



Progress Report

on Joint Experimentation

By HAROLD W. GEHMAN, JR.

Each service has an experimentation program, but who does the joint part? In 1998 U.S. Atlantic Command (ACOM), the predecessor to U.S. Joint Forces Command (JFCOM), was designated as the executive agent for joint experimentation. The action was taken in concert with Congress, which was concerned over preparing for security challenges in an evolutionary fashion, without sufficient attention to the future. With its marching orders in

hand, JFCOM is forging a program that satisfies those concerns in the near and far terms.

Laying the Foundations

The goal of JFCOM is a broad and unconstrained exploration of concepts and technologies that will add value and provide empirical data to support decisions. The effort has two purposes: to sustain and widen the qualitative superiority of joint forces over potential enemies and to prevent surprise attacks utilizing new concepts and weapons. JFCOM will conduct evaluations not only to find new technologies but also to learn the best tactics, techniques, and procedures for employing a joint force. Moreover, it is looking at

Admiral Harold W. Gehman, Jr., USN (Ret.), served as Commander in Chief, Joint Forces Command, and Supreme Allied Commander, Atlantic, and earlier as Vice Chief of Naval Operations.

ways to expand interagency and allied involvement. A key point in structuring a program is to meet current and future requirements. True experimentation is an iterative process intended to gain knowledge before making expensive decisions on future forces.

ACOM produced an implementation plan to provide the intellectual and organizational basis for this mission. When the Joint Experimentation Directorate (J-9) was activated in October 1998, the foundations had been laid for working with the services, unified commands, defense agencies, industry, and academe on exploring new concepts. Consideration had been given to the scope and intent of the program, especially in relation to existing service experimentation.

Initial Accomplishments

The pace of establishing the program has been fast and furious, with implementation in less than a year. Much work went into gathering warfighting concepts with transformational promise, winnowing them down, and identifying high payoff ideas for experimentation. The selected joint concepts, experiments, and related activities are collected in an annual campaign plan, which serves to focus on the most compelling challenges facing commanders as well as informing the services.

Joint experimentation is a balanced program that moves along three axes. The first looks at how off-the-shelf technologies can enhance concepts, including interoperability problems involving current systems. This near-term axis helps

maintain an edge over extant threats and capitalizes on JFCOM assets. One aspect is the sponsorship of advanced concept technology demonstrations that can be quick on-ramps for promising solutions to existing problems.

The second (mid-term) axis focuses on *Joint Vision 2020* and how concepts, technologies, and advanced information systems can support the evolution of a joint force. Using platforms or their derivatives, this axis consists of activities which seek to enhance synergy and effectiveness, enabling full spectrum dominance over emerging threats facing the Armed Forces.

The third investigates revolutionary concepts and technologies to transform the joint force, facilitating continued success against challenges in the revolution in military affairs. This far-term axis seeks breakthrough discoveries in technology, policy, and man-machine interface.

JFCOM updates every component of the campaign plan annually to ensure staying on the cutting edge. Demonstrating the dynamic nature of the process, some of the concepts in Campaign Plan '99 were removed or modified for the following year. Nine concepts made the cut.

Rapid decisive operations serves as an overarching integrating concept for the other joint initiatives. Its characteristics are immediate, high-tempo, continuous overwhelming operations, and the ability to shape and control the battlespace, integrate application of precision effects and dominant maneuver, and minimize the need for protracted campaigns.

Evolution of a Command

U.S. Joint Forces Command (JFCOM) was established on October 7, 1999, with responsibility for joint force integration, training, experimentation, doctrine development, and testing as well as its role as a combatant command.

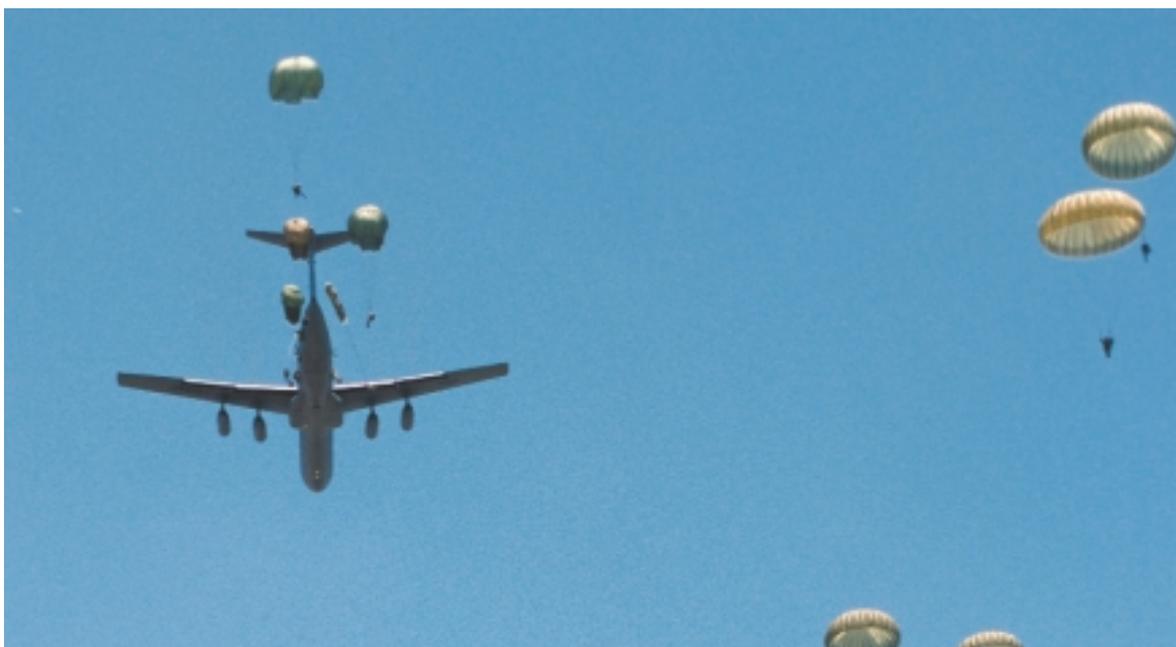
When its earliest predecessor, U.S. Atlantic Command (LANTCOM), was established in 1947, it was one of the original unified commands. At that time it was primarily a maritime command with responsibility for the Atlantic Ocean, especially sealanes between the United States and Europe. From the outset, LANTCOM devoted most of its assets to protecting the north Atlantic against Soviet submarines. NATO created the Allied Command Atlantic in 1952 with headquarters adjacent to LANTCOM in Norfolk and designated the Commander in Chief, Atlantic Command, as Supreme Allied Commander, Atlantic.

LANTCOM received responsibility for the Caribbean in 1956 and events in Cuba in 1959 transformed this area into a turbulent region. Other operations in the area included the Dominican Republic (1965) and Grenada (1983). Changes in the Unified Command Plan in 1997 transferred oversight of the Caribbean to U.S. Southern Command.

Increased emphasis on jointness led to significant changes in the LANTCOM mission and its redesignation as U.S. Atlantic Command (ACOM) in 1993. With calls for improved interoperability among the services, the Joint Chiefs recommended that ACOM be assigned responsibility for joint training and integration. Changes in the Unified Command Plan also directed that ACOM assume peacetime control over U.S. Army Forces Command and Air Combat Command. Today, JFCOM is the provider, trainer, and integrator of joint forces.

JFQ

82nd Airborne jumping
at McGuire Air Force
Base.



Marines at Twentynine
Palms.

2nd Marine Division Combat Camera (Donald R. Storms, Jr.)



305th Communications Squadron (Scott H. Spitzer)

Attack operations against critical mobile targets is aimed at improving detection, decision, and engagement of a maneuvering enemy. It addresses threats to warfighting capabilities posed by mobile systems, including theater ballistic missiles and integrated air defense systems.

adaptive joint command and control investigates alternatives to headquarters and components to leverage information technology

Adaptive joint command and control investigates alternatives to joint force headquarters and components to leverage advances in information technology. Improving synchronization of joint operations, an adaptive joint force structure, and reducing the footprint of joint headquarters are the primary objectives.

Joint interactive planning seeks new planning and decision support tools to enable faster interactive, simultaneous, and parallel planning. Dynamic tasking and retasking of forces, quicker decisions, and control over the operational tempo are key elements.

Common relevant operational picture provides commanders and subordinates on all levels with timely, fused, accurate, assured, relevant information. Building a single integrated air picture is an important subset of this concept.

Focused logistics enabling early decisive operations is focused on providing commanders with improved joint and service support through fused, tailored, time-definite logistics. It includes

less dependence on fixed port facilities and improved business practices and information fusion.

Information operations recognizes the need to protect and assure friendly information while permitting commanders to disrupt, deny, exploit, or destroy enemy capabilities. It is a key element of information superiority.

Forcible entry operations focuses on rapid deployment and employment of joint forces to penetrate and conduct decisive operations in hostile territory. It considers alternatives to overcome denial of access to strategic areas and facilitates follow-on sustained combat operations.

Strategic deployment seeks an optimum mix of in-theater forces, deployment assets, pre-positioned matériel, and near-theater staging alternatives to enable rapid decisive operations. Key goals are faster joint force projection, quick transition to combat, and support to rapid intra-theater maneuver.

The results of this experiment influenced the development of technology, doctrine, tactics, techniques, and procedures. They suggest that technology development to improve attack operations is on track and that real-time sensor management and having a man-in-the-loop are essential. They also imply that methods other than direct attack may be equally effective at neutralizing theater ballistic missiles. Analysis and follow-on experiments are continuing.

Another critical element of the program is developing strong partnerships with a wide range of organizations. Advanced technology workshops have gathered experts from the Armed Forces, governmental agencies, industry, and academe to shape the joint force after next. Together with service battle lab representatives, the command has formed the Alliance of All Service Battlelabs to foster debate and identify opportunities for experiment teaming. This group complements the work of the JFCOM Joint Battle Center.

In addition, international experimentation has been addressed. Future military operations will involve coalition partners, which is reflected in a dialogue on experimentation with allies. The first step was supporting NATO in its new concept development and experimentation program by sharing what ACOM learned in its first year of joint experimentation.

What the Future Holds

Finite amounts of time, people, and money, and the staggering catalog of ideas on which to experiment, call for discrimination. Concepts chosen for FY00, and those selected for subsequent campaign plans, must demonstrate certain qualifications to make the cut.

Experiments on attack operations against critical mobile targets exemplify the iterative and refining nature of the program. Building on past events, the current iteration integrated lessons of the Kosovo campaign. The requirements for locating, tracking, and eliminating mobile air defense systems in that campaign were virtually identical to those addressed in the attack operations against mobile theater missiles. Mobile air defense systems were added as targets in experiments during the year. There are plans to expand this investigation, then evaluate findings from experiments in 1999 against this broader operational environment.

Another area in which dynamic change is expected involves rapid decisive operations. A recent analytical wargame explored three candidate concepts for conducting such operations within a



5th Communications Squadron (Anna M. Hayman)

B-2 at Minot Air Force Base.

To provide a starting point and minimize redundancy, ACOM developed a baseline from all sources of past concept development and experimentation efforts and ongoing or planned activities which might be used to explore a selected concept. So far the command has completed baselines for six of the nine experimentation concepts.

Baselining has jumpstarted experimentation and made it more efficient. For example, in August 1999, some 46 defense agencies met for the first time to pool their experience in attack operations. These agencies continue to interact through bilateral discussions and as part of the investigation of the attack operations against critical mobile targets concept. In conjunction, the first joint experiment explored the dynamics of attacking mobile target sets such as mobile theater ballistic missiles, air defenses, and command and control systems. This offered insights into coping with time-sensitive targeting and asymmetrical tactics, techniques, and procedures used by agile, innovative enemies.

2^d Marine Division Combat Camera (Donald F. Storms, Jr.)

Combined arms exercise, Twentynine Palms.

common scenario. The game engaged senior decisionmakers in a seminar environment with a rigorous, constructive, nonattrition-based simulation. One element was understanding how precision allows maneuver to shape the battlespace and create opportunities for precision engagement.

The FY00 program culminates in the first of a series of exercises designed to synchronize then integrate major service field experiments. Called Millennium Challenge '00, it is being conducted in September 2000 as simultaneous and near-sim-

ultaneous experimentation events in partnership with the services and unified commands. It offers a joint context for the Air Force Joint Expeditionary Force Experiment, the Army Advanced Warfighting Experiment, the Navy Fleet Battle Experiment-Hotel, and the Marine Corps Millennium Dragon.

This exercise is focused on rapid decisive operations and examines means to enhance the joint deployment process; develop tactics, techniques, and procedures for joint collaborative planning tools; and identify essential elements of the common operational picture and served as a prototype of future experiments. It is synchronized with the annual Ulchi Focus Lens exercise to develop and validate the JFCOM precision engagement concept of operations.

In addition to offering a joint scenario, tools, and context for service experimentation, the series acts as a venue for exploring the operational aspects of rapid decisive operations, which will culminate in a major integrating event in FY04.

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To accelerate the benefits of the program, a Millennium Challenge '02 event may be added if service agreements, manpower issues, and funding are resolved. Though collaboration with the services was rapid for Millennium Challenge '00, it was only an initial step in a program of some complexity. Based on many issues involved, the command is looking at what would be needed to execute an intermediate step in FY02, using initial service elements of their transformed forces in a consolidated, integrated experiment.

JFCOM is also increasingly involved in international concept development and experimentation programs. The purpose is to ensure that the future joint force can rapidly form coalitions of willing international partners and prosecute operations as a combined force. This is essential to the desired endstate in each concept. The first allied liaison officer is serving with the joint experimentation team, and additional nations are preparing to commit personnel. International work is greatly enhanced by the fact that the Commander in Chief, Joint Forces Command, also serves as NATO Supreme Allied Commander Atlantic, and by the benefits of work being done under NATO in the same area.

Finally, looking beyond *Joint Vision 2020*, a matter of growing interest is innovation and transformation, focused on technological, organizational, and doctrinal concepts that will shape the joint force after next. Seminars, workshops, and games are pulling together the sharpest minds to identify concepts and technologies that may revolutionize military capabilities. While these notions address the future, they are part of an adaptive exploration. Many ideas and technologies may be achievable sooner than originally thought, with a much earlier operational impact.

Joint Requirements

The revisions in the Unified Command Plan in 1999 also provided JFCOM with a mandate to promote jointness. Vital to this responsibility is involvement in the joint requirements process, particularly in the development of capstone documentation. Accordingly, the command has begun to advocate jointness and interoperability in generating requirements. An initial analysis identified several areas calling for an aggressive joint advocate, so JFCOM took the lead in the following:

- combat identification
- theater air and missile defense
- global information grid
- information dissemination management.

The command is moving pragmatically by choosing areas with a high payoff. Doing a few things right is better than doing many poorly. Through

a deliberative process, nine joint warfighting areas that will have the greatest immediate impact on joint warfighting have been selected:

- theater air and missile defense
- command and control
- combat identification
- intelligence, surveillance, and reconnaissance
- attack operations against critical mobile targets
- joint deployment process
- joint simulation system
- battlefield awareness
- deep strike and battlefield interdiction.

At the same time JFCOM has many opportunities to influence the development and approval of all mission needs statements regardless of acquisition category or origination source. Each is affected by the Joint Requirements Oversight Council (JROC) or the Joint Staff interoperability certification process, ensuring that mission need statements are reviewed for interoperability compliance.

JFCOM also influences the staffing of service-generated operational requirements. This is critical because these documents define program performance parameters for improving interoperability. These parameters describe the particulars of capabilities within a larger operational architecture and include the definition of the joint information exchange requirements for measuring program success. By reviewing service mission need statements JFCOM can help integrate capabilities across functional components.

in JROC and the Defense Acquisition Board. The command selectively engages in those issues that fall within its focus and offer the greatest opportunity to advance joint equities. This approach has developed a healthy partnership between JFCOM and the services.

Many incorrectly presume that joint requirements address only matériel. In fact the JFCOM mandate includes all doctrinal, organizational, training and education, leader development, and personnel areas as well. For example, the recommendation arising from initial experimentation into attack operations against critical mobile targets is an organizational and doctrinal proposal for a critical mobile target attack cell within joint task forces.

Additional legislative initiatives have enhanced the ability of JFCOM to furnish input on the full range of requirements. The Defense Authorization Act for FY00 amended Title 10 to strengthen the voice of unified commanders in the resourcing process and requires the Chairman to submit an annual report to Congress on requirements by August 15 of each year. The report consolidates the integrated priority lists of requirements of combatant commands and CJCS views on these lists. JFCOM regards this development as a means of strengthening the role of the joint warfighter in the process. While CINC integrated priority lists will continue to go directly to the Secretary of Defense for action, the Chairman will submit a consolidated integrated priority list to Congress highlighting critical CINC warfighting deficiencies to be resourced.

The JFCOM joint experimentation program has completed the first steps toward becoming a major influence in transforming the joint force. The accomplishments of FY99 set the conditions for continuing, accelerating, and expanding the work. The impact of the first year of the program is seen in greater cooperation among service experimentation programs, valuable lessons learned from initial experimentation, greater synergy of effort, and more precise focus on emerging needs of the warfighting CINCs. Campaign Plan '00 provides an effective construct for building on the accomplishments of this increasingly successful effort for the Armed Forces.

JFQ



1st Combat Camera Squadron (Jim Varhagy)

**Intelligence analysts,
Roving Sands 2000.**

Once JROC or service acquisition executives approve a requirements document, it migrates from requirements generation into system acquisition. JFCOM has the opportunity to participate on every level of decisionmaking from the integration process team level to CINC involvement