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## The Division Advanced Warfighting Experiment: Fire Support Implications (Crusader, MLRS and Comanche)

Emerging from the Army's November 1997 Division Advanced Warfighting Experiment (DAWE) were important insights into operational concepts, organizational changes, and potential doctrinal changes. Most significant among the lessons learned, however, were the contribution and impact of fire support assets to the division fight and especially that of the Crusader advanced field artillery system.

The Advanced Warfighting Experiments are designed to provide insights into how new technologies, particularly those associated with information, can best be integrated into the new weapon systems, organizations and doctrine that will characterize the Army in the first half of the 21st century. The force used during the DAWE was a mechanized infantry division modernized with weapons and information systems that will be fielded during the first decades of the next millennium. The enemy was represented by a significantly larger force, modernized to represent potential adversaries in the same time frame.

Results of the DAWE indicate that fire support systems — Crusader, Multiple Launch Rocket System (MLRS) and aviation — will have a far greater impact on the battlefield than anything seen before. To quote from the DAWE Initial Insights Report: “[4th Infantry Division’s] successes point to the potentially decisive impact that Force XXI fires will have on the division’s ability to dominate a larger enemy in an expanded battlespace. A combination of joint air, attack aviation and field artillery fires played a central role in the

division’s dominance of forces over four times its size in each of three successive operations.” The synergy of the field artillery fire support assets was vital to the success with a particularly dominant role being played by Crusader.

There were several reasons for so significant an impact by fire support assets. First, a very large number of sensing systems were employed continuously across the battlespace, and sharing of the sensor information throughout the U.S. force was much greater than was possible in the past. Second, the indirect fire support assets were provided with smart munitions that greatly enhanced the ability of indirect fire assets to destroy targets. Finally, fire support units were dispersed and capable of maneuvering rapidly, thus ensuring that fires could be massed effectively.

The sequence of operations during the DAWE exercise is best characterized by a “find – kill – finish” concept. The “find” phase of operations occurred when reconnaissance assets such as Unmanned Aerial Vehicles (UAVs) and the Joint Surveillance Target Attack Radar System (Joint STARS) identified enemy formations. The “kill” phase followed with the massing of fires (cannon artillery, missile, rocket and aviation) against the enemy. It was during this phase that the majority of enemy systems were destroyed and the enemy force was rendered combat ineffective. As an illustration of the effectiveness of fires, the artillery accounted for an unprecedented 40 percent of all the 4th Infantry Division’s enemy tank kills (more than 800 kills from

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Crusader with Sense and Destroy Armor [SADARM] and more than 600 from the MLRS Smart Tactical Rocket [MSTAR]); when combined with the effects of the attack helicopters the total reached 75 percent. It is also significant that, due to the distances involved, maneuver forces were often not needed for the “kill” phase, but used in the “finish” phase, when they closed on the remnants of the enemy and completed their destruction.

This battle sequence differs qualitatively from current combat operations. During Operation Desert Storm, and in National Training Center rotations, the operational sequence is best described as “find – shape – finish.” In these operations, indirect fire assets are used in the “shape” phase to set up conditions for the direct-fire fight and to destroy enemy indirect fire assets. This allows the enemy to retain a large measure of combat effectiveness until the “finish” phase, when the majority of the enemy forces are destroyed in the direct-fire fight. This is also where U.S. forces are most susceptible to casualties.

The DAWE demonstrated the significant advantages of placing greater reliance on indirect fire and massed effects to alter fundamentally the sequence of battle. The advantages:

- ◆ Indirect fires are used as the primary means of engagement, allowing a much greater dispersal of assets across the battlespace.
- ◆ The concentration of fires can be accomplished very quickly. For systems such as Crusader, which is fully digitized and automated, the time advantage is unprecedented.
- ◆ Casualties are reduced. The role played by fire support assets in preserving the fighting strength of the division was significantly enhanced by the survivability of its dominant delivery system, Crusader.

- ◆ The logistical tail can be significantly reduced. Crusader already reduces the logistics sustainment burden with its significant manpower savings, but with the use of precision munitions, the logistics effect is even more profound. The use of smart munitions will also have a profound logistical effect. During the DAWE, the division achieved results with 220 Crusader-delivered SADARM rounds that would otherwise require 3,600 Dual Purpose Improved Conventional Munitions (DPICM) rounds. The effects of 204 MSTAR rockets accomplished what would otherwise require 664 DPICM rockets.

The DAWE demonstrated that next-generation fire support systems such as Crusader, which capitalize on information dominance, automation and precision munitions, bring order-of-magnitude improvements to the battlefield. The capabilities that such systems provide are such a leap beyond current systems that an innovative approach to doctrine development and organization building is required to fully exploit their potential, although the potential for decisive fires clearly emerged from the DAWE. Continued growth of information systems development must ensure that battlespace intelligence is instantaneously available to responsive fire support assets, such as Crusader, that deliver the lethal blow, and that fires decisions are made so rapidly that the enemy cannot hide and has nowhere to run.

An Army XXI that adopts a reconnaissance and fire support center of gravity takes a huge step towards a revolutionary Army After Next (AAN) and paves the way for a true revolution in military affairs. With fire support systems like Crusader and the doctrine to go with them, warfighting will be qualitatively improved from the 1980s and the United States prepared for successfully accomplishing the missions likely to be faced in the 21st century.

(This is the first in a series of *Defense Reports* addressing the implications of the Division Advanced Warfighting Experiments.)

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