CHALLENGE: FORCE XXI BATTLE COMMANDER

Just as the industrial age changed the conduct of warfare a century and a half ago, the emerging information age is making armies everywhere rethink their doctrine, training and modernization goals. Industrial-age military commanders needed a different set of skills than their agrarian predecessors. Battle commanders and soldiers of the information age will have to be skilled at using customized, high-speed, precise information to their advantage under the ambiguous, hyperdiverse conditions of the new battlefield environment.

As America's Army develops a force projection which will generate and maintain a tempo of operations against which no enemy can compete, the best possible investment must be made in the human resources. Education, training and technology will be integrated with soldiers' battlefield instincts, giving commanders the capability to succeed in information-dominated military operations.

One of the important means to technological superiority on the battlefield will be the exploitation of information by field commanders who can lead their units to outthink, outmaneuver and outshoot the enemy on a real-time basis. The objective will be a fully integrated operation where the commander has the information necessary to develop intelligence, synchronize the maneuver of forces and optimize the employment of weapons throughout the battle area.

Visualize the digitized battlefield:

It is widely dispersed; the command, control, communications, computers and intelligence (C^4I) systems of combat, combat support and combat service support organizations are interconnected to share digitized information vital to the outcome of the battle. Upgraded mobile weapon systems are operating on and above the battlefield: the M1A2 Abrams tank and the M2A3 Bradley infantry fighting vehicle; the M109A6 Paladin 155mm self-propelled howitzer; the AH-64 Apache attack helicopter; the OH-58D Kiowa Warrior armed reconnaissance helicopter; the UH-60 Black Hawk helicopter equipped for command and control; the unmanned aerial vehicle (UAV); the Joint Surveillance and Attack Radar System (Joint STARS) aircraft; and other ground and air vehicles.

To link the weapon systems through an information-sharing network, ground vehicles are equipped with an Inter-Vehicular Information System (IVIS) which can transmit and receive real-time battlefield data automatically through vehicle-mounted single channel ground and airborne radio systems (SINCGARS). Digital electronic map display screens, integrated into each weapon system, are updated automatically to provide real-time self, friendly and enemy locations. Forward units share this information, thus reducing fratricide and contributing significantly to the ability of the ground force to execute swift and decisive maneuvers and employ firepower more effectively.

Target information is transmitted from a helicopter (or from a UAV or Joint STARS aircraft) to ground commanders (who can use direct-fire weapons to engage the target); fire support units (where a fire support team can coordinate the indirect fire of mortars and artillery to mass fires on the target); and command and control elements (which can maintain updated intelligence information on enemy forces and friendly locations to synchronize maneuver forces and supporting fires to defeat the enemy force). At the same time, combat and combat support units can be interconnected with combat service support units to continuously update expenditures of ammunition, fuel and other resources to facilitate timely resupply.

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Force XXI is the Army's institutional response to the re-design of the Army for the information age. The Army is in the process of digitizing the battlefield, building in the information-age requirements of speed and precision. It is upgrading intelligence, maneuver, fire support, sustainment, and command and control platforms with advanced technologies that can gather, sort, share and distribute information. The goal: a lethal, digitized land force with the operational versatility to respond to a wide range of crises and opposing forces with equally deadly capabilities.

The Army is just beginning to analyze the recent advanced warfighting experiment conducted at the National Training Center (NTC). During this NTC unit rotation (dubbed Desert Hammer), the Army tested all participants' situational awareness, battlefield maneuver and synchronization, and battle command procedures to mass combat power and execute precision strikes. The experiment also tested how digital technology can enhance lethality, maintain an operating tempo that disrupts the timeliness and effectiveness of the enemy's decisions, and increases survivability across the combined arms team. These lessons and other experiments are the building blocks for the Army of the information age.

The Army continues adapting its doctrine to the emerging information age. The next edition of Field Manual 100-5, *Operations*, will outline the principles governing the conduct of warfare in the information age. FM 101-5, *Staff Organizations and Operations*, will adjust decisionmaking processes and describe staff functions, duties and relationships for a digitized force. Other doctrinal manuals will follow suit.

In the final analysis, however, the success of Force XXI is contingent upon the Army being sufficiently resourced to recruit and retain quality people, develop its leaders, test its doctrine, provide the necessary training, field the most modern equipment, and analyze the mix of forces and capabilities needed for the host of tasks to be faced.

In a period of competing domestic needs, the long-range objective of a modern Army capable of defeating opponents armed with increasingly high-tech weapons must be assured through adequate funding in the annual defense budget. Force XXI battle commanders — who will emerge as totally different leaders conducting totally different warfare operations on totally different battlefields — must be given the training, quality manpower and equipment resources they need to meet the challenge.

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