Ulchi-Focus Lens '97:

UFL '97 briefing.

DOD

Putting *JV 2010* into Practice

By JOHN H. TILELLI, JR.

The concepts articulated in *Joint Vision 2010* and expanded in *Concept for Future Joint Operations* are essential if the U.S. military is to remain the dominant fighting force in the world. In Korea, Combined Forces Command (CFC) put the concepts into practice during a theater wide joint and combined command post exercise (CPX), Ulchi Focus Lens '97 (UFL '97).

The mission of United Nations Command/Combined Forces Command/U.S. Forces Korea is to maintain the armistice, deter war, and if deterrence fails defeat a North Korean attack. Some 700,000 Korean and 37,000 American soldiers, sailors, marines, and airmen are able to accomplish the CFC mission through a commitment to training readiness and force modernization. The basis of readiness is a combined and joint exercise program that includes events designed to train joint and combined commanders and staffs on warfighting skills, exercise campaign plans, and practice various contingencies in case of renewed hostilities. It also enables complex staff organizations to practice new processes, coordinate with each other, and refine CFC standard operating procedures. Moreover, exercises permit us to share new concepts, practice tactics, techniques, and procedures, and experiment with emerging technologies.

The keystone exercise for CFC is UFL, the largest simulation supported, theater wide joint and combined command post exercise. In 1997 this exercise involved the governments of both

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the Republic of Korea (ROK) and the United States, including some 16,000 service members, DOD civilians, and contractor personnel. It was conducted August 18–29, 1997, with participants connected by simulations and a real-world C^4I architecture from sites in South Korea, at Fort Hood, Texas, and afloat. UFL '97 was the 22d annual CPX in this series which began in 1975.

Practicing Concepts

There are several reasons for sustaining UFL at its current level. The most obvious is the North Korean threat to freedom and stability on the peninsula and throughout northeast Asia. That threat is real, unpredictable, and dangerous. The situation in the North is uncertain because of its economic dilemma. Yet the Kim Jong-Il regime appears firmly in control and the North Korean military, the world's fourth largest, continues to modernize despite a bleak economic outlook.

As the economy of North Korea deteriorates it is certain that the regime and its military will look for signs of weakness or waning in our commitment to South Korea. Forward positioning of Pyongyang's forces just 26 miles from Seoul is another cause for concern.

UFL is an exercises that helps us remain strong and vigilant. It has the additional benefit of reminding the North and other potential adversaries of a firm allied resolve to protect freedom and stability on the peninsula and in the region. It strengthens the teamwork between the governments and militaries of the Republic of Korea and the United States. It is a forum for exchanging ideas on doctrine, organization, and technology. Most of all, it is the backbone of training readiness.

While we are confident that Washington and Seoul will resolve regional tensions through diplomacy and peacetime engagement, it remains the prime responsibility of our combined defense team to deter conflict and, should that fail, to fight and win. UFL '97, like our other exercises, is a significant part of this deterrence package.

An underlying theme for UFL '97 was the CFC goal to put *JV 2010* concepts into practice. On reflection it was concluded that battlefield situational awareness, partly enabled by a common relevant picture, is a prerequisite for full spectrum dominance. Thus it was decided from the outset to configure simulations, C^4I systems, and experimental technologies in order to better understand the enemy and battlespace to make effective decisions and take action before the enemy could react.

The ultimate outcome sought was to maximize joint and combined relative combat power to fight and win decisively. We looked for ways to achieve synergy with combined capabilities in an asymmetric manner to offset the enemy's numerical advantage and sustain operational initiative.

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One goal was to use our decision support tools to focus on when to decide rather than labor over what to decide. This is a key distinction. The concepts in *JV 2010*, enabled by information warfare capabilities, allow us to focus on future decisions and outcomes instead of on present or past operational situations.

To practice dominant maneuver, precision strike, full dimensional protection, and focused logistics we built and tested a C^4I system that allowed joint and combined commanders and staffs to climb the cognitive ladder. We employed UFL '97 to gauge how well members of the command understood a particular battlefield situation and visualized a future outcome.

The C^4I concept was ambitious. Because of the daily theater wide operations tempo and an influx of new commanders and staff members, we maximized opportunities during the exercise. In simple terms we adopted the framework for *JV 2010* experimentation using a common operating picture. The first step was integrating the joint confederation of models under the aggregate level simulation protocol so that each service component model could feed data to others linked to the confederation. The joint models included the Army corps battle simulation system at Yongsan and Camp Casey, Korea; the Navy research, evaluation, and systems analysis model at Suwon; and the Air Force air warfare simulation model at Osan.

Next an interface was established between many real world C^4I systems, including several experimental technologies so each system could exchange data and information. The third step was to build an electronic link, with redundant pathways, between the simulation models and C^4I systems to replicate realistic national and theater level sensor feeds to the C^4I systems.

The final step was creating a theater wide classified internet, complete with CFC home page and web browser so command posts could access pertinent common operating picture information, send recurring status reports, and communicate via e-mail.

Assessment and Evaluation

While transitioning to the global command and control system (GCCS)-common operating picture, the nerve center of this system is the theater automated command and control information management system (TACCIMS) designed exclusively for the theater of operations. TACCIMS is the classified, U.S./ROK tactical English/Hangul means of moving digital information.

CFC tested this system of systems before the exercise. Once some refinements were made the common operating picture was broadcast over command and control personal computer (C^2PC) terminals at command posts throughout Korea. It was also broadcast over several joint force air component command (JFACC) joint situational awareness system (JSAS) workstations located at component command headquarters and on a three dimensional screen at the CFC theater air, naval, ground operations command center, Command Post Tango.

It took many subject matter experts to build the CFC common operating picture including members of the

Korea Battle Simulation Center, command staffs, 1st Signal Brigade (operational control to Eighth U.S. Army), and military and civilian agencies off the peninsula.

To help evaluate the effectiveness of theater wide situational awareness during UFL '97, CFC used the Army Vision 21 information management system to compare the battlefield situation from the simulation models with the common operating picture displayed by CFC. The exercise director and senior observers used Vision 21 to develop C^2 and *JV 2010* lessons learned for after action reviews. Vision 21 aided discovery learning by members of the combined defense team.

creative counter-fire was one of several warfighting improvements over previous UFL exercises

Another important CFC assessment and evaluation method was the decision to solicit help from research and evaluation consultants who looked at CFC battlefield visualization and common operating picture systems used in the exercise, evaluated them, and recommended improvements. This firm provided the command with an extensive post-exercise report. CFC was pleased to learn that its own observations and internal assessment closely matched those in the report.

Considering the many objectives CFC established for its CPX, UFL '97 was a tremendous success. We made great strides in practicing *JV 2010* concepts and achieving a common relevant picture. During the exercise we immersed commanders and staffs in the warfighting plan, trained essential warfighting skills, and strengthened teamwork between both governments and militaries.

Many new warfighting methods worked well in UFL '97. A highlight of the exercise was the improvement in the CFC ability to plan and direct a lethal counter-fire battle that took advantage of experimenting with several concepts from a newly created counter-fire primer for Korea.

With one U.S. field artillery brigade from III Corps acting as the counter-fire headquarters, CFC used an improved common operating picture and the synergism of air component close air support with the ground component counter-fire systems for unparalleled success in reducing the significant fire support capability of the enemy. The CFC creative counter-fire program was just one of several warfighting improvements over previous UFL exercises.

The improvements in common operating picture enabled by C^4I architecture also allowed experimentation with tactics, techniques, and procedures. Two examples were the combined naval component command maritime interdiction operations campaign and CFC simultaneous command and control of air interdiction sorties, close air support sorties, and attack helicopter operations for decisive, synergistic effects throughout the depth of the theater.

For the first time, largely because of improved situational awareness, creative thinking, and enhanced communications, the naval component controlled Army attack helicopter squadrons, in coordination with 6th Cavalry Brigade from the ground component command, to interdict enemy amphibious unconventional warfare penetrations. The naval component headquarters aboard *USS Blue Ridge* vectored AH–64s to enemy landing sites before it could disembark from submarines or landing craft thereby offering a new level of littoral, maritime interdiction versatility. Allied sensor technologies and communications between the naval component command and 6th Cavalry Brigade enhanced the ability to rapidly respond to the infiltration.

While events unfolded offshore, CFC aggressively pursued enemy operational formations, artillery groups, logistics nodes, and surface to surface missile units from skies over the theater of operations. Using the common operating picture, enhanced by effective C^4I, CFC combined the effects of strike capabilities by the air component command with those of attack helicopters by the combined aviation component.

The combined air component quickly achieved air superiority in the campaign. Capitalizing on early air campaign successes, the CFC Combined Targeting Board, Air Space Management Center, and component commands worked together to blanket enemy formations with the lethal fires of the combined Air Force and combined aviation component.

While air interdiction sorties went deep to target enemy second operational echelons and reserves, close air support and attack aviation squadrons worked together in the main battle area to attack leading enemy formations and artillery groups.

The net effect of these simultaneous, around the clock operations was to upset enemy attack plans. The enemy sustained heavy losses and also found it extremely difficult to move attacking mechanized and armored units, support infantry with effective artillery, or reposition reserves.

Man and Machine

CFC successfully exploited the synergism of its air platforms by visualizing the sky over the Korean theater and the enemy on the ground in real time. That battlefield visualization enabled the orchestration of precision strike and dominant maneuver.

Another first for UFL '97 was deploying a joint space support team (JSST) to the theater, complete with a supporting space based campaign plan and joint tactical ground station (JTAGS). JSST was tied into the theater common operating picture for real time warning of a Scud surface to surface missile launch against CFC. Locating it in Korea with JTAGS strengthened overall theater missile defenses. It gave new meaning to full dimensional protection.

Success in implementing *JV 2010* concepts began with the common operating picture that was based upon an extensive C^4I architecture involving man and machine. Many C^4I systems and automated technologies worked well, although some were more capable than others. UFL '97 was the best on record for the joint simulation confederation. The simulations came together smoothly and yielded a stressful, real time exercise scenario for combined and joint staffs. The mastery

UFL '97 situation update at Korean command post.

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USS Blue Ridge.

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of simulation technology by the Korea Battle Simulation Center enabled players to direct their energy on warfighting and experimenting with *JV 2010* concepts and to attain a common relevant picture.

All C^4I systems used during UFL '97 gave CFC staffs the potential to build a common operating picture, which is the vital first step toward full spectrum dominance.

Of the systems available to CFC in UFL '97, JSAS offers tremendous utility. It provides real time U.S. multi-source intelligence data and models a range of U.S. sensor capabilities. It is a useful analytical planning tool, has three dimensional display capability, and incorporates its own communications suite. The ability to fuse data rapidly and disseminate the information theater wide is the real strength of the system. It is an interim step toward achieving situational awareness until the potential of the GCCS-common operating picture is maximized and visualization requirements are met. Meantime, JSAS provides an important first step among the many steps we will take to provide the theater a fully capable situational awareness tool.

C^2PC is worth pursuing. It is a relatively inexpensive, user friendly, NT-based server with access to GCCS. Sixty-four TACCIMS workstations throughout the command had access to a PC-based common operating picture, releasable to ROK.

the automated deep operations coordination system is an effective aid to fire support and deep operations

The focused intelligence system of systems offers significant capabilities and will continue development and refinement. Focused intelligence integrates and fuses information from ground, sea, and air components into a common view of the battlespace. Focused intelligence is an automated way to portray the battlespace to all components and allies and is the result of analysis and synthesis of collected data. It accepts data feeds from a host of national and theater intelligence sensors and provides a three dimensional view of the battlespace including radar, artillery, terrain, and communications networks. It has also taken the peninsula into the first steps of an interactive wargaming process that will greatly assist planners' course-of-action development.

This system has notable implications for our ability to analyze reconnaissance information, perform real time battle damage assessment, direct artillery fire, and determine enemy and friendly dispositions anywhere within the theater. Focused intelligence is not a common operating picture, but it is a major input device to a combined picture.

Another system—used by the Theater Deep Operations Coordination Center at Command Center Seoul—was the automated deep operations coordination system. It is an effective aid to fire support and deep operations. Yet it is a temporary replacement for the common targeting system until the Army fields its field artillery target data system in Korea.

CFC evaluated the utility of several other systems during UFL '97. We encouraged staffs to experiment with systems such as the joint operational visualization environment, which portrays a three dimensional view of the battlespace, blue and red forces, terrain, and Scud attacks on an 18 by 20 foot screen. Each system had unique capabilities and limitations. The CFC experience with them is similar to that of other theaters where emerging technologies are brought together to support a theater level warfighting exercise.

The command found it had much to learn about combining current and future information technologies to provide a seamless common operating picture that ultimately will enable us to make decisions more quickly and effectively than an enemy. With the advent of this technology on the peninsula,

we are on the verge of full spectrum dominance which will save lives and resources.

CFC determined that the combined effectiveness of various systems used during UFL '97 is proportional to compatibility with each other, training proficiency of the operators, connectivity to theater communication and automation systems, and ease of use by allied personnel.

The Relevant and Irrelevant

Several conclusions were drawn from the exercise. CFC experience suggests that the joint community is right on target in its method of building a C^4I system of systems from the bottom up. It is more compatible, user friendly, and functional and less redundant than the stovepiped systems that proliferated after the Gulf War. By utilizing a systems engineering approach to C^4I structure, we can achieve a common relevant picture with the potential to achieve full spectrum dominance. We are merging joint and combined systems with a cogent C^4I concept, including a demanding training regimen and evaluation of factors affecting our ability to attain a common relevant picture.

The information operations challenge was approached like any other tactical or operational problem. In this case we began with a mission analysis that concerned a unique information age enemy which was neither another person nor an opposing weapons system but rather was possible incompatibility between joint and combined C^4I subsystems and English/Hangul.

Part of the solution to problems of the information age involves organizational structures as well as hardware and software. We are studying those structures and related roles and missions commensurate with the degree of future uncertainties, the task or function each must perform, and the minimum information each needs to complete its mission.

The layout of command posts is also being investigated. As we continue to add enhanced information systems, the physical design of these facilities must maximize information exchanges. They must also filter a burgeoning volume of information. We must assist by pursuing the right information and enabling subordinate components to pull what they need.

The CPX demonstrated that ample information can be generated. As in other commands, the concern is differentiating between the relevant and irrelevant. Using the critical requirements of the commander as a filter, C^4I architecture can be manipulated to deselect information irrelevant to effective and timely decisionmaking.

A sustainment training program for C^4I systems must be established. We cannot wait for periodic exercises to train operators on systems. CFC is finding ways to employ the same systems daily. Both our C/J-3 and C/J-6 are considering how to make TACCIMS into a theater wide internet system for all everyday peacetime business.

Another lesson is that informal communications and decisionmaking channels will remain as valid in the 21st century as in the past. In an age when our command posts manage and analyze increasing amounts of information, commanders need an informal way to balance the demands of the C^4I system of systems through their own intuition and that of their subordinates.

Korea has bilingual, bicultural, and security considerations that magnify the C^4I challenge for the alliance. Both parties have cultures that are unique and rich in tradition. The differences are what make our alliance strong. Even though each side brings complimentary strengths to the table, cultural and linguistic distinctions may be the most important consideration for joint and combined theater wide C^4I architecture. Consequently Americans and Koreans are collaborating every day to determine the best methods of enabling a common relevant picture.

There is another UFL '97 lesson: more is not always better. After assessing the results of our varied experiments, training, and demonstrations, we must decide the minimum effect that C^4I architecture must achieve at each level and what system or system of systems to employ. Also, since we did not exercise the potential effects of an enemy attack on our C^2 systems, we must put them to the test of simulated combat. The enemy will always have a vote; we must be prepared.

We must develop a simulation tool that accurately portrays an enemy capable of attacking or deceiving our C^4I structure. How well we understood the battlefield situation during UFL '97 is far less important than how well we might understand it during a conflict.

UFL '97 was enormously successful. CFC took a major step in moving *JV 2010* concepts from theory into application. Advances in information age technologies have ushered in a new era in the evolution of warfare. While technology will never provide perfect information or certainty, innovations over the last ten to fifteen years place us on the verge of providing timely and accurate enough information to give commanders sufficient certainty to make quicker and better decisions than our enemies. With better decisions commanders can seize and retain the initiative.

CFC is searching for combined situational awareness and battlefield visualization each day. It is obvious that attaining a common relevant picture is absolutely fundamental to moving *JV 2010* concepts from theory to practice. Our C^4I system is the nerve center that connects the muscles of the command to its brain. Situational awareness rests in the brain and from there concepts emerge to ensure full spectrum dominance. We are moving even closer to turning the concepts contained in *Joint Vision 2010* into an operational way of life within the Korean theater. **JFQ**