JFQ

A Word from the Chairman

Paratroopers boarding C–130 in Iraq.

U.S. Air Force (Suzanne M. Jenkins)

One of my three agenda items as Chairman is military transformation, an imperative that is obviously gaining acceptance across the defense community. It is difficult to find an argument for standing still rather than developing new capabilities. Yet there are many unresolved issues because clarity on the future environment is lacking.

Despite such uncertainties, there are many capabilities that must be transformed in order to get to the fight more quickly, achieve better information sharing and command and control, increase interoperability, and improve interagency coordination. And while progress on transformation in the 1990s was not insignificant, 9/11 raised the stakes. Terrorists, who want to undermine the very principles on which America is founded, threaten our security at home and abroad.

The Armed Forces have many advantages over potential enemies: command and control, logistics, precision weaponry, and professionalism. But terrorists pose an unconventional threat that is highly adaptable and shrewd. For example, while many al Qaeda leaders have been killed or captured, their command and control network has adjusted. It is necessary to transform in order to be more agile, responsive, and capable to defeat global terrorism.

(continued on page 4)

(continued from page 1)

Experimentation

Transformation has three aspects: technological, intellectual, and cultural. New technology and weapons systems are important, but old problems also must be approached in new ways—the intellectual piece. And the ways in which organizations interact—components, services, agencies, and allies—must change. That is the cultural aspect, which is probably the greatest challenge.

There are real benefits in understanding resistance to change. As part of the CJCS lecture series, I recently invited Hugh O'Neill of the University of North Carolina to address the subject of transformation. He has written and lectured widely to business and government audiences on the dynamics that make organizations resistant to change. The key influences that work against change are size, age, and success. Although these factors strike close to home for many of us in uniform, O'Neill identified some methods to overcome them. He recommended encouraging innovation and risk-taking by breaking out smaller groups that can function separately from the day-to-day tasks of the organization. These groups would go outside normal processes to come up with innovative ideas. There is a growing community hard at work doing just that. We call them experimenters.

what defines experimentation is applying scientific method to evaluate a concept

Experimenting is not new, especially in wartime. During the Civil War, the Navy built and employed *USS Monitor*, a ship that was really a floating set of experiments; it had ironclad armor, an innovative hull design, and a moveable gun turret. Aviation was in its infancy in World War I when the Army Air Corps experimented with observation, aerial gunnery, and bombing. In the Korean War, the Army experimented with combat medical care, aeromedical evacuation by helicopter, and MASH field hospitals, all of which dramatically reduced combat casualties.

What defines experimentation—whether it takes place in isolation or as part of an exercise, wargame, or demonstration—is applying scientific method to evaluate a concept. Experiments test ideas by hypothesizing, testing the hypothesis, collecting data, and analyzing results to determine their validity. By contrast, traditional exercises provide training for commanders, staffs, and units to practice existing doctrine and capabilities.

U.S. Army (Charles B. Johnson)

Patrolling in Al Fallujah, Iraqi Freedom.

The real key to experimentation is risk-taking. Although the acquisition process attempts to mitigate risk by a structured approach and rigorous accountability, experimenters accept a certain degree of risk. Outcomes are not predetermined; failure is an option. That amounts to a cultural change for most. For example, in a recent experiment, an off-the-shelf networking program was used to link planners. It did not work, so U.S. Joint Forces Command (JFCOM), working with the Defense Information Systems Agency, went back to the drawing board to find a better tool.

Even as a formal process to support transformation, experimentation has been taking place throughout the Department of Defense for some time. The services have been making progress for about a decade, and their battle labs have been experimenting and developing concepts for years.

The Marine Corps Warfighting Lab, established in 1995, has developed and fielded a range of projects. For example, it designed and tested the chemical and biological incident response force, which became operational at Camp Lejeune. The Army, Navy, and Air Force have 27 labs in all, but until recently no one was responsible for coordinating them. Today the joint community is making great strides in linking experiments to lessons learned and required joint capabilities as well as coordinating experiments among the services and combatant commands.

Steering the Course

Last year, JFCOM assumed the lead role in military transformation. One of its functions is issuing the joint concept development and experimentation campaign plan, which lays out criteria and priorities for all joint experiments. The command coordinates experiments with all services, combatant commands, and other Government agencies such as the Federal Bureau of Investigation, Central Intelligence Agency, and Justice Department, as well as allied nations.

One task that JFCOM must tackle, along with other players, is balancing readiness against mid- and long-term transformation. Professor O'Neill suggested ways to have highly independent groups begin transformation experiments,

U.S. Navy (Todd Flint)

***USS Theodore Roosevelt*, Enduring Freedom.**

increase efforts within existing organizations focusing on mid-term modernization, and encourage critical thinking to come up with innovative solutions for the long term. The JFCOM vision of experimentation is strikingly similar, encouraging efforts along two separate paths. The first is aimed at the near term—fielding prototypes quickly to solve existing problems. The second is aimed at developing innovative concepts and capabilities for the future. Both are critical. In fighting the global war on terrorism we must transform in midstride, balancing short-term needs with longer-range vision to ensure that we are as prepared as possible to meet future threats.

The Olympic event of experimentation to date was Millennium Challenge in summer 2002, which involved more than 13,500 people and an enormous simulation network. The experiments covered everything from headquarters command and control to individual weapon systems. One concept tested was standing joint force headquarters (SJFHQ), conceived as a means to provide the combatant commander with a core command and control team, along with collaborative networking capabilities, for joint task force headquarters. The goal is eliminating the spin-up time for ad hoc, service-centric headquarters to respond to contingencies as combined and joint headquarters.

Initially, XVIII Airborne Corps had the lead for the SJFHQ experiment, but it could not participate in Millennium Challenge because it was deployed to Afghanistan; III Corps responded in just three weeks. This late change in the game plan actually proved beneficial. Despite short notice, III Corps validated the headquarters concept by becoming operational in only five days.

Information sharing was another focus of Millennium Challenge. At one point, 800 people were networked in a collaborative information environment that furnished situation awareness on opposing forces, Web portal to access databases, and a collaborative tool. The prototype system that resulted is about to be fielded in Korea, the Pacific region, and various non-DOD agencies.

The air component conducted several experiments within Millennium Challenge, including a program for generating air tasking orders and an improved process for time-sensitive targeting. These capabilities were employed in Iraqi Freedom, with over 800 time-sensitive targets struck.

Experiments went beyond headquarters information systems and strategic and operational processes to tactical aspects of joint warfighting. For example, the Army Stryker Brigade proved its intratheater ability to deploy, flying aboard C–130s to the National Training Center. The brigade is now serving in Iraq. In another example, the Marine Corps experimented with Dragon Eye—a five-pound, $70,000 UAV designed to provide surveillance and reconnaissance out to six miles. This vehicle was also employed during Iraqi Freedom.

Enhanced Jointness

The experimentation community is functioning in high gear. The JFCOM charter ensures that it will not lose sight of its primary objective: enhanced joint warfighting. As Chairman, I have stressed the need to look beyond the Armed Forces in planning and executing operations to bring every instrument of national power to bear in a coherent way. Experimentation is fertile ground for exercising interagency processes.

U.S. Marine Corps (Kevin R. Reed)

Marines crossing river in Iraq.

Millennium Challenge investigated a concept known as the joint interagency coordination group that provides civilian perspectives and contacts to joint task forces. It is being expanded from an initial focus on counterterrorism to the range of military operations. The day may not be too far off when we will include the private sector in the integration process.

Multinational cooperation is important in fighting the global war on terrorism, and JFCOM experimentation is breaking new ground by testing allied participation in collaborative networks. In the last event, the Armed Forces linked with four national militaries and performed a combined operational net assessment. This comprehensive analysis of enemy capabilities evaluated not only instruments of power such as military forces, but networks and alliances, intellectual and financial resources, and other national assets. The next multinational experiment will involve six nations and focus on combined effects-based planning.

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Experiments are vital in creating momentum and cutting across barriers. However, they are not the answer to every transformation challenge.

First, like all new processes and systems, it is necessary to think jointly from the outset. The joint direct attack munition (JDAM) is a success in part because it was born joint. In Desert Storm, less than 10 percent of air-to-ground bombs were laser guided and only 5 percent of air-to-ground fighters could even guide them. After the Persian Gulf War, JDAM kits were developed to provide global positioning to all weapons delivered by Navy, Marine, and Air Force platforms. In Iraqi Freedom, nearly every air-to-ground fighter and bomber employed JDAM or other precision munitions day or night in any weather.

Second, experimenters must share information and stay connected to lessons learned from ongoing operations. Together with the Marine Corps, JFCOM recently hosted Emerald Express. Returning warfighters from five services and several coalition nations met with concept developers to discuss lessons from Iraqi Freedom and generate ideas for future experiments. This is exactly the right approach.

Third, experimentation must balance costs and risks against potential benefits. Millennium Challenge cost on the order of $250 million, but it was a needed, innovative set of experiments. Smaller events, whether conducted independently or as part of larger exercises, also play a major role and may provide substantial benefits.

Many past experiments were born of necessity. When Americans are engaged in combat, their willingness to take risks at home increases. But in times of peace, innovation tends to follow a more cautious path. Should a pause occur in the global war on terrorism—which may take some time—experimentation can play an important role in transformation by providing an environment for continued risk-taking.

Innovation is measured by its impact on the environment. In other words, we are looking for good ideas with practical applications to solve real-world problems or create new capabilities. Above all, experimentation is a means to an end: improved joint warfighting.

Military transformation has come a long way, but the Armed Forces are still organized for the 20th century. Though it is necessary to be prepared to defeat conventional threats, terrorism is different and requires being ready for the unknown. Change implies taking risks to provide every possible advantage when going into harm's way. Warfare will always be part art and part science. Experimentation is one project in which scientific methods and creative ideas combine to generate dramatic results for joint warfighters.

RICHARD B. MYERS
Chairman
of the Joint Chiefs of Staff