

Implications of Information-Based Warfare

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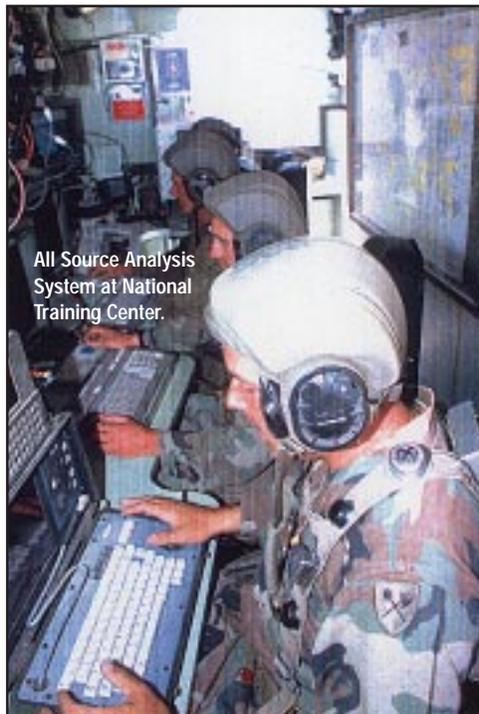
The methods and instruments of war evolved over centuries to accommodate or counteract technological change. Armor was developed to protect cavalry and to lend weight and shock to the attack. The introduction of the crossbow resulted in thicker armor. That, in turn, led to innovations such as the English longbow and gunpowder, to pierce armor. The history of war can be characterized as an imaginative use of technology to nullify advantages of mass. The most successful militaries have applied technology and mass to provide striking power, maneuverability, and agility.

The Electronic Battlefield

Until recently technological innovation was largely limited to combat and logistics; that is, to moving troops to the battlefield and sustaining them. In the last century information technology in the form of the telegraph began to impact on the military, forever altering the course of war. The telegraph and subsequent developments enabled commanders thousands of miles away to maintain an electronic battlefield presence and eventually coordinate theater-wide operations. Over the past 150 years information technology has increased in complexity and become indispensable to combat operations—so pervasively that modern militaries are utterly dependent upon it to maintain, deploy, and employ virtually every weapon system in their arsenals.

We have reached a point where technology which supported combat has become a weapon in its own

right. Again, under technological pressure, instruments of war are changing and leading to a concomitant need to change methods of war. For the United States these methods are found in joint doctrine. However, as technology changes the instruments of war, imaginative ways



All Source Analysis System at National Training Center.

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to use them in other than a traditional environments are lacking. In other words, information technology is seen as a handmaiden of the instruments of war, not as a tool in itself. It is time for change.

Perhaps the most fundamental change needed is a reevaluation of the nature of war. During Desert Storm, the piecemeal destruction of Iraqi forces was made possible by paralyzing its central nervous system—that is, C⁴I links. This was a harbinger of the crucial role that information-based warfare (IBW) will play in the future. It also raises some practical questions about war and

victory in the 21st century that must be addressed in order to make the necessary sweeping changes in joint doctrine, force structure, and national military strategy for a multipolar, coalition-dependent world. When does war begin? How should it be fought? How will one define victory in the future?

Joint doctrine acknowledges the importance of secure, reliable, robust C⁴I capabilities but it is mute on nonlethal IBW. For example, a conflict in Europe could involve information-intensive friendly and adversary weapons systems. Just as the U.S.-led coalition took months to construct a C² picture of Iraqi forces in the Persian Gulf War, and the Israelis to develop a diagram of Syrian forces prior to the Bekaa Valley campaign, a resurgent Russian war machine would have to undertake a similar effort to target NATO. The commercial off-the-shelf (COTS) dependent military environment of the next generation will make this task far simpler due to the availability of future C⁴I systems on the open market.

Doctrine must be revamped to reflect the fundamental importance of IBW in the conduct of future wars. Also, joint doctrine must recognize that IBW can and probably will occur long before a shot is fired and that success in combat is likely to rely on IBW campaigns. Depending upon an enemy's level of information dependence, moreover, it may be possible to prevail without a resort to combat. However, the relevance of these precepts to future warfighting is not widely accepted.

Critics point out that not every adversary in potential conflicts (for instance, low-intensity warfare in the Third World) will be as information-dependent as technologically

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