see Alan Vick, David Orletsky, Abram Shulsky, and John Stillion, Preparing the U.S. Air Force for Military Operations Other Than War, RAND, MR-842-AF, 1997.
tions remain important objectives—perhaps the most important objectives—assigned to U.S. military forces. With the proper levels of attention and investment, U.S. forces have the potential to render this form of warfare virtually obsolete for our opponents.

Writing more than a decade ago, the British armor officer and military theorist Richard Simpkin concluded that “the dominance of indirect fire achieved by surveillance and fire control on the one hand, and by terminal guidance on the other [means that] whether they are in armored vehicles, on their feet, or dug in, troops deployed at high density will certainly be pulverized into incapacity and . . . destroyed.” Simpkin recognized that changes in capabilities of this magnitude imply the need for an equally fundamental revision of operational concepts, force mix, and investment strategy. This study seeks to inform those revisions.