FORCE PROJECTION ARMY COMMAND AND CONTROL (C2)

Recently, the AUSA Institute of Land Warfare staff was briefed on the Army's command and control modernization plans. What follows is a simplified version of that briefing. Acronyms have been reduced to the bare minimum and formal names of systems put in general terms in order to present a concise overview of the thrust of the Army's plans.

INTRODUCTION

The shift from a primary focus on countering the Soviet threat to a new global set of concerns puts the Army on a revised path towards modernization of command and control (C2) doctrine and equipment. This new path is illuminated by lessons learned in Operations Urgent Fury, Just Cause and Desert Storm.

Three interrelated requirements dictate the approach to future operations: **Strategic Deployability, Global Connectivity and Battlefield Agility**. To achieve this, the Army must be prepared to deploy tailored force packages to conduct operations ranging from humanitarian and peacekeeping activities to warfighting in a wide range of threat environments.

Particularly in battle, forces will be dispersed over wide distances, making synchronization of combat power more difficult. Information systems must serve as force multipliers, providing commanders with the ability to see the battlefield with greater clarity, precision and timeliness to act with superior agility.

The new environment reinforces the need for a joint warfare focus. Victories will be gained by integration of ground, sea, air and amphibious forces. Enhanced Army command and control resources must meld effectively into the overall joint operational C2 structure.

The shift to a force projection Army requires a reexamination of operational doctrine and equipment requirements. Toward this end, the Army's recent study of C2 needs identified five areas for further modernization:

- C2 for Mobile Operations

- Communications Architecture

- Automation Supporting the Commander

- Intelligence Dissemination and Targeting

- Automation of the Sustainment Base

C2 FOR MOBILE OPERATIONS

The Army's study of force projection command and control resulted in significant adjustments to the Cold War model dominated by a European war scenario. Commanders of modern, agile Army forces must be able to move freely about the battlefield, constantly linked to command posts, intelligence sensors and subordinate commanders by satellite-based systems. This will require command posts, computers and communications equipment that operate on the move and have ready access to all critical operations and intelligence information.

The commander must be able to assess and influence situations while on the move, in the air and on the ground. Airborne command and control consoles and command vehicles will be tailored to the commander's needs as dictated by the nature of the operation.

A key element of mobile command posts is the command and control vehicle which must be capable of operating on the move or as an integral part of a stationary, wireless command post. In addition, the organization and structure of tactical command posts' C2 must adapt to split based operations.

The field commander relies on first-hand voice reporting directly from subordinate commanders, or by monitoring their internal C2 nets. On a more dispersed, fluid battlefield, corps and division command nets will continue to have this capability on an extended basis via tactical satellite and unmanned aerial relays.

A global positioning system (GPS), with devices to receive satellite information at one's location, can help meet this need. This capability can be refined by integrating GPS devices with weapons and command, control, communications, computer and intelligence systems. The Army envisions that the company commander's location, for example, will be automatically passed to higher headquarters where his and other unit locations are gathered and displayed on a large screen display. A commander and his subordinate commanders and staff will be able to see a common and accurate picture of the mobile battlefield, so that forces can be employed more effectively. Additionally, fratricide can be reduced by sharing this common picture.

COMMUNICATIONS ARCHITECTURE

Investments in the 1980s to upgrade Army communications systems are beginning to pay off.

Desert Storm demonstrated the increased capability of tactical communications systems. This includes mobile subscriber equipment (MSE), which provides the commander secure, automatic data, facsimile and voice communications; and the single channel ground and airborne radio system (SINCGARS), which provides the commander reliable, powerful radio C2 in the electronic warfare threat environment.

The new architecture, integrated with commercial systems, provides redundancy and additional capacity. Satellite communications are the cornerstone of the architecture, providing range extension between combat forces in the theater of operations and the continental United States (CONUS) sustainment bases. Continued support of military and other satellite programs will help to meet these needs.

A major component of the Army communications architecture involves the concept of satellite broadcast communications. Desert Storm clearly showed the value of passing intelligence, weather and other types of information directly from the broadcast source to the users. The Army must continue to exploit this capability.

Desert Storm, National Training Center unit rotations and feedback from Army units attest to the superior performance and reliability of SINCGARS, particularly in the combat radio component of the Army communications architecture. The Army will field SINCGARS to all elements of the Army and strive for its acceptance in the joint and combined arena. Gloal positioning systems should also be integrated with SINCGARS.

AUTOMATION SUPPORTING THE COMMANDER

The area common user system component of the Army communications architecture provides telephone and data communications throughout the operational area and down to brigade level. It consists of MSE among other equipment. Wartime experience has shown that these systems are adaptable to the force projection role. Some improvements are needed, such as greater interoperability with commercial and joint systems and enhanced range extension capability.

Like the commercial world, the Army is transitioning from predominantly analog to digital systems. Digital data distribution systems provide the advantages of speed and accuracy. An increasing number of weapon systems and C2 systems have made the transition.

The data distribution component of the Army communications architecture provides near real time data distribution in division and corps areas. It consists of a joint tactical information system for high speed data distribution, an enhanced position location reporting system, an MSE network and SINCGARS. Like the commercial world, the Army requirement to move data is increasing rapidly. As efforts continue to digitize the battlefield, low cost distribution alternatives and data compression techniques will need to be explored.

The Army's sights are set on the day when the strategic and tactical commanders will have access to a common pool of data to provide a common picture of the battlefield tailorable to each

commander's needs. A seamless architecture is needed to allow information to flow uninhibited from where it exists to where it is needed in a way that is transparent to the user. Adherence to commercial, open systems standards will enable Army tactical and strategic systems to interface with joint systems.

Tactical automation on common hardware/software platforms will be provided by an Army tactical command and control system. In order to move toward a seamless architecture as economically as possible, the Army has recommended that several automation programs be streamlined. A maneuver control system, which is a tactical force information system, is key to C2 interoperability. The system can be improved in terms of reduced size and increased capability, such as addition of a large screen display, embedding of global positioning system functions, and the ability to operate while on the move.

INTELLIGENCE DISSEMINATION AND TARGETING

Recent wartime experience highlights the need to better integrate intelligence and battlefield targeting systems and processes. Technology exists today which allows the Army to achieve improved intelligence and targeting performance. The application of space-based broadcast technology can reduce sensor to user timelines and allow much wider access to national intelligence and early warning imagery. To exploit these capabilities, the Army will have to validate the numbers and types of ground terminals needed, strive for standardization and eliminate redundant systems.

SUPPORTING THE FORCE

The projection Army will be supported by sustainment bases in CONUS. With high capacity global communications to connect sustainment bases to the battlefield, it is no longer necessary to move sophisticated logistics data centers into the operational area. Although this will substantially reduce lift requirements, it underscores the need for seamless automation architectures.

To further exploit the availability of data from the theater-CONUS linkage, the Army will have to further automate the exchange of information between the logisticians and the field commanders. At present there are a number of unique logistics information systems that cannot share data or pass it to tactical automated systems. Software, hardware, and communications improvements will have to be made which will allow this sharing of information.

CONCLUSIONS

The Army's C2 study has identified the adjustments which are needed in the various information systems to support the Army's role as a global projection force. The findings of the study, summarized above, are grounded in the experience gained in recent military operations, at Army combat training centers and in field exercises.

Four conclusions stand out as crucial.

The concept of **C2 FOR MOBILE OPERATIONS** can provide the commander the agility needed to synchronize combat power on the widely dispersed and fluid battlefield. Implementation represents a formidable technological challenge, as well as a point of departure for doctrinal change.

Integration of **GLOBAL POSITIONING SYSTEM** capabilities into communications and automation devices can provide commanders at all echelons with a common picture of the battlefield. Integrations will also enhance anti-fratricide capabilities.

The force projection Army will have a greater reliance on defense and commercial **SPACE-BASED** communications. Satellite access and terminals required for the conduct of military operations will also need to be available for training.

Finally, a **SEAMLESS ARCHITECTURE** is essential within Army systems and those of the other services to achieve the technical and tactical harmony so essential to joint operations.

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