

INFORMATION AGE TECHNOLOGIES AND CORPS OPERATIONS

A FUTURE BATTLE

At 0300, in his command vehicle, the corps commander studies the graphic display of the enemy and friendly situations. Simultaneously, through a digitized link, he consults with his G2 at the main CP and his G3 at the TAC CP. This is the time to strike the decisive blow. Gathering his subordinate commanders on the video net, he gives the command to attack.

The advanced land combat task force of M1A2+ and M2A3+ rolls across the empty battlespace toward enemy positions 25 kilometers distant. Moving in an open formation, over an area more than 10 kilometers wide and 5 kilometers deep, the task force's dispersion effectively neutralizes the threat of enemy artillery concentrations. The movement is rapid and "in step," coursing over the open terrain, converging momentarily to slip through pinpointed passages in restricted terrain, then dispersing again.

Turrets traverse as gunners and commanders scan for the enemy. Images of other task force vehicles shine clearly in the gunner's second-generation forward-looking infrared sights, haloed with a warm amber glow indicating their identification as "friendlies."

There is reassurance from the scanning and traversing—the training and discipline of the unit is clearly evident. But most of the targets to be attacked have already been acquired by UAVs and Comanches. Information is quickly processed and correlated by smart ground center and then burst-communicated to individual shooting vehicles. Inside the tanks and Bradleys, digital processing transforms targets into flashing red symbols mapped onto the terrain in the gunner's sights.

The task force rolls past the smoldering hulks of dug-in enemy vehicles in the

security zone. A platoon of Apache Longbow-silent and deadly killers-did this part of the job with "smart" munitions at standoff range.

The task force swerves hard right at a range of 10 kilometers from forward enemy positions guarding the airfield. This is a preventive maneuver the task force commander directs with the aid of onboard computer simulations and decision support processors in the task force's command and control vehicles (C²Vs). It works. Inaccurate enemy artillery fire begins to fall along the task force's previous axis.

Simultaneously, the task force begins to converge in width and depth, its trail vehicles speeding up as they come on-line to deliver fires. Movement is coordinated instantaneously between vehicles through automatic exchange of digital information. It is controlled using each vehicle's integrated position/navigation (POSNAV) capabilities.

Battlefield situation information exchange is automatic; the G²V knows precisely where everything was and where it is supposed to be. The weapons platforms also know; there is no guessing or mistaking identity.

Friendly artillery is fired with pinpoint accuracy from the recently acquired advanced field artillery system guns. Each enemy position takes a "burst" of four of the advanced projos in a time-on-target.

Two of the smaller UAVs circle overhead, providing real-time targeting and battle damage assessment. These miniature

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aircraft are loaded with weight-reduced imaging infrared, millimeter wave and optical correlators designed to exchange information with other members of the combined-arms team.

The defender is no match for the violent assaulting force. What he sees seems like pure magic—not a battle—but an almost instantaneous blanket of destruction directed with pinpoint accuracy across his entire force. The M1A2+s and M2A3+s, in a 10- to 15-second wave of firing, take out the enemy's dug-in tanks and AT weapons with one-shot, one-kill precision strikes, completely destroying his direct-fire defense.

It is over in a few minutes.

FUTURE IMPROVEMENTS

Many changes are likely to occur in corps operations as the Army exploits the benefits of information-age technologies. To meet future requirements, the corps must become more capable as it becomes smaller. The ideas in this chapter are not prescriptive; they represent an evolution of how the corps may gather, analyze, distribute, and act on information.

Advances in technology continue to shape the way the Army conducts warfare. The pace of operations is now greater than ever. The age of digitization is shifting how the Army operates. New technology will eliminate-

- Communications that are limited because of line of sight (LOS) restrictions.
- The need for soldiers to navigate by maps and compass.
- Hierarchical information flow.
- Bottlenecked theater communications networks.
- Static command posts.

Cold War C² systems of ground-based, grid-networked architectures will no longer meet the needs of the corps' force-projection requirements. Digitization of the battlefield is one of the ways the Army has chosen to transition to the twenty-first century.

As the Army continues to expand the use of digital capabilities to sensors, intelligence fusion

systems, communications systems, and logistics activities, the corps will be able to rapidly receive, process, and distribute information with its subordinate units. The goal of digitization is to create a global information network that supports commanders at all echelons. The corps must be capable of supporting joint and multinational operations with secure connectivity between all elements of the force.

Technology gains are beginning to have major effects on how the corps manages, transports, processes, and presents information that supports synchronized activities on the battlefield. Improved voice capabilities (mobile subscriber equipment (MSE), cellular phones, satellite links), imagery directly downlinked to ground terminals, broadcast technologies, facsimile, video, color graphics, global positioning systems (GPSs), digital overlay mapping, and data basing are increasingly more available to lower echelon units.

More information is available faster, processed more quickly, and easier to understand and visualize than ever before. This gives commanders and soldiers rapid access to extremely complete and accurate information. All of these capabilities create opportunities to improve the way the corps plans, prepares for, and executes land operations.

BOS IMPLICATIONS

When digitization is applied across battlefield operating systems, the corps can focus a concentrated effort as a result of the opportunities each BOS provides.

Intelligence provides—

- Increased accuracy and timeliness of intelligence data collection and dissemination.
- Improved operational efficiency through creation of the relevant common picture for the force.

Maneuver provides—

- Rapid depiction of friendly unit dispositions along with associated control measures.
- Precision maneuver through accurate identification of enemy locations.
- Pinpoint navigation through the use of a GPS.

Fire support provides—

- Improved accuracy and timeliness of the targeting process.
- Timely and more accurate fires through improved target location and streamlined fire control processes.
- Improvements in speed and accuracy result in a reduced number of rounds fired per engagement.
- Reduced fratricide and collateral damage through the employment of more precise fires.

Air defense provides—

- An enhanced A²C² process through rapid deconfliction of user requirements.
- Timely and accurate data distribution to support engagement operations.
- Rapid dissemination of AD warnings and alert status.

Mobility and survivability provides—

- Enhanced mobility and survivability planning, execution, and coordination of activities.
- Improved force protection through the prevention of fratricide by better knowledge of obstacles and emplacements.
- Improved operational efficiency through rapid dissemination of data regarding all engineer activities.

Combat service support provides—

- Automatic status reports on vehicles, systems, ammunition, fuel, and other supplies.
- A reduced burden on transportation and distribution systems through timely and accurate forecasting of requirements and pinpoint locations for delivery.

Command and control provides—

- The commander an improved ability to see the same battlefield situation that his subordinates visualize.
- Timely and accurate planning, preparation and dissemination of orders.
- Increased understanding and reduced possibility of errors through rapid exchange of data.

- Improved decision aids such as automated displays and overlays.

FUTURE APPLICATIONS

When properly applied, information-age technology can provide commanders data on the operational and logistic statuses of friendly units (as well as giving him a current picture of the enemy's status). Units can couple friendly and enemy positions and statuses with a graphic representation of the terrain and deliver it electronically to commanders and their staffs. This will give precise knowledge to wage decisive warfare.

The staff can automatically update map displays and graphics, giving subordinate units a "common picture" of the AO. This common picture and situational awareness will permit commanders at all echelons to better control forces, synchronize effects, and achieve decisive victory with minimal casualties.

A digitized force will have significant advantages over conventionally equipped forces. Technology will increase situational awareness; improve the planning, preparation, and distribution of orders; enhance the timeliness and accuracy of reporting processes; and enable precision fires to establish the preconditions for decisive maneuver.

Introducing digital technologies into the Army will not occur simultaneously throughout the force. Within the corps, the integration of digitally equipped units with conventionally equipped units presents unique challenges for commanders and staffs. They must ensure that procedures exist for communicating with and supporting all elements of the force (joint, multinational, government, or non-government agencies).

Commanders and staffs can achieve total integration through the exchange of LNOS and by establishing additional voice communications capabilities. Commanders can synchronize operations through battle drills and SOPS. Finally, the staff can process digital information for distribution to conventionally equipped units via compatible means.

Information-age technologies enhance the corps' enormous complementary capability to conduct sustained land combat operations. The corps commander must employ all capabilities to dominate

maneuver, conduct precision fires, protect the force, win the battlefield information war, and sustain combat power.

Through digitization, friendly units will be able to move precisely at great speed and effectively employ weapons of superior range and lethality. Enhancements in command and control, intelligence, target detection, and fire control will allow the corps to conduct decisive maneuver in combination with simultaneous precision fires. The corps will be able to attack enemy information-

gathering and processing systems with both lethal and nonlethal means, while improving its ability to rapidly process, distribute, and protect friendly information.

Digitization will also improve early warning and the ability to accurately forecast requirements and provide timely delivery of resources. The corps commander can then protect and sustain the force anywhere in the world. All of these improvements result in the corps' ability to be dominate in future land warfare.