Airmen tending F–15E, Nellis Air Force Base.

Briefing Millennium Challenge.

1st Combat Camera Squadron (Lisa Zunzanyika)

1st Combat Camera Squadron (Aaron D. Allmon II)

# MILLENNIUM CHALLENGE 2002

## Setting the Mark

*By* GROVER E. MYERS

New enemies with old grudges are using innovative ways to challenge American leadership around the world. To meet this threat, the Secretary of Defense has given the task of transforming the military to U.S. Joint Forces Command (JFCOM). Millennium Challenge, conducted in the summer of 2002, was the pinnacle of this effort thus far. JFCOM believes this multilevel exercise was successful enough to warrant immediate implementation of some of its recommendations.

Equally important as decisions on change for those who must confront emerging enemies are the lessons of recent operations and deliberate experimentation. New adversaries are not likely to wait as we adapt to fresh tactics and threats in the traditional methodical Cold War fashion. And the lessons from transformational experiments need

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to be immediately recognized and incorporated into plans and, more importantly, into doctrine. As one observer noted, "Experience in the private sector demonstrates that successful corporations do not plan to transform in the distant future: they transform constantly."[1]

### The Challenge

The United States finds itself in a unique historical position that is both highly perilous and full of opportunities. With the end of the Cold War it is the most powerful nation on earth. After some forty years of superpower confrontation and a nuclear standoff, many Americans believe that the country has earned a respite from the burden of global leadership. But its role in the world presents new challenges to national interests.

Technological advances offer unprecedented capabilities to friendly and enemy forces alike. Political, economic, cultural, and other pressures in the post-colonial, post-Cold War environment make conflict more likely. Globalization seeds unrest in distant lands that is potentially damaging to national interests. The possible consequences of future conflict were brought home when the United States came under terrorist attack in September 2001.

**for the force to carry out effects-based action, it must have detailed knowledge of an enemy**

The latest defense planning guidance acknowledged new challenges and recognized that current forces and operational concepts designed for symmetrical warfare against similarly armed enemies were inadequate. Thus it tasked JFCOM to develop joint operational concepts to support military transformation while exploiting asymmetric advantages and emerging joint capabilities.

### A Response

The rapid decisive operations (RDO) concept developed by JFCOM responds to defense planning guidance and to the new operational realities driving it. Fostered by the requirement to meet a wider range of enemy capabilities, this concept presents new ideas on achieving national objectives and is centered on effects-based methods and processes. It describes a way to apply military capabilities in conjunction with the other instruments of national power—diplomatic, informational, and economic—in a campaign centered on the effects required to achieve national objectives. Unlike traditional military operations, an effects-based campaign does not focus primarily on attrition of an enemy, although that option remains, but on affecting the will and ability of opposing leaders to resist U.S. objectives—on creating desired actions or reactions or even an inability to act at all. The goal is to apply the right set of capabilities to control the circumstances and the enemy and conclude conflicts as quickly and resolutely as possible at minimum cost in lives and treasure.

Since JFCOM was assigned the mission to lead joint experimentation, the command has worked a robust program of experimentation and wargames to initiate and develop key warfighting concepts. For example, Unified Vision, an experiment conducted in May 2001, assessed the value added of a standing joint force headquarters in a rapid decisive operation. From its findings and insights, the RDO concept was further developed through a series of smaller limited objective experiments so that a mature concept with supporting systems, procedures, and tools was ready for rigorous analysis when Millennium Challenge was conducted.

Paramount in rapid decisive operations is the idea that one must think differently about planning and executing military operations. That is the overarching theme of JFCOM concept development and experimental activity, which has emphasized a fully networked joint force with a superior, knowledge-focused joint organization ready to implement effects-based operations in rapid decisive operations. Along the way, the command has used input from the field and fleet in the form of findings from experimentation and wargaming.

The RDO concept emerged from four characteristics of future joint operations: coherently joint, fully networked, effects-based, and knowledge centric. Together they provide a framework for examining joint concepts and exploring capabilities—an approach to thinking differently about military operations. Moreover, since they are closely interrelated, these characteristics must not be viewed in isolation. For example, to be coherently joint means that all components of the force must be fully networked with integrated, collaborative command and control structures. And for the force to carry out effects-based action, it must have detailed knowledge of an enemy, itself, and the environment, thus being knowledge-centric.

### Testing New Concepts

Millennium Challenge tested the RDO construct and the ability of the joint force to conduct such operations in this decade. It employed newly developed concepts and stressed them in the new world environment. The command mission was not only to demonstrate the ability to conduct rapid decisive operations, but to produce comprehensive recommendations as part of the

SEALs emerging from HH–60, Desert Rescue X.

1st Combat Camera Squadron (Aaron D. Allmon II)

JFCOM role as a leading agent for joint force transformation. The command has begun making recommendations based on more than two years of joint experimentation.

Millennium Challenge enabled JFCOM to develop specific recommendations to transform joint operations and provide a pathway for future experiments. It was the largest as well as the most comprehensive joint force experiment ever conducted. This $250 million undertaking was preceded by 23 workshops and 16 limited objective experiments. In addition, it facilitated the exploration of 11 joint service concepts, 27 joint initiatives, and 46 service initiatives, and also evaluated 22 warfighting issues based on concerns of combatant commanders. Some 13,500 personnel at 25 locations across the United States were involved in this experiment, which incorporated a rich mix of live and simulated forces, current and future capabilities, an aggressive and asymmetric opposing force, and a new federation of 42 models and simulations.

The RDO concept is not a stand-alone construct; it relies on component concepts to achieve its objectives. The most prominent concepts addressed during Millennium Challenge were effects-based operations, standing joint force headquarters, the collaborative information environment, the joint interagency coordination group, and operational net assessment.

*Effects-based operations*. Unlike traditional campaigns, an effects-based campaign is not primarily focused on attrition but rather on creating effects—desired enemy actions, reactions, or inabilities to act—that force compliance with national objectives. The goal is to apply the right set of capabilities that will conclude the conflict as quickly and resolutely as possible at minimum cost in lives and treasure. Effects-based operations provide a process for obtaining the desired strategic outcome through the precise application of all national capabilities—economic, information, and diplomatic as well as military. On the operational level of war, effects-based campaigning is concerned with controlling or influencing the behavior of a complex, adaptive enemy by creating specific conditions and disrupting its ability to adapt to those conditions in any way other than the desired outcome.

Effects-based operations are prefaced on understanding an enemy as a complex adaptive system and identifying the key nodes and links in that system where effects are to be concentrated. It also aims to achieve effects that cannot always be attained with weapons—political, information, and economic. It focuses the collective effects to take away what an enemy most values.

To the soldier on the ground, effects-based operations are transparent—what he does and

U.S. Army (Sara Wood)

**Operating tactical satellite radio at Fort Erwin.**

how he does it will change little; however application of its principles directly against enemy will and capability to resist mitigates the risks to that soldier. Its effectiveness rests on friendly advantages in new information technology and the knowledge of the enemy, oneself, and one's environment. Of all the emerging concepts, it best represents the idea of looking at things from a different perspective.

*Standing joint force headquarters*. Located within a combatant command, the standing joint force headquarters is a permanent command and control element that:

- operates and trains together on a daily basis, creating permanent, habitual working relationships
- participates in planning and executing the commander's long-term security cooperation program
- conducts operational net assessment and contingency planning for potential crises in the commander's area of responsibility
- is enabled by the collaborative information environment
- reduces ad hoc staff adaptation and augmentation in time of crisis.

Traditionally, task-specific headquarters have been organized and deployed only when a crisis has begun or political/senior military authorities identify a need. In such cases, a commander must then be identified and a staff assigned to manage the operation. Often the tasked headquarters is composed of representatives of only one service who are untrained in joint task force procedures. By contrast, a fully trained standing headquarters of 50 to 60 personnel from all services located in the regional commander's headquarters can begin much of the planning almost immediately and can be augmented as the situation requires.

JFCOM is convinced that standing joint force headquarters can provide faster stand-up of a joint task force headquarters during a crisis where every minute counts, and that once established the headquarters has a better awareness of the intent of a combatant commander and the operational situation. This approach also provides the organizational construct for applying the remaining concepts described below.

*Collaborative information environment*. Using newly available high-speed information connectivity and electronic collaborative tools, the collaborative information environment facilitates immediate information exchange among members of the joint force and its supporting and supported organizations. It contributes to achieving decision superiority by rapidly and simultaneously sharing information and ideas to all who need it, reducing planning times and enhancing operational effectiveness.

The environment used during Millennium Challenge was a command, control, and intelligence system that simultaneously linked commanders at many levels and locations and their sources of vital information both within and outside military channels. Collaborative information environment uses the global information grid as its information management and dissemination backbone, which will allow operational commanders to collaborate with supporting organizations wherever they are located. The operational net assessment and joint interagency coordination group concepts discussed below rely heavily on collaborative information environment in that each uses collaborative applications to permit supporting staffs, separated by geography and organizational boundaries, to develop products collectively.

Additionally, the new joint en route mission planning and rehearsal system-near term was integral to the collaborative information environment in Millennium Challenge. This command and control tool allowed the operational commander to continue to participate in the collaborative environment with his staff and subordinate commanders even while on the move at great distances from his headquarters.

*Joint interagency coordination group*. Both military leaders and civilian officials recognize the persistent shortfall in synchronizing military and agency efforts toward common goals. When the Nation undertakes operations to influence, deter,

or defeat an enemy, the Armed Forces are only one component. Achieving national goals is a cooperative endeavor involving many Federal agencies. The joint interagency coordination group provides civilian representatives to combatant commands and facilitates rapid information sharing across the interagency community. It fosters mutual understanding by developing collaborative day-to-day working relationships between civilian and military operational planners. In keeping with the intent of rapid decisive operations, this group allows theater commanders to bring all elements of national power to bear—harmonizing diplomatic, information, military, and economic activities within their areas of responsibility. These elements can best be applied together to rapidly result in the collapse of an enemy.

**the joint interagency coordination group provides civilian representatives to combatant commands**

*Operational net assessment*. Harnessing recent advances in intelligence, surveillance, and reconnaissance systems and procedures as well as in communications and information management, operational net assessment provides commanders with comprehensive analysis of the potential effects of both friendly and enemy actions. This study extends beyond traditional military means to provide a range of options that can decisively influence enemy will.

Operational net assessment relies on habitual, persistent, institutionalized collaboration and integration among as many concerned parties as possible (largely provided by the collaborative information environment). The intent is to leverage a wide variety of experts from multiple organizations to build a coherent knowledge base. This assessment links potential effects to critical leverage points within a political, economic, information, and military system and to a range of options necessary to achieve those effects.

## Linking the Pieces

The central hypothesis tested in Millennium Challenge involved three concepts that will enlarge joint force capability to conduct a rapid decisive operation. If an enhanced joint headquarters is informed by an operational net assessment and employs effects-based operations that utilize the full range of national capabilities, the 2007 joint force will be able to conduct rapid decisive operations against a determined 2007 enemy.

The hypothesis can best be understood in terms of the desired outcome, which is achieved by gaining decision superiority over an enemy. Such decisions are based on altering the perceived environment of an enemy. That is effects-based thinking. Key is the difference between traditional objective-oriented operations, which are focused on destroying physical objectives, and effects-based operations, in which the cohesion of the environment, capability, and will of an enemy is attacked through full simultaneous integration of all aspects of national power.

The first understanding of the situation is the job of the operational net assessment—providing a full understanding of an enemy, the battlespace environment, and friendly resources as seen by an enemy. This type of insight is called a system-of-systems analysis.

Finally, it was recognized early on that the current process of managing the way the military views the world and the operational challenges it presents was not achieving the goal of decision superiority. The processes and formal relationships were out of date. The Armed Forces were still organized like Napoleonic armies while operating in a world of cyberwar.

## An Assessment

Millennium Challenge was judged by most participants as a success in determining the ability to conduct rapid decisive operations in this decade and in rigorously analyzing component concepts. The central ideas presented earlier fall into two camps. The characterization of these positions—either *invest now* or *in need of refinement*—is determined by the readiness of a concept or initiative for implementation in the joint force. Several significant insights from this experiment call for immediate investment.

DOD should first select a common collaborative capability for an interim joint command and control tool; JFCOM, with support from unified commands, services, et al., should develop joint command, control, communications, computers, and intelligence ($C^4I$) architecture. Then the Joint Requirements Oversight Council should approve a base prototype incorporating both key enablers of a collaborative information environment and evolving concepts of operational net assessment and effects-based operations. Finally, a capability should be fielded to combatant commands; JFCOM should collaborate with the Office of the Secretary of Defense, Joint Staff, and unified commands to refine roles, responsibilities, business rules, and a reachback capability.

In addition, two main areas need refinement. JFCOM should revamp the concept of effects-based operations. The Joint Forces Staff College should be assigned to JFCOM and tasked with joint professional military education aligned with changing operational art. Moreover, the Defense Advanced Research Projects Agency, in concert with JFCOM, industry, other agencies, and

**Changing the Conduct of Warfare and Conflict**

| Traditional<br>Deconflicted Operations | Future<br>Fully Integrated Joint Operations |
|---|---|
| Interoperable service-based | Integrated joint-based |
| Interagency coordination | Interagency integration |
| Complementary multinational | Coordinated multinational |
| Continuous information/data generation | Continuous actionable knowledge generation and management |
| Target effects | Effects-based |
| Platform-based | Networked |
| Engagement-centric | Effects-centric |
| Massive force application | Precise force application |
| Sequential and segmented | Simultaneous and parallel |
| Regional battlespace perspective | Global battlespace perspective |
| Contiguous (in contact) | Noncontiguous (not in contact) |
| Combat focus primarily threat-based | Combat focus on capabilities-based system of systems |

headquarters, should develop enabling technologies to support the operational net assessment initiative. Work should begin on a prototype with the Office of the Secretary of Defense and combatant commands, and a DOD fusion/knowledge advantage capability should be created.

From these and other more detailed observations throughout the three-week event some conclusions can be drawn about near-term U.S. force capabilities and the RDO concept. The bottom line is that while there is more to be done, transformation to a force capable of achieving its objectives in the post-Cold War environment at any place any time seems to be on track.

**experiments can enable JFCOM to capture emerging trends in the American way of war**

## Experiment Findings

Today the joint force cannot conduct rapid decisive operations across the entire force or on the scale desired. However, if the recommendations are implemented, it will be able to conduct them over the course of this decade.

Several combatant commands have already incorporated and are using concepts and tools developed for Millennium Challenge. Joint experimentation, training, and integration are moving the Armed Forces in the right direction—toward military transformation.

It is time to apply ideas derived from the JFCOM experimentation process to doctrinal prescriptions. In this context, and as defined in Joint Publication 1-02, *Department of Defense Dictionary of Military and Associated Terms*, doctrine is "Fundamental principles that guide the employment of forces of two or more services in coordinated action toward a common objective."

Advances that lead to change are not confined to the world of science and technology. It is often stated that developments in warfare stem from technological innovations such as the longbow, stirrup, machine gun, tank, stealth aircraft, and unmanned aerial vehicle. While *Joint Vision 2020* clearly acknowledges the role of technology in such advances, it states that it is not the sole driver of change within the Armed Forces. The document places greater importance on the "development of doctrine, organizations, training, and education, leaders and people."

It is not a coincidence that doctrine heads this list since it is an authoritative statement of the best way of doing business. It also drives education and training. Concepts such as rapid decisive operations represent much of the future of military doctrine. Ideas on better ways of doing things, properly developed, tested, sponsored, and presented, can become part of the driving paradigm of military might. Rapid decisive operations, standing joint force headquarters, and effects-based operations could be seen as the source of doctrine. They forward ideas that may eventually become part of the doctrinal construct.

Experiments such as Unified Vision and Millennium Challenge can enable JFCOM to capture emerging trends in the American way of war and present new constructs for operations. The accompanying figure depicts how command experiments on new concepts and effects-based operations might eventually change the nature of military operations to meet 21st century needs. These emerging trends have already fostered change in the way we view military operations and will result in far more in the next few years. But as of this writing, most do not yet have a conceptual foundation in joint doctrine; there is very little doctrinal description of their effects on how national goals are achieved.

Rapidly developing concepts such as effects-based operations, the interagency campaign, collaborative information environment, and the standing joint force headquarters are four examples of new national security concepts being developed across the diplomatic, information, and economic as well as military elements of national power. But it can be argued that for the military component, the level of interest and the time and energy spent on their development, test, and initial use in the field make them ideal candidates for near-term doctrinal review.

1st Combat Camera Squadron (John Houghton)

**Marines patrolling, Millennium Challenge.**

JFCOM is including a list of doctrine development issues in its formal recommendations for change in the wake of Millennium Challenge. For example, one recommendation suggests that the Joint Staff and JFCOM assess the impact of the concept of effects-based operations and the results of the experiment on joint publications and on the joint pub assessment and publication schedule. But this is no simple task, as any such analysis must consider the relationship between effects-based operations and the collaborative information environment, operational net assessment, standing joint force headquarters, and joint intelligence, surveillance, and reconnaissance concepts, which reinforce each other.

Moreover, Millennium Challenge revealed that standing joint force headquarters—formed in peacetime, organized to manage information and plan for contingencies in advance of events, and ready to deploy as crises escalate—significantly improves the readiness of combatant commands. They can provide up-front contingency planning and the ability to rapidly establish an operational joint task force headquarters that is battle ready as the first soldiers hit the ground. But achieving the full effectiveness of the headquarters requires it to incorporate the effects-based operations process through use of collaborative information environment and operational net assessment.

The question now becomes when a concept is ready for incorporation into doctrine. The obvious answer is when it has been thoroughly evaluated through test and experimentation. But even concepts being developed for use in the distant future may refine doctrine in the near term, as seen during Enduring Freedom when ideas such as effects-based operations and operational net assessment were applied to operations in Afghanistan. A JFCOM pamphlet entitled *Bridging the Gap Between Concepts and Doctrine* makes this point: "Even a concept focused on 2015 and based on matériel capabilities not yet available can contain process and organizational constructs that could improve today's operations." Such is the case, especially with effects-based operations and collaborative information environment, where the main thrust centers on changing thinking rather than building new systems.

Concepts are developed to solve pressing needs. Traditionally they have been validated by testing and experimentation, at times even in the cauldron of conflict. The emerging principles are then submitted to joint and service doctrine development authorities for review and eventual inclusion in doctrinal publications.

But converting proven ideas into viable prescriptions is a lengthy process. The life cycle of a doctrine publication from development through approval can take two years or more as parochial differences among the various parties are worked out. The publication is then assessed for revision after five years and the process begins again.

This approach to consensus management might have been acceptable during the Cold War, when basic strategic and doctrinal precepts rarely changed and the focus was on a confrontation in Western Europe similar to World War II. But since the fall of the Berlin Wall, the Armed Forces have experienced a tremendous expansion in military operations—Desert Storm, Deliberate Force, Allied Force, and Enduring Freedom—as well as relief and peacekeeping missions, each with its own set of circumstances and objectives. As a result, lessons are being learned faster than doctrine can be developed. The same phenomenon applies to new concepts being generated by the forms of warfare encountered in those operations.

The goals of military transformation will not be fully accomplished until joint doctrine takes related changes into account. Millennium Challenge made significant progress in validating several new concepts and paved the way for others. It established the initial mark for joint force transformation. Now the onus on the joint community is incorporating new concepts into doctrine in order to conduct true rapid decisive operations in 2007. The question is whether doctrinal development will be able to keep apace of change and meet that deadline. **JFQ**

NOTE

[1] Douglas A. Macgregor, "Resurrecting Transformation: A New Structure for Post-Industrial Warfare," *Defense Horizons,* no. 2 (September 2001), p. 1.

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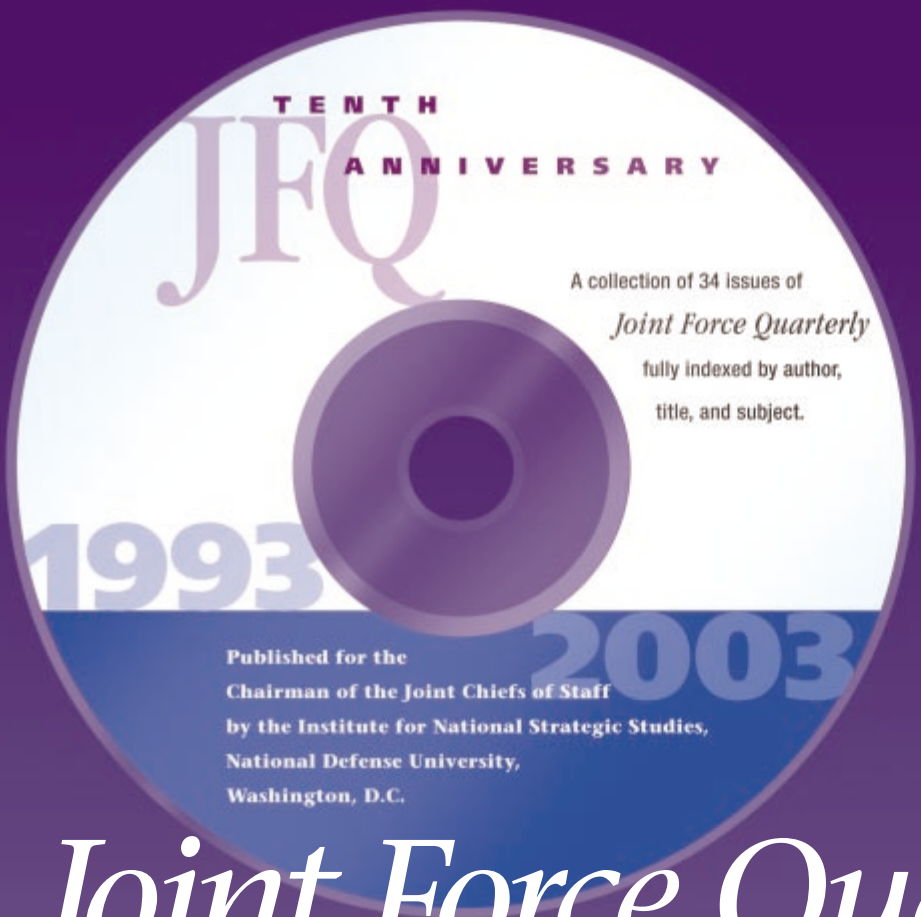


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